GYPROCK®
SAINT-GOBAIN

THE RED BOOK™

01

APRIL 2026

DESIGN GUIDE

FIRE, ACOUSTICS AND THERMAL

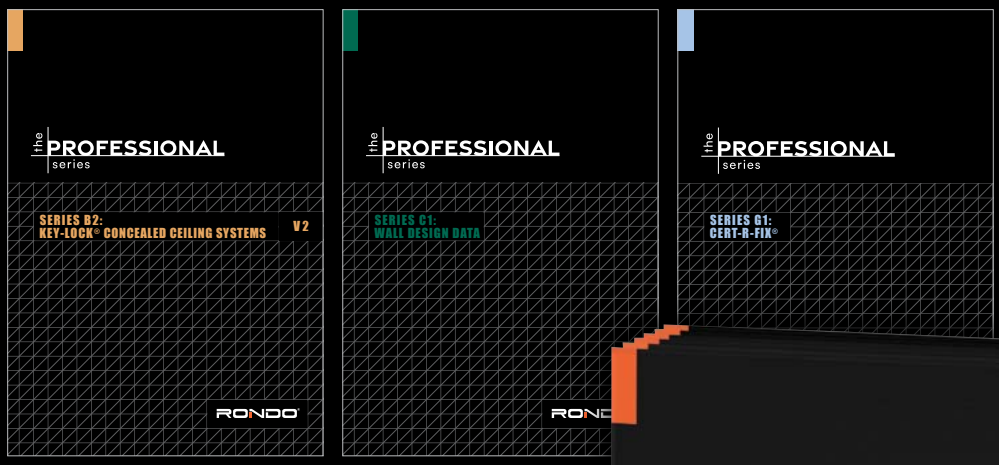


CSR

the PROFESSIONAL series

The Rondo Professional Series compiles extensive technical knowledge, testing data, and practical insights for efficient utilisation of Rondo's innovative building systems. This invaluable resource benefits professionals involved in designing, or constructing with Rondo's advanced lightweight rolled-formed steel wall and ceiling framing products. Organised into separate books, the series enables easy access to the specific knowledge required for each system or product.

RONDO®



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THE RED BOOK™

The Red Book is one of the industry's most recognised and respected technical publications. It provides fire, acoustic and thermal information on hundreds of wall and ceiling systems to support architects, engineers, and other design professionals in their day-to-day design work. As a result of the revisions and expansions to the original 1999 edition, The Red Book continues to provide comprehensive design information and complete system solutions from CSR Gyprock, Australia's leading Plasterboard Manufacturer.

CSR

Backed By a Trusted Name

CSR has proudly been a part of the Australian building market since 1942 and is the name behind some of Australia's most recognised building products brands. We have a strong history of creating innovative and sustainable building materials that work together to provide better whole-of-project solutions across the Australian commercial and residential construction industries.

Foundation for National Parks & Wildlife

We are mindful of the impact on the environment when printing The Red Book. We limit the printing of editions of The Red Book and have a digital version available. CSR Gyprock® and Rondo® have partnered with the Foundation for National Parks & Wildlife (FNPW) to plant one tree each for every printed edition.



Photo Credit; Rebecca Collins

This is in addition to the paper the book has been printed on being certified by the Forest Stewardship Council® (FSC®) as having come from responsible sources.

FSC®
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MIX
Paper from responsible sources
FSC® C018183

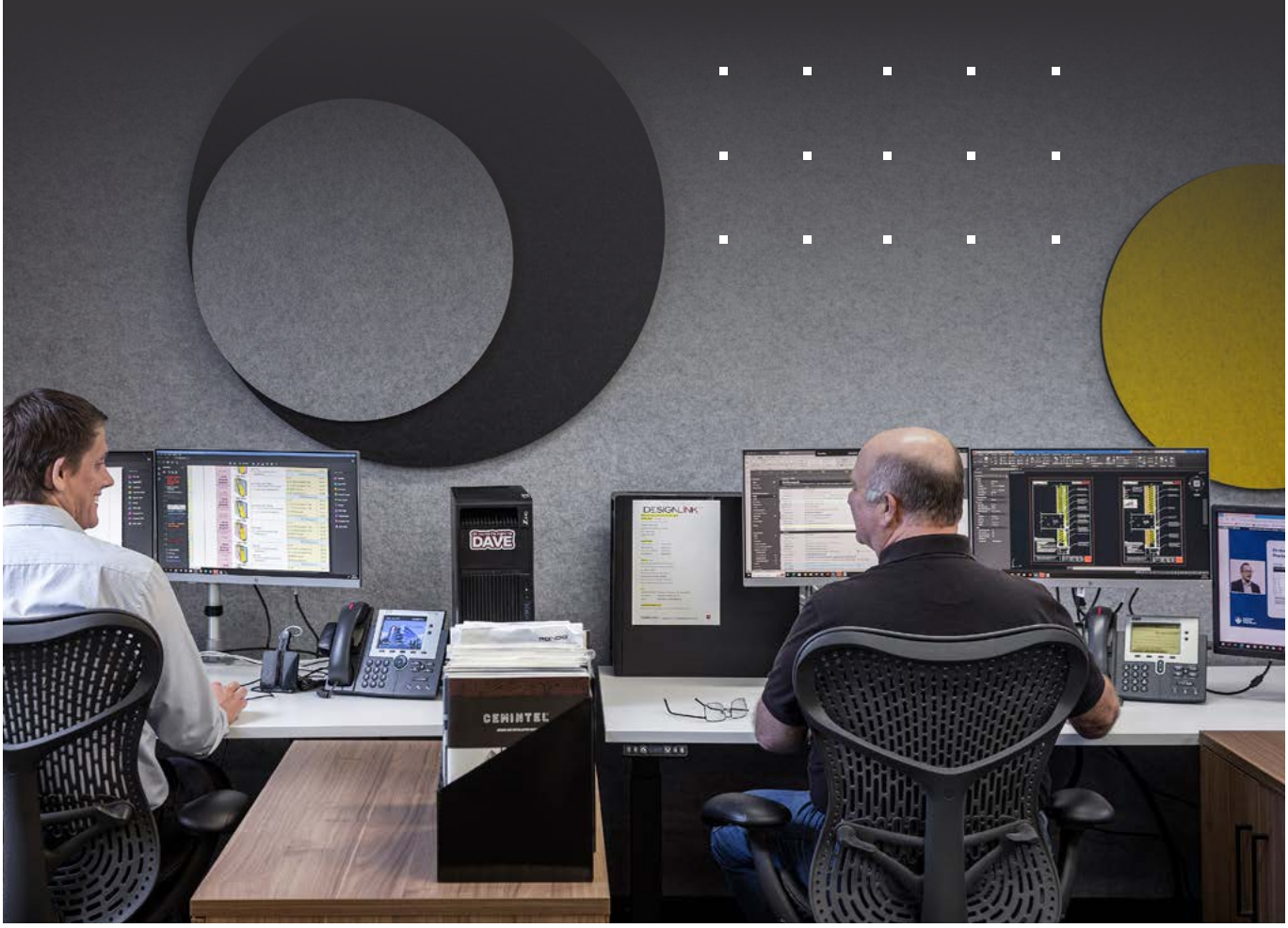
Why partner with CSR

In an increasingly complex building world, you need a trusted partner that offers proven quality and expertise to help you achieve your project goals. One that is dedicated to continual innovation and leading the building industry into a sustainable future. To that end, we have a multitude of resources available, including;

DesignLINK

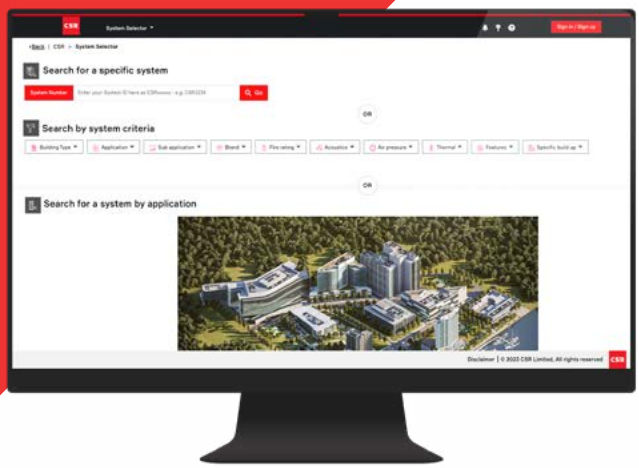
CSR DesignLINK is a unique team of professionals including engineers and building designers working to support the specifications of CSR projects. DesignLINK partners with customers to:

- workshop complex design issues
- provide value engineering with estimating and design tools
- rationalise system specifications to meet specific fire, thermal, acoustic and footprint needs
- offer compliance support through the provision of complex test data
- deliver better building performance
- provide installation guidance for builders and contractors



Digital Tools

We have developed, and continue to expand, a suite of digital tools that enables you to specify systems, manage your orders and access all compliance documents and installation manuals. Recent digital additions to the toolbox include the CSR System Selector and Thermal Calculator.



Compliance

As leaders in the building industry, we understand that compliance is at the core of building requirements. Our portfolio covers such a breadth of brands and products, we have the knowledge, expertise and capability to offer compliance details on an extensive number of complete system solutions. When you partner with CSR, you can rest easy knowing what's specified fulfills all your compliance requirements.

Industry-leading warranty

All CSR products and systems are of an industry-leading standard. As such they are guaranteed to perform and are backed by a comprehensive warranty, whether they are manufactured in Australia or sourced from a trusted international partner. All products are covered by warranties that provide buyer confidence and peace of mind.

Sustainability

Sustainability is an increasingly important topic in the building industry from both a product and design perspective. We are proud to focus on developing sustainable manufacturing processes, products that produce minimal environmental impact and systems that enable building efficiency.

Scan to download

Green Building Council Australia

Our efforts have seen us gain accreditation and certification with a number of regulatory and industry bodies. For a complete picture of our commitment to sustainability, we invite you to look at our 'Sustainability Report 2022 – Building Solutions for a better future'.
CSR is a member of Green Building Council of Australia, an association that fosters environmental sustainability amongst commercial building and construction industry companies and is an HIA GreenSmart leader – a voluntary community with a hands-on approach to residential building that focuses on educating builders, designers, product manufacturers and consumers about the benefits of an environmentally responsible approach to business.

Foundation for National Parks & Wildlife

CSR Gyprock® and Rondo® are proud to partner with The Foundation for National Parks & Wildlife

The Foundation for National Parks & Wildlife (FNPW) was founded in 1970 and is the charity partner of national parks and wildlife services across Australia. Having invested more than $65 million since 2000, FNPW has the mission to combat biodiversity loss through the growth of national parks, the conservation of native flora and fauna, and the restoration of disaster affected lands now and for future generations.

FNPW joins the dots between corporate partners, local communities, government, environmental scientists, and First Nation peoples to restore and protect Australia's unique natural beauty.



Photo Credit; Rebecca Collins

The interconnectedness of FNPWs projects to grow national parks, save threatened species, and restore disaster-affected lands allows us to maximise the impact for the environment and our ecosystems.

FNPW runs one of the largest environmental community-led restoration programs in Australia, the FNPWs Landscape Resilience Program (LRP) which targets fragmented ecosystems adjacent to protected areas, habitat corridors, riparian zones, and wetlands to increase resilience and support biodiversity on a national scale.

The LRP will plant and grow 1 million+ native trees in flood and fire affected areas by 2025 by establishing and supporting community nurseries which propagate native seedlings that will be planted locally on public and private lands.

Thanks to collaborations like the one Gyprock currently has with FNPW, we can have a positive environmental impact on Australia's biodiversity, creating a sustainable and healthy country for all future generations.



Photo Credit; Douglas Gimesy

Scan here to find out more about FNPW's work and how to get involved.

Photo Credit; Stacey Irving

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PRODUCTS & DESIGN B

STEEL FRAMED WALL SYSTEMS C

TIMBER FRAMED WALL SYSTEMS D

CONCRETE AND MASONRY WALL SYSTEMS E

EXTERNAL WALL SYSTEMS F

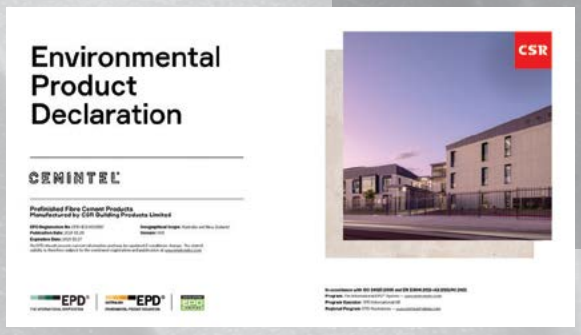
CEILING SYSTEMS G

SERVICES SYSTEMS H

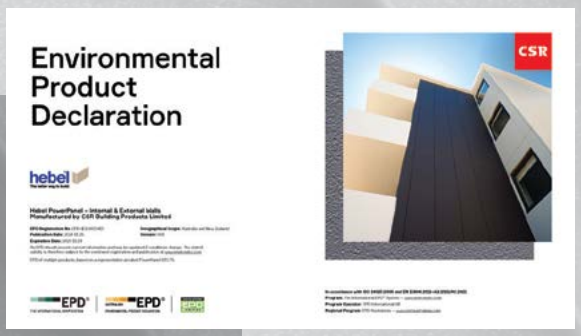
FLANKING PATH SYSTEMS J

INDEX OF SYSTEM NUMBERS IN

EPDs
NOW AVAILABLE







As part of our commitment to sustainable building practices, CSR has launched a series of Environmental Product Declarations (EPDs).

SCAN QR CODE TO SEE ALL AVAILABLE EPDS

CSR

INTRODUCTION

A

SECTION CONTENTS

Three Red Books _____ **A2**
Introduction to The Red Book _____ **A2**
Using The Red Book _____ **A3**

QUICK SELECTION GUIDES
- Multi-Residential Class 2 _____ **A4**
- Hospitals _____ **A6**
- Office _____ **A8**
- Aged Care _____ **A10**
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THREE RED BOOKS

The Red Book now includes 3 parts:

- Book 1 Design Guide
  Fire, Acoustics and Thermal
- Book 2 Residential Installation Guide
  Class 1 & 10 Buildings
- Book 3 Commercial & Multi-Residential Installation Guide
  Class 2 – 9 Buildings

Over time, each version of the Red Book has grown significantly with the addition of new systems, sections and details. As a result of this, the Red Book has been extended to three books for enhanced navigation, functionality and efficiency.

BOOK 1 DESIGN GUIDE FIRE, ACOUSTICS AND THERMAL

Dedicated to complete system solutions for walls, ceilings and façades for all building classes. Book 1 provides fire, acoustic and thermal information on hundreds of wall and ceiling systems and includes products from the CSR companies Gyprock, Cemintel, Himmel, Bradford, Martini, AFS and Hebel.

For current products/systems performance, visit CSR online digital tools such as on CSR System Selector and Thermal Calculator at https://apps.csr.com.au/

BOOK 2 RESIDENTIAL INSTALLATION GUIDE CLASS 1 & 10 BUILDINGS

Book 2 provides comprehensive installation details for Gyprock plasterboards fixed to walls and ceilings of timber, steel and masonry construction in residential buildings. Applications include internal wet areas, protected external ceilings and eaves, curved surfaces, bushfire solutions, and fire rated boundary walls.

BOOK 3 COMMERCIAL & MULTI-RESIDENTIAL INSTALLATION GUIDE CLASS 2 – 9 BUILDINGS

Book 3 provides comprehensive installation details for Gyprock plasterboard in commercial style construction. The details focus on slab-to-slab steel framed construction that is common in offices, warehouses, schools, hospitals, and medium to high-rise residential construction. Applications include wall, ceiling, column, beam and wet area linings that may be required to achieve fire and acoustic ratings.

INTRODUCTION TO THE RED BOOK

The Red Book 1, Fire, Acoustic & Thermal Design Guide showcases the performance of CSR Gyprock's extensive range of building systems. Together with the associated Red Book installation manuals, it forms a suite of essential reference documents for the building industry.

Over the last 75 years, Gyprock has developed effective, practical and cost-effective systems for most applications. Extensive testing has been carried out on the systems and components in the Design Guide, including for fire, acoustic, thermal, weather resistance and structural properties. To complement this program, Gyprock has obtained assessments from appropriate authorities on the likely performance of many details and system variations; expert opinions based on test results.

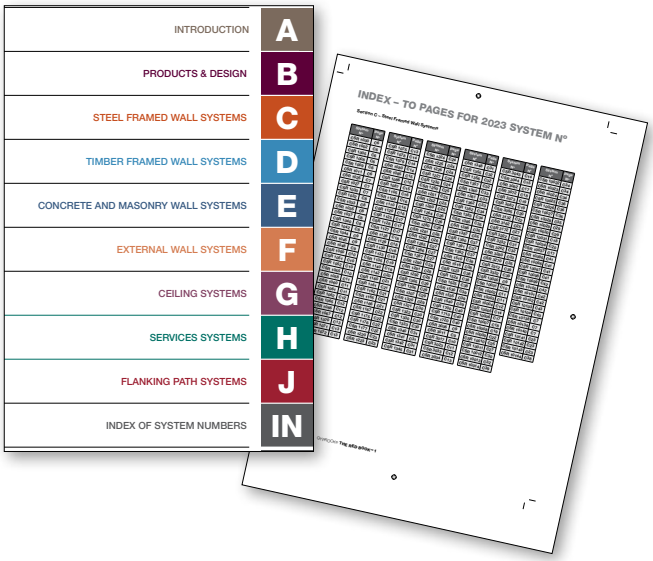
Systems in the Red Book Design Guide should be viewed in conjunction with the relevant product or installation manual noted on system pages.



USING THE RED BOOK

Section Index: Use the Section Index to search for walls by framing type, ceilings under roofs and floors, for services enclosures and acoustic junction systems. Navigate quickly by colour or section letter – section letter and page numbers are referenced at the bottom of each page.

Index to Systems – Section IN: An index of all systems is provided in Section IN at the rear of the book. Here all systems are listed in numerical order using the unique system numbers, alongside their location within the book by section/page number



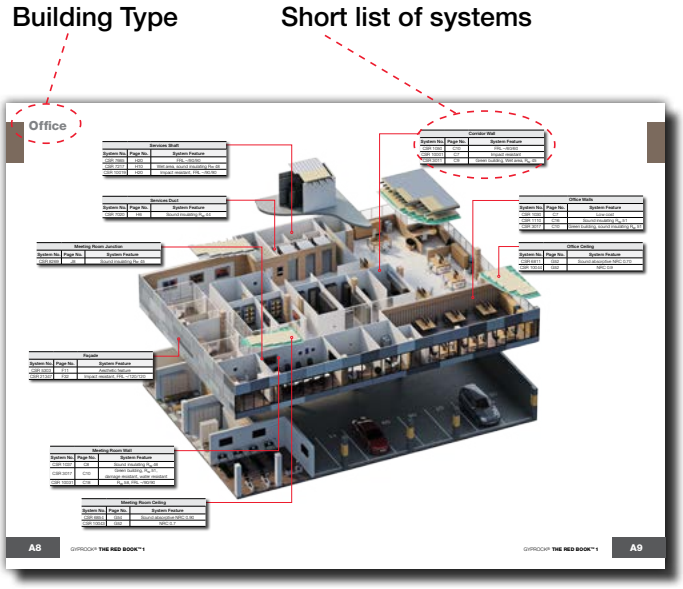
SYSTEM SHORT CUTS

Many systems are on offer in The Red Book and finding the right one can be time consuming. To make the task easier, a set of systems is presented that may lead to solutions for some common building types. The systems available include walls, ceilings, façades and services enclosures.

The system sets are based on years of experience in collaborating with designers and builders, and aim to provide typical fire and acoustic values, properties necessary for a space's use, and other features such as cost, appearance and footprint.

The recommendations will not be suitable in all cases, but systems displayed on pages near to the highlighted solution have variations that are likely to suit.

The Guide is intended as a shortcut to the right system and the user should ensure that any system selected meets all performance requirements.

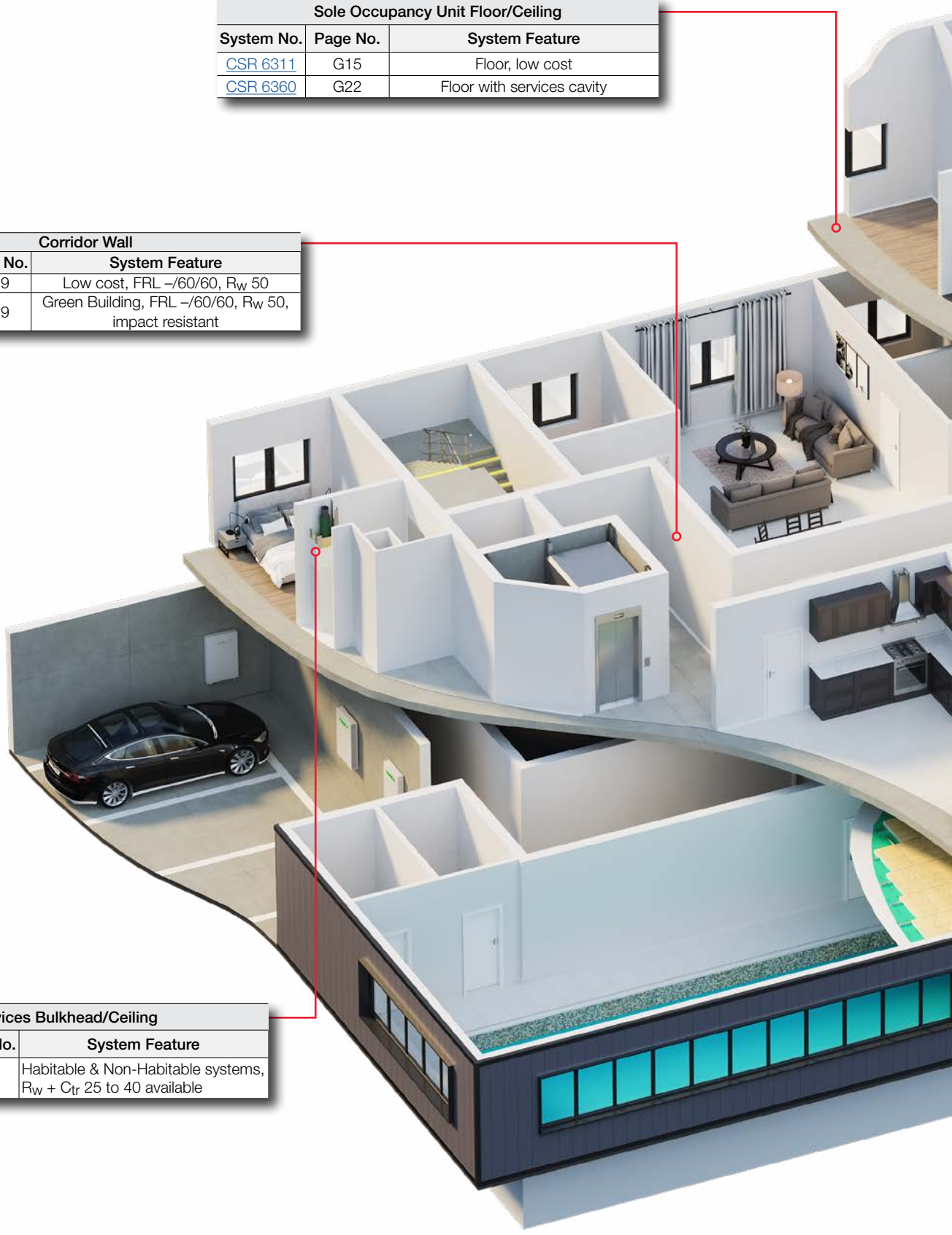


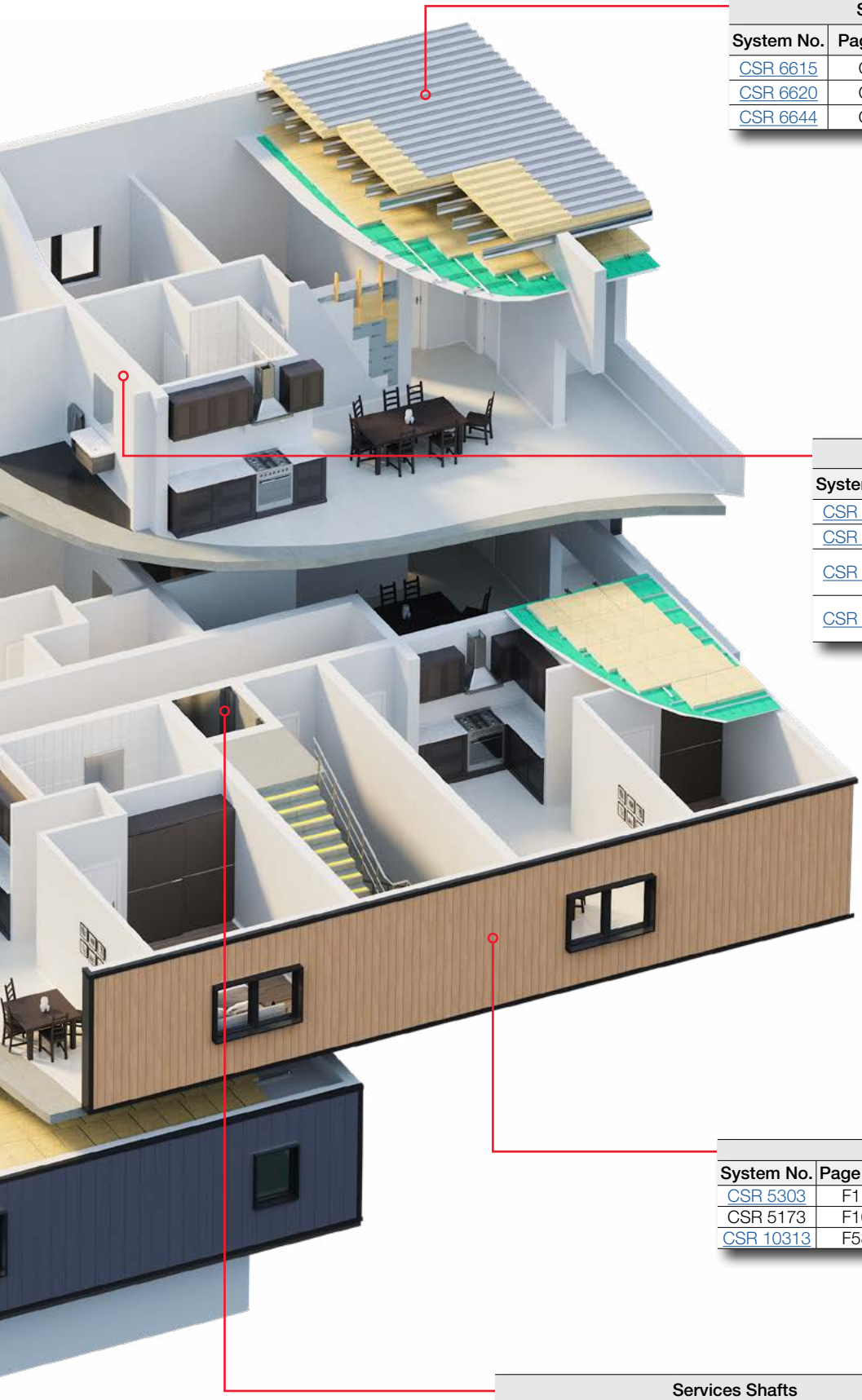
Multi-Residential Class 2

Sole Occupancy Unit Floor/Ceiling		
System No.	Page No.	System Feature
CSR 6311	G15	Floor, low cost
CSR 6360	G22	Floor with services cavity

Corridor Wall		
System No.	Page No.	System Feature
CSR 1125	C19	Low cost, FRL –/60/60, R_W 50
CSR 10006	C19	Green Building, FRL –/60/60, R_W 50, impact resistant

Services Bulkhead/Ceiling		
System No.	Page No.	System Feature
CSR 7020	H6	Habitable & Non-Habitable systems, $R_W + C_{tr}$ 25 to 40 available





Sole Occupancy Unit Ceilings		
System No.	Page No.	System Feature
CSR 6615	G43	Roof, pitched, R_W 50, R 6.0
CSR 6620	G44	Roof, pitched with RISF 60
CSR 6644	G46	Roof, low slope with RISF 60

Sole Occupancy Unit Walls		
System No.	Page No.	System Feature
CSR 1386	C37	FRL –/90/90, $R_W + C_{tr}$ 50
CSR 1523	C40	FRL –/60/60, $R_W + C_{tr}$ 50
CSR 4269	E15	Masonry + stud + furring channel $R_W + C_{tr}$ 50
CSR 4294	E18	Masonry + furring channel two sides $R_W + C_{tr}$ 50

Façade Wall		
System No.	Page No.	System Feature
CSR 5303	F11	Pre-finished option, lightweight
CSR 5173	F10	FRL 90/90/90
CSR 10313	F58	Class 4 Permiance

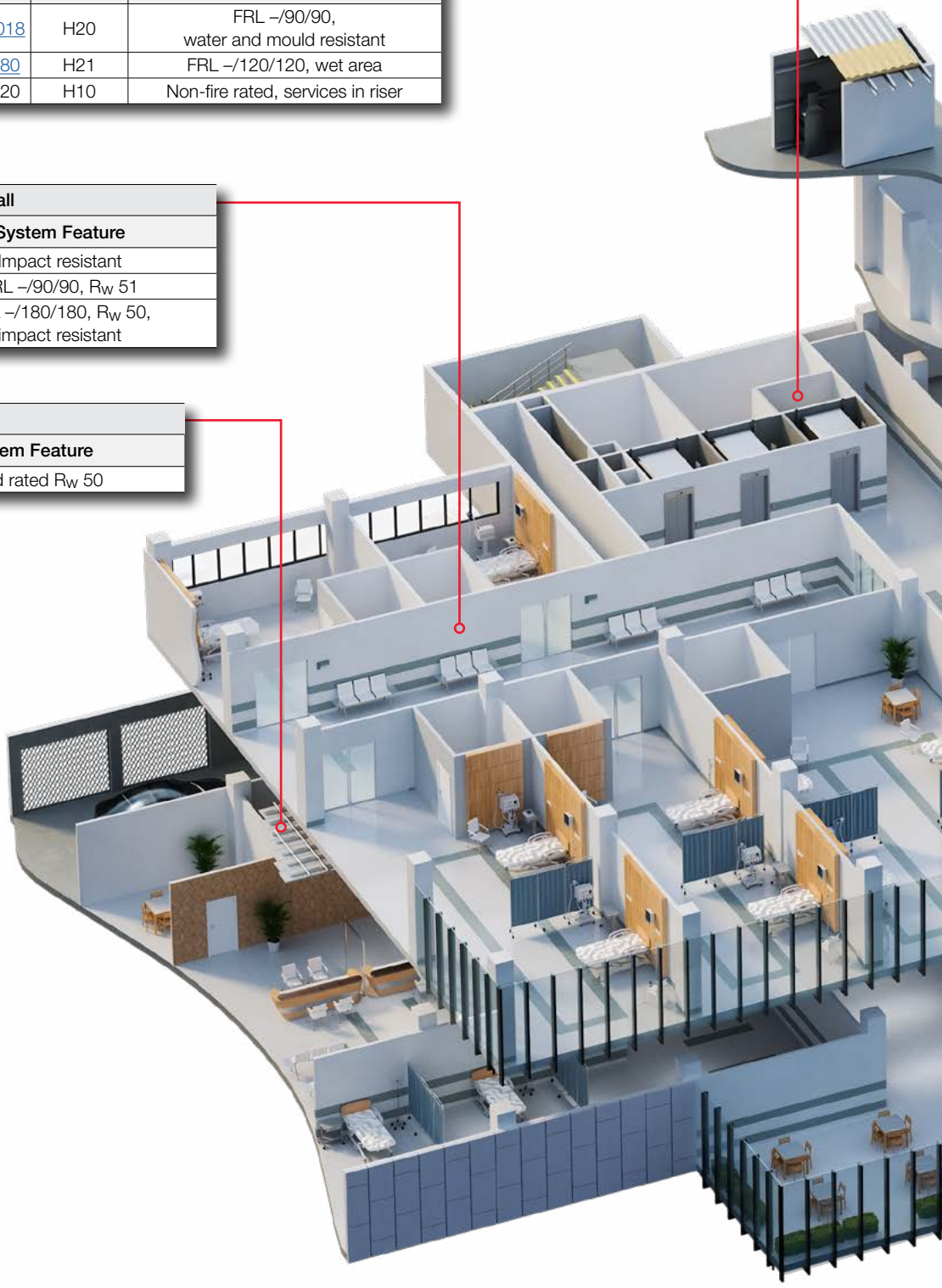
Services Shafts		
System No.	Page No.	System Feature
CSR 4065	E8	Concrete lift shaft, R_W 54
CSR 4070	E8	Concrete stair shaft, R_W 61, wet area
CSR 7670	H21	FRL –/90/90, wet area

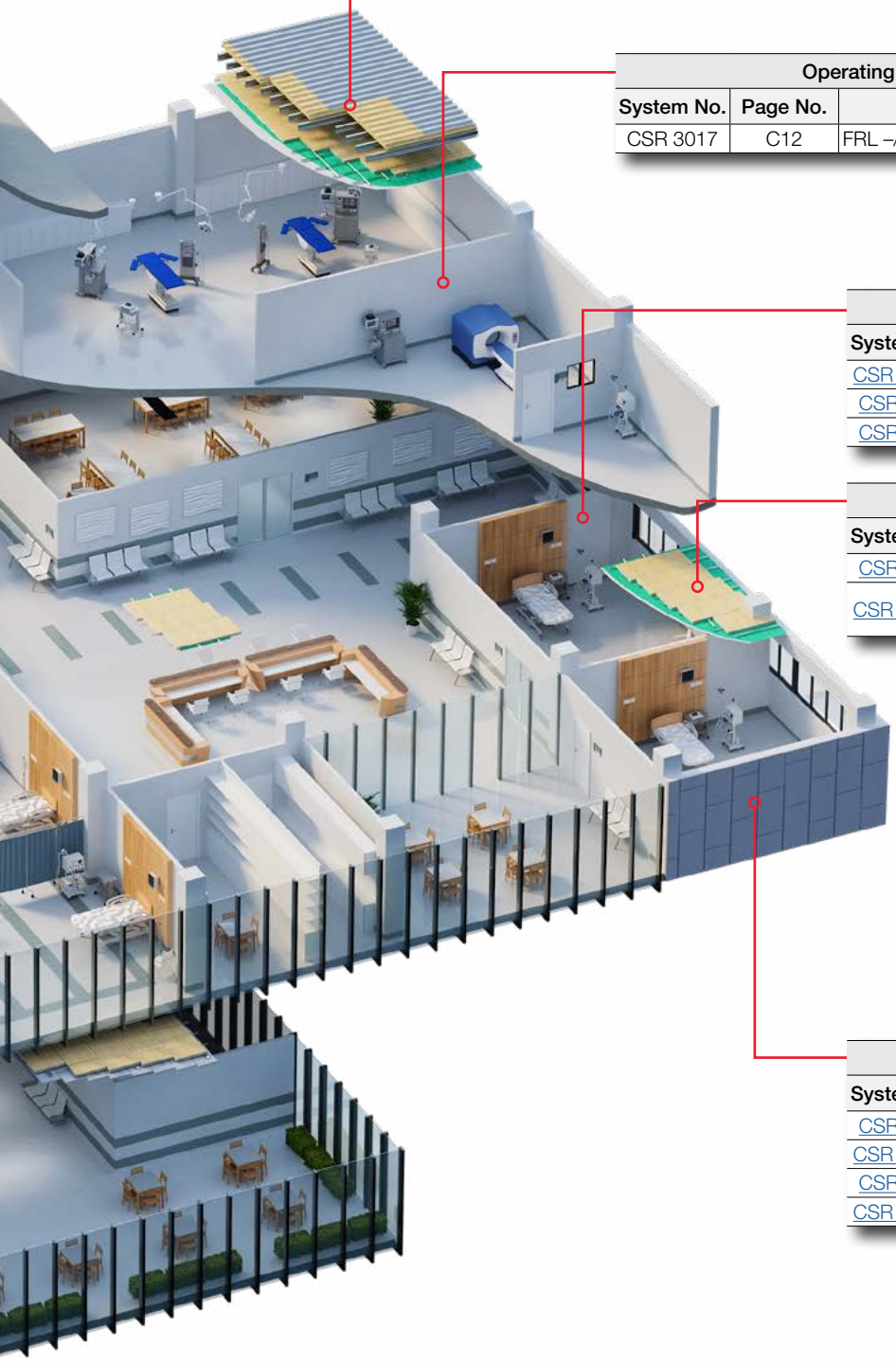
Hospitals

Service Shaft		
System No.	**Page No.**	**System Feature**
CSR 10018	H20	FRL –/90/90, water and mould resistant
CSR 7680	H21	FRL –/120/120, wet area
CSR 7220	H10	Non-fire rated, services in riser

Corridor Wall		
System No.	**Page No.**	**System Feature**
CSR 10001	C12	Impact resistant
CSR 3033	C14	FRL –/90/90, R_W 51
CSR 3095	C22	FRL –/180/180, R_W 50, impact resistant

Service Duct		
System No.	**Page No.**	**System Feature**
CSR 7020	H6	Sound rated R_W 50





Operating Room Ceilings		
System No.	**Page No.**	**System Feature**
CSR 10041	G52	Global Greentag Level A Certified, NRC 0.7
CSR 6811	G52	Sound absorptive NRC 0.70

Operating Room Wall		
System No.	**Page No.**	**System Feature**
CSR 3017	C12	FRL –/60/60, mould resistant, low VOC

Ward Walls		
System No.	**Page No.**	**System Feature**
CSR 10002	C13	Impact resistant, FRL –/60/60
CSR 1066	C14	FRL –/90/90, wet area
CSR 1030	C9	Low cost

Ward Ceilings		
System No.	**Page No.**	**System Feature**
CSR 6816	G52	Sound resisting CAC 41
CSR 10041	G52	Global Greentag Level A Certified, NRC 0.7

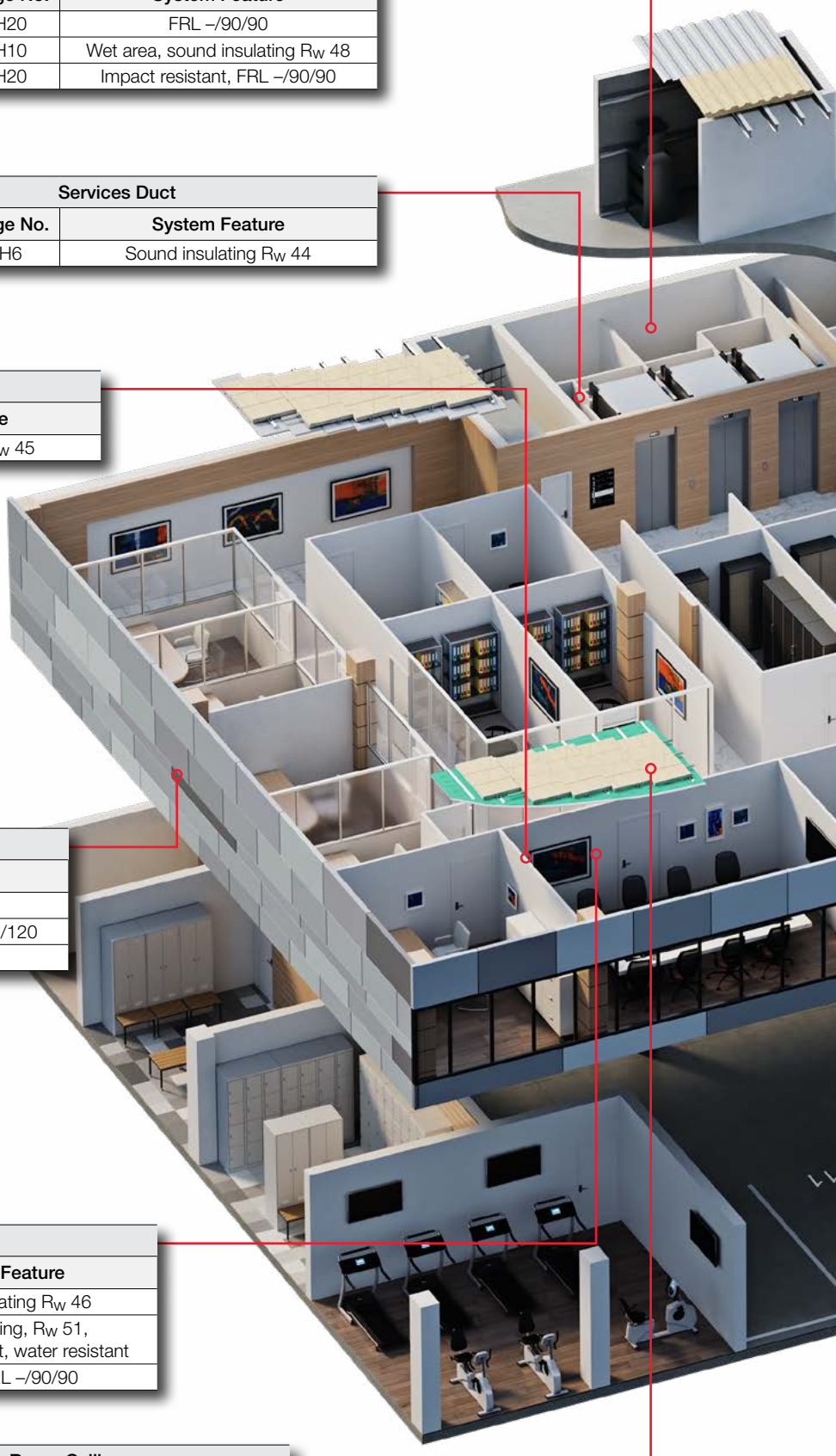
Façade		
System No.	**Page No.**	**System Feature**
CSR 5327	F13	Impact resistant, lightweight
CSR 21347	F33	FRL –/120/120, R_W 50
CSR 5324	F12	Pre-finished, lightweight, FRL 90/90/90
CSR 10313	F58	Class 4 Permiance, FRL –/60/60

Office

Services Shaft		
System No.	Page No.	System Feature
CSR 7665	H20	FRL –/90/90
CSR 7217	H10	Wet area, sound insulating R_W 48
CSR 10019	H20	Impact resistant, FRL –/90/90

Services Duct		
System No.	Page No.	System Feature
CSR 7020	H6	Sound insulating R_W 44

Meeting Room Junction		
System No.	Page No.	System Feature
CSR 8269	J8	Sound insulating R_W 45



Façade		
System No.	Page No.	System Feature
CSR 5303	F11	Aesthetic feature
CSR 21347	F33	Impact resistant, FRL –/120/120
CSR 10313	F58	Class 4 Permiance

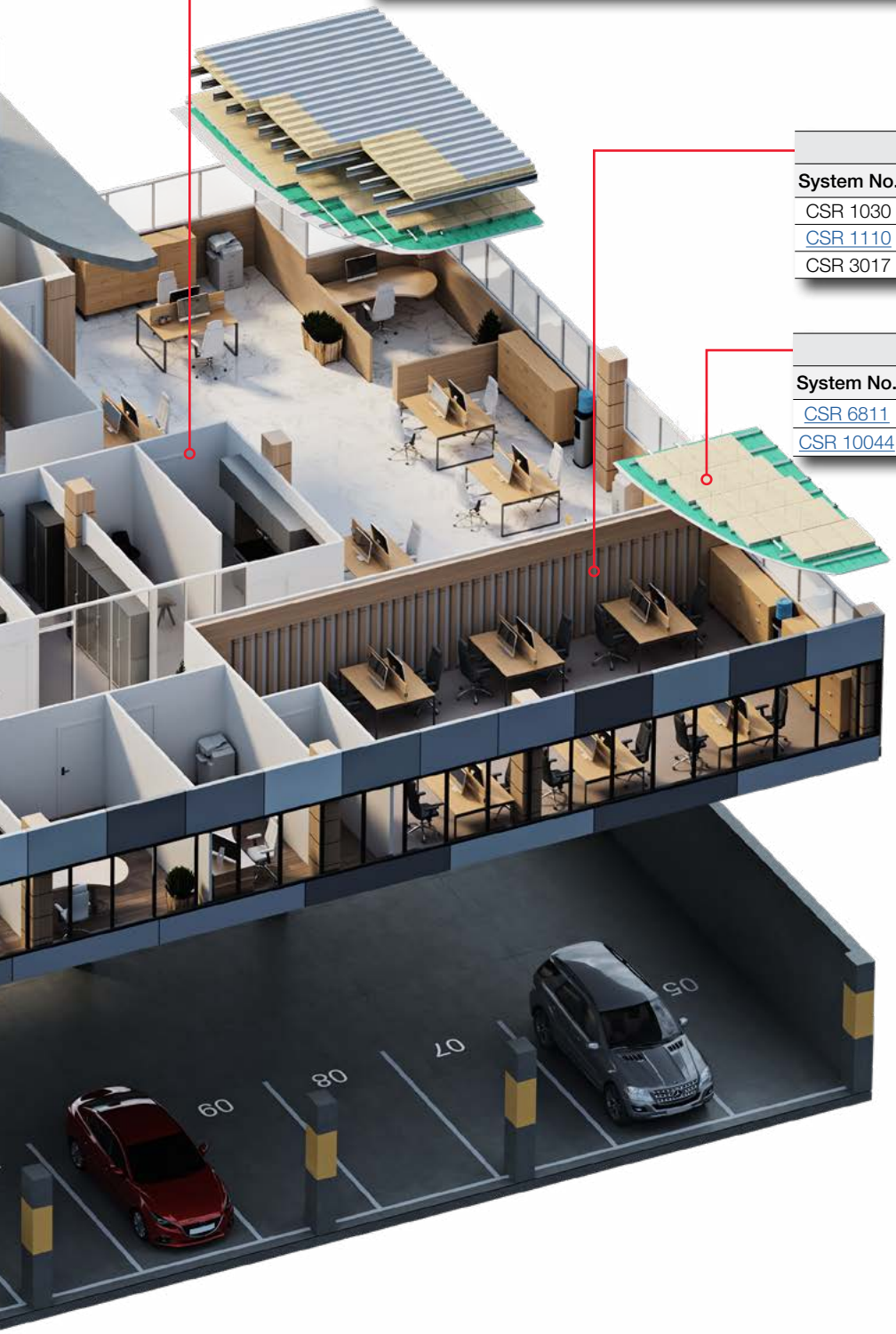
Meeting Room Wall		
System No.	Page No.	System Feature
CSR 1037	C10	Sound insulating R_W 46
CSR 3017	C12	Green building, R_W 51, damage resistant, water resistant
CSR 10031	C20	R_W 58, FRL –/90/90

Meeting Room Ceiling		
System No.	Page No.	System Feature
CSR 6854	G54	Sound absorptive NRC 0.90
CSR 10043	G52	NRC 0.7

Corridor Wall		
System No.	**Page No.**	**System Feature**
CSR 1050	C12	FRL –/60/60
CSR 10001	C12	Impact resistant
CSR 3011	C11	Green building, Wet area, R_W 45

Office Walls		
System No.	**Page No.**	**System Feature**
CSR 1030	C9	Low cost
CSR 1110	C18	Sound insulating R_W 51
CSR 3017	C12	Green building, sound insulating R_W 51

Office Ceiling		
System No.	**Page No.**	**System Feature**
CSR 6811	G52	Sound absorptive NRC 0.70
CSR 10044	G52	NRC 0.9

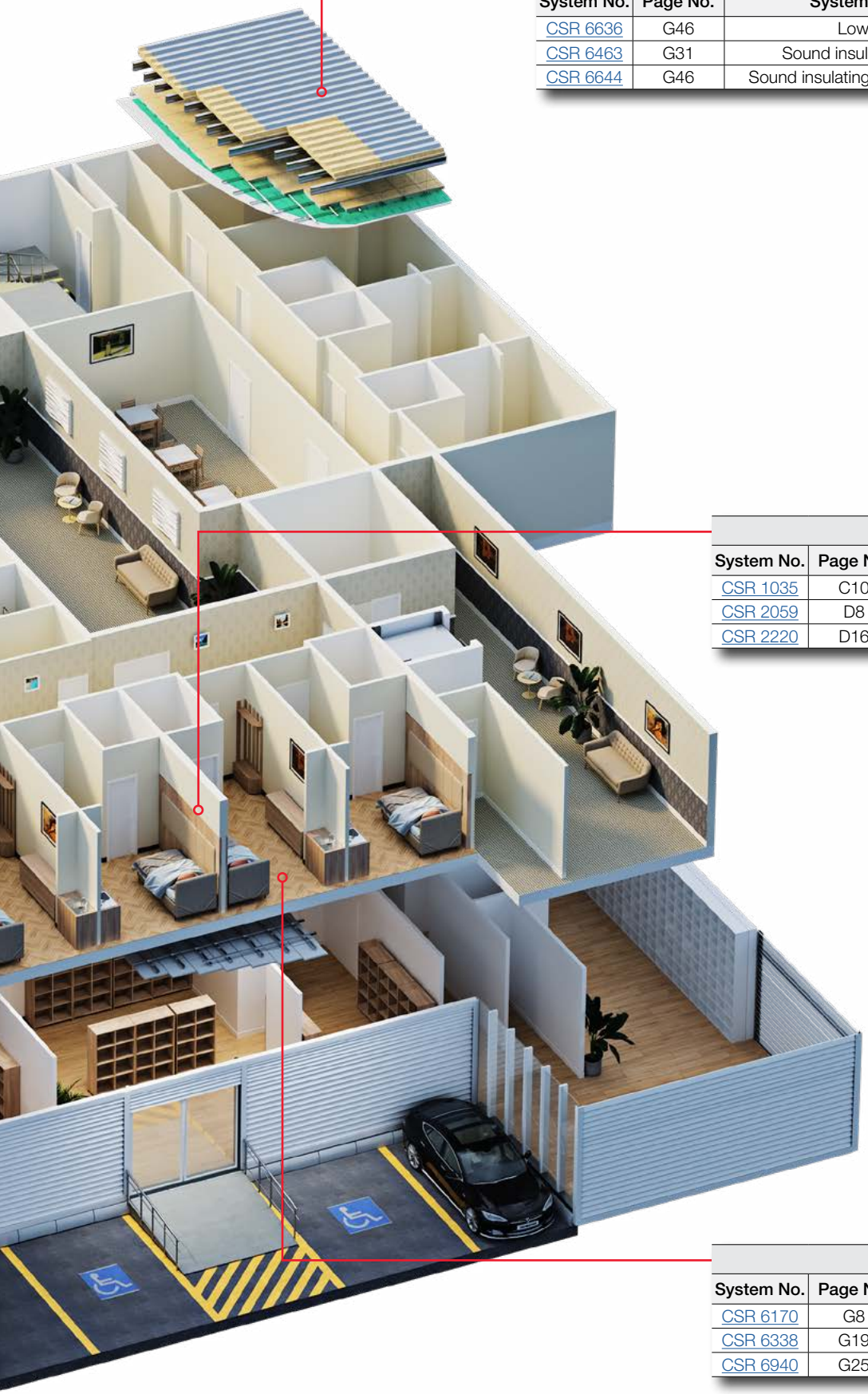


Aged Care

Corridor Wall		
System No.	**Page No.**	**System Feature**
CSR 2049	D8	Impact resistant, sound insulating R_W 40
CSR 2045	D7	Timber frame, Smoke-proof
CSR 3017	C12	Steel frame, impact resistant, FRL –/60/60
CSR 1030	C9	Steel frame, smoke proof

Façade		
System No.	**Page No.**	**System Feature**
CSR 5520	F19	Lightweight, FRL 60/60/60
CSR 5710	F24	Cladding with cavity; lightweight, timber frame, FRL 60/60/60
CSR 5828	F26	Timber frame, pre-finished, lightweight
CSR 5303	F11	Steel frame, pre-finished, lightweight
CSR 10333	F60	Timber frame, pre-finished, Class 4





Ward Ceiling		
System No.	Page No.	System Feature
CSR 6636	G46	Low cost
CSR 6463	G31	Sound insulating, Rw 51
CSR 6644	G46	Sound insulating, R_W 50, RSIF 60

Ward Wall (SOU)		
System No.	Page No.	System Feature
CSR 1035	C10	Wet areas, R_W 47
CSR 2059	D8	Timber frame
CSR 2220	D16	Sound insulating R_W 48, wet area

Ward Floor		
System No.	Page No.	System Feature
CSR 6170	G8	R_W 45, low cost
CSR 6338	G19	R_W 58, $L_{n,w}$ 45
CSR 6940	G25	Services cavity

Retail

Services Ceiling		
System No.	**Page No.**	**System Feature**
CSR 7020	H6	Low cost
CSR 6722	G49	FRL 120/120/120 both directions

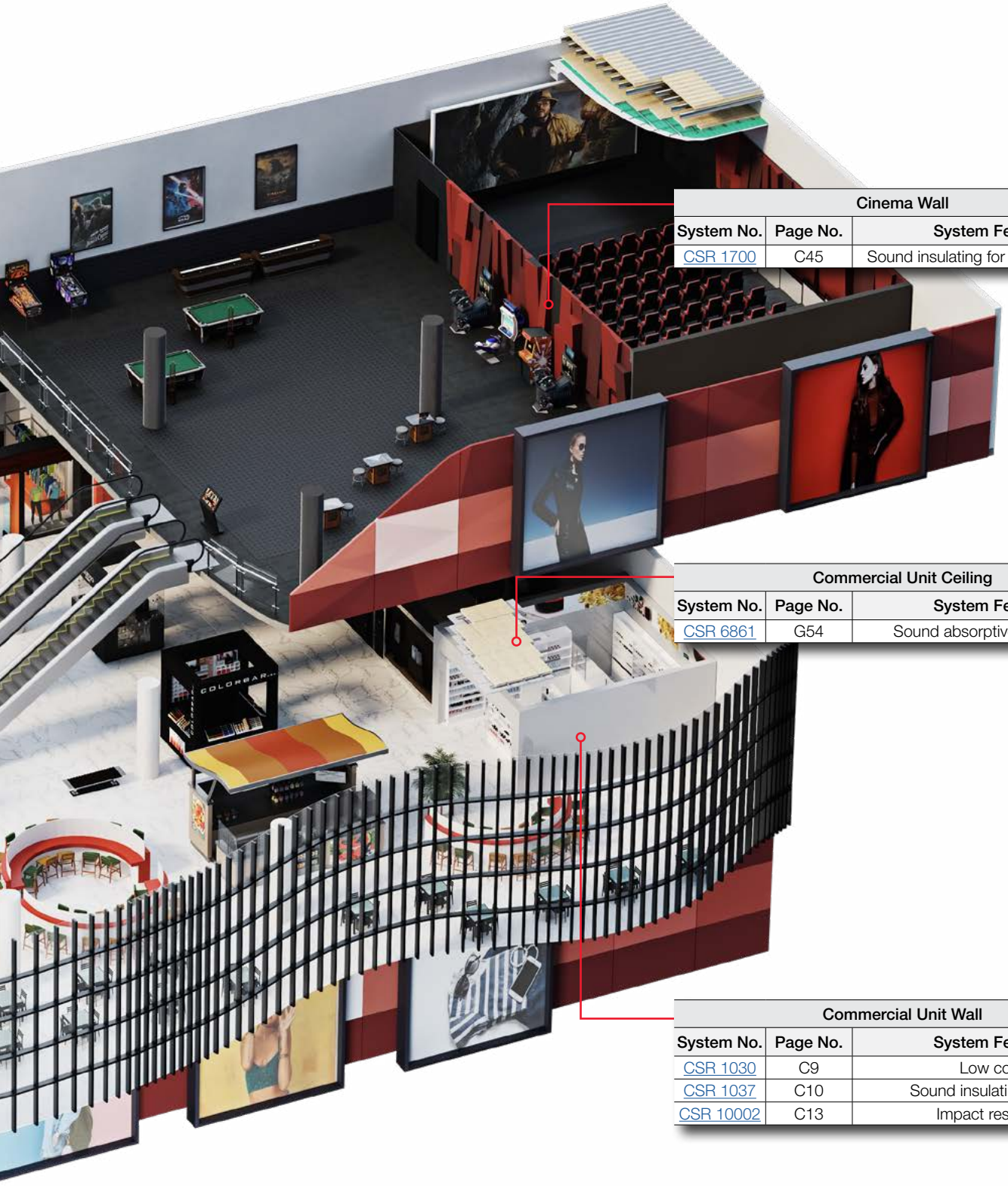
Services Wall		
System No.	**Page No.**	**System Feature**
CSR 7410	H14	Low cost, lined one side

Services Shaft		
System No.	**Page No.**	**System Feature**
CSR 7220	H10	Low cost
CSR 7675	H21	FRL –/120/120

Corridor Wall		
System No.	**Page No.**	**System Feature**
CSR 10002	C13	Impact resistant
CSR 1065	C14	FRL –/90/90



Façade		
System No.	**Page No.**	**System Feature**
CSR 5327	F13	Impact resistant, R_W 50, R2.6
CSR 5385	F16	FRL 90/90/90, steel clad



Cinema Wall		
System No.	**Page No.**	**System Feature**
CSR 1700	C45	Sound insulating for cinemas R_W 77

Commercial Unit Ceiling		
System No.	**Page No.**	**System Feature**
CSR 6861	G54	Sound absorptive NRC 0.65

Commercial Unit Wall		
System No.	**Page No.**	**System Feature**
CSR 1030	C9	Low cost
CSR 1037	C10	Sound insulating R_W 46
CSR 10002	C13	Impact resistant

House Class 1

Floor/Ceiling		
System No.	**Page No.**	**System Feature**
CSR 6153	G8	Low cost
CSR 10169	G10	R_W 55, impact sound resistant $L_{n,w}$ 50



Façade		
System No.	**Page No.**	**System Feature**
CSR 5502	F18	Low cost
CSR 5709	F24	BAL 29, water resistant
CSR 5828	F26	Aesthetic feature
CSR 10161	F23	Zero lot boundary wall, FRL 60/60/60, R_W + Ctr 50
CSR 10325	F59	BAL FZ, FRL 60/60/60, Class 4 Permiance



House Ceiling		
System No.	Page No.	System Feature
CSR 6403	G29	Low cost
CSR 10185	G33	Impact resistant R_W 50
CSR 6644	G46	Sound insulating, R_W 50, RSIF 60

House Wall		
System No.	Page No.	System Feature
CSR 10146	D7	Impact resistant
CSR 10154	D25	FRL 60/60/60, R_W + Ctr 51
CSR 10153	D15	Impact resistant, R_W 57
CSR 2000	D6	Wet area

Education

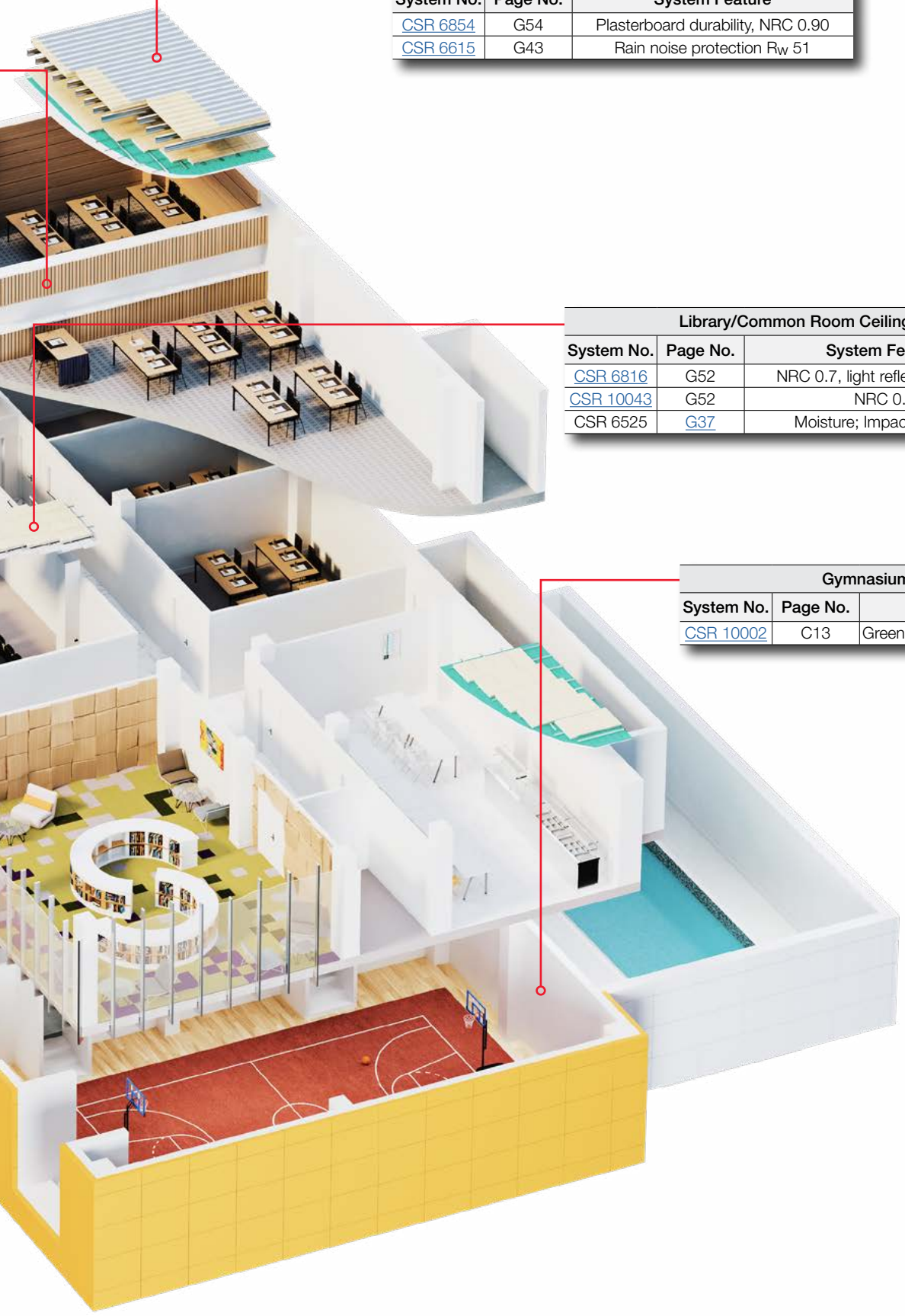
Classroom Wall		
System No.	Page No.	System Feature
CSR 1045	C11	R_W 51
CSR 3011	C11	impact resistant, R_W 45
CSR 3017	C12	Impact resistant from both sides

Gymnasium/Hall Ceiling		
System No.	Page No.	System Feature
CSR 6525	G37	Moisture; Impact resistant
CSR 6940	G25	Low cost
CSR 3718	G25	Impact resistant

Corridor Wall		
System No.	Page No.	System Feature
CSR 3017	C12	Green building, R_W 45, impact resistant
CSR 10002	C13	Impact resistant, R_W 45



Façade		
System No.	Page No.	System Feature
CSR 5327	F13	Impact resistant, R_W 50, R2.6
CSR 5403	F17	Masonry, R_W 59
CSR 5303	F11	Pre-finished option, lightweight



Classroom Ceiling		
System No.	Page No.	System Feature
CSR 6854	G54	Plasterboard durability, NRC 0.90
CSR 6615	G43	Rain noise protection R_W 51

Library/Common Room Ceiling		
System No.	Page No.	System Feature
CSR 6816	G52	NRC 0.7, light reflectance 87%
CSR 10043	G52	NRC 0.7
CSR 6525	G37	Moisture; Impact resistant

Gymnasiums/Halls Wall		
System No.	Page No.	System Feature
CSR 10002	C13	Green building; R_W 47; Impact resistant

BRAND & PRODUCT OVERVIEW

GYPROCK® SAINT-GOBAIN

Since introducing paper-faced plasterboard to Australia in 1947, Gyprock has led the industry in innovation, service and product quality. Gyprock's rich history of pioneering many of the plastering industry's developments includes the delivery of specialty plasterboards for fire, moisture and impact applications, numerous advances in adhesives and compounds, and the introduction of Australia's first GECA accredited plasterboard product. Gyprock's industry leadership continues today, with the introduction of Optimised Core technology, delivering stronger, lighter plasterboard, and with development of premium quality compounds, cornice and accessories.

With products readily available from over 50 Gyprock Trade plaster stores, through preferred specialist distributors, and via national retail stockists, Gyprock maintains a key focus on ensuring every customer's needs are fully realised. From over-the-phone assistance, to a complete supply and fix service, Gyprock's experienced and knowledgeable team are available to support all projects.

MANUFACTURED FOR LIFE

INTERNATIONAL ALLIANCE

Apart from a small number of specialty products, Gyprock manufactures products in Australia to meet the requirements of AS/NZS 2588 – 'Gypsum Plasterboard' where applicable, and to exacting quality control standards. These products are backed by a Manufactured for Life warranty (25 years). Gyprock has developed exclusive relationships with leading manufacturers throughout the world for a small number of specialty products. CSR warrants its International Alliance Gyprock products to remain free of defects in material and manufacture for 7 years.

CEMINTEL™ SAINT-GOBAIN

Cemintel is part of the iconic CSR Building Materials group, manufacturing and supplying cement panels and building systems used for external façades, ceilings, internal linings, and flooring, suitable for use in commercial and residential applications.

Cemintel fibre cement products are locally manufactured at Wetherill Park NSW to AS/NZS 2908 Cellulose-cement products. Part 2: Flat sheets. The factory utilises a full-steels process to produce a variety of products. This method provides a smoother and flatter sheet compared to non-steels or sheet-on-sheet manufacturing processes and sets Cemintel products apart from others in the market.

Cemintel also has established global partnerships with leading manufacturers to obtain new product technology to meet our ever-changing market demands. Products are made to perform to relevant Australian Standards and Building Code requirements, to meet fire, acoustic and thermal requirements to service all segments of the construction industry, and are covered by a Cemintel warranty.

Fibre cement products are considered as non-combustible and have the highest reaction to fire rating, allowing the material to be used as a wall or ceiling lining in all building areas.

With only 20 years history, Cemintel has made some innovative contributions to the building industry including the introduction of CeminSeal water block technology in 2010 which is still unmatched today. Australian made Barestone products, launched in 2012, have become a favourite of the design community, and were quickly followed by other pre-finished product ranges such as Territory panels and Surround façade.

Products are available nationally through a significant distribution chain, and technical support can be sought from the DesignLINK team. In addition, customers can also access on-line technical resources such as BIM files, white papers, and how-to videos.

CSR Himmel brings together Australia's widest range of commercial interior system products and accessories under the one roof. Distributing high-quality products that ensure the design and functionality needs of any project are always met, Himmel offers a global product portfolio to support any sized commercial project. Himmel boasts some of the world's leading brands as part of their product portfolio, such as the CSR Martini dECO Acoustic Collection, Gyprock, Fricker, Rondo, OWA, Troldtekt and Ecophon.

OWA produce a wide range of mineral fibre ceiling tiles, from commodity ceilings to specialty and customised tiles. OWA products are produced in Germany utilising the most up-to-date technologies to ensure a premium product offering.

Ecophon, part of Saint Gobain, one of the world's largest building material companies, are a leading manufacturer worldwide. Focusing on the well-being of humans, Ecophon products enhance the everyday experience of individuals in commercial environments.

Both OWA and Ecophon products have been tested to Australian standards and offer extensive warranties when used with approved Rondo and Ecophon Grids.

Himmel also distributes the iconic Australia Made Gyprock paper or vinyl faced plasterboard ceiling tiles, Aluminium Partition Systems and Architectural Hardware. This diverse product offering enables Himmel to provide a solution for all projects.

Fricker is a customizable modular Aluminium ceiling grid system. The product has been installed in many of the landmark Perth and Sydney high rise buildings, and can be modified to suit a range of architectural building styles. Fricker has been designed to work with our extensive range of ceiling tiles, from mineral fibre and Ecophon tiles to acoustical metal pan and wood wool products. As a system, Fricker can be installed to be compliant to the most recent seismic building codes across Australia.

Bradford Insulation is a leading manufacturer of premium energy saving insulation products.

Established in 1934, the Bradford Insulation business was acquired by CSR Limited in the 1950's. Due to strong growth over the 60's and 70's, manufacturing of reflective foil sarking was also added to the Bradford business in the 1980's. By 2006, Bradford acquired the Edmonds ventilation business, further enhancing Bradford's leadership position in Australian manufacturing and energy efficient construction products. CSR Bradford is now a market leading manufacturer of premium energy efficiency products including insulation, wraps and ventilation.

Driven by extensive industry knowledge and the latest research, Bradford continues to innovate and develop new products to provide customers with meaningful, effective and compliant solutions.

With over 90 years of insulation experience, world class manufacturing technologies, combined with the research and development expertise of CSR, Bradford is the most trusted name in insulation and energy efficiency. We provide the high-performance building science solutions for residential homes, commercial and industrial projects. Our products are specifically designed for the Australian market in order to improve the long-term sustainability and health of buildings.

The better way to build

Hebel is a strong, versatile building product made from autoclaved aerated concrete (AAC), suitable for use in residential, commercial, industrial and civil applications. AAC was developed in Scandinavia over 70 years ago and is now a mainstream building material used in Europe, Asia and increasingly in Australia. In 2015, the Reinforced AAC Standards (AS 5146 Parts 1-3) were approved and published by Standards Australia, which will guide the use of Reinforced AAC in design and construction in Australia. CSR Hebel is the only organisation to manufacture AAC in Australia and has over 25 years of experience. A focus on knowledge, innovation, customer service and high standards of production has enabled Hebel to stand out as a supplier of AAC. This is evident in the fit-for-purpose product formulas to suit specific applications, and in the development of rigorously tested systems that ensure a consistently high-quality product and makes building with Hebel efficient and low-risk. CSR Hebel is a licensee of Xella GmBH, the largest AAC producer in the world. This affords CSR Hebel access to new AAC technologies and AAC specific testing facilities. An alliance with Asahi Japan, the largest AAC producer in Japan, also provides access to AAC panel manufacturing technology developments.

Hebel products and systems are designed, developed and warranted in Australia by CSR, making Hebel the AAC brand of choice amongst engineers, architects and builders.

CSR Hebel is Australia's only manufacturer of high performance Autoclaved Aerated Concrete (AAC) for façades and internal walls in residential, high rise, commercial and civil applications. Hebel panels are non-combustible and contain anti-corrosion coated steel reinforcement for added strength. Lightweight compared to other masonry products, Hebel panels are eco-friendly, termite resistant and can be finished to achieve the latest in building trends and design aesthetics. Quick and easy to build with, Hebel systems deliver safe solutions with the technical support and expertise to back them up.

For over two decades, AFS's innovative permanent formwork system has been instrumental in facilitating the rapid construction of multi-residential, residential, and commercial projects across Australia, New Zealand, the USA, the UK, and Canada.

Manufactured in Australia, Rediwall® is fully compliant with AS3600 standards and has attained CodeMark Certification, ensuring its adherence to the National Construction Code (NCC) and affirming its suitability for use in the design of concrete structures.

This advanced formwork system has been rigorously tested by leading bodies within the Australian building industry and certified for its ability to withstand various stressors, including those related to heat, fire, water, wind, and structural loading.

As a lightweight, load-bearing, and compliant permanent formwork, Rediwall offers a versatile walling solution in a variety of panel thicknesses, making it suitable for diverse applications both above and below ground, as well as in internal and external environments. Rediwall optimizes floor space while providing a consistent, high-quality finish, making it the preferred choice for construction professionals seeking an efficient, durable, and cost-effective alternative to traditional building methods.

AFS is dedicated to the development of products and manufacturing processes that prioritize both innovation and environmental responsibility. This includes systems aimed at recycling raw materials and maximizing the thermal efficiency of its products. Rediwall has achieved Silver status in the Vinyl Council of Australia's PVC Stewardship Program, an ongoing, voluntary initiative that promotes environmental sustainability, health, and safety throughout the PVC lifecycle. As a signatory to this program, AFS is committed to producing and supplying sustainable solutions that meet the needs of the building industry while adhering to environmentally responsible practices.

Rondo has been manufacturing and supplying a wide range of market leading wall and ceiling systems for over 50 years. With highly flexible, versatile and innovative manufacturing capabilities, not only can Rondo produce their standard range at fast rates, but they can also customise products to suit individual project needs. In addition, Rondo offers in-depth customer services that include technical design support, product training, and superior technical resources; all backed by a written guarantee and leading environmental performance.

Rondo's dedication to providing outstanding customer service leads to their contribution to the best buildings in Australia and overseas.

OTHER CSR BRANDS

CSR Building Products is one of Australia's oldest and most respected public companies. With one of Australia's largest portfolios of building materials manufacturers, each of CSR's respected brands are different, yet they all share the company's vision and values with the common goal being the provision of reliable and trusted products and services.

Additional brands in the CSR building product group include Monier Roofing, Martini insulation, PGH and Potter Interior systems and Woven Image.

TECHNICAL SUPPORT

CSR brands continually invests in research and development to ensure that their products and systems are responsive to Australia's ever-changing construction needs. Reach out for support on your next project, by phone, in person or through digital tools – the choice is yours.

Each brand website features multiple tools to help you navigate product or construction system selection. From system selectors to installation guides, aesthetic visualisers to CAD files – visit the sites to explore the tools available;

www.gyprock.com.au

www.cemintel.com.au

www.himmel.com.au

www.bradfordInsulation.com.au

www.hebel.com.au

www.rondo.com.au

www.afsformwork.com.au

With years of experience in the field, our national team of commercially or residentially focused Account Managers provide personalised service by getting to know your business and projects. Simply call 1300 306 556 to find your nearest representative.

DESIGNLINK

DesignLINK is a team of professionals including, engineers and building designers working to support the specification of CSR building products in projects across Australia. With extensive knowledge of the building industry, DesignLINK partners with clients to workshop complex design issues, provide value engineering, rationalise system specifications and deliver improved building performance while maintaining buildability for both builders and contractors. The DesignLINK team is based at the CSR Technical Centre in Wetherill Park, New South Wales, adjacent to the manufacturing sites for Gyprock and Cemintel products. The facility includes a technical workshop housing an extensive range of testing equipment as well as NATA accredited testing laboratories.

What does DesignLINK offer?

The DesignLINK service is tailored to meet the demands of the building professionals. From technical support for architects and designers, to installation guidance for builders and contractors, assistance is available via phone and email. DesignLINK can provide compliance support through the provision of complex test data, assistance with major projects, and the supply of CAD and BIM files for increased productivity.

Phone and email support

All enquiries are handled professionally. Where possible, the service can provide an immediate response, and otherwise will be escalated to the most qualified team member.

Assistance with major projects

DesignLINK is available to support major projects, offering system rationalisation to meet performance objectives. This service is offered in conjunction with State Technical Managers to ensure the very best local knowledge is combined with DesignLINK's technical expertise.

System performance data

Compliance reports are available for a wide variety of Red Book systems, covering fire, acoustics, weatherproofing, and structural properties. In addition, the CSR Acoustic Predictor provides ratings for lightweight walls, delivering custom solutions that save time and money.

How do I contact the DesignLINK team?

Call 1800 621 117 or email: designlink@csr.com.au.

NOTES

PRODUCTS & DESIGN

B

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INTRODUCTION

This section provides important background information necessary for the selection and usage of CSR Gyprock fire, acoustic and thermal systems and associated products.

All performance information provided in this manual relies on the system linings, components and accessories being strictly as specified. Information on the performance of third party materials should be sought from the relevant supplier.

REFERENCED MATERIAL

The following Standards and handbooks are referenced in this guide.

Manufacturing Standards:

- AS/NZS 2588 – Gypsum plasterboard.
- AS/NZS 2908.2 – Cellulose-cement products – Flat sheets.

Other referenced Standards and handbooks:

- AS/NZS 1170 series – Structural design actions.
- AS 1530.4 – Methods for fire tests on building materials, components and structures - fire resistance tests for elements of constructions.
- AS 1684 (series) – Residential timber framed construction.
- AS 1720.1 – Timber structures – Design methods.
- AS/NZS 2311 – Guide to the painting of buildings.
- AS/NZS 2358 – Adhesive – For fixing ceramic tiles.
- AS/NZS 2589 – Gypsum linings – Application and finishing.
- AS/NZS 2785 – Suspended ceilings – Design and installation.
- AS/NZS 3000 – Electrical installations (known as the Australian/New Zealand wiring rules).
- AS 3600 – Concrete Structures.
- AS/NZS 3700 – Masonry structures.
- AS 3740 – Waterproofing of domestic wet areas.
- AS 3958.1 – Ceramic tiles – Part 1: Guide to the installation of ceramic tiles.
- AS 3959 – Construction of buildings in bushfire-prone areas.
- AS 4055 – Wind loads for housing.
- AS/NZS 4200.1 – Pliable building membranes and underlays – Materials.
- AS 4200.2 – Pliable building membranes and underlays – Installation.
- AS/NZS 4600 – Cold formed steel structures.
- AS/NZS 4858 – Wet area membranes.
- AS/NZS 4859.1 – Thermal insulation materials for buildings – General criteria and technical provisions.
- AS 5216 – Design of post-installed and cast-in fastenings in concrete.
- AS/NZS 5601.1 – Gas installations – General installations.
- AS 5637.1 – Determination of fire hazard properties - wall and ceiling linings.
- AS/ISO 13007 – Ceramic tiles – grouts and adhesives - Terms, definitions and specifications for adhesives.
- National Construction Code (NCC).
- ICANZ Insulation Handbook Part 1: Thermal Performance – Version 3.
- NASH Standards – Residential and Low-rise Steel Framing, Part 1: Design criteria and Part 2: Design Solutions.
- SAHB39 – Installation code for metal roof and wall cladding.
- AS 5164 series – Reinforced autoclaved aerated concrete.
- ASTM C518 – Test method for steady-state thermal transmission properties by means of the heat flow meter apparatus.
- ISO 11654 – Sound absorbers for use in buildings – rating for sound absorption.
- AS 4312 – Atmospheric corrosivity zones in Australia.

RELATED GYPROCK PUBLICATIONS

- GYP949 Gyprock StrataWall Systems.
- GYP512 Gyprock Cinema Wall Systems.
- GYP513 Gyprock Party Wall Systems.
- GYP514 Gyprock Boundary Wall Installation Guide.
- GYP546 Gyprock Shaft Wall Systems.
- Book 2 Residential Installation Guide – Buildings Class 1 & 10.
- Book 3 Commercial & Multi-Residential Installation Guide – Buildings Class 2 to 9.

RELATED CEMINTEL PRODUCT & PUBLICATIONS

- Cemintel Rigid Air Barrier.
- Cemintel Wallboard – Interior Steel Framed Walling.
- Cemintel Wet Area Systems.
- Cemintel External Cladding & Eaves Lining.
- Cemintel Texture Base Sheet.
- Cemintel Headland Weatherboard.
- Cemintel Scarborough Weatherboard.
- Cemintel Balmoral Weatherboard.
- Cemintel Plank.
- Cemintel Commercial ExpressPanel.
- Cemintel Barestone External.
- Cemintel Ceiling Systems.
- Cemintel Edge & SimpleLine.
- Cemintel Surround External.
- Cemintel Territory Vertical Installation.
- Cemintel Territory Horizontal Installation.
- Cemintel Mosaic Façade Systems.
- Cemintel Aspect Cladding.
- Cemintel Constructafloor Interior Flooring.

Also refer to relevant technical guides from AFS, Hebel, Himmel and other product manufacturers for additional information.

GYPROCK RANGE & SELECTION

GYPROCK PLASTERBOARD MANUFACTURING

Plasterboard is an internal wall and ceiling lining board, used in residential and commercial lightweight framed construction.

The Gyprock range of plasterboard closely follows the plasterboard market split between Residential and Commercial applications. Each sector has two classifications:

- **Select Range –** Gyprock plasterboards products recommended for use in the majority of non-specialist wall and ceiling applications.
- **Specialty Options –** Gyprock plasterboards products for use in wall and ceiling systems where higher levels of performance are specified.

Plasterboard, or drywall as it is called in some parts of the world, is a machine made sheet comprised of a gypsum core wrapped in a heavy-duty liner paper.

The core is made by first mixing gypsum, a non-toxic sedimentary rock, with a foaming agent to create a wet plaster mix. This plaster is applied onto a sheet of thick paper and the side edges of the paper are wrapped around the plaster. Another sheet of linerboard paper is applied over the top to create a plaster 'sandwich' which is cut to length and oven dried, ready for use. The final plasterboard sheet has two long edges that are paper-wrapped and two cut edges.

Gyprock manufactures in Australia to AS 2588 – Gypsum plasterboard, and is formally accredited to the standard for Gyprock Plus, Supaceil and Standard Plasterboard 13mm.

In addition to standard plasterboard, Gyprock has developed technologies that deliver significant performance benefits to meet our customers' specific needs.

Gyprock Optimised Core technology delivers an advanced performance-to-weight ratio, providing greater breaking strength in a substantially lighter board. Optimised Core technology is currently available in Gyprock Plus and Supaceil.

While the majority of the plasterboard range is accredited by Good Environment Choice Australia, Gyprock also produces a handful of plasterboard products featuring higher levels of recycled content. This includes the Gyprock EC08 boards and HD, making these products a superior choice for Green Building projects.

Good Environmental Choice Australia (GECA)

In 2008, Gyprock was the first Australian manufacturer to deliver a plasterboard product certified by GECA. With continual development in the green building space, Gyprock now presents a wide range of accredited plasterboard products, and in 2014, was awarded GECA certification covering the majority of compounds in the range.

- GECA Panel Boards PBv3.0-2021
- Adhesives, Fillers & Sealants AFSv4.0-2014

GYPROCK PLASTERBOARD SELECTION

Gyprock plasterboard products are available in a large range of sheet lengths. Lengths vary by state, and a full list is available at www.gyprock.com.au. Standard width is 1200mm. Some products are also available in 900, 1350 and 1400mm widths (lead times may apply). Shaft Liner Panel is supplied in 600mm width only. Colour shading behind each product name approximates the colour of the product face liner sheet.

TABLE B1: GYPROCK PLASTERBOARD FEATURES, APPLICATIONS & SPECIFICATIONS

GYPROCK® PLASTERBOARDS	APPLICATIONS – WALLS & CEILINGS FEATURES	THICK-NESS (mm)	MASS kg/m²	FIRE GRADE	MOISTURE RESISTANT	ENHANCED IMPACT RESISTANCE	ENHANCED SOUND RESISTANCE	MOULD RESISTANT	LOW VOC	GECA ACCREDITED
RESIDENTIAL – SELECT RANGE										
Plus™	• A 10mm thick sheet primarily designed for residential walls. Long edges are recessed to assist in producing a smooth, even and continuous surface once jointed. • Made with Optimised Core technology that delivers an advanced performance-to-weight ratio, meaning greater breaking strength in a substantially lighter board that continues to exceed the performance requirements of AS/NZS2588. • Optimised Core technology delivers improved handling and installed performance, as well as crisper score and snap.	10	5.7						✓	✓
Supaceil™	• A 10mm thick sheet designed to span up to 600mm in ceiling applications. Can also be used for wall applications. Long edges are recessed to assist in producing a smooth, even and continuous surface once jointed. • Made with Optimised Core technology that delivers an advanced performance-to-weight ratio, meaning greater breaking strength in a substantially lighter board that continues to exceed the performance requirements of AS/NZS2588. • Optimised Core technology delivers improved handling and installed performance, as well as crisper score and snap.	10	6.1 6.2 WA only						✓	✓
Aquachek™	• Both the core and linerboard facing are treated in manufacture to withstand the effects of moisture and high humidity. • Recessed long edges allow flush jointing to other Recessed Edge plasterboard types.	10	7.1		✓				✓	✓
RESIDENTIAL – SPECIALTY OPTIONS										
HD	• Manufactured with a high density core and heavy duty liner paper to provide enhanced impact and acoustic resistance. • Will span 600mm in ceiling applications. • 75% more impact resistant compared to standard plasterboard. • Denser core to provide a reduction in sound transmission compared to standard 10mm thick plasterboard. • Long edges are recessed for flush jointing.	10	8.5			✓	✓		✓	✓
COMMERCIAL – SELECT RANGE										
Standard Plasterboard	RE – Recessed Edge • Long edges are recessed to assist in producing a smooth, even and continuous surface once jointed.	13	8.5						✓	✓
	RE/SE – 1 Recessed Edge, 1 Square Edge • Typically used on walls with a single horizontal joint. One long edge is recessed to assist in producing a smooth, even and continuous surface once jointed. • One long edge is square to enable easy fixing of skirting and cornice at the top and bottom of walls.	13	8.5						✓	✓
	SE – 2 Square Edges • Long edges are square, and can be butted together without jointing, or covered with aluminium, timber or vinyl mouldings.	13	8.5						✓	✓
Aquachek™	• Both the core and linerboard facing are treated in manufacture to withstand the effects of moisture and high humidity. • Recessed long edges allow flush jointing to other Recessed Edge plasterboard types.	13	9.8		✓				✓	✓
Soundchek™	• Designed to provide enhanced acoustic resistance. • A machine made sheet composed of a high density gypsum core encased in a heavy duty linerboard. • Long edges are recessed for flush jointing.	13	13.0				✓		✓	✓

TABLE B1: GYPROCK PLASTERBOARD FEATURES, APPLICATIONS & SPECIFICATIONS

GYPROCK® PLASTERBOARDS	APPLICATIONS – WALLS & CEILINGS / FEATURES	THICK-NESS (mm)	MASS kg/m²	FIRE GRADE	MOISTURE RESISTANT	ENHANCED IMPACT RESISTANCE	ENHANCED SOUND RESISTANCE	MOULD RESISTANT	LOW VOC	GECA ACCREDITED
Impactchek™	• Fire grade board reinforced with a woven fibreglass mesh to produce a high strength plasterboard which resists hard and soft body impact damage. • Ideal for high traffic areas such as hallways, stairways, playrooms and garages. • Long edges are recessed for flush jointing.	13	10.5	✓		✓✓	✓		✓	
Fyrchek™	• Fire grade board composed of a specially processed glass fibre reinforced gypsum core encased in a heavy duty linerboard. • Ideal for high performance fire and acoustic rated walls and ceilings. • Long edges are recessed for flush jointing.	13 16	10.8 12.9	✓			✓		✓	
Fyrchek™ MR	• Fire grade board with moisture resistant properties. • Both the core and the liner board are treated in manufacture to withstand the effects of high humidity and moisture. • Long edges are recessed for flush jointing.	13 16	11.1 13.3	✓	✓		✓		✓	
COMMERCIAL – SPECIALTY OPTIONS										
EC08™ Complete	• This product features higher levels of recycled content, making it a superior choice for Green Building projects. • Gyprock EC08 Complete is an internal lining solution which integrates an efficient mould inhibitor, scuff resistance, soft and hard body impact resistance, moisture resistance, sound resistance and fire resistance into a low VOC plasterboard. • Long edges are recessed for flush jointing.	13 16	12.4 14.8	✓	✓	✓	✓	✓	✓	20%
EC08™ Extreme	• This product features higher levels of recycled content, making it a superior choice for Green Building projects. • Gyprock EC08 Extreme is a premium internal lining solution with a focus on superior impact resistance for hard & soft body impact, and surface indentation. It also includes an efficient mould inhibitor, moisture resistance, sound resistance and fire resistance in a low VOC plasterboard to provide multifunction performance to a wide variety of commercial projects. • Long edges are recessed for flush jointing.	13	12.5	✓	✓	✓✓	✓	✓	✓	20%
Shaft Liner MP	• Fire grade board with antifungal additives to resist mould formation. • A 25mm thick sheet composed of a glass fibre reinforced gypsum core encased in a heavy duty ivory linerboard. • 600mm wide square edge sheets.	25	19.8	✓			✓	✓	✓	
Flexible	• A 6.5mm thick plasterboard with an enhanced core to allow bending to small radii for curved walls and ceilings. • Designed for installation as a two layer system. • Long edges are recessed for flush jointing.	6.5	4.3						✓	
Glasroc F	• A 30mm thick paperless gypsum board with glass fibre reinforced core. • Designed for single-layer installation, without jointing, to provide fire protection to structural steel columns and beams. • 1200mm wide square edge boards.	30	25.5	✓		✓				
Glasroc X®	• A 12.5mm thick paperless gypsum board with glass mat reinforcement. • A class 4 vapour-permeable rigid air barrier suitable for use externally in Climate Zones 2-8. • 1200mm wide recessed edge boards.	12.5	10.9	✓	✓			✓	✓	

GYPROCK PERFORATED PLASTERBOARD SELECTION

Excellence in design is achieved with a balance of aesthetics and functional performance. The Gyprock range of perforated plasterboard and access panels allows architects and designers to create beautiful ceilings and walls that achieve high levels of acoustic performance.

The perforations together with fleece linings and insulation where used, reduce echo and noise reverberation to create more comfortable environments for work and leisure.

TABLE B2: GYPROCK PERFORATED PLASTERBOARD FEATURES, APPLICATIONS & SPECIFICATIONS

GYPROCK® PERFORATED PLASTERBOARDS	PRODUCT FEATURES	SIZE (mm)	THICKNESS (mm)	MASS kg/m²	SUITABLE FOR CEILINGS	SUITABLE FOR WALLS	ACOUSTIC FABRIC
STANDARD RANGE							
Standard Perforated 6mm Round	• Featuring six large rectangular groupings per sheet, each with 2,100 x 6mm diameter perforations at 15mm centres to provide an open area of 8.3%. • Long edges are recessed for flush jointing.	1200 x 3600	13	8.5	✓	✓	NIL
GYPTONE RANGE							
Gyptone 12mm Hexagon	• Featuring eight large square groupings per sheet, each with 576 x 12mm hexagonal perforations at 20mm centres, providing a 15% open area. • Supplied with a black acoustic fabric backing. • Manufactured with patented Activ'Air technology, which removes formaldehyde and improves the environment for people working and living in the space. • All four edges are recessed for flush jointing. • Matching access panel available.	1200 x 2400	12.5	8.0	✓	✓	Black
Gyptone 12mm Hexagon Longboard	• Featuring 3 large square groupings per sheet, each with 1,521 x 12mm hexagonal perforations at 20mm centres, providing a 17.6% open area. • Supplied with a white acoustic fabric backing. • The Longboard provides a bigger perforation area than the standard board which makes it ideal for creating a strong visual impact on projects with a higher distance from floor to ceiling, as well as better sound absorption.	900 x 2700	12.5	8.0	✓	✓	White
Gyptone 12mm Square	• Featuring eight large square groupings per sheet, each with 400 x 12mm square perforations at 25mm centres, providing a 16% open area. • Supplied with a black acoustic fabric backing. • Manufactured with patented Activ'Air technology, which removes formaldehyde and improves the environment for people working and living in the space. • All four edges are recessed for flush jointing. • Matching access panel available.	1200 x 2400	12.5	8.0	✓	✓	Black
Gyptone 12mm Square Minigrid	• Featuring eight large square groupings per sheet, each with nine mini grids of 16 x 12mm square perforations at 25mm centres. This subtle pattern provides an open area of 6%. • Supplied with black acoustic fabric backing. • Manufactured with patented Activ'Air technology, which removes formaldehyde and improves the environment for people working and living in the space. • All four edges are recessed for flush jointing. • Matching access panel available.	1200 x 2400	12.5	8.0	✓	✓	Black
Gyptone 12mm Square Grid	• 32 small square groupings per sheet, each with 64 x 12mm square perforations at 25mm centres, providing a 10% open area. • Supplied with black acoustic fabric backing. • Manufactured with patented Activ'Air technology, which removes formaldehyde and improves the environment for people working and living in the space. • All four edges are recessed for flush jointing. • Matching access panel available.	1200 x 2400	12.5	8.0	✓	✓	Black
Gyptone 12mm Square Grid Longboard	• 3 large square groupings per sheet, each with 1,024 x 12mm square perforations at 25mm centres, providing a 18% open area. • Supplied with a white acoustic fabric backing. • The Long board provides a bigger perforation area than the standard board which makes it ideal for creating a strong visual impact on projects with a higher distance from floor to ceiling, as well as better sound absorption.	900 x 2700	12.5	8.0	✓	✓	White

TABLE B2: GYPROCK PERFORATED PLASTERBOARD FEATURES, APPLICATIONS & SPECIFICATIONS							
GYPROCK® PERFORATED PLASTERBOARDS	**PRODUCT FEATURES**	**SIZE (mm)**	**THICKNESS (mm)**	**MASS kg/m²**	**SUITABLE FOR CEILINGS**	**SUITABLE FOR WALLS**	**ACOUSTIC FABRIC**
GYPTONE RANGE (continued)							
Gyptone Slotted Minigrid	• Featuring eight large square groupings per sheet, each with 16 mini grids of six 6mm x 80mm slot perforations. This contemporary design provides 13% open area. • Supplied with black acoustic fabric backing. • Manufactured with patented Activ'Air technology, which removes formaldehyde and improves the environment for people working and living in the space. • All four edges are recessed for flush jointing. • Matching access panel available.	1200 x 2400	12.5	8.0	✓	✓	Black
Gyptone Slotted Minigrid Longboard	• 3 large square groupings per sheet, each with 49 mini grids of six 6mm x 80mm slot perforations. • This contemporary design provides 18% open area and is supplied with a white acoustic fabric backing. • The Longboard provides a bigger perforation area than the standard board which makes it ideal for creating a strong visual impact on projects with a higher distance from floor to ceiling, as well as better sound absorption.	900 x 2700	12.5	8.0	✓	✓	White
Gyptone Flexible 12mm Square	• Flexible board suitable for curving to 1.2m minimum radius. • Perforated gypsum board with square holes of 12mm x 12mm. • Total perforated area of 16%. • Supplied with black acoustic fabric backing.	1200 x 2400	6.5	6.5	✓	✘	Black
Gyptone Flexible Slotted Minigrid	• Flexible board suitable for curving to 1.2m minimum radius. • Perforated gypsum board with rectangular holes of 6mm x 80mm. • Total perforated area of 13%. • Supplied with black acoustic fabric backing.	1200 x 2400	6.5	6.5	✓	✘	Black
RIGITONE RANGE							
Rigitone Matrix 8mm Round	• Featuring a grid pattern of 8mm round perforations spaced at 18mm centres, providing a 15.5% open area. • Supplied with black acoustic fabric backing. • Manufactured with patented Activ'Air technology, which removes formaldehyde and improves the environment for people working and living in the space. • Unique jointing method to provide a continuous pattern once finished.	1188 x 1998	12.5	10.0	✓	✓	Black
Rigitone Matrix 8mm Square	• A pattern of 8mm square perforations spaced at 18mm centres, providing a 19.8% open area. Supplied with a black acoustic fabric backing. • Manufactured with patented Activ'Air technology, which removes formaldehyde and improves the environment for people working and living in the space. • Supplied with black acoustic fabric backing. • Unique jointing method to provide a continuous pattern once finished.	1188 x 1998	12.5	10.0	✓	✓	Black
Rigitone Matrix 12mm Round	• Featuring a grid pattern of 12mm round perforations spaced at 25mm centres, providing a 18.1% open area. • Manufactured with patented Activ'Air technology, which removes formaldehyde and improves the environment for people working and living in the space. • Supplied with black acoustic fabric backing. • Unique jointing method to provide a continuous pattern once finished.	1200 x 2000	12.5	9.5	✓	✓	Black
Rigitone Matrix 12mm Square	• Featuring a grid pattern of 12mm square perforations spaced at 25mm centres, providing a 23% open area. • Supplied with black acoustic fabric backing. • Manufactured with patented Activ'Air technology, which removes formaldehyde and improves the environment for people working and living in the space. • Unique jointing method to provide a continuous pattern once finished.	1200 x 1200	12.5	9.5	✓	✓	Black
Rigitone Matrix 10mm Round	• A pattern of 10mm round perforations spaced at 23mm centres, providing a 14.8% open area. Supplied with a black acoustic fabric backing. • Manufactured with patented Activ'Air technology, which removes formaldehyde and improves the environment for people working and living in the space. • Supplied with black acoustic fabric backing. • Unique jointing method to provide a continuous pattern once finished.	1196 x 2000	12.5	10	✓	✓	Black

TABLE B2: GYPROCK PERFORATED PLASTERBOARD FEATURES, APPLICATIONS & SPECIFICATIONS							
GYPROCK® PERFORATED PLASTERBOARDS	**PRODUCT FEATURES**	**SIZE (mm)**	**THICKNESS (mm)**	**MASS kg/m²**	**SUITABLE FOR CEILINGS**	**SUITABLE FOR WALLS**	**ACOUSTIC FABRIC**
RIGITONE RANGE (continued							
Rigitone Matrix 15mm Round	• Featuring a grid pattern of 15mm round perforations spaced at 30mm centres, providing a 19.6% open area. • Manufactured with patented Activ'Air technology, which removes formaldehyde and improves the environment for people working and living in the space. • Supplied with black acoustic fabric backing. • Unique jointing method to provide a continuous pattern once finished.	1200 x 1980	12.5	9.5	✓	✓	Black
Rigitone Astral	• Featuring a regularly staggered pattern consisting of 12mm and 20mm round perforations spaced at 33mm centres, providing a 19.6% open area. • Manufactured with patented Activ'Air technology, which removes formaldehyde and improves the environment for people working and living in the space. • Supplied with black acoustic fabric backing. • Unique jointing method to provide a continuous pattern once finished.	1188 x 1980	12.5	9.5	✓	✓	Black
Rigitone Galaxy	• Featuring an irregular scattered pattern consisting of 8mm, 15mm and 20mm round perforations, providing a 10% open area. • Manufactured with patented Activ'Air technology, which removes formaldehyde and improves the environment for people working and living in the space. • Supplied with black acoustic fabric backing. • Unique jointing method to provide a continuous pattern once finished.	1200 x 1960	12.5	10.0	✓	✓	Black

GYPROCK PLASTERBOARD CEILING TILE SELECTION

TABLE B3: CEILING TILE FEATURES, APPLICATIONS & SPECIFICATIONS			
GYPROCK® PLASTERBOARD CEILING TILES	**APPLICATIONS – GRID CEILING SYSTEMS** **FEATURES**	**THICKNESS (mm)**	**MASS kg/m²**
Supatone™ Bright	• Gyprock Supatone Bright is a plasterboard tile with a 'wipe clean' smooth polycoated surface paper laminate. Supatone Bright is available in 'white', and used in basic commercial ceiling applications. Supatone Bright's core features the sag resistance properties of Supaceil. 1200 x 600mm nom.	10	7.6
Freshtone™ Diamond White	• Freshtone is a Gyprock plasterboard tile finished with a finely textured vinyl laminate which resists fading and is easily wiped clean. Freshtone is available in 'white', and is ideal for shopping centres, offices and industrial premises. Freshtone's core features the sag resistance properties of Supaceil. 1200 x 600mm nom.	10	7.6
Arctic White	• Gyprock Arctic White Vinyl Face is a plasterboard panel finished with a finely textured vinyl laminate which resists fading and mould growth. It is suitable for a wide range of commercial building applications such as shopping centres, offices and retail spaces. 1200 x 600mm nom. Product ONLY available in WA.	10	7.6

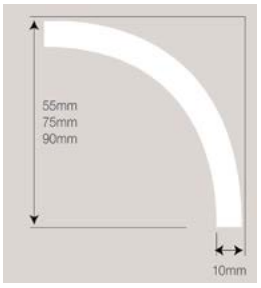
GYPROCK CORNICE SELECTION

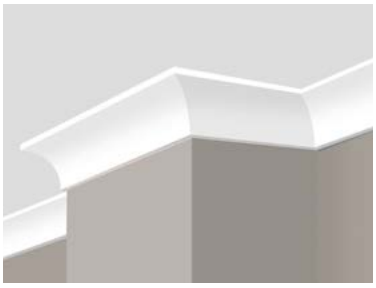
Gyprock Cornice is designed to provide an attractive finish at the junction of the wall and ceiling. It can be used on Gyprock plasterboard, fibrous plaster, fibre cement or cement rendered surfaces. Gyprock cornice is composed of gypsum plaster encased in a strong linerboard.

TABLE B4: GYPROCK CORNICE RANGE	
GYPROCK CORNICE	**APPLICATIONS – CEILING SYSTEMS** **FEATURES**
Cove	**Standard** • Gyprock Cove has long been the standard cornice choice for Australian home builders. Its functional profile does not detract from common décor styles and it is available in three profile sizes (55, 75 & 90mm) to suit different ceiling heights and applications.
Aria™ **Duo**	**Contemporary** • If the property style calls for something more modern and streamlined than Cove, the Gyprock Contemporary range offers minimalistic profiles that will add interest with simple, fresh appeal.
Opera™ **Alto™** **Trio** **Tempo™** **Concerto™** **Symphony**	**Inspirations** • A Gyprock Inspirations cornice gives a new dimension of style and detail. Whether traditional or modern in style, each has a unique and distinctive look that can add quality and value to the project.

COVE RANGE

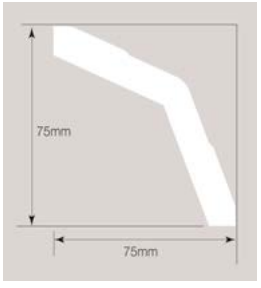
Gyprock Cove Cornice

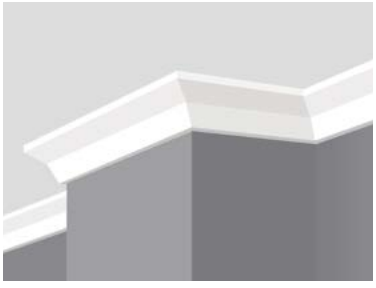




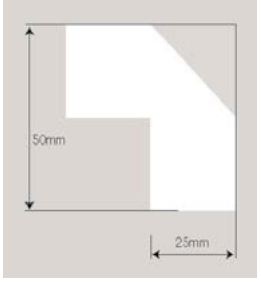
CONTEMPORARY RANGE

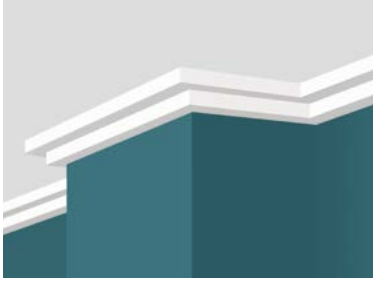
Gyprock Aria Cornice





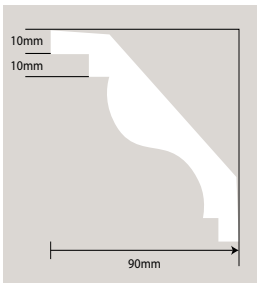
Gyprock Duo Cornice





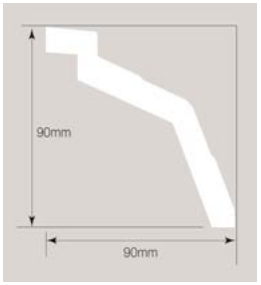
INSPIRATIONS RANGE

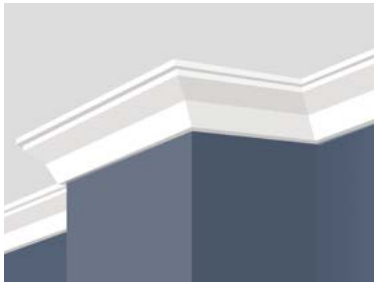
Gyprock Opera Cornice



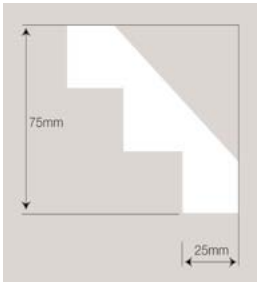


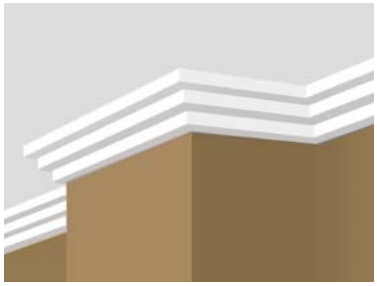
Gyprock Alto Cornice



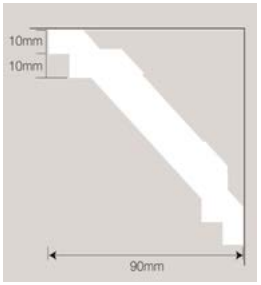


Gyprock Trio Cornice



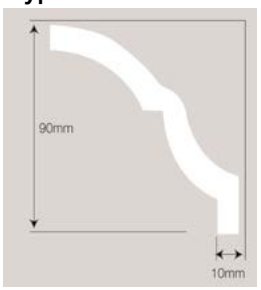


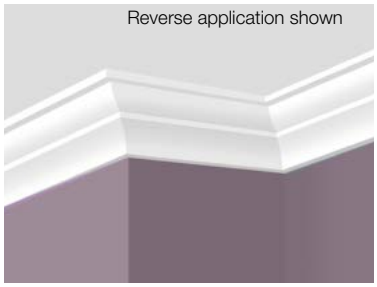
Gyprock Tempo Cornice



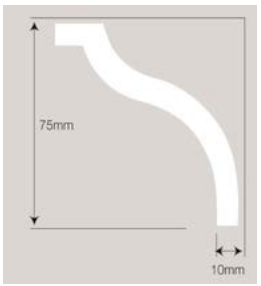


Gyprock Concerto Cornice





Gyprock Symphony Cornice





CEMINTEL RANGE

CEMINTEL WALLBOARD

Cemintel CeminSeal Wallboard features an embedded micro water block technology that prevents water penetrating into the sheet, repelling water and providing a more stable sheet.

Wallboard is a superior lining for wet areas such as bathrooms, laundries and semi-exposed ceilings, and for the construction of impact resistant walls.

Cemintel Wallboard has a recess on both long edges so that sheets may be taped and set. Once jointed it may be tiled, painted or wall papered as desired.

FAÇADES AND SOFFITS

Cemintel has a selection of façades with classics such as weatherboards and profiled sheets, and contemporary products such as the pre-finished Territory™ and Surround™ ranges.

Cemintel ceiling solutions that can be used in residential or commercial applications are also available.

FLOORING & DECKING

Choose from our range of advanced lightweight fibre cement flooring and high strength compressed sheet solutions – suitable for both residential and commercial applications

RIGID AIR BARRIER

Cemintel Rigid Air Barrier is a 6mm fibre cement panel consisting primarily of Portland Cement, cellulose fibres, sand and water. It is sealed on the face and edges using Cemintel's proven Ceminseal embedded micro waterblock technology, which repels water, preventing water penetrating into the panel and hence providing a durable sheet that will not rot, swell or warp when correctly installed. By protecting against wind and rain, it allows work to be carried on inside the building prior to cladding being installed. Being fibre cement, Cemintel Rigid Air Barrier may be used where a non-combustible material is required by the NCC.

BRADFORD RANGE

INSULATION PRODUCTS

The Red Book's fire, acoustic and thermal systems are designed around a range of Bradford insulation products including, Bradford Gold, Soundscreen, Acoustigard and Martini Polyester.

These products are specifically designed to achieve high performance results in a wide range of applications throughout the Red Book.



Bradford Gold™ Ceiling Insulation and Gold Wall Insulation with Comfort Touch™ Technology are designed to deliver optimal thermal performance across the building envelope. In winter, up to 25% of heat can be lost through the walls and up to 35% through the ceiling. Bradford Gold acts as an effective barrier to help slow heat loss and significantly improve the energy efficiency and internal comfort of the home



Bradford SoundScreen™ is a high-density acoustic insulation that is designed for hollow internal walls to provide exceptional noise reduction benefits. SoundScreen fills the empty space inside internal walls, effectively absorbing unwanted noise transfer between rooms for greater acoustic comfort.



Bradford Acoustigard™ is a glasswool fibre insulation specifically engineered to reduce sound transmission in walls and ceilings. The product comes in a range of densities and is also certified as a thermal insulation for non-combustible external walls.

Comfort Touch™ Technology helps reduce airborne dust during installation*, setting a new benchmark in installer comfort and ease of handling. Bradford Gold™ Wall Insulation and Bradford SoundScreen™ Wall Insulation with Comfort Touch™ Technology is the latest innovation in our wall batts range. Comfort Touch™ Technology has been certified such that the reduction in density, will not detrimentally affect the acoustic performance of the systems documented in The Red Book 01.

*Based on external testing.

WALL WRAP PRODUCTS

The installation of wall wrap can greatly increase weather resistance of the building both during and after construction. Wall wrap can assist in reducing the amount of wind driven rain that can enter the internal wall and protect the building from water damage. Additionally, Class 4 vapour permeable wall wraps allow internally generated water vapour to escape the inside of the building and minimise the risk of condensation formation.

Thermoseal™ Wall Wrap is a Class 1 vapour barrier wall wrap that provides additional weather protection to the building frame and minimises the entry of outside moisture into the wall system. Thermoseal Wall Wrap is recommended for use behind masonry construction only, however, may be used behind lightweight clad in humid, tropical regions.



Enviroseal™ RW Plus is a Class 4 highly vapour permeable wall wrap that can greatly reduce this risk of mould growth and condensation formation in the wall envelope while still providing exceptional weather resistance. Enviroseal™ RW Plus is suitable behind masonry and light weight clad construction in cold to warm climates. It is not recommended in tropical or high humidity regions.



Enviroseal™ CW and **CW-IT** are a Class 4 vapour permeable wall wrap which protects against water-related weather damage and mould or rot, while reducing airflow around insulation allowing it to work more efficiently. With a higher burst strength & material gsm weight than RW, Enviroseal™ CW is suitable for use as a commercial grade wrap with brick, timber, steel, fibre cements products & Hebel construction.



ROOF SARKING PRODUCTS

The installation of roof sarking can greatly increase weather resistance of the building both during and after construction. Roof sarking assists in reducing the amount of wind driven rain that can enter the roof and protect the building from water damage. Some roof sarking products provide additional thermal performance while others help minimise the risk of condensation.

Thermoseal™ Roof Tile Plus is an extra heavy duty, reflective foil weather barrier for use under tiled roofs. Thermoseal Roof Tile Plus can reflect up to 97% of radiant heat and minimises the entry of wind driven rain into the roof cavity.



Enviroseal™ HTS is a highly durable, vapour permeable roof underlay for use in residential or commercial tiled, slate and metal roof applications. Enviroseal™ HTS provides an additional layer of protection under tiles or metal roofs and minimises the risk of condensation damage.



TABLE B5: WALL WRAP/ROOF SARKING PRODUCT SPECIFICATION

Product	Vapour Permeance Class AS/NZS 4200.1	When used on walls – weather exposure limit prior to cladding	When used on roof – weather exposure limit prior to roofing
Thermoseal 733 MD	Class 1	6 Weeks	N/A
Thermoseal Resiwrap	Class 1	6 Weeks	2 Weeks
Thermoseal Wall Wrap/XP	Class 1	6 Weeks	N/A
Thermoseal Firespec	Class 2	6 Weeks	N/A
Enviroseal HTS	Class 4	6 weeks	2 Weeks
Enviroseal RW PLUS	Class 4	6 weeks	N/A
Thermoseal Roof Tile Plus	Class 1	N/A	2 Weeks
Enviroseal CW/ CW-IT	Class 4	6 weeks	N/A

TABLE B6: SPECIFIED INSULATION AND ABBREVIATIONS
(Abbreviated names have been used in system tables).

Product	Abbreviation	R – Value (m^2 K/W)[a]	Non-Combustible
70mm Bradford Soundscreen R2.0 & 70mm Bradford Soundscreen with Comfort Touch™ R2.0	70 Soundscreen 2.0	2.0	✔
88mm Bradford SoundScreen R2.5 & 88mm Bradford SoundScreen with Comfort Touch™ Technology R2.5	88 Soundscreen 2.5	2.5	✔
110mm Bradford SoundScreen R3.1 & 110mm Bradford SoundScreen with Comfort Touch™ Technology R3.1	110 Soundscreen 3.1	3.1	✔
25mm Bradford Acoustigard (24kg/m^3)	25 Acoustigard 24kg	0.65	✔
25mm Bradford Acoustigard (32kg/m^3)	25 Acoustigard 32kg	0.7	✔
50mm Bradford Acoustigard (14kg/m^3)	50 Acoustigard 14kg	1.2	✔
50mm Bradford Acoustigard (24kg/m^3)	50 Acoustigard 24kg	1.4	✔
75mm Bradford Acoustigard (11kg/m^3)	75 Acoustigard 11kg	1.7	✔
75mm Bradford Acoustigard (14kg/m^3)	75 Acoustigard 14kg	1.8	✔
75mm Bradford Acoustigard (24kg/m^3)	75 Acoustigard 24kg	2.1	✔
75mm Bradford Acoustigard (32kg/m^3)	75 Acoustigard 32kg	2.2	✔
100mm Bradford Acoustigard (14kg/m^3)	100 Acoustigard 14kg	2.4	✔
110mm Bradford Acoustigard (11kg/m^3)	110 Acoustigard 11kg	2.5	✔
165mm Bradford Acoustigard (11kg/m^3)	165 Acoustigard 11kg	3.5	✔
90mm Bradford Acoustigard (14kg/m^3)	90 Acoustigard 14kg	2.2	✔
90mm Bradford Acoustigard (24kg/m^3)	90 Acoustigard R2.5	2.5	✔
90mm Bradford Acoustigard (32kg/m^3)	90 Acoustigard 32kg	2.7	✔
75mm Bradford Gold Wall HP Batts R2.0 & 75mm Bradford Gold Comfort Touch™ Technology Wall HP Batts R2.0	75 Gold Batts 2.0	2.0	✔
90mm Bradford Gold Wall Batts R2.0 & 90mm Bradford Gold Comfort Touch™ Technology Wall Batts R2.0	90 Gold Batts 2.0	2.0	✔
90mm Bradford Gold Wall HP Batts R2.5 & 90mm Bradford Gold Comfort Touch™ Technology Wall HP Batts R2.5	90 Gold Batts 2.5	2.5	✔
90mm Bradford Gold Wall HP Batts R2.7 & 90mm Bradford Gold Comfort Touch™ Technology Wall HP Batts R2.7	90 Gold Batts 2.7	2.7	✔
140mm Bradford Gold Ceiling Batts R2.5	140 Gold Batts 2.5	2.5	✔
165mm Bradford Gold Ceiling Batts R3.0	165 Gold Batts 3.0	3.0	✔
185mm Bradford Gold Ceiling Batts R3.5	185 Gold Batts 3.5	3.5	✔
215mm Bradford Gold Ceiling Batts R4.1	215 Gold Batts 4.1	4.1	✔
50mm Martini MAB Polyester (11kg/m^3)	50 MAB Polyester 11kg	N/A	–
75mm Martini MAB Polyester (11kg/m^3)	75 MAB Polyester 11kg	N/A	–
100mm Martini MAB Polyester (11kg/m^3)	100 MAB Polyester 11kg	N/A	–
25mm Martini MAB Polyester (20kg/m^3)	25 MAB Polyester 20kg	N/A	–
75mm Martini MAB Polyester (20kg/m^3)	75 MAB Polyester 14kg	N/A	–
90mm Bradford Polymax R2.0	90 Polymax 2.0	2.0	–
100mm Martini Absorb XHD Polyester	100mm Absorb XHD Polyester	N/A	–
25mm Bradford Fibertex 450 Stone Wool (80kg/m^3)	25 Stone Wool 80	0.72	✔
110mm Bradford Glasswool Building Blanket R2.5	110 Glasswool Building Blanket	2.5	✔
25mm Soundlag 4525C Acoustic Pipewrap[c]	Soundlag[c]	–	–
60mm Bradford Anticon Medium Duty R1.3	Anticon 60 MD	1.3	✔[b]

N/A: Product not tested for R-Value

[a] R-Value are determined in accordance with AS/NZS 4859.1 and will remain the same unless the product is compressed or altered. The total R-Value of the system is dependent on installation and environmental conditions.

[b] Bulk Glasswool insulation material only - excludes facing material.

[c] Supplied by others

HIMMEL RANGE

HIMMEL CEILING TILE SELECTION

CSR Himmel offers a range of ceiling tiles for exposed grid ceiling systems, each with various surface finishes and different properties to suit a variety of commercial applications. For more information please contact the Himmel team on 1300 374 253 or visit www.Himmel.com.au.

TABLE B7: CEILING TILE FEATURES, APPLICATIONS & SPECIFICATIONS

OWA CEILING TILES	APPLICATIONS – GRID CEILING SYSTEMS FEATURES	THICKNESS (mm)	MASS kg/m²
OWA Constellation A	• A mineral fibre ceiling tile that offers good acoustic properties and a traditional fissured face pattern. • Suitable for many commercial applications such as offices and education projects. • Available in a variety of sizes and edge details.	14	4.5
OWA Finetta	• A mineral fibre ceiling tile that offers good acoustic properties and a pinhole face pattern. • Perfect for commercial projects where acoustics are essential to the environment. • Available in a variety of sizes and edge details.	15	4.5
OWA New Sandila	• A mineral fibre ceiling tile that offers good premium acoustic properties and durable face pattern. • Ideal for commercial applications with large noisy areas such as classrooms, retail spaces and hotels.	15	4.5
OWA Brillianto A	• A premium acoustic ceiling tile that offers high acoustic properties and a clean white face pattern. • Perfect for general commercial spaces such as hallways and open plan office spaces.	15	4.2
OWA Sinfonia Privacy Humancare	• A mineral fibre ceiling tile that offers premium acoustic properties with a modern, clean face pattern. • Prevents the spread of bacteria, fungi, and germs, and effective in stopping the growth of MRSA pathogens. • Achieves Hygiene Finish with Particle class ISO 4 (ISO 14644-1:1999)	20	6.4
OWA Sinfonia Balance	• A mineral fibre ceiling tile that offers premium acoustic properties and a modern, clean face pattern. • Perfect for commercial projects such as healthcare and retail where design and acoustics are essential. • Available in white and black and a variety of sizes and edge detail.	20	4.4
Troldtekt Panel – Ultrafine Natural	• Decorative acoustic woodwool panel made with responsibly-sourced spruce timber and cement. • Provides acoustic and aesthetic design in offices and retail projects and education spaces. • Available in natural timber, grey, white, black and custom RAL colours.	25	11.4
dECO Ceiling Tile	• dECO Ceiling Tiles are durable acoustic ceiling tiles with square edges designed for standard drop-in ceiling grid systems. • Available in 22 colours from our dECO Felt colour range. • Suitable in a variety of spaces such as open plan offices, meeting rooms, boardrooms, break-out spaces, classrooms and lecture theatres.	25	2.85

AFS RANGE

AFS rediwall®

AFS Rediwall is a PVC permanent formwork system and a time-saving alternative to conventional masonry and blockwork. Its precision-extruded components easily interconnect for rapid installation. CodeMark Certified, Rediwall panels are load bearing for multi-level structures, is suitable design in accordance AS 3600, and provides a consistently clean, even and water-resistant surface.

For more information on permanent formwork systems contact AFS on 1300 727 237 or visit afsformwork.com.au



MATERIAL PROPERTIES

MANUFACTURING STANDARDS

CSR Gyprock and Cemintel products, as referenced in this design guide, comply with the following manufacturing standards.

Plasterboard

- AS/NZS 2588 Gypsum Plasterboard.

CeminSeal Wallboard

- AS/NZS 2908.2 : 2000 Cellulose-cement products Part 2: Flat sheets. Type A, Category 3.

THERMAL & MOISTURE STABILITY

Gyprock plasterboard and Cemintel fibre cement products are stable building materials when subjected to the normal range of interior temperature and humidity conditions.

Thermal coefficient of expansion (α).

- Plasterboard: α = 16.2 x 10^{-6} mm/mm/°C in the temperature range 4°C to 38°C
- Fibre cement: α = 7.5 x 10^{-6} mm/mm/°C in the temperature range 0°C to 60°C

Hygrometric coefficient of expansion (δ).

- Plasterboard: δ =7.2 x 10^{-6} mm/mm/% (in the range 5% to 90% R.H.)
- Fibre cement: δ = 6.6x10^{-6} mm/mm/% (in the range 30% to 90% R.H.)
- The value of total expansion from equilibrium to saturated condition for fibre cement is 5.0x10^{-4} mm/mm.

Note that these values are approximate only and will vary across the range of product formulations.

INTERNAL MOISTURE

Gyprock plasterboard must not be used where it will be in contact with liquid water or an atmosphere of constant relative humidity above 90%.

For wet area walls and ceilings (including external ceilings) subject to intermittent high humidity where plasterboard is specified, any of the moisture resistant Gyprock plasterboards are recommended. CeminSeal Wallboard products are highly suitable for wet areas and semi-exposed ceilings. In all cases follow product installation brochures.

THERMAL PERFORMANCE

The R value, or thermal resistance of a material, expresses the ability of a particular material to resist heat flow.

Gyprock and Cemintel products have been tested to ASTM C518 for thermal performance.

The 'R' values for Gyprock plasterboards are:

- 10mm plasterboard R = 0.04 – 0.05. (0.04 – 0.05 m^2K/W).
- 12.5 – 13mm plasterboard R = 0.05 – 0.07. (0.05 – 0.07 m^2K/W).
- 16mm plasterboard R = 0.07 – 0.09. (0.07 – 0.09 m^2K/W).

The 'R' values for Cemintel products are:

- 6mm fibre cement R = 0.02 (0.02 m^2K/W).
- 7.5mm fibre cement R = 0.03 (0.03 m^2K/W).
- 9mm fibre cement R = 0.03 (0.03 m^2K/W).

RESISTANCE TO IMPACT

Wall lining materials may be selected for properties delivering resistance to damage. These properties include surface indentation (resistance to indentation from small, solid objects), soft body impact resistance (resistance to damage from people impact, measured with a swung sand bag) and hard body impact resistance (resistance to damage from solid object impact, measured with a swung hammer). Refer to TABLE B8 to TABLE B10 for a selection of linings and relative performance for the various properties.

Walls lined with Gyprock Fyrchek, Impactchek and CeminSeal Wallboard can meet the requirements of NCC2022 Specification 6 [NCC2019: Spec C1.8]. This clause specifies resistance to Uniform Distributed Loads (UDLs), surface indentation and impact from a weighted sand bag that is dropped from a specified height. For wall system deflection performance, please contact the framing manufacturer for more information.

Gyprock plasterboard of 10mm and 13mm thickness provides adequate resistance to soft body impacts likely in domestic or light commercial uses respectively. CSR has tested these products to meet the requirements of NCC2022 S6C11(b) [NCC2019: Spec C1.8:6b].

In addition to the above requirements, CSR Shaft wall system has been tested to meet the addition requirements for lift shafts of NCC2022 S6C5 [NCC2019: Spec C1.8:3.3].

TABLE B8: Impact Properties - Surface Indentation	
Lining	**Result**
6mm Wallboard	Pass
9mm Wallboard	Pass
10mm Plus	Pass
10mm Supaceil	Pass
10mm HD	Pass
10mm Aquachek	Pass
13mm Standard	Pass
13mm Soundchek	Pass
13mm Aquachek	Pass
13mm Fyrchek	Pass
13mm Fyrchek MR	Pass
13mm EC08 Extreme	Pass
13mm Impactchek	Pass
13mm EC08 Complete	Pass
16mm EC08 Complete	Pass
16mm Fyrchek	Pass
16mm Fyrchek MR	Pass
30mm Glasroc F	Pass
Note: test method as per NCC2022 Specification 6 [NCC2019: Spec C1.8].	

TABLE B9: Impact Properties - Soft Body Impact			
Lining	**Drop Height[2]**	**Typical Wall Application**	**Results**
6mm Wallboard	100mm	Fire resisting walls general	Pass
10mm HD[1]			Pass
13mm Standard[1]			Pass
13mm Fyrchek	150mm	Fire resisting walls of shafts and fire-isolated exits generally	Pass
13mm Fyrchek MR			Pass
13mm Impactchek			Pass
13mm EC08 Extreme			Pass
2 x 10mm Gyprock Plus[1]			Pass
2 x 13mm EC08 Extreme	350mm	Fire resisting walls of certain Class 9b buildings	Pass
2 x 13mm EC08 Complete			Pass
16mm Fyrchek			Pass
16mm Fyrchek MR			Pass
[1] For PartyWall/StrataWall application. [2] Drop height requirement as per NCC2022 Specification 6 [NCC2019: Spec C1.8].			

TABLE B10: Impact Properties - Hard Body Impact	
Lining	**Rating[1]**
6mm Wallboard	✓
10mm HD	✓✓
10mm Plus	✓
13mm EC08 Extreme	✓✓✓
13mm Impactchek	✓✓✓
13mm EC08 Complete	✓✓
13mm Fyrchek	✓✓
[1] More ✓ indicates higher performance.	

FIRE HAZARD PROPERTIES

The NCC limits the materials used in Class 2 to 9 buildings by controlling the Fire Hazard properties of linings. These properties are assessed using AS 5637.1.

Please refer to TABLE B11 for Gyprock plasterboard and Cemintel product performance details. Contact Himmel for properties of other acoustic ceiling products.

TABLE B11: FIRE HAZARD PROPERTIES		
Gyprock Plasterboard	**$SMOGRA_{RC}$**	**Group Number**
10mm Plus	<100	1
10mm Supaceil	<100	1
10mm HD	<100	1
13mm Standard	<100	1
10 – 13mm Aquachek	<100	1
13mm Soundchek	<100	1
13mm Impactchek	<100	1
13 – 16mm Fyrchek	<100	1
13 – 16mm Fyrchek MR	<100	1
13 – 16mm EC08 Complete	<100	1
13mm EC08 Extreme	<100	1
25mm Shaft Liner MP	<100	1
6.5mm Flexible	<100	1
13mm Perforated Panel	<100	1
12.5mm Gyptone Perforated Ceiling Panels	<100	1
12.5mm Rigitone Perforated Ceiling Panels	<100	1
Cemintel Fibre Cement		
CeminSeal Wallboard	<100	1
Gyprock Ceiling Tiles		
10mm Freshtone Diamond White	<100	1
10mm Supatone	<100	1
10mm Arctic White	<100	1

NOTES:
$SMOGRA_{RC}$ = Smoke Growth Rate Index
Report: WF 45759

Scan QR CODE for
Gyprock Fire Hazard Report

COMBUSTIBILITY

In accordance with NCC2022 Clause C2D10 [NCC2019: C1.9], plasterboard and fibre cement sheet may be used wherever a non-combustible material is required by the Code.

Polyester insulation may NOT be selected where the system has non-combustible construction requirements.

DESIGN CONSIDERATIONS

DESIGN RESPONSIBILITY

This guide represents good practice, though it is not intended as an exhaustive statement of all relevant information. It remains the responsibility of the customer (in conjunction with their designer or engineer, when applicable) to ensure that CSR's products/systems are suitable for their chosen application for any given project. CSR recommends that a comprehensive assessment of the performance requirements be undertaken prior to selection, including in respect of project-specific matters such as, but not limited structural adequacy, seismic, acoustic, fire resistance/combustibility, thermal, condensation and weatherproofing requirements. For further information refer to the relevant sections of this guide, and to the specific system design & installation guides.

CSR offers online digital tools for the most updated information, including but not limited to update of products/components, inclusion of new and modified systems, to meet the requirements of the National Construction Code of Australia (NCC) and any relevant Australian Standards.

For the most up-to-date product & system performance information, visit:

CSR System Selector: https://apps.csr.com.au/systemselector/search-option

CSR Thermal Calculator: https://apps.csr.com.au/thermalcalculator

WIND LOADS

All linings and framing are to be designed for the appropriate wind loads. Contact CSR DesignLink for loads higher than those stated in this guide.

Wind pressure can occur on walls and ceilings that form part of the building perimeter enclosure due to air infiltration through the façade and lining elements. It can also occur on any wall and ceiling when openings are present in the building façade such as doors and windows that are left open or are damaged in a wind event. The spacing of framing for these elements is dependent on

the plasterboard lining span limits. Refer to TABLE B12 and TABLE B13 for maximum framing centres.

Gyprock plasterboard and CeminSeal wallboard linings for all systems may be fixed with fasteners alone, using nails or screws as appropriate. Linings for some walls and ceilings may be fixed with a combination of fasteners and adhesive, for example, non-fire rated systems. Refer to specific framing sections for more information.

SEISMIC LOADS

Seismic actions must be considered for building elements in accordance with the NCC. The loads and effects of earthquakes may be determined in accordance with AS 1170.4 'Earthquake Actions in Australia'. The Standard has design procedures for houses (Class 1), and to buildings (Classes 2 to 9) with importance levels 2, 3 or 4 as defined in the NCC.

Framed walls and ceilings lined with plasterboard and fibre cement products are subject to inertial forces and the effect of movement such as inter-storey drift. The calculated seismic forces may be equated to pressures as is done for wind loads and are resisted by the lining product's strength properties and by the fastening methods that attach them to the framing.

Design pressures for linings are given in TABLE B12 & TABLE B13. Values for the design of framing elements may be calculated by standard engineering practices or may be provided by product manufacturers.

The effects of both building movement and the inertial forces require specific design of the connection of wall and ceiling framing to the structure. This is part of the wall framing manufactures design and information may be available from the frame supplier.

TABLE B12: MAXIMUM FRAMING CENTRES FOR PLASTERBOARD AND WALLBOARD LININGS ON WALLS

Linings (horizontal or vertical sheet orientation)	Wind Load (kPa) Ult.			
	0.25	0.50	0.75	1.00
10mm Plus	600	600	450	450
Other 10mm Gyprock plasterboards	600	600	600	450
12.5mm Glasroc X	600	600	600	600
13 and 16mm Gyprock plasterboards	600	600	600	600
6mm CeminSeal Wallboard	600	600	450	450
9mm CeminSeal Wallboard	600	600	600	600

TABLE B13: MAXIMUM FRAMING CENTRES FOR PLASTERBOARD AND WALLBOARD LININGS ON CEILINGS

Linings	Room Conditions	Wind Load (kPa) Ult.			
		0.25	0.50	0.75	1.00
		Max. Framing Centres (mm)			
10mm Plus	Low humidity	450	450	450	450
	High humidity	450	450	300	N/A
Other 10mm Gyprock plasterboards	Low humidity	600	600	600	450
	High humidity	450	450	450	450
13mm Gyprock plasterboards	Low humidity	600	600	600	600
	High humidity	600	450	450	450
16mm Gyprock plasterboards	Low humidity	600	600	600	600
	High humidity	600	600	600	600
6mm CeminSeal Wallboard	Low humidity	600	450	450	450
	High humidity	450	450	450	450
9mm CeminSeal Wallboard	Low humidity	600	600	600	600
	High humidity	600	600	450	450

- For Gyptone and Rigitone products, please refer to the appropriate installation guide.
- Includes an allowance for up to 5kg/m^2 insulation
- Low humidity includes air conditioned spaces
- High humidity includes non-air conditioned spaces

CONTROL JOINTS

Movement and stresses created by temperature and humidity fluctuation can result in deformation and damage to internal linings and partitions.

Control joints must be installed to allow for structural movement. Allowance for movement must be made through the frame, lining and any tiles.

Door frames extending from floor to ceiling constitute control joints. For doors less than ceiling height, a control joint extending from one corner of the frame may be used.

Control joints must be installed at all construction joints in the building and at the following locations:

- Non-tiled internal walls with plasterboard outer layer – at 12m maximum centres.
- Non-tiled internal walls with fibre cement outer layer – at 7.2m maximum centres.
- Tiled internal walls – at 4.8m maximum centres.
- Internal Gyprock ceilings – at 12m maximum centres.
- External Gyprock ceilings – at 6m maximum centres.
- Horizontal control joint at internal mid-floor position.
- For ceilings lined with CeminSeal Wallboard, refer to Cemintel Ceiling Systems.
- At junctions with other building elements.
- At changes of lining material.
- At changes of structural support systems.
- At each storey or rise of studs.

HEATING

The following situations may give rise to localised high temperature conditions (≥52°) which may be detrimental to wall and ceiling linings:

- Radiant heaters,
- Halogen lighting,
- Heat pumps,
- Reverse cycle air conditioners,
- Solid fuel stoves.

Recessed lights must be installed in a way which prevents damage from temperature rise and to prevent the risk of fire. Refer to AS/NZS 3000.

Refer to heating unit manufacturer for more information.

GAS SERVICES & APPLIANCES

Where a gas stove in a residential or commercial application is required to be installed to AS/NZ S5601.1 Gas Installations, there are requirements stipulated for the protection of surrounding construction. In this case a fire resistant material must be used that meets the specification provided in the code.

In residential applications, where a burner is within 200mm of a wall, protection methods include:

- A splashback attached to the stove intended to protect the rear wall.
- 12mm fibre cement lining covered with 0.4mm steel sheet.
- 5mm ceramic tiles attached to 10mm plasterboard or 6mm fibre cement lining.
- 5mm toughened glass attached to 10mm plasterboard or 6mm fibre cement lining.

Note that Gyprock plasterboards and Cemintel fibre cement products do not meet the code definition of fire resistant material.

ATTACHING FIXTURES

For non-fire rated plasterboard walls, lightweight fixtures such as picture frames may be attached with proprietary fixings. Check with the fixing manufacturer for allowable loadings.

Heavier loads such as shelves and appliances must be fixed through the linings to the framing, such as studs or noggings.

For fire rated plasterboard walls, fixtures such as handrails and other lightweight items may be attached to framing, such as studs or noggings with maximum 10g screws. Refer to details in Book 3. For the use of proprietary fixings in fire rated walls, refer to the manufacturers' details.

SEQUENCE OF WORKS

The sequence of works should be considered on a situation-by-situation basis, but generally will follow the following order:

Internal construction for Class 2-9 buildings:

1. Building made weathertight.
2. Framing installation.
3. Installation of in wall services (roughing in).
4. Installation of insulation in fire rated walls.
5. Fire rated plasterboard installation and jointing.
6. Fire rated penetrations (elec, mech etc).
7. Installation of insulation in ceilings and walls.
8. Remaining plasterboard installation on ceilings then walls.
9. Jointing of plasterboard.
10. Finishing of services.
11. Decorative finishing.

Internal construction for Class 1a buildings:

1. Framing installation.
2. Building made weathertight.
3. Mechanical, electrical services and penetrations.
4. Installation of insulation in ceilings and walls.
5. Plasterboard installation on ceilings then walls.
6. Jointing of plasterboard.
7. Finishing of services.
8. Decorative finishing.

FIRE RESISTANT DESIGN

CSR Gyprock has developed systems with 'Fire Resistance Levels' (FRL) up to – /180/180. The systems and performance specifications detailed in this manual are guaranteed only for the construction specified. Any variation or substitution of materials or assembly requirements, or any compromise in assembly may result in failure under critical conditions. It is recommended that only accredited plasterboard fixers install fire rated systems.

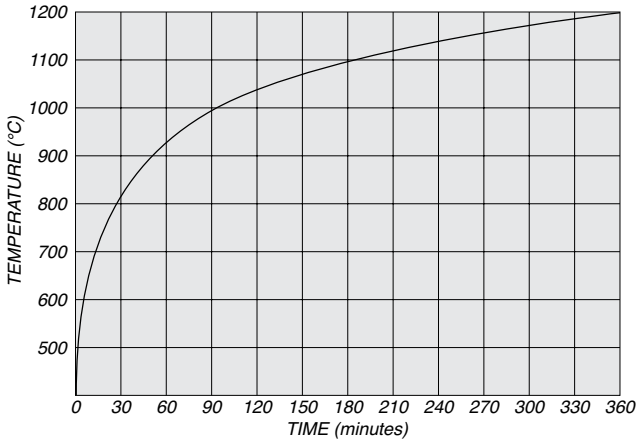
FIRE TESTING

CSR Gyprock fire rated systems have been tested or assessed to AS 1530. 4 – Fire Resistance Tests of Elements of Building Construction, at approved testing laboratories.

This standard gives the test method and criteria of failure for the various elements of construction such as partition walls, floor/ceilings and roof/ceilings.

The specimen assemblies are built into the test furnace and subjected to furnace temperatures in accordance with AS 1530.4 Standard Time vs Temperature Curve.

TABLE B14: STANDARD TIME vs TEMPERATURE CURVE



FIRE RESISTANCE LEVEL (FRL)

The fire rating of systems is determined by laboratory testing to determine the time to failure of three performance measurements, which combine to give a Fire Resistance Level (FRL). They are:

Structural Adequacy

Failure occurs when the specimen collapses under load.

Integrity

Failure occurs when the specimen develops cracks or openings through which flames or hot gases can pass.

Insulation

Failure occurs when the average temperature of the unexposed surface of the specimen increases by more than 140°C above the initial temperature, or the temperature at any point of the unexposed surface increases by more than 180°C above the reference temperature.

The test performance of the specimen is expressed as a Fire Resistance Level, which indicates the number of minutes for which the specimen fulfils the requirements of the three fire test criteria. These numbers are then rounded down to the nearest regulatory requirement.

The common regulatory FRL requirements are:

Non-Loadbearing	Loadbearing
– /30/30	30/30/30
– /60/60	60/60/60
– /90/90	90/90/90
– /120/120	120/120/120
– /180/180	180/180/180

For Example: – /120/120.

The dash indicates no requirement for Structural Adequacy, which applies to all non-loadbearing systems.

The first 120 indicates Integrity for 120 minutes.

The second 120 indicates Insulation for 120 minutes.

Resistance to the Incipient Spread of Fire

Ceiling systems may be required to achieve a Resistance to the Incipient Spread of Fire. This requires the ceiling to provide adequate thermal insulation to prevent combustibles in a roof/ceiling or floor/ceiling cavity from igniting for the specified time.

The National Construction Code (NCC) requirement for some ceilings is to provide Resistance to the Incipient Spread of Fire (RISF), into the space above it, for not less than 60 minutes.

Fire Hazard Properties

Fire hazard properties of wall and ceiling linings in some classes of building are specified by the NCC. Refer to TABLE B11.

Smoke Proof Walls

Smoke proof walls are required in some Class 9a buildings, and, where they do not require an FRL, must be built from non-combustible materials. Steel framed wall systems clad to full height with Gyprock Standard Plasterboard may be used.

Fire rated smoke proof walls should be selected from the steel framed systems with an appropriate FRL.

Smoke proof walls required for Class 9c buildings may use steel or timber framing with linings of 13mm Gyprock Standard Plasterboard, continued full height on a minimum of one side.

Penetrations

Service penetrations in fire rated walls and ceilings that can be effectively rated include electrical and data cables, switches and GPOs, hydraulic pipes, vents and mechanical ducts. Access panels and control joints can also be installed with appropriate fire resistance levels.

Power outlets and light switches can be installed in fire rated walls using fire rated switch boxes. When installed correctly, these maintain the FRL of the wall system in which they are installed.

Where fire and acoustic rated switch boxes are specified, refer to the manufacturer for appropriate products and installation details.

BUILDING ACOUSTICS

Building acoustics can be separated into sound absorption and sound transmission.

Sound absorption relates to control of sound that is generated within a room and how it affects people in that room.

Sound transmission relates to sound that passes through a dividing element (direct sound, controlled by the element's sound insulation), and through the surrounding structure (indirect or flanking transmission).

Methods of controlling noise in buildings can be based on systems, structure and lining materials and their absorption and transmission properties.

CSR Gyprock recommends that an acoustic engineer be consulted for all projects where acoustics are important.

FLANKING TRANSMISSION

Flanking sounds reach adjoining areas by indirect paths, rather than through the dividing element. The perimeter junction of walls, floors and ceilings that surround the dividing element are the main paths for flanking transmission. Other paths include open windows, ducts, doorways and suspended ceilings. Common flanking paths are shown in FIG B1.

Noise sources that have a high degree of low frequency noise such as traffic, aircraft and surround sound systems have potential for transmission through the building structure. Transmission of this type of noise follows structural load paths and can be controlled by breaking these load paths or providing complete separation of the structure.

Noise sources that generate a high amount of mid and high frequency noise, such as services and speech, tend to transmit via air paths and direct transmission in lightweight construction.

Typical problem areas for this type of transmission include doors and door frames, glazing, suspended ceiling cavities and ductwork. Practical methods for addressing common situations within buildings can be seen in Section J.

SOUND IMPACT RATINGS

The NCC has performance requirements relating to sound impact for floors and some walls.

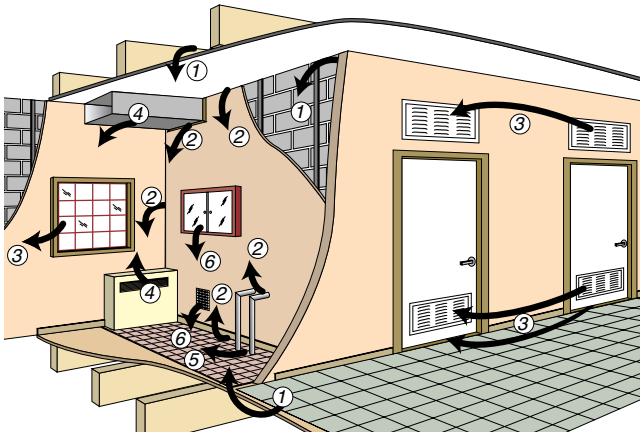
For floors, this is specified as a maximum value such as: L_{nw} = 62. Note that lower values of L_{nw} indicate better acoustic impact performance.

Walls may be required to meet the definition of Discontinuous Construction. This means that wall leaves must be separated by at least 20mm and no mechanical connection is permitted, except that masonry may have resilient ties.

Systems that meet this specification are noted in the appropriate system specifications.

FIG B1: COMMON FLANKING TRANSMISSION PATHS

1. Ceiling plenums, floors, walls.
2. Poor seals between structural elements and around service penetrations.
3. External air-borne paths.
4. Heating and ventilation ducting.
5. Rigid plumbing connections and penetrations.
6. Back-to-back cabinets and switches/power outlets.



SYSTEM PERFORMANCE

The R_W, $R_W + C_{tr}$ and $L_{n,w}$ values in this manual refer to expected results of a laboratory test on an element. Text has been **bolded** with $R_W + C_{tr}$ value greater than 50dB for common building code requirement.

Extensive testing over many years has been carried out by CSR at laboratories including the Commonwealth Experimental Building Station (later CSIRO) at North Ryde NSW, National Acoustic Laboratory at Lindfield NSW, CSIRO Laboratories at Highett, and Clayton, VIC, RMIT acoustic laboratories, VIC and even, up to 1978, at the Gyprock NATA registered laboratory. Extensive development testing has been carried out at Resolute (formally kilargo) Acoustic Laboratories, QLD and Rintoul Laboratories, NSW.

Performance values provided by PKA Acoustic Consulting use a prediction system based on these tests, and the system has been updated to include the most current CSR sponsored testing. The prediction system has

been calibrated against the round robin European test of a standard plasterboard wall in 24 European acoustic laboratories, and has successfully predicted the performance of a calibration wall for the Resolute Acoustic Laboratory.

As testing from different laboratories can vary (the European 24 laboratory test of the standard plasterboard wall was R_W47 to R_W52), it is possible that laboratory tests may be 1 to 2 R_W points above a prediction.

All care has been taken with preparation of these predictions and it is assumed that construction is strictly in accordance with this manual and relevant Gyprock and Cemintel installation guides.

The PKA Predictor was used in The Red Book 01 to calculate acoustic values for specified systems. The PKA Predictor formulas are based on PKA's extensive experience calculating the acoustic properties of lightweight wall systems. PKA certifies that the PKA Acoustic Predictor is an accurate tool for the acoustic prediction of lightweight wall systems. These acoustic predictions result in tolerances within ±2 Rw points when validated against acoustic laboratory test results and other supporting information, which have their own inherent variability.

SITE PERFORMANCE vs LABORATORY PERFORMANCE

As houses are not built like laboratories, it is unlikely that performance measured in ideal test conditions will be achieved in a building. Designers should take care to select systems compatible with the support structure to provide the desired level of insulation.

The NCC specifies deemed to satisfy acoustic values that are laboratory results, and in some cases allows lower values when site tested. For example, in a Class 2 building the separating wall can have $R_W + C_{tr} = 50$ (a laboratory result), or $D_{nT,w} + C_{tr} = 45$ (tested on site). The difference of 5 is that expected between site and laboratory, although it might not always be the case. CSR Gyprock recommends that where designers are selecting systems based on expected site performance, an acoustic engineer be consulted.

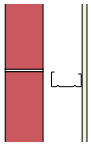
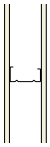
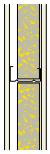
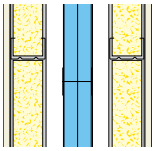
ACOUSTIC INTEGRITY

The acoustic integrity of a system can be influenced by the combination of elements that make up the system. Single leaf and uninsulated systems are more dependent on high quality installation, as relatively minor defects can cause major degradation of the system performance.

Building systems that allow defects to be hidden from view have a higher chance of gaps being left unsealed, making them more vulnerable to performance degradation.

The likelihood and effect of defects occurring with typical systems is shown in TABLE B15.

TABLE B15: ACOUSTIC INTEGRITY

Wall System	Chance of Gaps Being Left Unsealed	Effect of Defects on Performance
 Single skin masonry wall	High	High Degradation
 Masonry with stud, uninsulated	High	High Degradation
 Single stud, uninsulated	Low	High Degradation
 Single stud, insulated	Low	Moderate Degradation
 Double stud, insulated	Low	Low Degradation

BACKGROUND NOISE

Low levels of noise transmitted from other areas can be partially obscured by background noise.

Where the background noise level is low, such as in remote areas, consideration should be given to providing a higher than standard level of sound insulation.

VARIATION IN OCCUPANT PERCEPTION OF NOISE

Tolerance for noise varies greatly between people, and variations of up to 15dB can be considered acceptable. This means consideration should be given to the occupant's expectation of the internal acoustic environment. Users of concert halls and practice rooms may have higher acoustic expectations than guests of inner city hotels.

MINIMUM PERFORMANCE LEVELS FOR INTERNAL WALLS & CEILINGS

The NCC sets out minimum performance levels for internal walls and ceilings based on acceptable standards for affordable housing. The performance requirements are in terms of R_w, R_w+C_{tr} and $L_{n,w}$.

These levels may need to be increased for:

- Variation in occupant perceptions of noise, e.g. high, medium or low cost housing.
- Local authorities have higher or additional requirements.
- Background noise levels are low.
- Flanking transmission of the surrounding structure. Lightweight structures can be more prone to low frequency flanking.
- The presence of services will vary which NCC provisions are applicable, and could mean separate construction is required.
- The lack of simplicity in construction could reduce actual performance.

MINIMUM PERFORMANCE LEVELS FOR SERVICES

The NCC sets out minimum performance levels for isolation of noise from services based on acceptable standards for affordable housing. The performance levels are in terms of R_w and R_w+C_{tr}.

These levels may need to be increased for:

- The nature of the noise source and adjacent occupant activity. Some noises are particularly annoying to occupants.
- Variation in occupant perceptions of noise, e.g. high, medium or low cost housing.
- Background noise levels may be very low.
- The lack of simplicity in construction could reduce actual performance.

MINIMUM PERFORMANCE LEVELS FOR EXTERNAL WALLS

The NCC does not set minimum performance levels of transmission for external walls, although some State and local government rules apply, for example Qld Development Code MP4.4 for Noise Corridors. Guidance should be sought from an acoustic consultant or local authority for setting the design requirements of these elements, as they may be affected by road or aircraft noise.

Issues that may affect the design levels for external walls are:

- Variation in occupant perceptions of noise, e.g. high, medium or low cost housing.
- Background noise levels are low.
- Flanking transmission of the surrounding structure, particularly at windows and doors.
- The lack of simplicity in construction could reduce actual performance.

PENETRATIONS

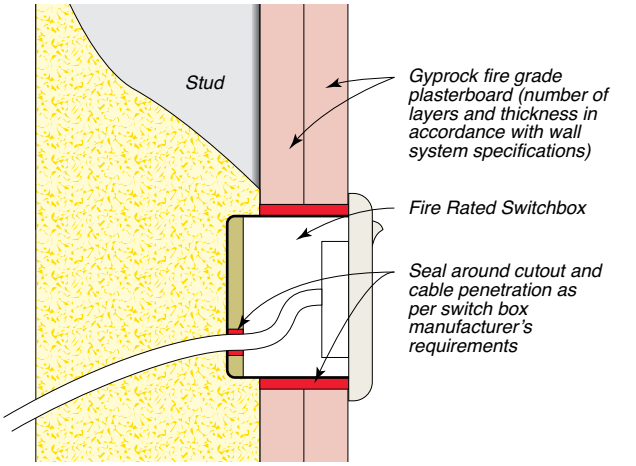
The acoustic performance of walls and ceilings can be reduced by penetrations for plumbing, electrical switches, light fittings, etc. For construction that is acoustically sensitive, it is recommended that, wherever possible, such penetrations are avoided. In other cases, rated proprietary sealants and products should be used.

There is a wide range of services and materials that may be required to penetrate sound rated walls and ceilings, and in varied configurations and concentrations. CSR Gyprock recommends that an acoustic engineer be consulted for advice on all details for projects with specific acoustic objectives.

The patented Gyprock SilencerF has been developed for use in Gyprock walls to provide fire and acoustic ratings for various penetrations. It can maintain fire rating up to FRL –/120/120 and maintain the system acoustic rating. Taps, pipes, power outlets, light switches and similar services can be installed in systems incorporating SilencerF sections.

Fire and acoustic rated switch boxes are available from manufacturers such as CLIPSAL and HPM to assist in maintaining the acoustic integrity of wall systems.

FIG B2: TYPICAL POWER OUTLET/LIGHT SWITCH INSTALLATION USING FIRE RATED SWITCH BOX



GAPS, CRACKS & HOLES

Small openings allow airborne sound to pass through an element and can significantly reduce sound insulation performance. For optimum sound insulation, the element must be airtight.

Perimeters and penetrations for services must be sealed with an acoustic sealant that is capable of accommodating the expected building movement.

For systems that are multi-layered, such as masonry composite systems, each layer must be air tight, as services such as power points and switches can act as airborne flanking paths. To remedy this, consider using acoustic rated power boxes, the Gyprock SilencerF, and insulation in the cavity.

ACOUSTIC TERMINOLOGY DEFINITIONS

R_W – Weighted Sound Reduction Index. A measure of the sound insulation performance of a building element. R_W is a laboratory measurement similar to STC.

R_W is measured and calculated using the procedures from the relevant Australian and International Standards. The related field measurement is abbreviated as $D_{nT,w}$.

The higher the number the better the insulation performance.

$D_{nT,w}$ – Weighted Standardised Field Level Difference. A measurement of the sound insulation performance of a building element. It describes the difference in noise level on each side of a wall or floor, and indicates the level of speech privacy between spaces. It is measured in the field and is therefore subject to the inherent inaccuracies involved in such a measurement.

The higher the number the better the insulation performance.

C_{tr} – A spectrum adaptation value used to modify the sound insulation performance of a wall or floor. Sound insulation performance can be described by R_W or the $D_{nT,w}$ but these are not accurate for all noises, especially for low frequency bass noise from modern stereo systems. C_{tr} values are negative values which are added to either the R_W or $D_{nT,w}$. The standards set out testing methodologies for the sound insulation properties of building elements and incorporates these factors and explains their use.

Smaller negative C_{tr} values are more favourable than large negative values.

dB(A) – The 'A'-scale and dB(A) noise level are used to degrade the performance of a sound level meter to simulate what humans hear. The human ear is not a perfect listening device, it is poor at hearing low frequency noise. dB(A) is used to compare measured sound with perceived sound.

A number of noise criteria refer to, and are measured in dB(A). The larger the dB(A) level the louder the noise.

$L_{n,w}$ – Weighted Normalised Impact Sound Pressure Level. A measure of the noise impact performance of a floor/ceiling. It is measured in very controlled conditions in a laboratory and is characterised by how much impact sound reaches the receiving room via the ceiling/floor from a standard tapping machine test.

The lower the number the better the performance.

$L'_{nT,w}$ – Weighted Standardised Field Impact Sound Pressure Level. A measure of the noise impact performance of a floor/ceiling. It is similar to $L_{n,w}$ except it is measured in the field and is therefore subject to the inherent inaccuracies involved in such a measurement.

The lower the number the better the performance.

NRC – Noise Reduction Coefficient. A measure of the ability of a material to absorb sound.

NRC is generally a number between 0 and 1. A material with an NRC rating of 1 absorbs 100 % of incoming sound, that is, no sound is reflected back from the material.

STC – Sound Transmission Class. A measure of the sound insulation performance of a building element used in the BCA prior to 2000. It is measured in very controlled conditions in a laboratory.

CAC – Ceiling Attenuation Class. A single number rating from a laboratory test to measure sound reduction between rooms via the ceiling.

$D_{nc,w}$ – Weighted Suspended Ceiling Normalised Level Difference. Similar to CAC.

Source: National Construction Code, Sound Insulation Guideline.

α_w – Weighted Sound Absorption Coefficient

Calculated According to AS ISO 11654-2002

A Weighted reference curve from 250Hz to 4000Hz is shifted until an octave band result exhibits deviation.

Shape indicators mean that one or more frequencies is considerably higher than the weighted reference curve.

(L) denotes excess performance at 250Hz

(M) denotes excess performance at 500Hz, 1000Hz

(H) denotes excess performance at 2000Hz, 4000Hz

THERMAL PERFORMANCE

External wall and roof systems in this manual have thermal Total R-Values expressed as R_t (WIN) and R_t (SUM). These are intended for use in various Climate Zones to suit the direction of heat flow, that is, Winter (WIN) for upward heat flow through roofs, outward for walls, and Summer (SUM) for downward heat flow through roofs and inward for walls.

The Total R-Values presented have been calculated using Bradford's Thermal Calculation software version 1.6 and are in accordance with the methods of AS/NZS 4859.1 – Materials for thermal insulation of buildings – General criteria and technical provisions. Any included bulk insulation is a CSR Bradford product that has a material R-Value compliant with the standard, and building elements have thermal values sourced from the ICANZ Technical Handbook. Wall cavities provided behind light weight claddings are assumed to be ventilated in line with weather resistance details, while masonry veneer walls and roofs are treated as non-ventilated in accordance with guidance in the ICANZ handbook.

Thermal performance values quoted are based on an assessment through the insulation path. This method is consistent with the definition of Total R-Value given in Volume Two of the NCC and excludes thermal bridging effects. The calculation for Total R-Value in accordance with NCC Volume One requires consideration of an element's framing components and arrangement and, for walls, any glazing areas. CSR recommends that an energy consultant is used for project specific calculations.

NCC 2022 will include changes to energy efficiency requirements. These requirements will express the R-Value of the building fabric as the Total R-Value. The Total R-Value will consider the project specific external wall configuration and materials used, so that the impact of the thermal bridging on the added insulation is captured.

Additional to the effects of thermal bridging through the framing paths of the structure, the designer will need to allow for gaps in the bulk insulation layer in the wall system due to structural framing (i.e., studs, noggings, perimeter of wall openings) and services obstructing or limiting wall insulation coverage, slab edge insulation, wall cavity ventilation, and the effects of air leakage due to unsealed architraves, unsealed door jambs, unsealed gaps between windows and the masonry wall or services penetrating the inner leaf. These effects are to be compensated for as outlined in NCC Volume One Section J.

For projects conforming to BCA versions prior to the NCC 2022, thermal bridging consideration is not required in the Total R-Value calculation for all building classes, such as:

Class 1 to Class 10 buildings (all building classes) for NCC2016 Amdt. 1 Volume 1 and NCC2016 Amdt. 1 Volume 2 (and earlier).

Class1 and Class 10 only for NCC2019 (incl. Amdt. 1) Volume 2.

For product information, refer to section B of this guide. Note, the insulation also improves the acoustic performance of the wall against outside noise.

CONDENSATION & MOISTURE CONTROL

CONDENSATION CONTROL

Gyprock plasterboard will give many years of satisfactory performance under a wide range of climatic conditions, but to ensure long term performance to both lining material and paint finishes, care should be taken in design of the external envelope to ensure that damaging condensation does not occur.

Condensation within a building is the result of a temperature difference from one side of a building element to the other. The temperature differential forces water vapour contained in the warmer air to flow towards the cooler region where it condenses on any surface below the dew point temperature of the air.

For walls and ceilings, vapour barriers are incorporated into the structure to prevent the flow of water vapour from the warm to the cool regions. As a general rule, locate the vapour barrier as close as possible to the surface which will normally be at the higher temperature at the time of the condensation hazard.

For ceilings, unheated roof spaces should be adequately ventilated. Comprehensive ventilation solutions are available from Bradford Ventilation, part of the Bradford Insulation Group. In rooms such as bathrooms, kitchens, and laundries, moisture laden air should be exhausted to the outside of the building, not to the roof or floor space.

Condensation is a complex problem and can occur under a variety of conditions, not just in cold and tropical climates. There are a large number of factors that need to be considered in assessing and managing condensation risk. Such factors include the local climate, building use, orientation, material R-Value of the insulation and the type of bulk insulation, position and integrity of vapour barriers/vapour permeable membranes, and the degree and location of ventilation. As a result, it is highly recommended that designers undertake a condensation risk analysis as part of the building design.

Additional literature on this subject is available from CSIRO, BRANZ, ASHRAE and ABCB, and should be consulted.

MOISTURE CONTROL WITHIN BUILDINGS

Moisture can be evident within a building for varied reasons and may include:

- Failure of the building fabric to protect the building from the ingress of external water, such as defective roofs, external claddings, flashings, etc. Wind loads can produce lower air pressures within buildings than on the outside, forcing water through small gaps in the building envelope around penetrations and joints, even at low wind speeds.
- Dampness within the building sub-floor due to poor sub-soil drainage and ponding of water under the building.
- Excess moisture from within the building including due to the condensation of water vapour, including from sources including cooking, bathing, and the vapour expelled in the breath of its occupants. Condensation within a building is the result of a temperature difference from one side of a building element to the other. The temperature differential forces water vapour contained in the warmer air to flow towards the cooler region where it condenses on any surface below the dew point temperature of the air.
- Failure of appliances within the building and the leakage of water, including from Hot Water Systems, plumbing fittings and drains, etc.

Methods to control moisture within buildings include:

- Providing adequate ventilation of the building sub-floor.
- Ensuring the roof space is adequately ventilated, as failure to do so may result in the plasterboard sagging, or the excessive moisture movement of the timber framing causing nail popping or joint deformation. Attics or similar unheated spaces above ceilings can be adequately ventilated to provide effective cross-ventilation by screened louvres or other approved and acceptable means. The ratio of total net free ventilating area to area of ceiling shall not be less than 1/150.
- In rooms such as bathrooms, kitchens, and laundries, moisture laden air should be exhausted to the outside of the building, not into the roof space.
- Installing wall wraps/sarking into the structure to control the flow of water vapour from the warm to the cool regions to prevent condensation within the structure. This is a complex problem and can occur under a variety of conditions (not just in cold and tropical climates) so selection of the right wall wrap/ sarking needs to consider the local climate, building use and orientation, material R-Value of the insulation, as well as the degree and location of ventilation.

Additional literature on condensation is available from sources including the CSIRO, BRANZ, ASHRAE, and the ABCB.

The control of moisture within a building is a requirement of the Building Code of Australia and is the responsibility of the designer.

TABLE B16: RECOMMENDED PRODUCTS FOR MOISTURE MANAGEMENT OF WALLS

Climate (NCC Zone)	Guidance on Vapour Control	Performance and Category	Recommended CSR Products
Warm-Humid, or Tropical climates (Zone 1)	Where vapour flow is typically inward, such as where the building is air-conditioned for cooling, the membrane should function as a vapour barrier	Vapour Barrier - Class1 or 2	Bradford Thermoseal membranes Bradford Thermoseal Firespec Cemintel Rigid Air Barrier with a Vapour Barrier Membrane
Temperate or Hot-Dry (inland) climates (Zones 2, 3, 4, 5)	These climates have varying diurnal and seasonal temperature changes that can affect the direction of the water vapour flow. In most cases a vapour permeable membrane outside the insulation is recommended to avoid creating a moisture trap, allowing drying in either direction. Where a high level of thermal insulation is used, a high degree of permeability may be required, and in some locations a vapour barrier is required. Expert guidance based on local experience should be sought.	Vapour Permeable or Vapour Barrier Class 2, 3 or 4 as required	Bradford Enviroseal™ membranes Bradford Thermoseal membranes Cemintel Rigid Air Barrier Cemintel Rigid Air Barrier with a Vapour Barrier Membrane Gyprock Glasroc X
Cold climates[1] (Zones 6, 7, 8)	Where there is a strong tendency for outward migration of vapour and a high risk of condensation, vapour permeable membranes should be installed on the cold, external side of the insulation.[1]	Vapour Permeable Class 3 or 4	Bradford Enviroseal™ membranes. Gyprock Glasroc X

[1] The use of a Class 3 membrane such as Cemintel Rigid Air Barrier may not be sufficient in some cold climates. If a Class 4 membrane cannot be used, a solution may include the use of a material to the interior side of the insulation that acts as a vapour barrier, e.g. a Class 1 or 2 membrane or a vapour sealed plasterboard lining coupled with a mechanical ventilation solution. Seek expert advice prior specifying systems for these regions.

LEVELS OF FINISH

Levels of finish are defined in the Australian/New Zealand Standard AS/NZS 2589 Gypsum linings – Application and Finishing for non-fire rated applications. This standard is intended to provide builders, plasterboard installers and finishers, and their customers with the various defined methods and practices necessary to meet the customer's expectations in terms of the 'Level of Finish'.

Three Levels of Finish (3, 4 and 5) are defined, and minimum specifications to achieve each level of finish are detailed in the standard for each of the installation processes from framing preparation to finishing. All details may not be suitable for fire rated systems or multilayer systems.

It is essential to determine the level of finish required before the frame construction begins, as specific tolerances are required for frame alignment as well as for plasterboard fixing and finishing for each of the levels of finish. Unless these requirements are met throughout construction, it may not be possible to attain the desired finish level without extensive corrective measures.

The level of finish specified also affects the methods of jointing, particularly butt joints and back-blocking requirements, the number of coats of joint compound applied, and the fitting and finishing of stopping beads. Refer to FIG B3.

It should be noted that, generally, residential applications should be prepared to a minimum Level 4 Finish unless specifically a higher or lower level of finish is agreed to by all contracting parties. Other commercial applications should be specified in contract documents.

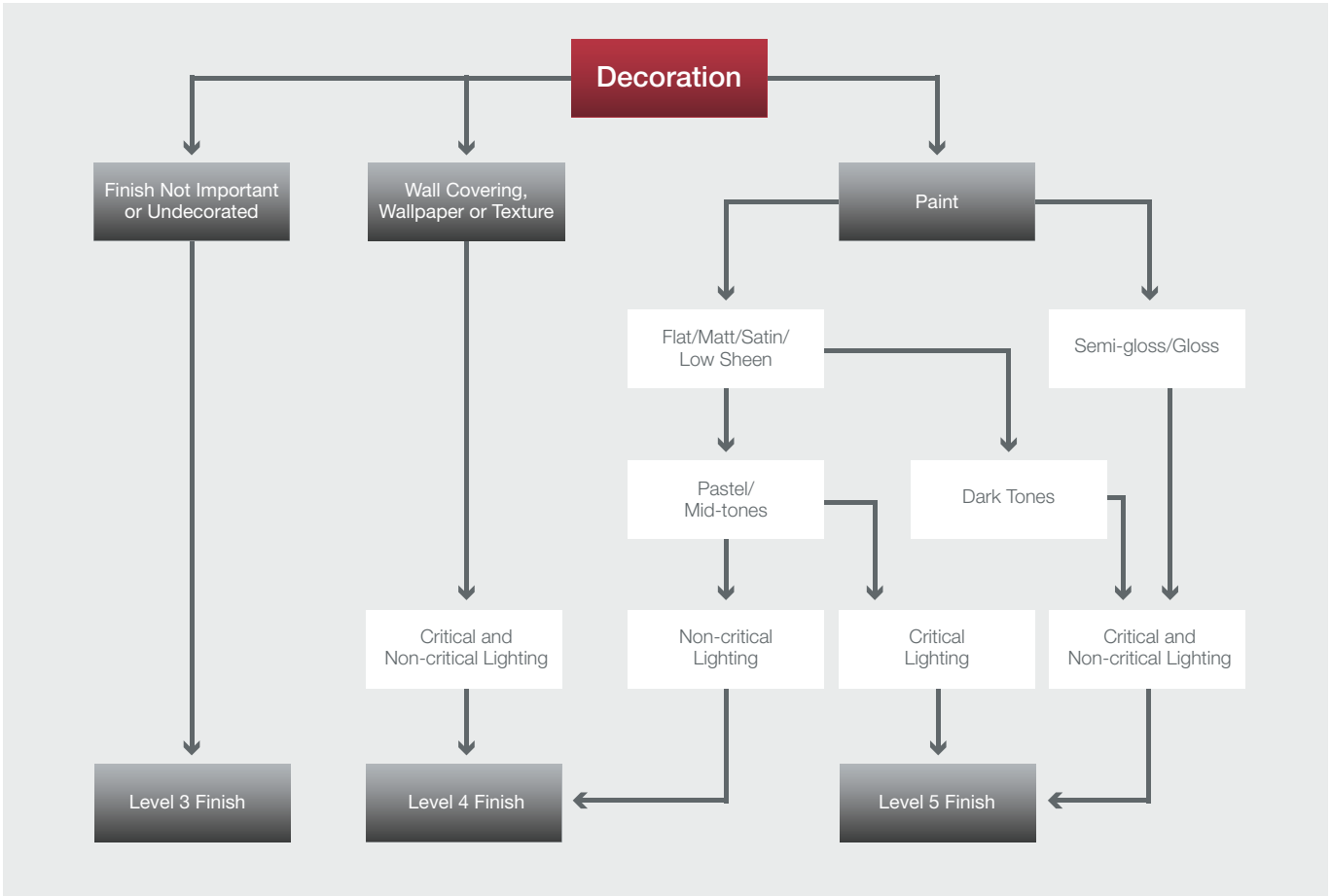
SELECTION OF LEVEL OF FINISH

Factors affecting the level of finish include the surface's visibility, the texture and gloss level of the final decoration and the lighting conditions. Critical or glancing light is that projected across the surface at low angles of incidence, as opposed to diffused lighting or light striking the surface at close to right angles. Refer to the following section "Surface Finishing & Lighting" on page B28.

A good method to overcome differences in opinions of quality is to prepare a sample area in a suitable position and for all parties to agree on the finish. The flow chart FIG B3 and TABLE B17 will assist in selecting the most appropriate Level of Finish for each area.

For further information on levels of finish, refer to Plasterboard Expectations, available from the Association of Wall & Ceiling Industries.

FIG B3: SELECTING A LEVEL OF FINISH



Level 3

For use in areas that do not require a finish, such as above ceilings and inside service shafts and other inaccessible spaces. All joints are to be taped with two applications of compound and all fastener heads are to be covered. Compound is to be finished smooth, such as by scraping ridges etc with a trowel.

Level 4

This is generally the accepted level of finish for residential construction. Joints are to have a tape coat, and two separate coats are to be applied over the tape coat and fastener heads. All joint compound should be sanded to a smooth finish free of tool marks and ridges. Refer to Gyprock Installation guides for details.

Gyprock One Finish is a pre-mixed acrylic compound designed to create a uniform surface on interior walls and ceilings affected by critical lighting conditions. The application of One Finish over a standard level 4 finish will improve the final surface and minimise the effects of critical light, however it will not automatically upgrade the work to a level 5 finish.

Level 5

This level of finish should be used wherever gloss or semi-gloss paints are to be used, where paint is mid or dark coloured, or where critical light conditions occur such as from windows, skylights, or silhouette and spot lighting.

A three coat jointing system is required as for level four. All joint compound should be sanded to a smooth finish free of tool marks and ridges. This should be followed by the application of proprietary surface preparations by skim coating to remove differential surface textures and porosity.

Skim coating is a term used to describe a thin finish coat, rolled, trowelled or airless sprayed and then possibly sanded, to achieve a smooth and even finish. It is normally less than 1mm in thickness and is applied over the entire surface to fill imperfections in the joint work, smooth the paper texture and provide a uniform surface for decorating.

TABLE B17: SUMMARY OF GYPROCK 'LEVEL OF FINISH' DEPENDENT REQUIREMENTS – NON-FIRE RATED CONSTRUCTION

It should be noted that, generally, residential applications should be prepared to a minimum level 4 finish unless specifically a higher or lower level of finish is agreed to by all parties.

Key to Symbols: – = Not Applicable. ✓ = Required. Other symbols, see notes.

Level of Finish	Max. Frame Alignment Deviation mm	Joint Between Frame Members and Back-block				* Adhesive + Fastener Fixing ④	OR	* Fastener Only Fixing ④	Jointing and Finishing (minimum)
		Ceilings		Walls					
		Butt	Recessed	Butt	Recessed				Butt and Recessed Joints Internal and External Corners
3	4	–	–	–	–	✓	OR	✓ ⑤	Tape Coat + Second Coat
4	4	✓	✓ ② ③	✓①	–	✓	OR	✓ ⑤	Tape Coat + Second Coat + Finish Coat
5	3	✓	✓	✓①	–	✓	OR	✓ ⑤	Tape Coat + Second Coat + Finish Coat + Skim Coat to the entire surface

NOTES

① Where a butt joint in a wall is less than 400mm long and is located more than 2 metres from the floor, there may be no need to provide back-blocking.

② Back-blocking required only where 3 or more recessed joints occur in a continuous ceiling area.

③ Back-blocking is not required in suspended ceilings with no rigid connection between ceiling and walls.

④ Tiled and/or fire rated installations MUST be all fastener fixed, adhesive is not permitted. All butt-joints to be on-stud.

⑤ Not permitted for unseasoned timber.

* Tiled installations MUST be all fastener fixed, adhesive is not permitted.

SURFACE FINISHING & LIGHTING

Builders, plasterers and painters work hard to achieve the appearance of a flat surface when installing walls and ceilings. However, some surface variation is inevitable due to the following factors:

- Natural variations in the framing.
- The hand-finished nature of a plasterboard wall or ceiling.
- Subtle differences between the textures of plasterboard and the jointing compounds.

Under the majority of lighting conditions a plasterboard surface finished to a Level 4 standard, as defined in AS/NZS 2589 'Gypsum Linings - Application and finishing', will appear flat. In critical lighting conditions, an effect referred to as 'glancing light', will highlight any surface variations.

This section will assist in minimising glancing light issues and enhance the occupant's enjoyment of their premises.

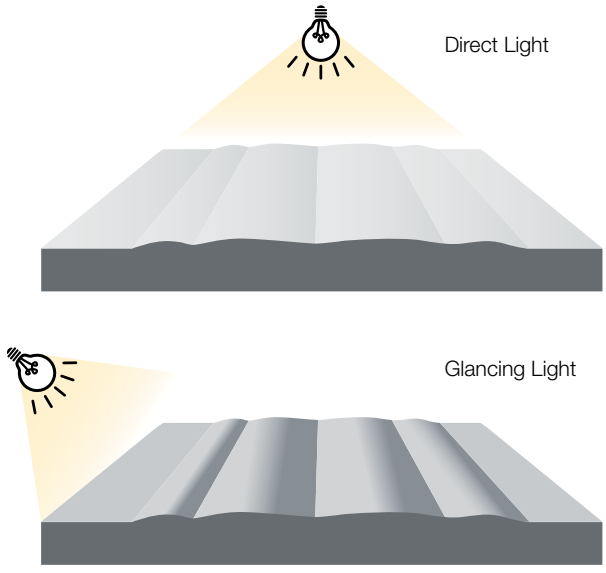
What is Glancing Light?

Glancing light (or critical light) is a condition which exists when light hits the plasterboard surface at an acute angle and casts shadows that highlight any surface irregularities. On plasterboard walls and ceilings this can make the surface look uneven and highlight the appearance of joints.

This is most commonly found in situations where there are:

- Floor to ceiling windows.
- Windows directly adjacent to walls.
- Unshaded batten holder ceiling lights.
- Ceiling mounted fluorescent lights.

FIG B4: WHAT IS GLANCING LIGHT



- Wall lights and downlights close to walls.
- Windows at the end of long corridors.
- Brightly lit rooms.
- Lights installed just below skillion/raked ceilings.
- Reflections of light from water features.

CONSIDERATIONS TO MINIMISE GLANCING LIGHT

The best time to consider potential glancing light issues is during the design phase, which allows choices to be made that can greatly reduce the impact of glancing light.

Large window areas are a popular feature of modern design and the preference for open plan living and working often results in ceilings and walls that extend through a number of different spaces. These features can lead to challenging lighting conditions for wall and ceilings surfaces.

When designing a project it is important to consider the effects of both natural and artificial light and how it will fall on the walls and ceilings across the whole day.

In particular, attention should be given to light entering the building in mornings and evenings when the sun is lower in the sky and casts elongated shadows that can highlight any surface variations in walls and ceilings.

Shading

For windows that are positioned where glancing light can be an issue, the use of external shading or vertical louvres may help to mitigate any problems. Curtains or interior blinds are also helpful in this situation.

Window Placement and Orientation

Ideally windows should not abut walls or ceilings and should be oriented away from the east and west. External reflective surfaces, such as pools or neighbouring buildings, can reflect light into the space, should also be considered as they can exacerbate the problem.

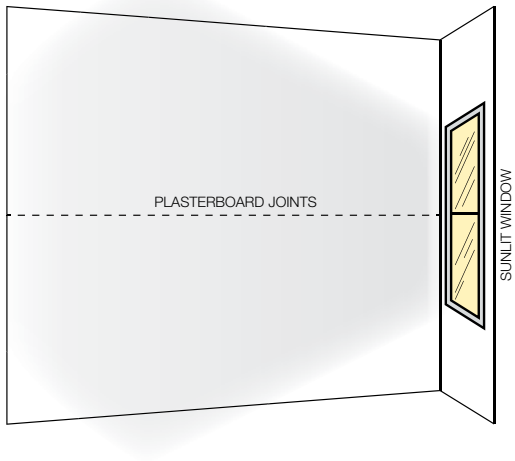
Rooms with windows in two orientations provide a more uniform natural light, and can reduce the effects of critical light.

Joint Orientation

The installation of plasterboard walls and ceilings should also be considered as there are a number of design and installation choices which can significantly impact the appearance of the surface.

Running the plasterboard so that the long joints are parallel to the direction of the light will help reduce the effects of glancing light. The use of longer sheets to reduce the number of butt joints is also beneficial.

FIG B5: JOINT ORIENTATION



Artificial & Natural Lighting

Any imperfection in a completed lining installation will be made obvious by a condition called critical lighting or glancing light, where the incident light from an artificial or natural light source is nearly parallel to the surface. Glancing light also greatly exaggerates the size of imperfections making them glaringly obvious.

The worst result is achieved by an unshaded light source located directly on a ceiling or wall where the light shines parallel to the surface.

Cases where this situation may exist include:

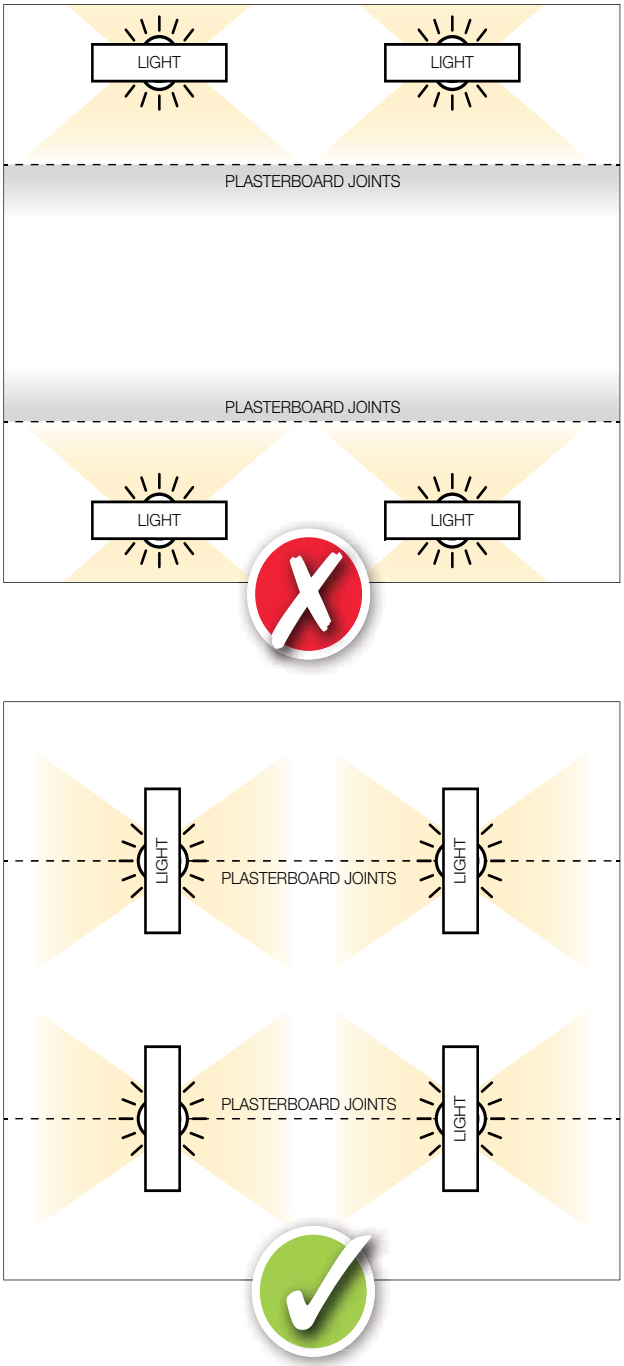
- Unshaded batten holder light fittings.
- Fluorescent lights mounted on the ceiling.
- Wall mounted up lights and downlights.

Methods to minimise glancing/critical lighting effects from artificial lighting sources

The following lighting solutions will provide diffused light and reduce the appearance of surface variations:

- Shaded batten holder light fittings.
- Ceiling mounted pendant lights.
- Recessed ceiling lights such as downlights and recessed fluorescents (although recessed lights are more likely to be associated with glare problems).
- Consider the use of more lights of lower intensity at regular spacings, ensuring lit areas overlap. This will improve ambiance and reduce the visible effects of glancing light, and minimise shadows that can occur from a single row or single light source.
- Allow a generous angle of incidence to the surface for feature lighting such as spotlights, to minimise the highlighting of imperfections.
- Do not locate a single or isolated unshaded light source close to a wall or ceiling in a space which has generally low levels of light.
- Do not use uplights, wall-washers and spotlights in areas with a smooth wall finish to eliminate light being emitted at a glancing angle to the surface.
- Preferably, locate fluorescent lights about 450mm below the ceiling as this will give a more even distribution of light.
- When installing ceiling mounted fluorescent lights it is recommended to position the light fittings over the long edge joints. Refer to the following illustration.

FIG B6: INSTALLATION OF CEILING MOUNTED FLUORESCENT LIGHT



Methods to minimise glancing/critical lighting effects from natural lighting sources

- Do not take window glazing right up to the ceiling level.
- Avoid placing windows or glass doors immediately adjacent to the end of a wall.
- Provide sun shades over the windows and glass doors.
- Recess the window to stop the sunlight reaching the wall.

APPLIED FINISH SELECTION

The chosen finish selected for walls and ceilings plays a very important role in determining the effects of glancing light.

A Level 4 finish presents the painter with a surface comprised of two different materials, namely the plasterboard paper surface and the jointing compound, which have different textures and porosity.

In order to achieve a consistent finish across these materials it is vital that a plasterboard primer sealer is applied.

AS/NZS 2311, 'Guide to the painting of buildings', requires that **a sealer plus two coats of water based paint must be applied as a minimum**. Such a system will provide a surface with minimal difference in texture and porosity.

Roller application for all coats is strongly recommended as it imparts a light texture to the surface and minimises visible differences. If spray application is used, each paint coat should be back rolled while still wet, to create a lightly textured finish, and allowed to dry completely before applying the next coat. Paint applied with a longer pile roller tends to mask imperfections better than those applied with a short pile roller.

A similar paint system is recommended for a level 5 finish to ensure the best possible result.

Paint Finishes

The choice of gloss level can also have a significant impact on the perceived quality of the surface in glancing light conditions.

A matt paint finish provides the highest level of light diffusion and helps to disguise any surface irregularities. It is recommended that a matt finish be used in areas where a higher gloss is not required for functional reasons, such as ceilings. Textured or heavy patterned finishes tend to hide imperfections.

Higher gloss levels, such as satin, semi gloss and gloss, can accentuate any minor variations in the surface and are recommended only for use over a level 5 finish.

Colour Selection

Light colours diffuse light more effectively than dark shades and reduce the effects of glancing light. In rooms where a dark colour is to be used a level 5 finish is recommended.

Wall Paper Finishes

Gyprock plasterboard walls may be finished with wall paper. A Level 4 Finish is recommended. A primer sealer should be applied to the surface prior to wall paper application. This will also assist with future removal.

Thin wall papers may still highlight imperfections in the wall surface. Textured or heavy patterned finishes tend to hide imperfections.

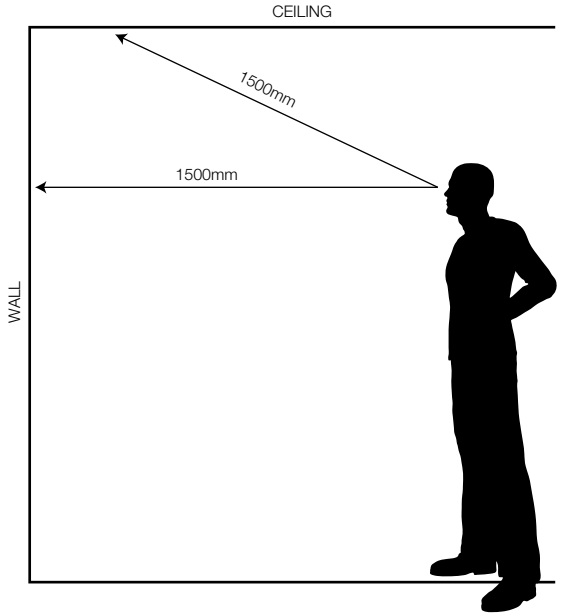
INSPECTION OF PLASTERBOARD

The Guide to Standards and Tolerances (Victorian Building Authority 2015) outlines the following standard for inspection of vertical and horizontal surfaces.

"Generally, variations in the surface colour, texture and finish of walls, ceilings, floors and roofs, and variations in glass and similar transparent materials are to be viewed where possible from a normal viewing position. A normal viewing position is looking at a distance of 1.5 m or greater (600 mm for appliances and fixtures) with the surface or material being illuminated by 'non-critical light'. 'Non-critical light' means the light that strikes the surface is diffused and is not glancing or parallel to that surface.

Slight variations in the colour and finish of materials do not always constitute a defect".

FIG B7: INSPECTION OF PLASTERBOARD



STEEL FRAMED WALL SYSTEMS

C

SECTION CONTENTS

Introduction C2

Design Considerations C2

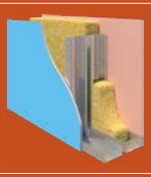
System Selection Tables

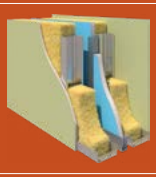

Single Stud C8


Rondo Quiet Stud C18


Resilient Mount C23


Staggered Stud C25


Double Stud C31


Party Wall/StrataWall C40


Cinema Wall C45


Column/Beam Encasement C46

INTRODUCTION

This section provides important design information and detailed selection and specification tables necessary for the correct use of CSR steel frame wall systems.

CSR Gyprock and Cemintel steel framed wall systems use zinc coated steel components with one or more layers of Gyprock plasterboard and/or Cemintel fibre cement linings fixed to one or both sides. A wide range of systems is available for both fire rated and non-fire rated applications in non-loadbearing and loadbearing situations.

These wall systems are most often used in internal non-loadbearing applications, including commercial, industrial, institutional, residential and high-rise residential construction. For external wall systems, refer to Section F, External Wall Systems in this guide.

This guide should be read in conjunction with The Red Book Book 2 Residential Installation Guide, Book 3 Commercial & Multi-Residential Installation Guide, Gyprock Shaft Wall Guide, Party Wall Guide, Cinema Wall systems Guide and Cemintel Wallboard installation Guide available for download from www.gyprock.com.au and https://www.cemintel.com.au/

DESIGN CONSIDERATIONS

DESIGNER RESPONSIBILITY

It remains the responsibility of the customer (in conjunction with their designer or engineer, when applicable) to ensure that CSR's products/systems are suitable for their chosen application for any given project. CSR recommends that a comprehensive assessment of the performance requirements be undertaken prior to selection, including in respect of project-specific matters such as, but not limited structural adequacy, seismic, acoustic, fire resistance/combustibility, thermal, condensation and weatherproofing requirements.

CSR offers online digital tools for the most updated information, including but not limited to update of products/components, inclusion of new and modified systems, to meet the requirements of the National Construction Code of Australia (NCC) and any relevant Australian Standards.

For the most up-to-date product & system performance information, visit:

CSR System Selector: https://apps.csr.com.au/systemselector/search-option

CSR Thermal Calculator: https://apps.csr.com.au/thermalcalculator

STRUCTURAL DESIGN

All walls must be designed for the applied loads. Guidance is given for the selection of Rondo studs for non-loadbearing internal walls only. For more information, refer to the appropriate design standards or handbooks, or contact Rondo Building Services Pty Ltd for design information.

Loadbearing walls, and walls subject to wind or seismic loads, shall be appropriately designed to meet the relevant Australian Standards or construction manuals.

Walls lined with Gyprock fire grade plasterboard meet the requirements of NCC2022 Clauses S6C6 [NCC2019: Spec C1.8: 3.4].

Seismic Loads

Seismic actions must be considered for building elements in accordance with the NCC. The loads and effects of earthquakes may be determined in accordance with AS 1170.4 'Earthquake Actions in Australia'. The Standard has design procedures for houses (Class 1), and to buildings (Classes 2 to 9) with importance levels 2, 3 or 4 as defined in the NCC.

Non-Loadbearing Walls

Internal wall studs are friction fitted into tracks with no clearance at the bottom and an allowance for vertical expansion at the top. Where vertical building movement is expected, a suitable gap must be specified. In this case deflection head tracks must be used.

Staggered stud walls using Rondo C studs must use an appropriate head and base to restrain the stud from twisting. Insulation may need to be cut to fit between studs (50mm max. thickness glasswool or 70mm max. thickness polyester batts).

A comprehensive set of height tables for Rondo steel frame stud walls is available in Book 3 Commercial & Multi-Residential Installation Guide. The tables include allowances for interior wind pressures, for other linings, for the addition of tile finishes, and for a greater range of stud sizes and spacings.

Loadbearing Walls

The building designer must ensure loadbearing walls have been designed:

- To resist all applied loads.
- To be in accordance with AS/NZS 4600.
- Assuming no contribution to axial strength is required of the wall linings.

Wind Loads

All linings and framing are to be designed for the appropriate wind loads. Contact CSR for loads higher than stated in this manual.

Tall residential buildings often have exterior operable doors and windows, resulting in internal walls being subject to wind pressure. In these cases, walls must be designed for the appropriate loads.

Refer to framing selection information in Wind Loads in Section B and TABLE B12 and TABLE B13 for maximum framing centres.

CONTROL JOINTS

Control joints must be installed to allow for structural movement. Allowance for movement must be made through the frame, lining and any tiles.

Vertical control joints in stud walls are to be constructed using two studs with a 15-20mm gap between.

Door frames extending from floor to ceiling constitute control joints. For doors less than ceiling height, a control joint extending from one corner of the frame may be used.

Control joints must be installed at all construction joints in the building and at the following locations:

- Non-tiled internal walls with plasterboard outer layer – at 12m maximum centres.
- Non-tiled internal walls with fibre cement outer layer – at 7.2m maximum centres.
- Tiled internal walls – at 4.8m maximum centres.
- At junctions with other building elements.
- At changes of lining material.
- At changes of structural support systems.
- At each storey or rise of studs.

FIRE RESISTANCE

The steel frame wall systems in this manual are suitable for the stated FRL when designed in accordance with the structural considerations above. Wall system fire ratings apply in both directions unless noted otherwise.

CSR fire rated steel stud wall systems have been designed with fire protection that limits the temperature of the steel framing to a maximum of 450°C at the FRL stated. Therefore, the structural design of the framing need only provide for normal temperature conditions, and no additional consideration of fire rating is required.

To protect structural steel beams and columns that are entirely within the wall, the FRL of the wall system must be at least equivalent to that required by the structural member. For example, a wall system with FRL 90/90/90, provides FRL 90/–/– for a steel column or beam within the wall.

Load-bearing steel elements such as columns that are contained within the wall. Have an FRL equivalent to the structural adequacy component of the wall.

Framing, Lining & Jointing

Steel framed walls required to have an FRL must comply with the following:

- Framing must be made from steel of up to 2.4mm BMT.
- Wall plates must be fixed to the fire rated support structure with steel fasteners such as expansion anchors and power driven fasteners. Fastener types may also be limited by seismic requirements. For fire rated wall, use anchor compliant to AS5216 such as Rondo Cert-R-Fix.
- In wet areas, Gyprock Fyrchek MR or other Gyprock moisture grade, fire resistant plasterboard must be used in lieu of Gyprock Fyrchek.
- As a minimum, systems require jointing and finishing of the outer (plasterboard or fibre cement) layer. Gyprock paper tape and a single coat finish may be used.

Caulking

To attain the specified FRL, all perimeter gaps must be filled to the specified depth with appropriate caulking material such as Gyprock Fire Mastic or CSR FireSeal. Penetrations must be installed in accordance to a proprietary tested system.

Vermiculite plaster has no capacity to accommodate building movement and may not be suitable for use as a general purpose fire rated caulking.

ACCEPTABLE VARIATIONS TO FIRE SYSTEMS

The Fire Resistance Level (FRL) of the systems detailed in this section will not be detrimentally affected by:

- Increasing the thickness of the wall.
- Increasing the cross-sectional dimensions of the framing elements.
- Decreasing the stud spacing.
- Decreasing the fixing centres of wall sheet materials.
- The inclusion of cavity insulation materials such as glasswool , rockwool and polyester provided any non-combustible requirements have been considered for the certain wall applications.
- The use of Fyrchek MR, Impactchek or EC08 range plasterboard in lieu of Fyrchek plasterboard of the same thickness.
- Additional layers of plasterboard or Cemintel fibre cement.
- Walls curved in plan with a radius of curvature no less than 3m.
- The attachment of light weight fixtures through to the framing with screws up to 10 gauge. Walls supporting loads from fixtures must be considered structurally.
- The addition of timber sheet material fixed directly to the studs may be used provided any non-combustible requirements have been considered for the certain wall applications.

COMBUSTIBILITY

Polyester insulation may NOT be selected where the system has non-combustible construction requirements.

In accordance with NCC2022 Clause C2D10 [NCC2019: C1.9], plasterboard and fibre cement sheet may be used wherever a non-combustible material is required by the Code.

STEEL BEAM & COLUMN ENCASEMENT

Additional fire protection systems are available using Gyprock Fyrchek or Glasroc F plasterboard linings. It is recommended for multi-residential and commercial construction projects where a fire rated encasement system is required for structural steel beams and columns to provide fire protection of up to 120/–/–. TABLE C2 and TABLE C3 provides the maximum section factor for given limiting steel temperatures when using Glasroc F to protect structural steel members used for Columns and Beams respectively. TABLE C4 provides the maximum section factor for given limiting steel temperatures when using Fyrchek and other CSR linings to protect structural steel members used for Columns and Beams. These values are required to calculate the FRL in accordance with AS4100:2020 clause 12.5.

Where the lining method creates void spaces to the columns, the spaces may be packed solid to a height of 1.2m, to prevent indenting. Surface protection from vehicle, materials or equipment damage with steel cladding or other suitable material may also be required as per NCC2022 Clause C2D9 [NCC2019:C1.8].

It remains the responsibility of the project engineer and certifier to ensure that the CSR system is is suitable for the chosen application and steel section type and size for any given project. Please note that the encasement systems in Redbook are only suitable for internal applications.

Refer to Redbook 3 Commercial & Multi-Residential Installation Guide and Glasroc F encasement Manual for installation instructions on Fyrchek and Glasroc F linings respectively.

TABLE C1: Gyprock Steel Beam/Column Protection - FRL Calculation Summary

Configuration	Beam / Column	Designation	Section Factor - Commonly Used Steel Geometry (m^{-1})	13mm or 16mm Fyrchek	30mm Glasroc F
4 sided protection	Hollow section	CHS	50-500	TABLE C4	TABLE C2 or TABLE C3
4 or 3 sided protection	Hollow section	RHS/SHS	50-500		TABLE C2 or TABLE C3
	I-section	UC/UB/WB/WC	50-260		TABLE C2 or TABLE C3
	C-section	PFC	80-300		N/A
2 sided protection	Hollow section	RHS/SHS	40-320		N/A
	I-section	UC/UB/WB/WC	30-170		N/A
	C-section	PFC	30-190		N/A

TABLE C2: Columns for Glasroc F

limiting Temperature °c	Maximum Selection Factor Hp/A m^{-1}		
750	260	260	260
700	260	260	260
650	260	260	260
620	260	260	215
600	260	260	191
550	260	260	164
500	260	260	134
450	260	260	117
400	260	242	91
350	260	158	70
	60	90	120
	Structural Adequacy min.		

TABLE C3: Beams for Glasroc F

limiting Temperature °c	Maximum Selection Factor Hp/A m^{-1}			
750	260	260	163	62
700	260	260	141	58
650	260	260	123	54
620	260	260	112	53
600	260	260	110	52
550	260	260	110	52
500	260	260	82	N/A
450	260	156	58	N/A
400	260	127	N/A	N/A
350	260	90	N/A	N/A
	30	60	90	120
	Structural Adequacy min.			

TABLE C4: Columns and Beams for Fyrchek

limiting Temperature °c	Maximum Selection Factor A/V or Hp/A m^{-1}				
750	240	260	260	240	260
700	240	260	260	240	260
650	240	260	260	240	260
620	240	260	260	240	260
600	240	260	260	240	260
550	240	260	260	240	260
500	234	260	260	N/A	260
450	201	260	260	N/A	260
400	168	260	260	N/A	260
<300	N/A	N/A	N/A	N/A	N/A
	30/–/– 1 x 13mm	60/–/– 2 x 13mm	90/–/– 2 x 16mm	120/–/– 3 x 13mm	120/–/– 3 x 16mm or 2 x 16mm + 1 x 13mm
	Structural Adequacy min.				

ACOUSTIC PERFORMANCE

The performance of the as-built system may be affected by sound flanking, the effectiveness of workmanship and caulking, the presence and treatment of penetrations, and the inclusion of structural elements and bridging items. Refer to appropriate information on addressing these issues detailed in Section B, Design Considerations and Section J, Flanking Paths in this guide.

General Notes.

- The acoustic performance of systems may be adversely affected by the use of studs with higher BMT or closer spacings than those specified, or by the use of additional linings fixed with battens.
- In non-fire rated systems, to attain the stated acoustic performance, use Gyprock Wet Area Acrylic Sealant, Gyprock Fire Mastic or CSR FireSeal.

The acoustic performance of CSR wall systems is not adversely affected by:

- The substitution of Gyprock Standard plasterboard by 13mm Aquachek.
- Changing the order of lining sheets that are fixed direct to framing.
- The use of Fyrchek MR, Impactchek, EC08 Extreme/ Complete plasterboard in lieu of Fyrchek plasterboard of the same thickness.

INSTALLATION

FRAMING

CSR recommends steel framing elements manufactured by Rondo Building Services Pty Ltd. Other steel framing elements of equivalent performance may be used, however, it is the responsibility of the manufacturer of the component to substantiate equivalent performance.

For detailed information on wall junctions, intersections, frame attachments and penetrations, refer to the Red Book Installation Guides.

Gyprock Shaft Wall, Party Wall and Cinema Wall systems have additional installation details. Refer to the relevant installation guide, available for download from www.gyprock.com.au.

PLASTERBOARD & WALLBOARD FIXING

Interior walls may be built to achieve a particular Level of Finish as defined in AS/NZS 2589. The Level of Finish specified can have requirements for frame alignment, jointing and back blocking methods, and sheet orientation. Gyprock plasterboard and Cemintel Wallboard may be installed vertically or horizontally, although for some Levels of Finish horizontal sheeting must be used.

Walls lined with Gyprock plasterboard or Cemintel Wallboard may be finished with tiles. Sheets used as a substrate for tiles must be fastened with screws only. Adhesive/fastener fixing is not acceptable.

For detailed jointing and finishing information, refer to The Red Book Installation Guides and the Cemintel Wet Area Linings Manual.

CURVED WALLS

Gyprock Flexible Plasterboard has a thickness or 6.5mm, and has been specifically designed for curved wall applications. Installed in two layers, it is particularly effective for small radius situations (less than 900mm) which cannot be accomplished with other Gyprock plasterboards.

Fire rated walls MUST NOT be curved to a radius of less than 3000mm.

For additional information on curved walls, refer to The Red Book 2 Residential Installation Guide or Book 3 Commercial & Multi-Residential Installation Guide

STEEL COMPONENT SELECTION

CSR Gyprock recommends steel components manufactured by Rondo Building Services Pty Ltd.

Additional information on steel building components can be obtained from Rondo, telephone 1300-367-663.

Other steel components of equivalent performance may be used, however it is the responsibility of the manufacturer of the steel component to substantiate equivalent performance to the recommended component.

GYPROCK PARTY WALL SYSTEMS

Gyprock Party Wall comprises a double frame wall with a 25mm Shaft Liner central fire barrier between the frames. The basis of the fire performance is the central fire barrier that provides the primary fire resistance, with the frame lining (or cavity insulations) on each side contributing to some extent. This allows the wall linings to be installed as for normal decorative linings, and to incorporate penetrations.

The basis of the acoustic performance is the double cavity system that provides effective sound transmission performance, as well as impact isolation. Insulation in both cavities is used to deliver a range of performance levels, including allowance for certain penetrations and services that may occur.

Wall clips must be installed only at the periphery of the wall, specifically within the designated floor and ceiling zones as illustrated in the detail drawings. Installing additional clips within the vertical span of the wall (storey height) will compromise the wall's acoustic performance and will result in non-compliance with the requirements for discontinuous construction.

TABLE C5 and TABLE C6 provides the overall wall height and lateral support (clip spacing) limitations for stud frames lined with plasterboard or fibre cement linings. The targeted FRL in the system table has considered the stated overall wall height and lateral support (clip spacing) limitations determined in accordance with AS1530.4.

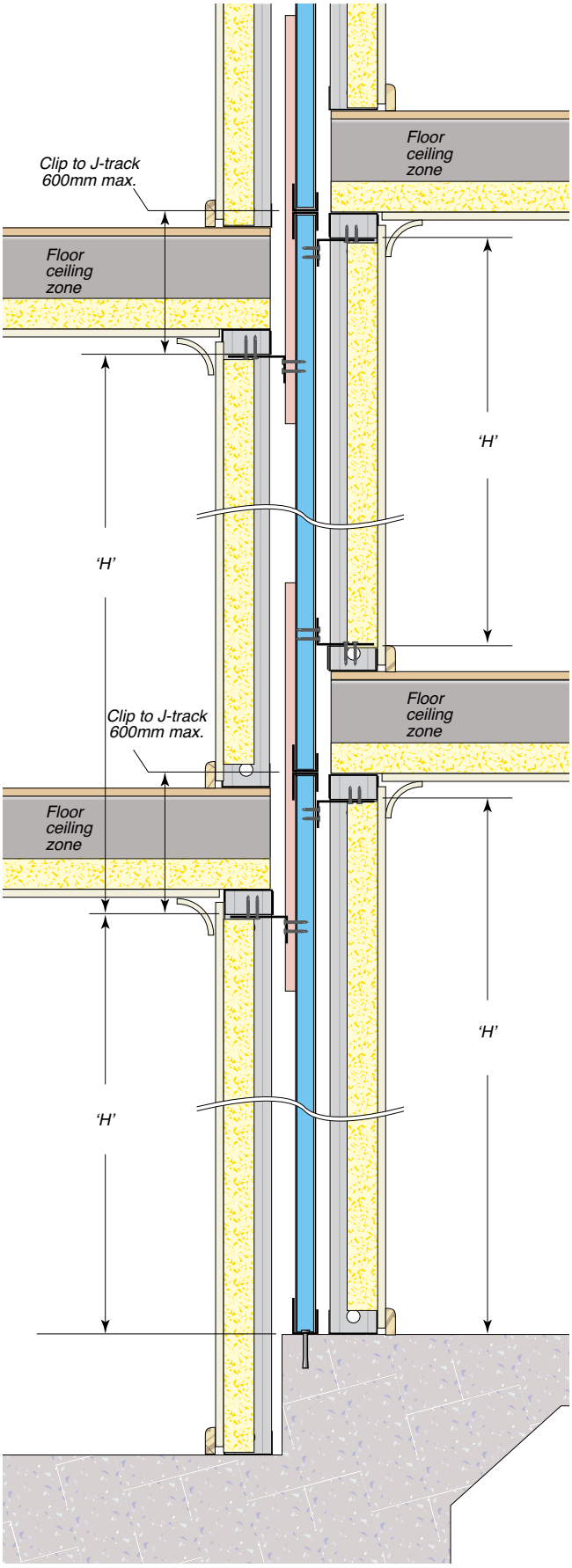
TABLE C5: Party Wall lateral support (clip spacing) locations for plasterboard linings on both sides

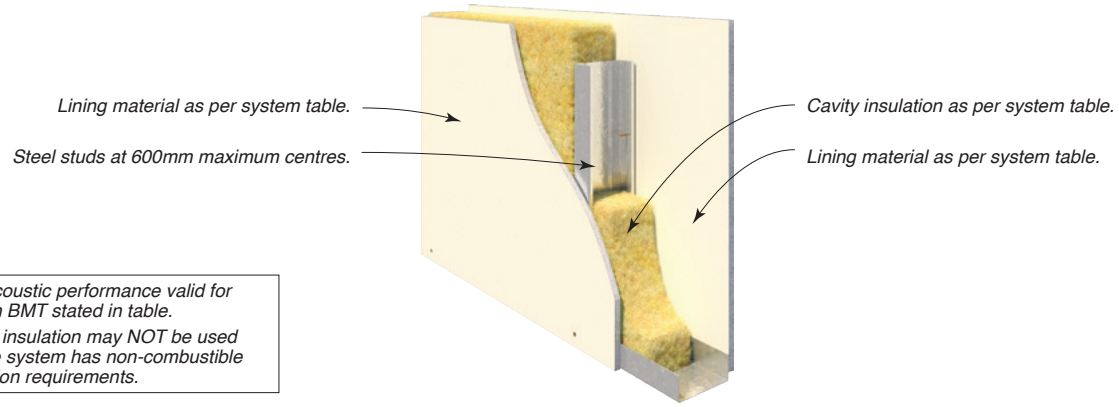
Overall Wall Height	'H'
Up to 14m	Max. 2.6m
Up to 12m	Max. 2.8m
Up to 10.8m	Max. 3.0m
Up to 9m	Max. 3.4m

TABLE C6: Party Wall lateral support (clip spacing) locations for fibre cement linings on one side or both sides

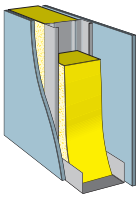
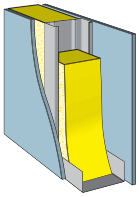
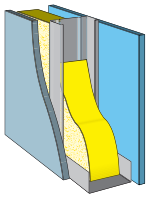
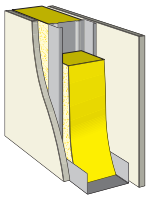
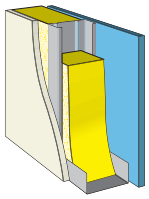
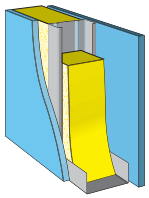
Overall Wall Height	'H'
Up to 7m	Max. 2.6m
Up to 6m	Max. 2.8m
Up to 5m	Max. 3.0m

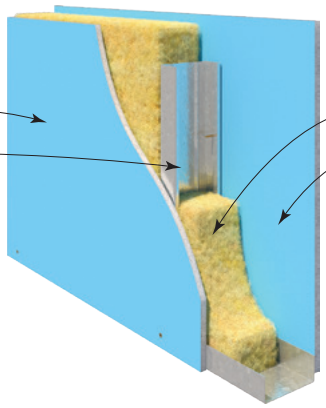
FIG C1: GYPROCK PARTY WALL HIGHT LIMITATIONS





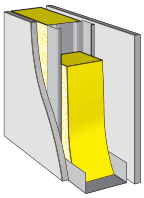
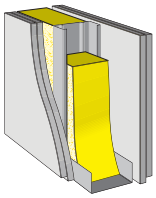
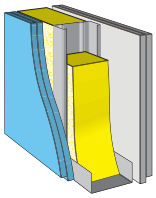
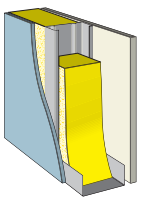
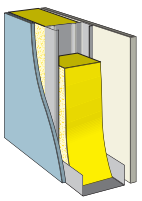
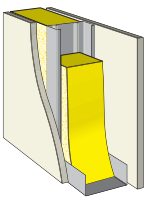
NOTE: Acoustic performance valid for studs with BMT stated in table.
Polyester insulation may NOT be used where the system has non-combustible construction requirements.

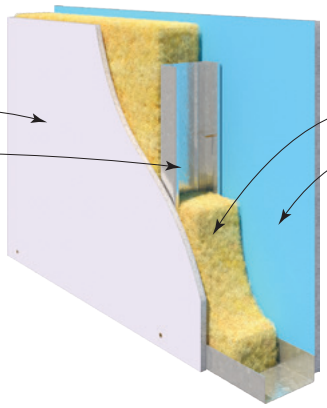
SYSTEM SPECIFICATION Refer to Gyprock Red Book 3 & Cemintel Wallboard Guide			ACOUSTIC REPORT: PKA Predictor V16					
FRL Report	SYSTEM Nº	WALL LININGS	STUD DEPTH mm	51	64	76	92	150
			STUD BMT mm	0.50	0.50	0.55	0.55	0.75
			CAVITY INFILL (Refer to TABLE B6)	R_w / R_w+C_{tr}				
– / – / –	**CSR 1000** 	BOTH SIDES • 1 x 6mm CeminSeal Wallboard.	(a) Nil	32/25	34/27	35/28	36/29	38/31
			(c) 75 Acoustigard 11kg	–	44/35	44/35	45/36	46/37
			(f) 50 Acoustigard 14kg	41/32	43/34	44/35	45/36	46/37
			(g) 70 Soundscreen 2.0	–	–	45/35	46/36	47/37
			(h) 50 MAB Polyester 11kg	38/30	40/32	41/33	42/34	43/35
			Wall Thickness mm	63	76	88	104	162
– / – / –	**CSR 1002** 	BOTH SIDES • 1 x 9mm CeminSeal Wallboard.	(a) Nil	37/30	38/31	39/32	40/33	42/36
			(c) 75 Acoustigard 11kg	–	48/39	48/39	49/40	50/42
			(f) 50 Acoustigard 14kg	46/37	47/38	48/39	49/40	50/42
			(g) 70 Soundscreen 2.0	–	–	49/39	50/40	51/42
			(h) 50 MAB Polyester 11kg	43/35	44/36	45/37	46/38	47/40
			Wall Thickness mm	69	82	94	110	168
– / – / –	**CSR 1005** 	SIDE ONE • 1 x 6mm CeminSeal Wallboard. SIDE TWO • 1 x 10mm Gyprock Aquachek Plasterboard.	(a) Nil	31/23	32/25	34/27	35/28	37/30
			(c) 75 Acoustigard 11kg	–	42/33	43/34	44/35	45/36
			(f) 50 Acoustigard 14kg	40/30	41/32	43/34	44/35	45/36
			(g) 70 Soundscreen 2.0	–	–	44/34	45/35	46/36
			(h) 50 MAB Polyester 11kg	37/28	38/30	40/32	41/33	42/34
			Wall Thickness mm	67	80	92	108	166
– / – / –	**CSR 1008** 	BOTH SIDES • 1 x 10mm Gyprock Plus Plasterboard.	(a) Nil	28/20	29/21	30/22	30/23	33/26
			(c) 75 Acoustigard 11kg	–	39/29	39/29	39/30	41/32
			(f) 50 Acoustigard 14kg	37/27	38/28	39/29	39/30	41/32
			(g) 70 Soundscreen 2.0	–	–	40/29	40/30	42/32
			(h) 75 MAB Polyester 14kg	–	39/29	39/29	39/30	41/32
			Wall Thickness mm	71	84	96	112	170
– / – / –	**CSR 1009** 	SIDE ONE • 1 x 10mm Gyprock Plus Plasterboard. SIDE TWO • 1 x 10mm Gyprock Aquachek Plasterboard.	(a) Nil	29/21	30/22	31/23	32/25	35/28
			(c) 75 Acoustigard 11kg	–	40/30	40/30	41/32	43/34
			(f) 50 Acoustigard 14kg	38/28	39/29	40/30	41/32	43/34
			(g) 70 Soundscreen 2.0	–	–	41/30	42/32	44/34
			(h) 75 MAB Polyester 14kg	–	40/30	40/30	41/32	43/34
			Wall Thickness mm	71	84	96	112	170
– / – / –	**CSR 1011** 	BOTH SIDES • 1 x 10mm Gyprock Aquachek Plasterboard.	(a) Nil	30/22	31/24	32/25	34/27	36/29
			(c) 75 Acoustigard 11kg	–	41/32	41/32	43/34	44/35
			(f) 50 Acoustigard 14kg	39/29	40/31	41/32	43/34	44/35
			(g) 70 Soundscreen 2.0	–	–	42/32	44/34	45/35
			(h) 75 MAB Polyester 14kg	–	41/32	41/32	43/34	44/35
			Wall Thickness mm	71	84	96	112	170



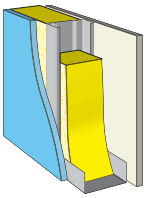
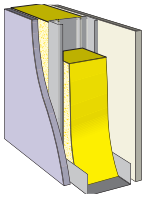
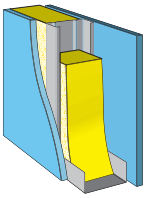
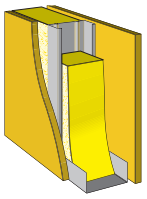
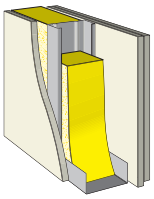
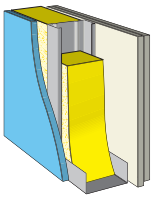
NOTE: Acoustic performance valid for studs with BMT stated in table.

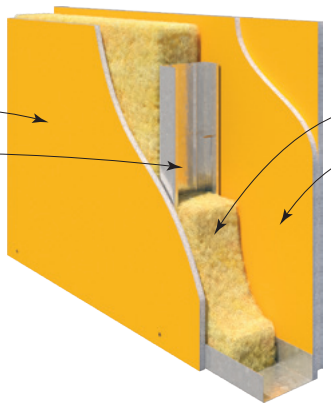
Polyester insulation may NOT be used where the system has non-combustible construction requirements.

SYSTEM SPECIFICATION Refer to Gyprock Red Book 3 & Cemintel Wallboard Guide			ACOUSTIC REPORT: PKA Predictor V16					
			STUD DEPTH mm	51	64	76	92	150
			STUD BMT mm	0.50	0.50	0.55	0.55	0.75
FRL Report	SYSTEM Nº	WALL LININGS	CAVITY INFILL (Refer to TABLE B6)	R_w / R_w+C_{tr}				
– / – / –	CSR 10138 	BOTH SIDES • 1 x 10mm Gyprock HD Plasterboard.	(a) Nil	32/24	33/26	34/27	35/28	37/30
			(b) 75 Acoustigard 11kg	–	43/34	43/34	44/35	45/36
			(c) 50 MAB Polyester 11kg	38/29	39/31	40/32	41/33	42/34
			(d) 50 Acoustigard 14kg	41/31	42/33	43/34	44/35	45/36
			(e) 70 Soundscreen 2.0	–	–	44/34	45/35	46/36
			Wall Thickness mm	71	84	96	112	170
– / – / –	CSR 10139 	BOTH SIDES • 2 x 10mm Gyprock HD Plasterboard.	(a) Nil	41/34	43/36	43/36	45/39	46/40
			(b) 75 Acoustigard 11kg	–	51/42	50/41	52/44	52/44
			(c) 50 MAB Polyester 11kg	46/38	48/40	49/41	50/43	51/44
			(d) 50 Acoustigard 14kg	48/39	50/41	50/41	52/44	52/44
			(e) 70 Soundscreen 2.0	–	–	51/41	53/44	53/44
			Wall Thickness mm	91	104	116	132	190
– / – / –	CSR 10140 	SIDE ONE • 2 x 13mm Gyprock Aquachek Plasterboard. SIDE TWO • 2 x 10mm Gyprock HD Plasterboard.	(a) Nil	42/35	43/36	44/37	46/40	47/41
			(b) 75 Acoustigard 11kg	–	51/42	51/42	53/45	53/45
			(c) 50 MAB Polyester 11kg	46/38	47/39	48/40	50/43	50/43
			(d) 50 Acoustigard 14kg	49/40	50/41	51/42	53/45	53/45
			(e) 70 Soundscreen 2.0	–	–	52/42	54/45	54/45
			Wall Thickness mm	97	110	122	138	196
– / – / –	CSR 1025 	SIDE ONE • 1 x 6mm CeminSeal Wallboard. SIDE TWO • 1 x 13mm Gyprock Standard Plasterboard.	(a) Nil	32/24	33/26	35/28	35/28	38/31
			(c) 75 Acoustigard 11kg	–	43/34	44/35	44/35	46/37
			(f) 50 Acoustigard 14kg	41/31	42/33	44/35	44/35	46/37
			(g) 70 Soundscreen 2.0	–	–	45/35	45/35	47/37
			(h) 75 MAB Polyester 14kg	–	43/34	44/35	44/35	46/37
			Wall Thickness mm	70	83	95	111	169
– / – / –	CSR 1027 	SIDE ONE • 1 x 9mm CeminSeal Wallboard. SIDE TWO • 1 x 13mm Gyprock Standard Plasterboard.	(a) Nil	34/26	36/29	37/30	38/31	41/34
			(c) 75 Acoustigard 11kg	–	46/37	46/37	47/38	49/40
			(f) 50 Acoustigard 14kg	43/33	45/36	46/37	47/38	49/40
			(g) 70 Soundscreen 2.0	–	–	47/37	48/38	50/40
			(h) 75 MAB Polyester 14kg	–	46/37	46/37	47/38	49/40
			Wall Thickness mm	73	86	98	114	172
– / – / –	CSR 1030 	BOTH SIDES • 1 x 13mm Gyprock Standard Plasterboard.	(a) Nil	32/24	33/26	34/27	35/28	37/30
			(c) 75 Acoustigard 11kg	–	43/34	43/34	44/35	45/36
			(f) 50 Acoustigard 14kg	41/31	42/33	43/34	44/35	45/36
			(g) 70 Soundscreen 2.0	–	–	44/34	45/35	46/36
			(h) 50 MAB Polyester 11kg	38/29	39/31	40/32	41/33	42/34
			Wall Thickness mm	77	90	102	118	176



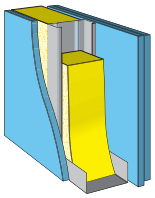
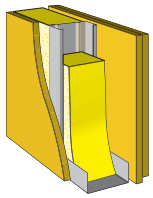
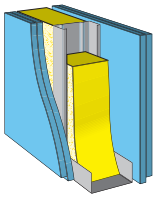
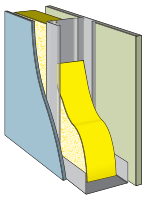
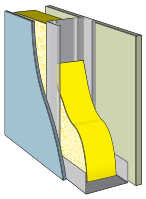
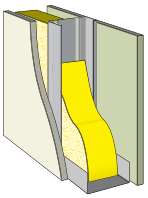
NOTE: Acoustic performance valid for studs with BMT stated in table.
Polyester insulation may NOT be used where the system has non-combustible construction requirements.

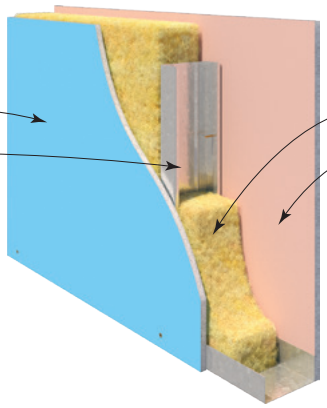
SYSTEM SPECIFICATION Refer to Gyprock Red Book 3 & Cemintel Wallboard Guide			ACOUSTIC REPORT: PKA Predictor V16					
			STUD DEPTH mm	51	64	76	92	150
			STUD BMT mm	0.50	0.50	0.55	0.55	0.75
FRL Report	SYSTEM Nº	WALL LININGS	CAVITY INFILL (Refer to TABLE B6)	R_w / R_w+C_{tr}				
– / – / –	CSR 1032 	SIDE ONE • 1 x 13mm Gyprock Aquachek Plasterboard. SIDE TWO • 1 x 13mm Gyprock Standard Plasterboard.	(a) Nil	32/24	34/27	35/28	36/29	38/31
			(c) 75 Acoustigard 11kg	–	44/35	44/35	45/36	46/37
			(f) 50 Acoustigard 14kg	41/31	43/34	44/35	45/36	46/37
			(g) 70 Soundscreen 2.0	–	–	45/35	46/36	47/37
			(h) 50 MAB Polyester 11kg	38/29	40/32	41/33	42/34	43/35
			Wall Thickness mm	77	90	102	118	176
– / – / –	CSR 1033 	SIDE ONE • 1 x 13mm Gyprock Impactchek Plasterboard. SIDE TWO • 1 x 13mm Gyprock Standard Plasterboard.	(a) Nil	33/25	35/28	35/28	36/29	38/31
			(c) 75 Acoustigard 11kg	–	45/36	44/35	45/36	46/37
			(f) 50 Acoustigard 14kg	42/32	44/35	44/35	45/36	46/37
			(g) 70 Soundscreen 2.0	–	–	45/35	46/36	47/37
			(h) 50 MAB Polyester 11kg	39/30	41/33	41/33	42/34	43/35
			Wall Thickness mm	77	90	102	118	176
– / – / –	CSR 1035 	BOTH SIDES • 1 x 13mm Gyprock Aquachek Plasterboard.	(a) Nil	33/26	35/28	36/29	37/30	39/33
			(c) 75 Acoustigard 11kg	–	45/36	45/36	46/37	47/39
			(f) 50 Acoustigard 14kg	42/33	44/35	45/36	46/37	47/39
			(g) 70 Soundscreen 2.0	–	–	46/36	47/37	48/39
			(h) 50 MAB Polyester 11kg	39/31	41/33	42/34	43/35	44/37
			Wall Thickness mm	77	90	102	118	176
– / – / –	CSR 1037 	BOTH SIDES • 1 x 13mm Gyprock Soundchek Plasterboard.	(a) Nil	35/28	36/29	38/31	39/32	41/35
			(c) 75 Acoustigard 11kg	–	46/37	47/38	48/39	49/41
			(f) 50 Acoustigard 14kg	44/35	45/36	47/38	48/39	49/41
			(g) 70 Soundscreen 2.0	–	–	48/38	49/39	50/41
			(h) 75 MAB Polyester 14kg	42/33	43/34	45/36	46/37	47/39
			Wall Thickness mm	77	90	102	118	176
– / – / –	CSR 1040 	SIDE ONE • 1 x 13mm Gyprock Standard Plasterboard. SIDE TWO • 2 x 13mm Gyprock Standard Plasterboard.	(a) Nil	37/29	38/31	39/32	41/34	43/36
			(c) 75 Acoustigard 11kg	–	47/38	47/38	49/40	50/41
			(f) 50 Acoustigard 14kg	45/35	46/37	47/38	49/40	50/41
			(g) 70 Soundscreen 2.0	–	–	48/38	50/40	51/41
			(h) 75 MAB Polyester 14kg	43/33	44/35	45/36	47/38	48/39
			Wall Thickness mm	90	103	115	131	189
– / – / –	CSR 1042 	SIDE ONE • 1 x 13mm Gyprock Aquachek Plasterboard. SIDE TWO • 2 x 13mm Gyprock Standard Plasterboard.	(a) Nil	38/31	39/32	40/33	41/34	43/37
			(c) 75 Acoustigard 11kg	–	48/39	48/39	49/40	50/42
			(f) 50 Acoustigard 14kg	46/37	47/38	48/39	49/40	50/42
			(g) 70 Soundscreen 2.0	–	–	49/39	50/40	51/42
			(h) 75 MAB Polyester 14kg	44/35	45/36	46/37	47/38	48/40
			Wall Thickness mm	90	103	115	131	189



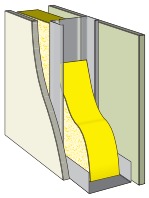
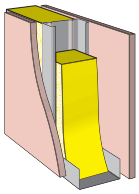
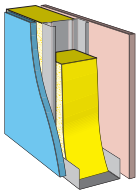
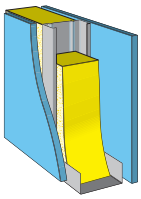
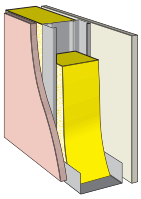
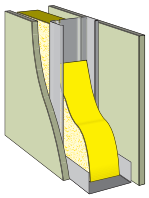
NOTE: Acoustic performance valid for studs with BMT stated in table.

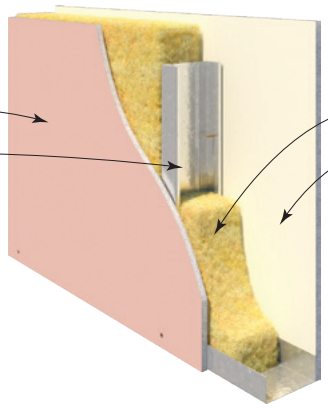
Polyester insulation may NOT be used where the system has non-combustible construction requirements.

SYSTEM SPECIFICATION Refer to Gyprock Red Book 3 & Cemintel Wallboard Guide			ACOUSTIC REPORT: PKA Predictor V16					
FRL Report	SYSTEM Nº	WALL LININGS	STUD DEPTH mm	51	64	76	92	150
			STUD BMT mm	0.50	0.50	0.55	0.55	0.75
			CAVITY INFILL (Refer to TABLE B6)	R_w / R_w+C_{tr}				
– / – / –	**CSR 1044** 	SIDE ONE • 1 x 13mm Gyprock Aquachek Plasterboard. SIDE TWO • 2 x 13mm Gyprock Aquachek Plasterboard.	(a) Nil	38/31	39/32	41/34	42/35	44/38
			(c) 75 Acoustigard 11kg	–	48/39	49/40	50/41	51/43
			(f) 50 Acoustigard 14kg	46/37	47/38	49/40	50/41	51/43
			(g) 70 Soundscreen 2.0	–	–	50/40	51/41	52/43
			(h) 75 MAB Polyester 14kg	44/35	45/36	47/38	48/39	49/41
			Wall Thickness mm	90	103	115	131	189
– / – / –	**CSR 1045** 	SIDE ONE • 1 x 13mm Gyprock Soundchek Plasterboard. SIDE TWO • 2 x 13mm Gyprock Soundchek Plasterboard.	(a) Nil	40/33	42/35	43/36	44/37	46/40
			(c) 75 Acoustigard 11kg	–	51/42	51/42	52/43	54/46
			(f) 50 Acoustigard 14kg	48/39	50/41	51/42	52/43	53/45
			(g) 70 Soundscreen 2.0	–	–	52/42	53/43	54/45
			(h) 50 MAB Polyester 11kg	45/37	47/39	48/40	49/41	50/43
			Wall Thickness mm	90	103	115	131	189
– / – / –	**CSR 1048** 	BOTH SIDES • 2 x 13mm Gyprock Aquachek Plasterboard.	(a) Nil	43/36	44/37	46/40	47/41	48/42
			(c) 75 Acoustigard 11kg	–	52/43	53/45	54/46	54/46
			(f) 50 Acoustigard 14kg	50/41	51/42	53/45	54/46	54/46
			(g) 70 Soundscreen 2.0	–	–	54/45	55/46	55/46
			(h) 50 MAB Polyester 11kg	47/39	48/40	50/43	51/44	51/44
			Wall Thickness mm	103	116	128	144	202
– / – / –	**CSR 3006** 	SIDE ONE • 1 x 6mm CeminSeal Wallboard. SIDE TWO • 1 x 13mm Gyprock EC08 Complete.	(a) Nil	34/27	36/29	36/29	38/31	40/33
			(c) 75 Acoustigard 11kg	–	46/37	45/36	47/38	48/39
			(e) 88 Soundscreen 2.5	–	–	48/39	49/40	51/42
			(f) 50 Acoustigard 14kg	43/34	45/36	45/36	47/38	48/39
			(h) 50 MAB Polyester 11kg	40/32	42/34	42/34	44/36	45/37
			Wall Thickness mm	70	83	95	111	169
– / – / –	**CSR 10000** 	SIDE ONE • 1 x 6mm CeminSeal Wallboard. SIDE TWO • 1 x 13mm Gyprock EC08 Extreme.	(a) Nil	34/27	36/29	36/29	38/31	40/33
			(b) 75 Acoustigard 11kg	–	46/37	45/36	47/38	48/39
			(d) 88 Soundscreen 2.5	–	–	48/39	49/40	51/42
			(e) 50 Acoustigard 14kg	43/34	45/36	45/36	47/38	48/39
			(f) 50 MAB Polyester 11kg	40/32	42/34	42/34	44/36	45/37
			Wall Thickness mm	70	83	95	111	169
– / – / –	**CSR 3011** 	SIDE ONE • 1 x 13mm Gyprock Standard Plasterboard. SIDE TWO • 1 x 13mm Gyprock EC08 Complete.	(a) Nil	33/25	35/28	36/29	38/31	40/33
			(c) 75 Acoustigard 11kg	–	45/36	45/36	47/38	48/39
			(e) 88 Soundscreen 2.5	–	–	48/39	49/40	51/42
			(f) 50 Acoustigard 14kg	42/32	44/35	45/36	47/38	48/39
			(h) 50 MAB Polyester 11kg	39/30	41/33	42/34	44/36	44/36
			Wall Thickness mm	77	90	102	118	176



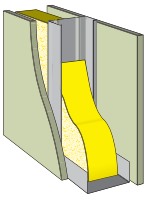
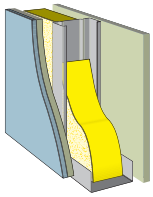
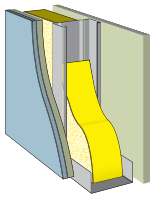
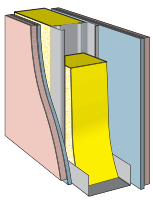
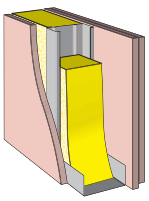
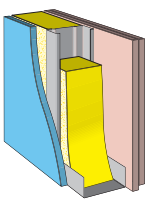
NOTE: Acoustic performance valid for studs with BMT stated in table.
Polyester insulation may NOT be used where the system has non-combustible construction requirements.

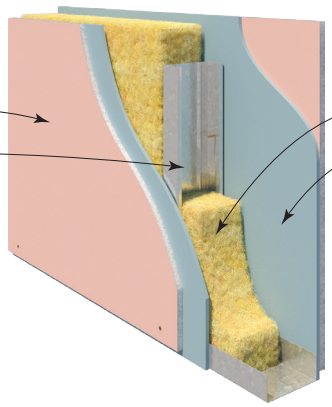
SYSTEM SPECIFICATION Refer to Gyprock Red Book 3 & Cemintel Wallboard Guide			ACOUSTIC REPORT: PKA Predictor V16					
FRL Report	SYSTEM Nº	WALL LININGS	STUD DEPTH mm	51	64	76	92	150
			STUD BMT mm	0.50	0.50	0.55	0.55	0.75
			CAVITY INFILL (Refer to TABLE B6)	R_w / R_w+C_{tr}				
– / – / –	CSR 10001 	SIDE ONE • 1 x 13mm Gyprock Standard Plasterboard. SIDE TWO • 1 x 13mm Gyprock EC08 Extreme.	(a) Nil	33/25	35/28	36/29	38/31	40/33
			(b) 75 Acoustigard 11kg	–	45/36	45/36	47/38	48/39
			(d) 88 Soundscreen 2.5	–	–	48/39	49/40	51/42
			(e) 50 Acoustigard 14kg	42/32	44/35	45/36	47/38	48/39
			(f) 50 MAB Polyester 11kg	39/30	41/33	42/34	44/36	44/36
			Wall Thickness mm	77	90	102	118	176
– /60/60 30/30/30 (from both sides) FC 12946	CSR 1050 	BOTH SIDES • 1 x 13mm Gyprock Fyrchek Plasterboard.	(a) Nil	34/27	36/29	36/29	38/31	40/34
			(c) 75 Acoustigard 11kg	–	46/37	45/36	47/38	48/40
			(f) 50 Acoustigard 14kg	43/34	45/36	45/36	47/38	48/40
			(g) 70 Soundscreen 2.0	–	–	46/36	48/38	49/40
			(h) 75 MAB Polyester 14kg	–	46/37	45/36	47/38	48/40
			Wall Thickness mm	77	90	102	118	176
– /60/60 30/30/30 (from both sides) FC 12946	CSR 1051 	SIDE ONE • 1 x 13mm Gyprock Fyrchek MR Plasterboard. SIDE TWO • 1 x 13mm Gyprock Fyrchek Plasterboard.	(a) Nil	34/27	36/29	36/29	38/31	40/34
			(c) 75 Acoustigard 11kg	–	46/37	45/36	47/38	48/40
			(f) 50 Acoustigard 14kg	43/34	45/36	45/36	47/38	48/40
			(g) 70 Soundscreen 2.0	–	–	46/36	48/38	49/40
			(h) 75 MAB Polyester 14kg	–	46/37	45/36	47/38	48/40
			Wall Thickness mm	77	90	102	118	176
– /60/60 30/30/30 (from both sides) FC 12946	CSR 1052 	BOTH SIDES • 1 x 13mm Gyprock Fyrchek MR Plasterboard.	(a) Nil	34/27	36/29	36/29	38/31	40/34
			(c) 75 Acoustigard 11kg	–	46/37	45/36	47/38	48/40
			(f) 50 Acoustigard 14kg	43/34	45/36	45/36	47/38	48/40
			(g) 70 Soundscreen 2.0	–	–	46/36	48/38	49/40
			(h) 75 MAB Polyester 14kg	–	46/37	45/36	47/38	48/40
			Wall Thickness mm	77	90	102	118	176
– /60/60 30/30/30 (from Fyrchek lined side only) FC 12946	CSR 1055 	SIDE ONE • 1 x 16mm Gyprock Fyrchek Plasterboard. SIDE TWO • 1 x 13mm Gyprock Standard Plasterboard.	(a) Nil	33/25	35/28	35/28	37/30	39/32
			(c) 75 Acoustigard 11kg	–	45/36	44/35	46/37	47/38
			(f) 50 Acoustigard 14kg	42/32	44/35	44/35	46/37	47/38
			(g) 70 Soundscreen 2.0	–	–	45/35	47/37	48/38
			(h) 75 MAB Polyester 14kg	39/30	41/33	41/33	43/35	44/36
			Wall Thickness mm	80	93	105	121	179
– /60/60 30/30/30 (from both sides) FC 12946	CSR 3017 	BOTH SIDES • 1 x 13mm Gyprock EC08 Complete.	(a) Nil	36/29	37/30	39/32	40/33	42/36
			(c) 75 Acoustigard 11kg	–	47/38	48/39	49/40	50/42
			(e) 88 Soundscreen 2.5	–	–	51/42	51/42	53/45
			(f) 50 Acoustigard 14kg	45/36	46/37	48/39	49/40	50/42
			(h) 50 MAB Polyester 11kg	42/34	43/35	45/37	46/38	47/40
			Wall Thickness mm	77	90	102	118	176



NOTE: Acoustic performance valid for studs with BMT stated in table.

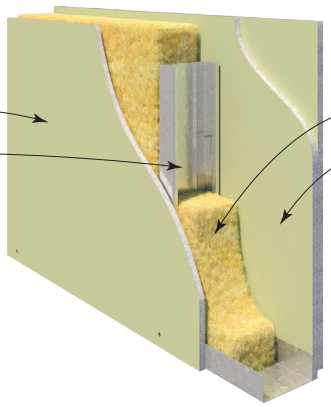
Polyester insulation may NOT be used where the system has non-combustible construction requirements.

SYSTEM SPECIFICATION Refer to Gyprock Red Book 3 & Cemintel Wallboard Guide			ACOUSTIC REPORT: PKA Predictor V16					
			STUD DEPTH mm	51	64	76	92	150
			STUD BMT mm	0.50	0.50	0.55	0.55	0.75
FRL Report	SYSTEM Nº	WALL LININGS	CAVITY INFILL (Refer to TABLE B6)	R_w / R_w+C_{tr}				
– /60/60 30/30/30 (from both sides) FC 12946	CSR 10002 	BOTH SIDES • 1 x 13mm Gyprock EC08 Extreme.	(a) Nil	36/29	37/30	39/32	40/33	42/36
			(b) 75 Acoustigard 11kg	–	47/38	48/39	49/40	50/42
			(d) 88 Soundscreen 2.5	–	–	51/42	51/42	53/45
			(e) 50 Acoustigard 14kg	45/36	46/37	48/39	49/40	50/42
			(f) 50 MAB Polyester 11kg	42/34	43/35	45/37	46/38	47/40
			Wall Thickness mm	77	90	102	118	176
– /60/60 30/30/30 (from both sides) FC 12946	CSR 3023 	SIDE ONE (ANY ORDER) • 1 x 13mm Gyprock EC08 Complete. • 1 x 6mm CeminSeal Wallboard. SIDE TWO • 1 x 13mm Gyprock EC08 Complete.	(a) Nil	40/33	42/35	42/35	43/36	45/39
			(c) 75 Acoustigard 11kg	–	51/42	50/41	51/42	52/44
			(e) 88 Soundscreen 2.5	–	–	53/44	53/44	55/47
			(f) 50 Acoustigard 14kg	48/39	50/41	50/41	51/42	52/44
			(h) 50 MAB Polyester 11kg	45/37	47/39	47/39	48/40	49/42
			Wall Thickness mm	83	96	108	124	182
– /60/60 30/30/30 (from both sides) FC 12946	CSR 10003 	SIDE ONE (ANY ORDER) • 1 x 13mm Gyprock EC08 Extreme. • 1 x 6mm CeminSeal Wallboard. SIDE TWO • 1 x 13mm Gyprock EC08 Extreme.	(a) Nil	40/33	42/35	42/35	43/36	45/39
			(b) 75 Acoustigard 11kg	–	51/42	50/41	51/42	52/44
			(d) 88 Soundscreen 2.5	–	–	53/44	53/44	55/47
			(e) 50 Acoustigard 14kg	48/39	50/41	50/41	51/42	52/44
			(f) 50 MAB Polyester 11kg	45/37	47/39	47/39	48/40	49/42
			Wall Thickness mm	83	96	108	124	182
– /90/90 30/30/30 (from both sides) FC 12946	CSR 1058 	BOTH SIDES (ANY ORDER) • 1 x 6mm CeminSeal Wallboard. • 1 x 13mm Gyprock Fyrchek Plasterboard.	(a) Nil	43/36	44/37	46/40	46/40	48/42
			(c) 75 Acoustigard 11kg	–	52/43	53/45	53/45	54/46
			(f) 50 Acoustigard 14kg	50/41	51/42	53/45	53/45	54/46
			(g) 70 Soundscreen 2.0	–	–	54/45	54/45	55/46
			(h) 50 MAB Polyester 11kg	47/39	48/40	50/43	50/43	51/44
			Wall Thickness mm	89	102	114	130	188
– /90/90 30/30/30 (from both sides) FC 12946	CSR 1060 	SIDE ONE • 1 x 13mm Gyprock Fyrchek Plasterboard. SIDE TWO • 2 x 13mm Gyprock Fyrchek Plasterboard.	(a) Nil	39/32	41/34	42/35	43/36	45/39
			(c) 75 Acoustigard 11kg	–	50/41	50/41	51/42	52/44
			(f) 50 Acoustigard 14kg	47/38	49/40	50/41	51/42	52/44
			(g) 70 Soundscreen 2.0	–	–	51/41	52/42	53/44
			(h) 75 MAB Polyester 14kg	–	50/41	50/41	51/42	52/44
			Wall Thickness mm	90	103	115	131	189
– /90/90 30/30/30 (from both sides) FC 12946	CSR 1061 	SIDE ONE • 1 x 13mm Gyprock Fyrchek MR Plasterboard. SIDE TWO • 2 x 13mm Gyprock Fyrchek Plasterboard.	(a) Nil	39/32	41/34	42/35	43/36	45/39
			(c) 75 Acoustigard 11kg	–	50/41	50/41	51/42	52/44
			(f) 50 Acoustigard 14kg	47/38	49/40	50/41	51/42	52/44
			(g) 70 Soundscreen 2.0	–	–	51/41	52/42	53/44
			(h) 75 MAB Polyester 14kg	–	50/41	50/41	51/42	52/44
			Wall Thickness mm	90	103	115	131	189



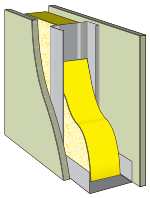
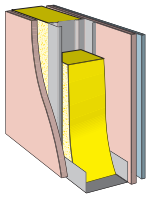
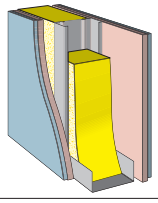
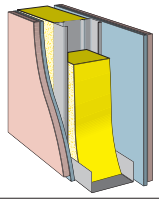
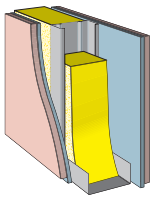
NOTE: Acoustic performance valid for studs with BMT stated in table.
Polyester insulation may NOT be used where the system has non-combustible construction requirements.

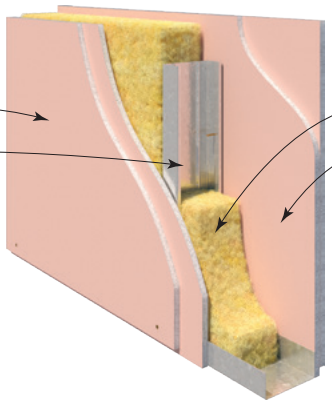
SYSTEM SPECIFICATION Refer to Gyprock Red Book 3 & Cemintel Wallboard Guide			ACOUSTIC REPORT: PKA Predictor V16					
FRL Report	SYSTEM Nº	WALL LININGS	STUD DEPTH mm	51	64	76	92	150
			STUD BMT mm	0.50	0.50	0.55	0.55	0.75
			CAVITY INFILL (Refer to TABLE B6)	R_w / R_w+C_{tr}				
– /90/90 30/30/30 (from both sides) FC 12946	CSR 1062	SIDE ONE • 1 x 13mm Gyprock Fyrchek MR Plasterboard. SIDE TWO • 2 x 13mm Gyprock Fyrchek MR Plasterboard.	(a) Nil	39/32	41/34	42/35	43/36	45/39
			(c) 75 Acoustigard 11kg	–	50/41	50/41	51/42	52/44
			(f) 50 Acoustigard 14kg	47/38	49/40	50/41	51/42	52/44
			(g) 70 Soundscreen 2.0	–	–	51/41	52/42	53/44
			(h) 75 MAB Polyester 14kg	–	50/41	50/41	51/42	52/44
			Wall Thickness mm	90	103	115	131	189
– /90/90 30/30/30 (from both sides) FC 12946 FAS 200002	CSR 3033	SIDE ONE • 1 x 13mm Gyprock EC08 Complete. SIDE TWO • 2 x 13mm Gyprock EC08 Complete.	(a) Nil	40/33	42/35	43/36	45/38	46/40
			(c) 75 Acoustigard 11kg	–	51/42	51/42	53/44	53/45
			(e) 88 Soundscreen 2.5	–	–	54/45	55/46	56/48
			(f) 50 Acoustigard 14kg	48/39	50/41	51/42	53/44	53/45
			(g) 50 MAB Polyester 11kg	45/37	47/39	48/40	50/42	50/43
			Wall Thickness mm	90	103	115	131	189
– /90/90 30/30/30 (from both sides) FC 12946	CSR 10004	SIDE ONE • 1 x 13mm Gyprock EC08 Extreme. SIDE TWO • 2 x 13mm Gyprock EC08 Extreme.	(a) Nil	40/33	42/35	43/36	45/38	46/40
			(c) 75 Acoustigard 11kg	–	51/42	51/42	53/44	53/45
			(e) 88 Soundscreen 2.5	–	–	54/45	55/46	56/48
			(f) 50 Acoustigard 14kg	48/39	50/41	51/42	53/44	53/45
			(g) 50 MAB Polyester 11kg	45/37	47/39	48/40	50/42	50/43
			Wall Thickness mm	90	103	115	131	189
– /90/90 60/60/60 (from both sides) FC 12946 FRL Requires min 64mm stud	CSR 1065	BOTH SIDES • 1 x 16mm Gyprock Fyrchek Plasterboard.	(a) Nil	34/27	35/28	37/30	38/31	40/34
			(c) 75 Acoustigard 11kg	–	45/36	46/37	47/38	48/40
			(f) 50 Acoustigard 14kg	43/34	44/35	46/37	47/38	48/40
			(g) 70 Soundscreen 2.0	–	–	47/37	48/38	49/40
			(h) 50 MAB Polyester 11kg	40/32	41/33	43/35	44/36	45/38
			Wall Thickness mm	83	96	108	124	182
– /90/90 60/60/60 (from both sides) FC 12946 FRL Requires min 64mm stud	CSR 1066	SIDE ONE • 1 x 16mm Gyprock Fyrchek MR Plasterboard. SIDE TWO • 1 x 16mm Gyprock Fyrchek Plasterboard.	(a) Nil	35/28	36/29	38/31	39/32	41/35
			(c) 75 Acoustigard 11kg	–	46/37	47/38	48/39	49/41
			(f) 50 Acoustigard 14kg	44/35	45/36	47/38	48/39	49/41
			(g) 70 Soundscreen 2.0	–	–	48/38	49/39	50/41
			(h) 50 MAB Polyester 11kg	40/32	42/34	44/36	45/37	46/39
			Wall Thickness mm	83	96	108	124	182
– /90/90 60/60/60 (from both sides) FC 12946 FRL Requires min 64mm stud	CSR 1067	BOTH SIDES • 1 x 16mm Gyprock Fyrchek MR Plasterboard.	(a) Nil	36/29	37/30	39/32	40/33	42/36
			(c) 75 Acoustigard 11kg	–	47/38	48/39	49/40	50/42
			(f) 50 Acoustigard 14kg	45/36	46/37	48/39	49/40	50/42
			(g) 70 Soundscreen 2.0	–	–	49/39	50/40	51/42
			(h) 50 MAB Polyester 11kg	42/34	43/35	45/37	46/38	47/40
			Wall Thickness mm	83	96	108	124	182



NOTE: Acoustic performance valid for studs with BMT stated in table.

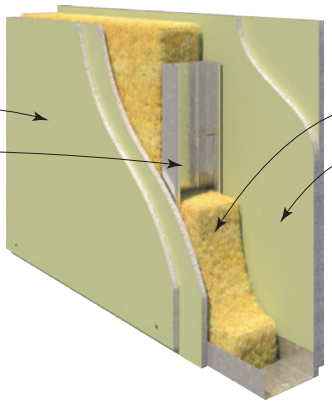
Polyester insulation may NOT be used where the system has non-combustible construction requirements.

SYSTEM SPECIFICATION Refer to Gyprock Red Book 3 & Cemintel Wallboard Guide			ACOUSTIC REPORT: PKA Predictor V16					
FRL Report	**SYSTEM Nº**	**WALL LININGS**	**STUD DEPTH mm**	**51**	**64**	**76**	**92**	**150**
			STUD BMT mm	**0.50**	**0.50**	**0.55**	**0.55**	**0.75**
			CAVITY INFILL (Refer to TABLE B6)	**R_w / R_w+C_{tr}**				
– /90/90 **60/60/60** (from both sides) FC 12946 FRL Requires min 64mm stud	**CSR 3034** 	BOTH SIDES • 1 x 16mm Gyprock EC08 Complete.	(a) Nil	38/31	39/32	40/33	41/34	44/38
			(c) 75 Acoustigard 11kg	–	49/40	49/40	50/41	52/44
			(f) 50 Acoustigard 14kg	47/38	48/39	49/40	50/41	51/43
			(g) 70 Soundscreen 2.0	–	–	50/40	51/41	52/43
			(h) 50 MAB Polyester 11kg	44/36	45/37	46/38	47/39	49/42
			Wall Thickness mm	83	96	108	124	182
– /90/90 **60/60/60** (from both sides) FC 12946	**CSR 1070** 	SIDE ONE • 1 x 16mm Gyprock Fyrchek Plasterboard. SIDE TWO (ANY ORDER) • 1 x 16mm Gyprock Fyrchek Plasterboard. • 1 x 6mm CeminSeal Wallboard.	(a) Nil	39/32	41/34	41/34	42/35	44/38
			(c) 75 Acoustigard 11kg	–	50/41	49/40	50/41	51/43
			(f) 50 Acoustigard 14kg	47/38	49/40	49/40	50/41	51/43
			(g) 70 Soundscreen 2.0	–	–	50/40	51/41	52/43
			(h) 50 MAB Polyester 11kg	44/36	46/38	46/38	47/39	48/41
			Wall Thickness mm	89	102	114	130	188
– /90/90 **60/60/60** (from both sides) FC 12946	**CSR 1071** 	BOTH SIDES • 1 x 16mm Gyprock Fyrchek Plasterboard (against studs). • 1 x 6mm CeminSeal Wallboard.	(a) Nil	44/37	45/38	46/40	47/41	48/42
			(c) 75 Acoustigard 11kg	–	53/44	53/45	54/46	54/46
			(f) 50 Acoustigard 14kg	51/42	52/43	53/45	54/46	54/46
			(g) 70 Soundscreen 2.0	–	–	54/45	55/46	55/46
			(h) 50 MAB Polyester 11kg	48/40	49/41	50/43	51/44	51/44
			Wall Thickness mm	95	108	120	136	194
– /120/120 **60/60/60** (from both sides) FC 12946	**CSR 1072** 	BOTH SIDES • 1 x 6mm CeminSeal Wallboard (against studs). • 1 x 16mm Gyprock Fyrchek Plasterboard.	(a) Nil	44/37	45/38	46/40	47/41	48/42
			(c) 75 Acoustigard 11kg	–	53/44	53/45	54/46	54/46
			(f) 50 Acoustigard 14kg	51/42	52/43	53/45	54/46	54/46
			(g) 70 Soundscreen 2.0	–	–	54/45	55/46	55/46
			(h) 50 MAB Polyester 11kg	48/40	49/41	50/43	51/44	51/44
			Wall Thickness mm	95	108	120	136	194
– /120/120 **90/90/90** (from both sides) FC 12946	**CSR 1075** 	BOTH SIDES (ANY ORDER) • 1 x 9mm CeminSeal Wallboard. • 1 x 16mm Gyprock Fyrchek Plasterboard.	(a) Nil	45/38	47/41	48/42	49/43	50/44
			(c) 75 Acoustigard 11kg	–	55/47	55/47	56/48	56/48
			(f) 50 Acoustigard 14kg	52/43	54/46	55/47	56/48	56/48
			(g) 70 Soundscreen 2.0	–	–	56/47	57/48	57/48
			(h) 50 MAB Polyester 11kg	49/41	51/44	52/45	53/46	53/46
			Wall Thickness mm	101	114	126	142	200



NOTE: Acoustic performance valid for studs with BMT stated in table.
Polyester insulation may NOT be used where the system has non-combustible construction requirements.
‡ Unique height restrictions apply. Refer to The Red Book 3, height selection tables.

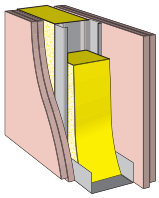
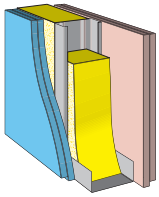
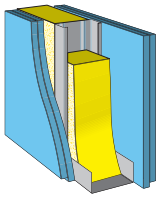
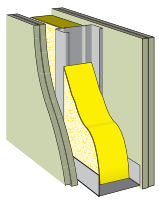
SYSTEM SPECIFICATION Refer to Gyprock Red Book 3 & Cemintel Wallboard Guide			ACOUSTIC REPORT: PKA Predictor V16					
FRL Report	SYSTEM Nº	WALL LININGS	STUD DEPTH mm	51	64	76	92	150
			STUD BMT mm	0.50	0.50	0.55	0.55	0.75
			CAVITY INFILL (Refer to TABLE B6)	R_w / R_w+C_{tr}				
– /120/120 **90/90/90** (from both sides) FC 12946	**CSR 1078**	BOTH SIDES • 2 x 13mm Gyprock Fyrchek Plasterboard.	(a) Nil	44/37	45/38	46/40	47/41	48/42
			(c) 75 Acoustigard 11kg	–	53/44	53/45	54/46	54/46
			(f) 50 Acoustigard 14kg	51/42	52/43	53/45	54/46	54/46
			(g) 70 Soundscreen 2.0	–	–	54/45	55/46	55/46
			(h) 50 MAB Polyester 11kg	48/40	49/41	50/43	51/44	51/44
			Wall Thickness mm	103	116	128	144	202
– /120/120 **90/90/90** (from both sides) FC 12946	**CSR 1079**	SIDE ONE • 2 x 13mm Gyprock Fyrchek MR Plasterboard. SIDE TWO • 2 x 13mm Gyprock Fyrchek Plasterboard.	(a) Nil	44/37	45/38	46/40	47/41	48/42
			(c) 75 Acoustigard 11kg	–	53/44	53/45	54/46	54/46
			(f) 50 Acoustigard 14kg	51/42	52/43	53/45	54/46	54/46
			(g) 70 Soundscreen 2.0	–	–	54/45	55/46	55/46
			(h) 50 MAB Polyester 11kg	48/40	49/41	50/43	51/44	51/44
			Wall Thickness mm	103	116	128	144	202
– /120/120 **90/90/90** (from both sides) FC 12946	**CSR 1080**	BOTH SIDES • 2 x 13mm Gyprock Fyrchek MR Plasterboard.	(a) Nil	44/37	45/38	47/41	47/41	48/42
			(c) 75 Acoustigard 11kg	–	53/44	54/46	54/46	54/46
			(f) 50 Acoustigard 14kg	51/42	52/43	54/46	54/46	54/46
			(g) 70 Soundscreen 2.0	–	–	55/46	55/46	55/46
			(h) 50 MAB Polyester 11kg	48/40	49/41	51/44	51/44	51/44
			Wall Thickness mm	103	116	128	144	202
– /120/120 **90/90/90** (from both sides) FC 12946	**CSR 3043**	SIDE ONE • 2 x 13mm Gyprock EC08 Complete. SIDE TWO • 2 x 13mm Gyprock EC08 Complete.	(a) Nil	45/38	47/41	48/42	49/43	50/44
			(c) 75 Acoustigard 11kg	–	55/47	55/47	56/48	56/48
			(e) 88 Soundscreen 2.5	–	–	58/**50**	58/**50**	59/**51**
			(f) 50 Acoustigard 14kg	52/43	54/46	55/47	56/48	56/48
			(h) 50 MAB Polyester 11kg	49/41	51/44	52/45	53/46	53/46
			Wall Thickness mm	103	116	128	144	202
– /120/120 **90/90/90** (from both sides) FC 12946	**CSR 10005**	SIDE ONE • 2 x 13mm Gyprock EC08 Extreme. SIDE TWO • 2 x 13mm Gyprock EC08 Extreme.	(a) Nil	45/38	47/41	48/42	49/43	50/44
			(b) 75 Acoustigard 11kg	–	55/47	55/47	56/48	56/48
			(d) 88 Soundscreen 2.5	–	–	58/**50**	58/**50**	59/**51**
			(e) 50 Acoustigard 14kg	52/43	54/46	55/47	56/48	56/48
			(f) 50 MAB Polyester 11kg	49/41	51/44	52/45	53/46	53/46
			Wall Thickness mm	103	116	128	144	202

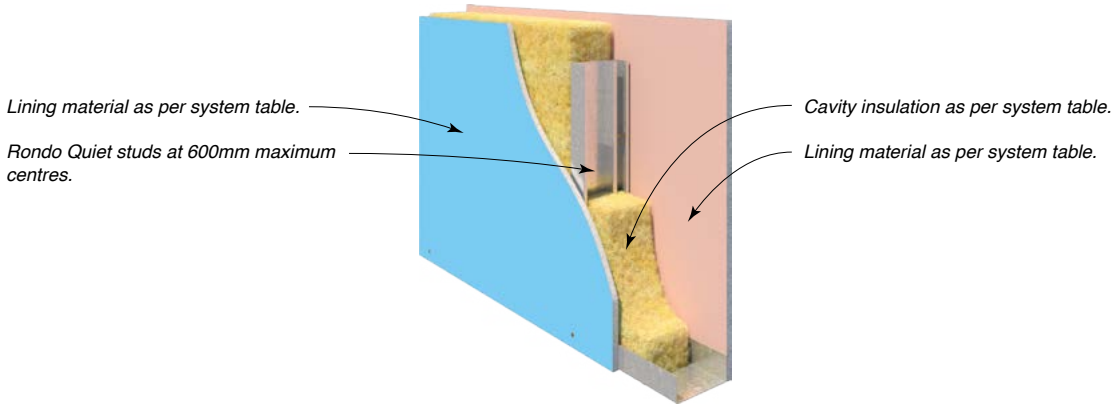


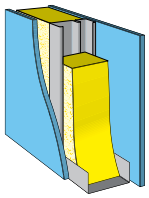
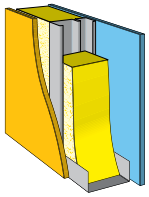
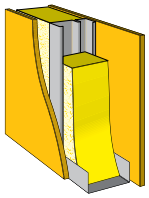
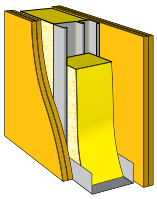
NOTE: Acoustic performance valid for studs with BMT stated in table.

Polyester insulation may NOT be used where the system has non-combustible construction requirements.

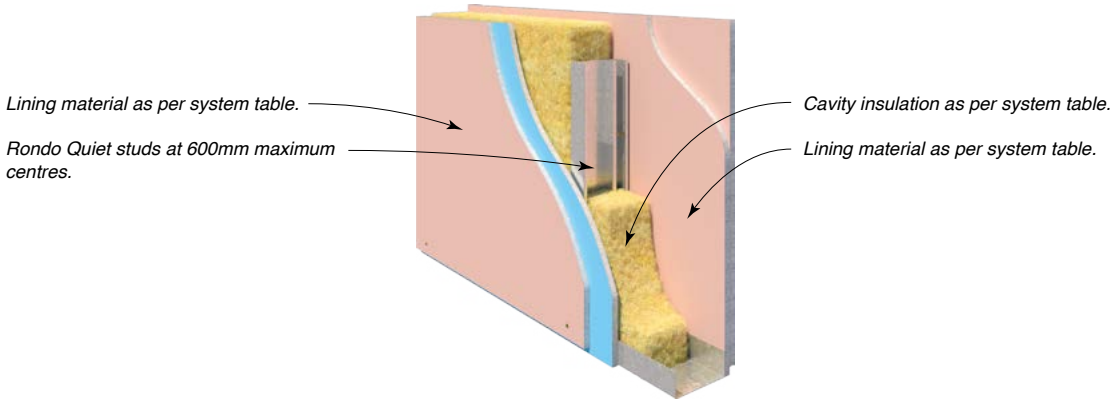
‡ Unique height restrictions apply. Refer to The Red Book 3, height selection tables.

SYSTEM SPECIFICATION Refer to Gyprock Red Book 3 & Cemintel Wallboard Guide			ACOUSTIC REPORT: PKA Predictor V16					
FRL Report	SYSTEM Nº	WALL LININGS	STUD DEPTH mm	51	64	76	92	150
			STUD BMT mm	0.50	0.50	0.55	0.55	0.75
			CAVITY INFILL (Refer to TABLE B6)	R_w / R_w+C_{tr}				
– /180/180‡ 120/120/120 (from both sides) FC 12946	CSR 1085 	BOTH SIDES • 2 x 16mm Gyprock Fyrchek Plasterboard.	(a) Nil	43/36	45/39	46/40	47/41	48/42
			(c) 75 Acoustigard 11kg	–	53/45	53/45	54/46	54/46
			(f) 50 Acoustigard 14kg	50/41	52/44	53/45	54/46	54/46
			(g) 70 Soundscreen 2.0	–	–	54/45	55/46	55/46
			(h) 50 MAB Polyester 11kg	47/39	49/42	50/43	51/44	51/44
			Wall Thickness mm	115	128	140	156	214
– /180/180‡ 120/120/120 (from both sides) FC 12946	CSR 1086 	SIDE ONE • 2 x 16mm Gyprock Fyrchek MR Plasterboard. SIDE TWO • 2 x 16mm Gyprock Fyrchek Plasterboard.	(a) Nil	44/37	46/40	47/41	48/42	49/43
			(c) 75 Acoustigard 11kg	–	54/46	54/46	55/47	55/47
			(f) 50 Acoustigard 14kg	51/42	53/45	54/46	55/47	55/47
			(g) 70 Soundscreen 2.0	–	–	55/46	56/47	56/47
			(h) 50 MAB Polyester 11kg	48/40	50/43	51/44	52/45	52/45
			Wall Thickness mm	115	128	140	156	214
– /180/180‡ 120/120/120 (from both sides) FC 12946	CSR 1087 	BOTH SIDES • 2 x 16mm Gyprock Fyrchek MR Plasterboard.	(a) Nil	45/38	47/41	48/42	49/43	50/44
			(c) 75 Acoustigard 11kg	–	55/47	55/47	56/48	56/48
			(f) 50 Acoustigard 14kg	52/43	54/46	55/47	56/48	56/48
			(g) 70 Soundscreen 2.0	–	–	56/47	57/48	57/48
			(h) 50 MAB Polyester 11kg	49/41	51/44	52/45	53/46	53/46
			Wall Thickness mm	115	128	140	156	214
– /180/180‡ 120/120/120 (from both sides) FC 12946	CSR 3044 	BOTH SIDES • 2 x 16mm Gyprock EC08 Complete.	(a) Nil	48/42	49/43	49/43	50/44	52/46
			(c) 75 Acoustigard 11kg	–	57/49	56/48	57/49	58/**50**
			(f) 50 Acoustigard 14kg	55/47	56/48	56/48	57/49	57/49
			(g) 70 Soundscreen 2.0	–	–	57/48	58/49	58/49
			(h) 50 MAB Polyester 11kg	52/45	53/46	53/46	54/47	55/48
			Wall Thickness mm	115	128	140	156	214

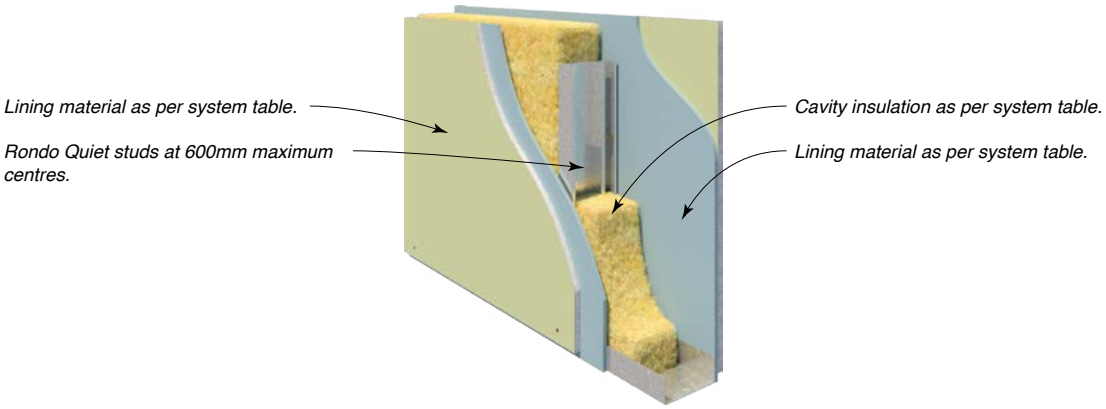


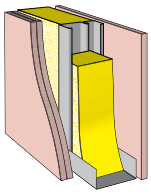
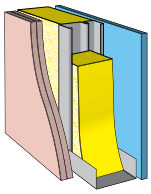
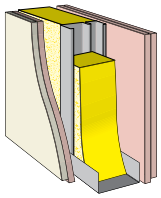
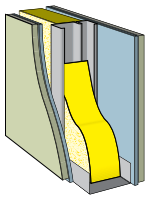
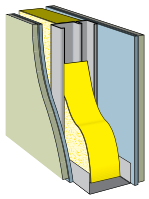
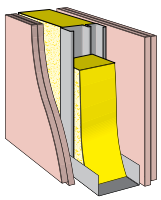
SYSTEM SPECIFICATION Refer to Gyprock Red Book 3 & Cemintel Wallboard Guide			ACOUSTIC REPORT: PKA Predictor V16		
FRL Report	SYSTEM Nº	WALL LININGS	**STUD DEPTH mm**	**92**	
			STUD BMT mm	**0.55**	**0.75**
			CAVITY INFILL (Refer to TABLE B6)	**R_w / R_w+C_{tr}**	
– / – / –	**CSR 1105** 	BOTH SIDES • 1 x 13mm Gyprock Aquachek Plasterboard.	(a) Nil	40/33	39/32
			(c) 75 Acoustigard 14kg	49/41	48/40
			(f) 50 Acoustigard 14kg	48/39	47/38
			(g) 70 Soundscreen 2.0	50/42	49/41
			(i) 90 Acoustigard 14kg	50/42	49/41
			Wall Thickness mm	118	
– / – / –	**CSR 1108** 	SIDE ONE • 1 x 13mm Gyprock Soundchek Plasterboard. SIDE TWO • 1 x 13mm Gyprock Aquachek Plasterboard.	(a) Nil	42/35	41/34
			(c) 75 Acoustigard 14kg	51/43	50/42
			(f) 50 Acoustigard 14kg	50/41	49/40
			(g) 70 Soundscreen 2.0	52/44	51/43
			(i) 90 Acoustigard 14kg	52/44	51/43
			Wall Thickness mm	118	
– / – / –	**CSR 1110** 	BOTH SIDES • 1 x 13mm Gyprock Soundchek Plasterboard.	(a) Nil	42/35	41/34
			(c) 75 Acoustigard 14kg	51/43	50/42
			(f) 50 Acoustigard 14kg	50/41	49/40
			(g) 70 Soundscreen 2.0	52/44	51/43
			(i) 90 Acoustigard 14kg	52/44	51/43
			Wall Thickness mm	118	
– / – / –	**CSR 1120** 	BOTH SIDES • 2 x 13mm Gyprock Soundchek Plasterboard.	(a) Nil	51/45	50/44
			(c) 75 Acoustigard 14kg	58/**51**	57/**50**
			(f) 50 Acoustigard 14kg	57/49	56/48
			(g) 70 Soundscreen 2.0	59/**52**	58/**51**
			(i) 90 Acoustigard 14kg	59/**52**	58/**51**
			Wall Thickness mm	144	

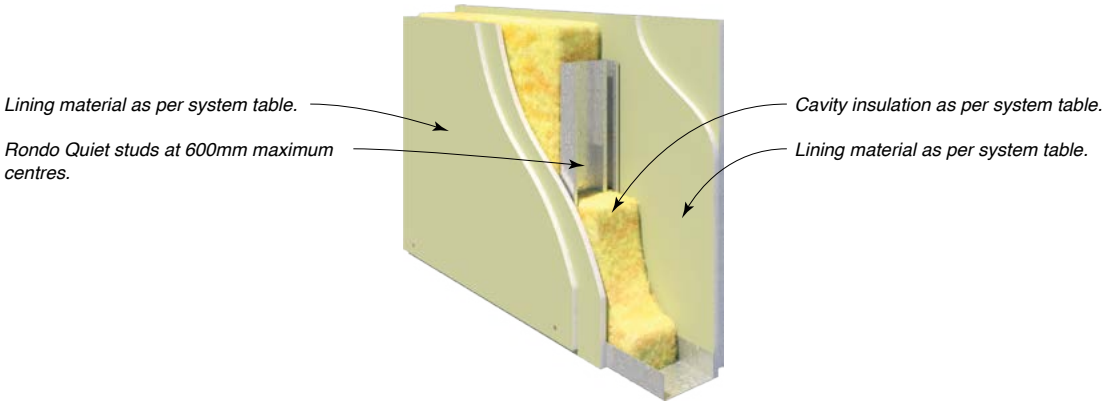
Steel Frame Internal Wall Systems – Rondo Quiet Stud

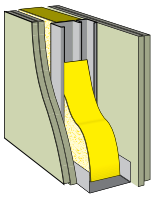
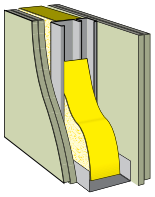
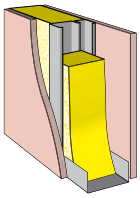
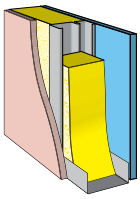
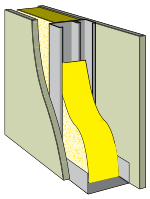
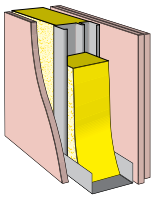


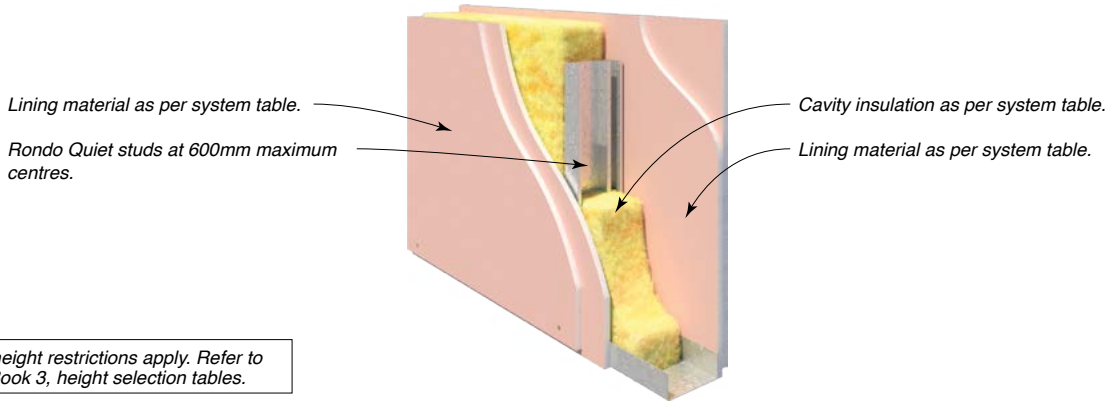
SYSTEM SPECIFICATION Refer to Gyprock Red Book 3 & Cemintel Wallboard Guide			ACOUSTIC REPORT: PKA Predictor V16		
FRL Report	SYSTEM Nº	WALL LININGS	STUD DEPTH mm	92	
			STUD BMT mm	0.55	0.75
			CAVITY INFILL (Refer to TABLE B6)	R_w / R_w+C_{tr}	
– /60/60 30/30/30 (from both sides) FC 12946	CSR 1125	BOTH SIDES • 1 x 13mm Gyprock Fyrchek Plasterboard.	(a) Nil	41/34	40/33
			(c) 75 Acoustigard 14kg	50/42	49/41
			(f) 50 Acoustigard 14kg	49/40	48/39
			(g) 70 Soundscreen 2.0	51/43	50/42
			(i) 90 Acoustigard 14kg	51/43	50/42
			Wall Thickness mm	118	
– /60/60 30/30/30 (from both sides) FC 12946	CSR 1126	SIDE ONE • 1 x 13mm Gyprock Fyrchek MR Plasterboard. SIDE TWO • 1 x 13mm Gyprock Fyrchek Plasterboard.	(a) Nil	41/34	40/33
			(c) 75 Acoustigard 14kg	50/42	49/41
			(f) 50 Acoustigard 14kg	49/40	48/39
			(g) 70 Soundscreen 2.0	51/43	50/42
			(i) 90 Acoustigard 14kg	51/43	50/42
			Wall Thickness mm	118	
– /60/60 30/30/30 (from both sides) FC 12946	CSR 1127	BOTH SIDES • 1 x 13mm Gyprock Fyrchek MR Plasterboard.	(a) Nil	41/34	40/33
			(c) 75 Acoustigard 14kg	50/42	49/41
			(f) 50 Acoustigard 14kg	49/40	48/39
			(g) 70 Soundscreen 2.0	51/43	50/42
			(i) 90 Acoustigard 14kg	51/43	50/42
			Wall Thickness mm	118	
– /60/60 30/30/30 (from both sides) FC 12946	CSR 10037	BOTH SIDES • 1 x 13mm Gyprock Impactchek Plasterboard.	(a) Nil	41/34	40/33
			(c) 75 Acoustigard 14kg	50/42	49/41
			(f) 50 Acoustigard 14kg	49/40	48/39
			(g) 70 Soundscreen 2.0	51/43	50/42
			(i) 90 Acoustigard 14kg	51/42	50/42
			Wall Thickness mm	118	
– /60/60 30/30/30 (from both sides) FC 12946	CSR 3062	BOTH SIDES • 1 x 13mm Gyprock EC08 Complete.	(a) Nil	43/36	42/35
			(c) 75 Acoustigard 14kg	51/42	50/41
			(e) 88 Soundscreen 2.5	54/46	53/45
			(f) 50 Acoustigard 14kg	51/42	50/41
			(i) 90 Acoustigard 14kg	53/45	52/44
			Wall Thickness mm	118	
– /60/60 30/30/30 (from both sides) FC 12946	CSR 10006	BOTH SIDES • 1 x 13mm Gyprock EC08 Extreme.	(a) Nil	43/36	42/35
			(b) 75 Acoustigard 14kg	51/42	50/41
			(d) 88 Soundscreen 2.5	54/46	53/45
			(e) 50 Acoustigard 14kg	51/42	50/41
			(f) 50 MAB Polyester 11kg	53/45	52/44
			Wall Thickness mm	118	



SYSTEM SPECIFICATION Refer to Gyprock Red Book 3 & Cemintel Wallboard Guide			ACOUSTIC REPORT: PKA Predictor V16		
FRL Report	SYSTEM Nº	WALL LININGS	STUD DEPTH mm	92	
			STUD BMT mm	0.55	0.75
			CAVITY INFILL (Refer to TABLE B6)	R_w / R_w+C_{tr}	
– /90/90 30/30/30 (from both sides) FC 12946	CSR 1128 	SIDE ONE • 2 x 13mm Gyprock Fyrchek Plasterboard SIDE TWO • 1 x 13mm Gyprock Fyrchek Plasterboard.	(a) Nil	46/39	45/38
			(c) 75 Acoustigard 14kg	54/46	53/45
			(e) 88 Soundscreen 2.5	56/48	55/47
			(f) 50 Acoustigard 14kg	53/44	52/43
			(i) 90 Acoustigard 14kg	55/47	54/46
			Wall Thickness mm	131	
– /90/90 30/30/30 (from both sides) FC 12946	CSR 1129 	SIDE ONE • 2 x 13mm Gyprock Fyrchek Plasterboard SIDE TWO • 1 x 13mm Gyprock Fyrchek MR Plasterboard.	(a) Nil	46/39	45/38
			(c) 75 Acoustigard 14kg	54/46	53/45
			(e) 88 Soundscreen 2.5	56/48	55/47
			(f) 50 Acoustigard 14kg	53/44	52/43
			(i) 90 Acoustigard 14kg	55/47	54/46
			Wall Thickness mm	131	
– /90/90 30/30/30 (from both sides) FC 12946	CSR 1130 	SIDE ONE (ANY ORDER) • 1 x 13mm Gyprock Fyrchek Plasterboard • 1 x 13mm Gyprock Standard Plasterboard. SIDE TWO • 2 x 13mm Gyprock Fyrchek Plasterboard.	(a) Nil	50/44	49/43
			(c) 75 Acoustigard 14kg	57/**50**	56/49
			(f) 50 Acoustigard 14kg	56/48	55/47
			(g) 70 Soundscreen 2.0	58/**51**	57/**50**
			(i) 90 Acoustigard 14kg	58/**51**	57/**50**
			Wall Thickness mm	144	
– /90/90 30/30/30 (from both sides) FC 12946	CSR 3072 	BOTH SIDES (ANY ORDER) • 1 x 13mm Gyprock EC08 Complete. • 1 x 6mm CeminSeal Wallboard.	(a) Nil	50/44	49/43
			(c) 75 Acoustigard 11kg	56/48	55/47
			(e) 88 Soundscreen 2.5	59/**52**	58/**51**
			(f) 50 Acoustigard 14kg	56/48	55/47
			(i) 90 Acoustigard 14kg	58/**51**	57/**50**
			Wall Thickness mm	130	
– /90/90 30/30/30 (from both sides) FC 12946	CSR 10007 	BOTH SIDES (ANY ORDER) • 1 x 13mm Gyprock EC08 Extreme. • 1 x 6mm CeminSeal Wallboard.	(a) Nil	50/44	49/43
			(b) 75 Acoustigard 11kg	56/48	55/47
			(d) 88 Soundscreen 2.5	59/**52**	58/**51**
			(e) 50 Acoustigard 14kg	56/48	55/47
			(i) 90 Acoustigard 14kg	58/**51**	57/**50**
			Wall Thickness mm	130	
– /120/120 90/90/90 (from both sides) FC 12946	CSR 10031 	BOTH SIDES • 2 x 13mm Gyprock Fyrchek Plasterboard.	(a) Nil	50/44	49/43
			(b) 75 Acoustigard 14kg	57/**50**	56/49
			(d) 50 Acoustigard 14kg	56/48	55/47
			(e) 70 Soundscreen 2.0	58/**51**	57/**50**
			(i) 90 Acoustigard 14kg	58/**51**	57/**50**
			Wall Thickness mm	144	



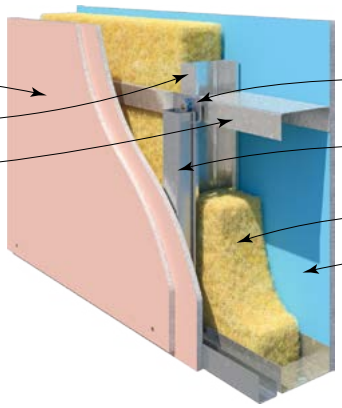
SYSTEM SPECIFICATION Refer to Gyprock Red Book 3 & Cemintel Wallboard Guide			ACOUSTIC REPORT: PKA Predictor V16		
FRL Report	**SYSTEM Nº**	**WALL LININGS**	**STUD DEPTH mm**	92	
			STUD BMT mm	0.55	0.75
			CAVITY INFILL (Refer to TABLE B6)	**R_w / R_w+C_{tr}**	
– /120/120 90/90/90 (from both sides) FC 12946	**CSR 3082** 	BOTH SIDES • 2 x 13mm Gyprock EC08 Complete.	(a) Nil	52/46	51/45
			(c) 75 Acoustigard 11kg	58/**50**	57/49
			(e) 88 Soundscreen 2.5	61/**54**	60/**53**
			(f) 50 Acoustigard 14kg	58/**50**	57/49
			(i) 90 Acoustigard 14kg	60/**53**	59/**52**
			Wall Thickness mm	144	
– /120/120 90/90/90 (from both sides) FC 12946 FAS 200002	**CSR 10008** 	BOTH SIDES • 2 x 13mm Gyprock EC08 Extreme.	(a) Nil	52/46	51/45
			(c) 75 Acoustigard 11kg	58/**50**	57/49
			(e) 88 Soundscreen 2.5	61/**54**	60/**53**
			(f) 50 Acoustigard 14kg	58/**50**	57/49
			(i) 90 Acoustigard 14kg	60/**53**	59/**52**
			Wall Thickness mm	144	
– /90/90 60/60/60 (from both sides) FC 12946	**CSR 1133** 	BOTH SIDES • 1 x 16mm Gyprock Fyrchek Plasterboard.	(a) Nil	41/34	40/33
			(c) 75 Acoustigard 14kg	50/42	49/41
			(f) 50 Acoustigard 14kg	49/40	48/39
			(g) 70 Soundscreen 2.0	51/43	50/42
			(i) 90 Acoustigard 14kg	51/43	50/42
			Wall Thickness mm	124	
– /90/90 60/60/60 (from both sides) FC 12946	**CSR 1135** 	SIDE ONE • 1 x 16mm Gyprock Fyrchek Plasterboard. SIDE TWO • 1 x 16mm Gyprock Fyrchek MR Plasterboard.	(a) Nil	42/35	41/34
			(c) 75 Acoustigard 14kg	51/43	50/42
			(f) 50 Acoustigard 14kg	50/41	49/40
			(g) 70 Soundscreen 2.0	52/44	51/43
			(i) 90 Acoustigard 14kg	52/44	51/43
			Wall Thickness mm	124	
– /90/90 60/60/60 (from both sides) FC 12946	**CSR 3073** 	BOTH SIDES • 1 x 16mm Gyprock EC08 Complete.	(a) Nil	44/37	43/36
			(c) 75 Acoustigard 14kg	53/45	52/44
			(f) 50 Acoustigard 14kg	52/43	51/42
			(g) 70 Soundscreen 2.0	54/46	53/45
			(i) 90 Acoustigard 14kg	54/46	53/45
			Wall Thickness mm	124	
– /90/90 60/60/60 (from both sides) FC 12946	**CSR 1140** 	SIDE ONE • 1 x 16mm Gyprock Fyrchek Plasterboard. SIDE TWO • 2 x 16mm Gyprock Fyrchek Plasterboard.	(a) Nil	46/39	45/38
			(c) 75 Acoustigard 14kg	54/46	53/45
			(f) 50 Acoustigard 14kg	53/44	52/43
			(g) 70 Soundscreen 2.0	55/47	54/46
			(i) 90 Acoustigard 14kg	55/47	54/46
			Wall Thickness mm	140	



‡ Unique height restrictions apply. Refer to The Red Book 3, height selection tables.

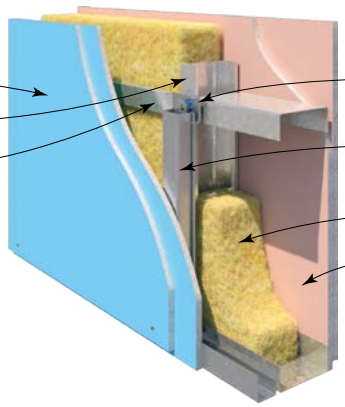
SYSTEM SPECIFICATION Refer to Gyprock Red Book 3 & Cemintel Wallboard Guide			ACOUSTIC REPORT: PKA Predictor V16		
FRL Report	**SYSTEM Nº**	**WALL LININGS**	**STUD DEPTH mm**	**92**	
			STUD BMT mm	**0.55**	**0.75**
			CAVITY INFILL (Refer to TABLE B6)	**R_w / R_w+C_{tr}**	
– /90/90 **60/60/60** (from both sides) FC 12946	**CSR 1142**	SIDE ONE • 1 x 16mm Gyprock Fyrchek MR Plasterboard. SIDE TWO • 2 x 16mm Gyprock Fyrchek Plasterboard.	(a) Nil	47/40	46/39
			(c) 75 Acoustigard 14kg	55/47	54/46
			(f) 50 Acoustigard 14kg	54/45	53/44
			(g) 70 Soundscreen 2.0	56/48	55/47
			(i) 90 Acoustigard 14kg	56/48	55/47
			Wall Thickness mm	140	
– /180/180‡ **120/120/120** (from both sides) FC 12946	**CSR 10034**	BOTH SIDES • 2 x 16mm Gyprock Fyrchek Plasterboard.	(a) Nil	53/47	52/46
			(c) 75 Acoustigard 11kg	59/**51**	58/**50**
			(e) 88 Soundscreen 2.5	62/**55**	61/**54**
			(f) 50 Acoustigard 14kg	59/**51**	58/**50**
			(i) 90 Acoustigard 14kg	58/**51**	57/**50**
			Wall Thickness mm	156	
– /180/180‡ **120/120/120** (from both sides) FC 12946	**CSR 3095**	BOTH SIDES • 2 x 16mm Gyprock EC08 Complete.	(a) Nil	53/47	52/46
			(c) 75 Acoustigard 11kg	59/**51**	58/**50**
			(e) 88 Soundscreen 2.5	62/**55**	61/**54**
			(f) 50 Acoustigard 14kg	59/**51**	58/**50**
			(i) 90 Acoustigard 14kg	61/**54**	60/**53**
			Wall Thickness mm	156	

Steel Frame Internal Wall Systems – Resilient Mount



NOTE: Polyester insulation may NOT be used where the system has non-combustible construction requirements.

SYSTEM SPECIFICATION Refer to Gyprock Red Book 3 & Cemintel Wallboard Guide			ACOUSTIC REPORT: PKA Predictor V16 Not Deemed Discontinuous Construction				
FRL Report	SYSTEM N°	WALL LININGS	STUD DEPTH mm	64	76	92	150
			STUD BMT mm	0.50	0.55	0.55	0.75
			CAVITY INFILL (Refer to TABLE B6)	R_w / R_w+C_{tr}			
– /90/90 30/30/30 (from both sides) FC 12946	CSR 1160	SIDE ONE (FURRING SIDE) • 2 x 13mm Gyprock Fyrchek Plasterboard. SIDE TWO • 1 x 13mm Gyprock Fyrchek Plasterboard.	(a) Nil	46/39	46/39	48/41	49/43
			(c) 75 Acoustigard 14kg	56/46	56/46	58/48	58/49
			(f) 50 Acoustigard 14kg	55/45	54/44	56/46	57/48
			(g) 70 Soundscreen 2.0	–	56/46	58/48	58/49
			(h) 50 MAB Polyester 11kg	51/43	51/43	53/45	53/46
			Minimum Wall Thickness mm	131	143	159	217
– /90/90 30/30/30 (from both sides) FC 12946	CSR 1161	SIDE ONE (FURRING SIDE) • 2 x 13mm Gyprock Fyrchek Plasterboard. SIDE TWO • 1 x 13mm Gyprock Fyrchek MR Plasterboard.	(a) Nil	46/39	47/40	48/41	50/44
			(c) 75 Acoustigard 14kg	56/46	57/47	58/48	59/**50**
			(f) 50 Acoustigard 14kg	55/45	55/45	56/46	58/49
			(g) 70 Soundscreen 2.0	–	57/47	58/48	59/**50**
			(h) 50 MAB Polyester 11kg	51/43	52/44	53/45	54/47
			Minimum Wall Thickness mm	131	143	159	217
– /90/90 30/30/30 (from both sides) FC 12946	CSR 1162	SIDE ONE (FURRING SIDE) • 2 x 13mm Gyprock Fyrchek MR Plasterboard. SIDE TWO • 1 x 13mm Gyprock Fyrchek MR Plasterboard.	(a) Nil	46/39	47/40	48/41	50/44
			(c) 75 Acoustigard 14kg	56/46	57/47	58/48	59/**50**
			(f) 50 Acoustigard 14kg	55/45	55/45	56/46	58/49
			(g) 70 Soundscreen 2.0	–	57/47	58/48	59/**50**
			(h) 50 MAB Polyester 11kg	51/43	52/44	53/45	54/47
			Minimum Wall Thickness mm	131	143	159	217
– /120/120 90/90/90 (from both sides) FC 12946	CSR 1165	BOTH SIDES • 2 x 13mm Gyprock Fyrchek Plasterboard.	(a) Nil	50/44	51/45	51/45	53/47
			(c) 75 Acoustigard 14kg	59/**50**	60/**51**	60/**51**	61/**52**
			(f) 50 Acoustigard 14kg	58/49	58/49	58/49	60/**51**
			(g) 70 Soundscreen 2.0	–	60/**51**	60/**51**	61/**52**
			(h) 50 MAB Polyester 11kg	54/47	55/48	55/48	56/49
			Minimum Wall Thickness mm	144	156	172	230
– /120/120 90/90/90 (from both sides) FC 12946	CSR 1166	SIDE ONE (FURRING SIDE) • 2 x 13mm Gyprock Fyrchek MR Plasterboard. SIDE TWO • 2 x 13mm Gyprock Fyrchek Plasterboard.	(a) Nil	50/44	51/45	51/45	53/47
			(c) 75 Acoustigard 14kg	59/**50**	60/**51**	60/**51**	61/**52**
			(f) 50 Acoustigard 14kg	58/49	58/49	58/49	60/**51**
			(g) 70 Soundscreen 2.0	–	60/**51**	60/**51**	61/**52**
			(h) 50 MAB Polyester 11kg	54/47	55/48	55/48	56/49
			Minimum Wall Thickness mm	144	156	172	230



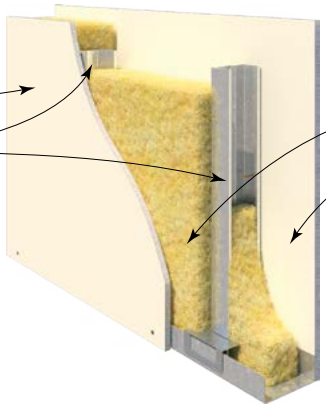
NOTE: Polyester insulation may NOT be used where the system has non-combustible construction requirements.
‡ Unique height restrictions apply. Refer to The Red Book 3, height selection tables.

SYSTEM SPECIFICATION Refer to Gyprock Red Book 3 & Cemintel Wallboard Guide			ACOUSTIC REPORT: PKA Predictor V16 Not Deemed Discontinuous Construction				
FRL Report	SYSTEM N°	WALL LININGS	STUD DEPTH mm	64	76	92	150
			STUD BMT mm	0.50	0.55	0.55	0.75
			CAVITY INFILL (Refer to TABLE B6)	R_w / R_w+C_{tr}			
– /120/120 90/90/90 (from both sides) FC 12946	**CSR 1167**	BOTH SIDES • 2 x 13mm Gyprock Fyrchek MR Plasterboard.	(a) Nil	50/44	51/45	52/46	53/47
			(c) 75 Acoustigard 14kg	59/**50**	60/**51**	61/**52**	61/**52**
			(f) 50 Acoustigard 14kg	58/49	58/49	59/**50**	60/**51**
			(g) 70 Soundscreen 2.0	–	60/**51**	61/**52**	61/**52**
			(h) 50 MAB Polyester 11kg	54/47	55/48	56/49	56/49
			Minimum Wall Thickness mm	144	156	172	230
– /120/120 90/90/90 (from both sides) FC 12946	**CSR 3132**	BOTH SIDES • 2 x 13mm Gyprock EC08 Complete.	(a) Nil	52/46	52/46	53/47	54/48
			(c) 75 Acoustigard 11kg	60/**51**	60/**51**	61/**52**	61/**52**
			(e) 88 Soundscreen 2.5	62/**53**	62/**53**	63/**54**	63/**54**
			(f) 50 Acoustigard 14kg	60/**51**	59/**50**	60/**51**	61/**52**
			(g) 50 MAB Polyester 11kg	56/49	56/49	57/**50**	57/**50**
			Minimum Wall Thickness mm	144	156	172	230
– /120/120 90/90/90 (from both sides) FC 12946	**CSR 10009**	BOTH SIDES • 2 x 13mm Gyprock EC08 Extreme.	(a) Nil	52/46	52/46	53/47	54/48
			(c) 75 Acoustigard 11kg	60/**51**	60/**51**	61/**52**	61/**52**
			(e) 88 Soundscreen 2.5	62/**53**	62/**53**	63/**54**	63/**54**
			(f) 50 Acoustigard 14kg	60/**51**	59/**50**	60/**51**	61/**52**
			(g) 50 MAB Polyester 11kg	56/49	56/49	57/**50**	57/**50**
			Minimum Wall Thickness mm	144	156	172	230
– /180/180‡ 120/120/120 (from both sides) FC 12946	**CSR 1175**	BOTH SIDES • 2 x 16mm Gyprock Fyrchek Plasterboard.	(a) Nil	50/44	50/44	51/45	52/46
			(c) 75 Acoustigard 11kg	58/49	58/49	59/**50**	59/**50**
			(f) 50 Acoustigard 14kg	58/49	57/48	58/49	59/**50**
			(g) 70 Soundscreen 2.0	–	59/**50**	60/**51**	60/**51**
			(h) 50 MAB Polyester 11kg	54/47	54/47	55/48	55/48
			Minimum Wall Thickness mm	156	168	184	242
– /180/180‡ 120/120/120 (from both sides) FC 12946	**CSR 1176**	SIDE ONE (FURRING SIDE) • 2 x 16mm Gyprock Fyrchek MR Plasterboard. SIDE TWO • 2 x 16mm Gyprock Fyrchek Plasterboard.	(a) Nil	51/45	51/45	52/46	54/48
			(c) 75 Acoustigard 11kg	59/**50**	59/**50**	60/**51**	61/**52**
			(f) 50 Acoustigard 14kg	59/**50**	58/49	59/**50**	61/**52**
			(g) 70 Soundscreen 2.0	–	60/**51**	61/**52**	62/**53**
			(h) 50 MAB Polyester 11kg	55/48	55/48	56/49	57/**50**
			Minimum Wall Thickness mm	156	168	184	242
– /180/180‡ 120/120/120 (from both sides) FC 12946	**CSR 1177**	BOTH SIDES • 2 x 16mm Gyprock Fyrchek MR Plasterboard.	(a) Nil	52/46	52/46	53/47	55/49
			(c) 75 Acoustigard 11kg	60/**51**	60/**51**	61/**52**	62/**53**
			(f) 50 Acoustigard 14kg	60/**51**	59/**50**	60/**51**	62/**53**
			(g) 70 Soundscreen 2.0	–	61/**52**	62/**53**	63/**54**
			(h) 50 MAB Polyester 11kg	56/49	56/49	57/**50**	58/**51**
			Minimum Wall Thickness mm	156	168	184	242

Lining material as per system table.

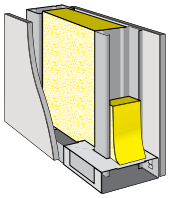
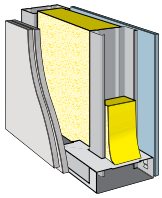
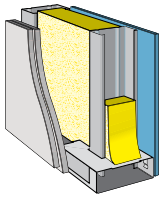
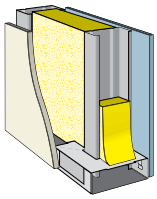
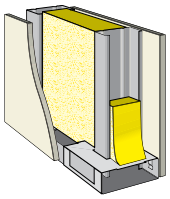
Staggered steel studs at 600mm maximum centres each side. Studs restrained in track or angle at top and bottom with minimum 28mm clearance between stud and opposing lining.

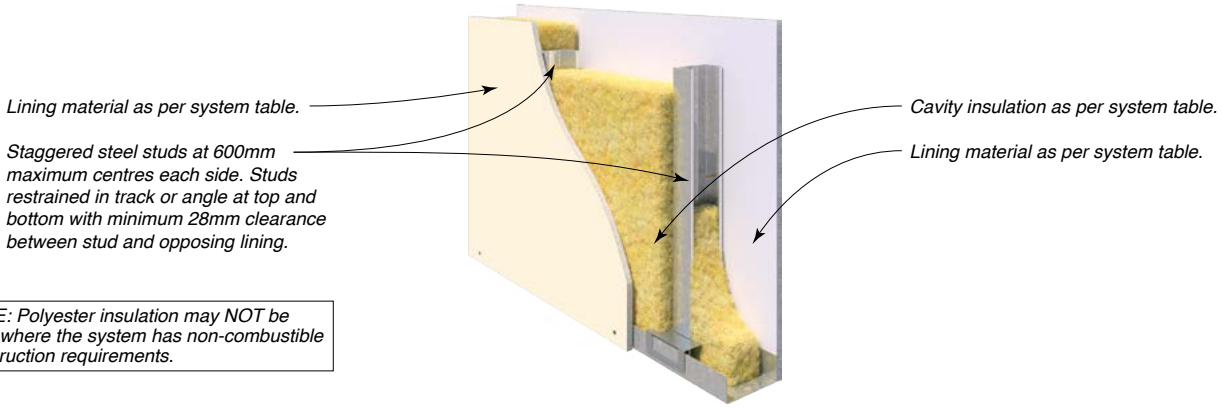
NOTE: Polyester insulation may NOT be used where the system has non-combustible construction requirements.



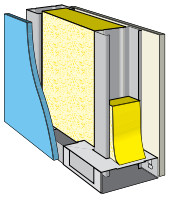
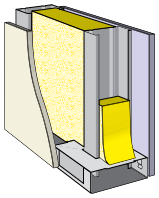
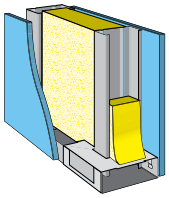
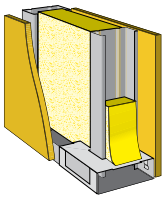
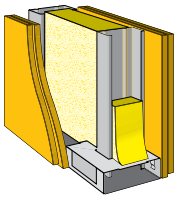
Cavity insulation as per system table.

Lining material as per system table.

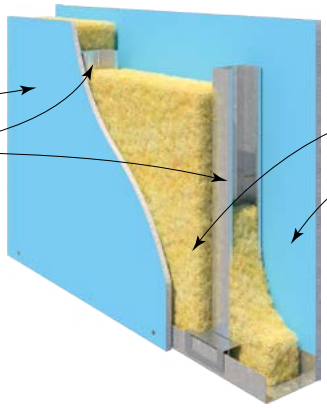
SYSTEM SPECIFICATION Refer to Gyprock Red Book 3 & Cemintel Wallboard Guide			ACOUSTIC REPORT: PKA Predictor V16 Not Deemed Discontinuous Construction		
FRL Report	SYSTEM N°	WALL LININGS	CAVITY DEPTH mm	92	150
			STUD DEPTH/BMT mm	64/0.5	92/0.55
			CAVITY INFILL (Refer to TABLE B6)	R_w / R_w+C_{tr}	
– / – / –	CSR 10141 	BOTH SIDES • 1 x 10mm Gyprock HD Plasterboard.	(a) Nil	38/31	41/34
			(b) 75 Acoustigard 11kg	49/40	51/42
			(c) 75 MAB Polyester 11kg	45/37	47/39
			(d) 50 Acoustigard 14kg	49/40	51/42
			(e) 70 Soundscreen 2.0	51/40	53/42
			Wall Thickness mm	112	170
– / – / –	CSR 10142 	SIDE ONE • 2 x 10mm Gyprock HD Plasterboard. SIDE TWO • 1 x 6mm CeminSeal Wallboard.	(a) Nil	44/37	47/40
			(b) 75 Acoustigard 11kg	54/45	56/47
			(c) 75 MAB Polyester 11kg	50/42	52/44
			(d) 50 Acoustigard 14kg	54/45	56/47
			(e) 70 Soundscreen 2.0	56/45	58/47
			Wall Thickness mm	118	176
– / – / –	CSR 10143 	SIDE ONE • 2 x 10mm Gyprock HD Plasterboard. SIDE TWO • 1 x 13mm Gyprock Aquachek Plasterboard.	(a) Nil	44/37	47/41
			(b) 75 Acoustigard 11kg	54/45	56/48
			(c) 75 MAB Polyester 11kg	50/42	52/45
			(d) 50 Acoustigard 14kg	54/45	56/48
			(e) 70 Soundscreen 2.0	56/45	58/48
			Wall Thickness mm	125	183
– / – / –	CSR 1220 	SIDE ONE • 1 x 13mm Gyprock Standard Plasterboard. SIDE TWO • 1 x 6mm CeminSeal Wallboard.	(a) Nil	38/31	42/35
			(c) 75 Acoustigard 11kg	49/40	52/43
			(f) 50 Acoustigard 14kg	49/40	52/43
			(g) 70 Soundscreen 2.0	51/40	54/43
			(h) 75 MAB Polyester 11kg	45/37	48/40
			Wall Thickness mm	111	169
– / – / –	CSR 1223 	BOTH SIDES • 1 x 13mm Gyprock Standard Plasterboard.	(a) Nil	38/31	41/34
			(c) 75 Acoustigard 11kg	49/40	51/42
			(f) 50 Acoustigard 14kg	49/40	51/42
			(g) 70 Soundscreen 2.0	51/40	53/42
			(h) 100 MAB Polyester 11kg	46/38	49/41
			Wall Thickness mm	118	176



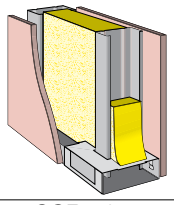
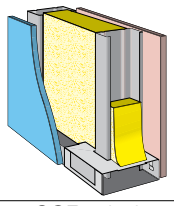
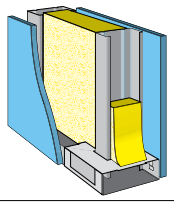
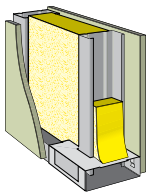
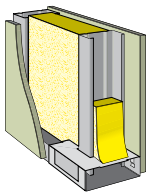
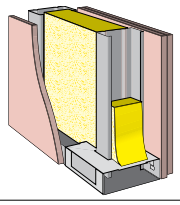
NOTE: Polyester insulation may NOT be used where the system has non-combustible construction requirements.

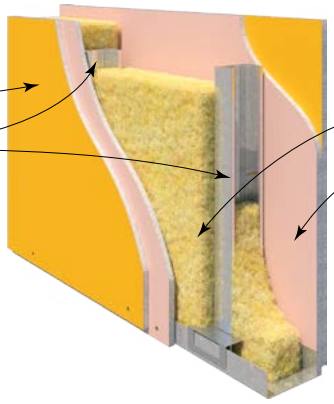
SYSTEM SPECIFICATION Refer to Gyprock Red Book 3 & Cemintel Wallboard Guide			ACOUSTIC REPORT: PKA Predictor V16 Not Deemed Discontinuous Construction		
FRL Report	SYSTEM Nº	WALL LININGS	CAVITY DEPTH mm	92	150
			STUD DEPTH/BMT mm	64/0.5	92/0.55
			CAVITY INFILL (Refer to TABLE B6)	R_w / R_w+C_{tr}	
– / – / –	CSR 1224 	SIDE ONE • 1 x 13mm Gyprock Aquachek Plasterboard. SIDE TWO • 1 x 13mm Gyprock Standard Plasterboard.	(a) Nil	39/32	42/35
			(c) 75 Acoustigard 11kg	50/41	52/43
			(f) 50 Acoustigard 14kg	50/41	52/43
			(g) 70 Soundscreen 2.0	52/41	54/43
			(h) 100 MAB Polyester 11kg	47/39	50/42
			Wall Thickness mm	118	176
– / – / –	CSR 1225 	SIDE ONE • 1 x 13mm Gyprock Standard Plasterboard. SIDE TWO • 1 x 13mm Gyprock Impactchek Plasterboard.	(a) Nil	39/32	42/35
			(c) 75 Acoustigard 11kg	50/41	52/43
			(f) 50 Acoustigard 14kg	50/41	52/43
			(g) 70 Soundscreen 2.0	52/41	52/43
			(h) 75 MAB Polyester 11kg	46/38	48/40
			Wall Thickness mm	118	176
– / – / –	CSR 1226 	BOTH SIDES • 1 x 13mm Gyprock Aquachek Plasterboard.	(a) Nil	40/33	43/37
			(c) 75 Acoustigard 11kg	51/42	53/45
			(f) 50 Acoustigard 14kg	51/42	53/45
			(g) 70 Soundscreen 2.0	53/42	55/45
			(h) 100 MAB Polyester 11kg	48/40	51/44
			Wall Thickness mm	118	176
– / – / –	CSR 1227 	BOTH SIDES • 1 x 13mm Gyprock Soundchek Plasterboard.	(a) Nil	42/35	45/39
			(c) 75 Acoustigard 11kg	53/44	55/47
			(f) 50 Acoustigard 14kg	53/44	55/47
			(g) 70 Soundscreen 2.0	55/44	57/47
			Wall Thickness mm	118	176
– / – / –	CSR 1230 	BOTH SIDES • 2 x 13mm Gyprock Soundchek Plasterboard.	(a) Nil	51/45	53/47
			(c) 75 Acoustigard 11kg	60/**52**	61/**53**
			(f) 50 Acoustigard 14kg	60/**52**	61/**53**
			(g) 70 Soundscreen 2.0	62/**52**	63/**53**
			Wall Thickness mm	144	202

Steel Frame Internal Wall Systems – Staggered Stud



NOTE: Polyester insulation may NOT be used where the system has non-combustible construction requirements.

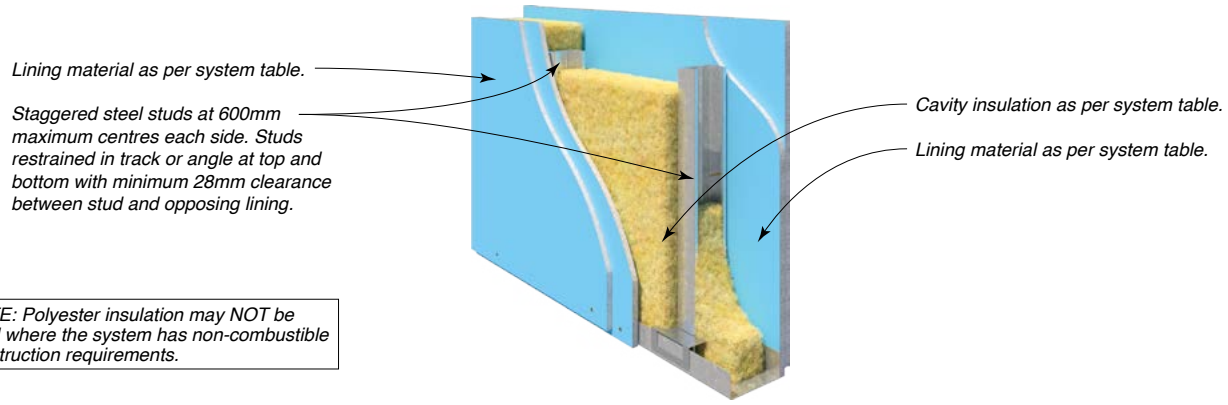
SYSTEM SPECIFICATION Refer to Gyprock Red Book 3 & Cemintel Wallboard Guide			ACOUSTIC REPORT: PKA Predictor V16 Not Deemed Discontinuous Construction		
FRL Report	**SYSTEM Nº**	**WALL LININGS**	**CAVITY DEPTH mm**	**92**	**150**
			STUD DEPTH/BMT mm	**64/0.5**	**92/0.55**
			CAVITY INFILL (Refer to TABLE B6)	**R_w / R_w+C_{tr}**	
– /60/60 **30/30/30** (from both sides) FC 12946	**CSR 1250** 	BOTH SIDES • 1 x 13mm Gyprock Fyrchek Plasterboard.	(a) Nil	41/34	44/38
			(c) 75 Acoustigard 11kg	52/43	54/46
			(f) 50 Acoustigard 14kg	52/43	54/46
			(g) 70 Soundscreen 2.0	54/43	56/46
			(h) 75 MAB Polyester 11kg	48/40	50/43
			Wall Thickness mm	118	176
– /60/60 **30/30/30** (from both sides) FC 12946	**CSR 1251** 	SIDE ONE • 1 x 13mm Gyprock Fyrchek MR Plasterboard. SIDE TWO • 1 x 13mm Gyprock Fyrchek Plasterboard.	(a) Nil	41/34	44/38
			(c) 75 Acoustigard 11kg	52/43	54/46
			(f) 50 Acoustigard 14kg	52/43	54/46
			(g) 70 Soundscreen 2.0	54/43	56/46
			(h) 75 MAB Polyester 11kg	48/40	50/43
			Wall Thickness mm	118	176
– /60/60 **30/30/30** (from both sides) FC 12946	**CSR 1252** 	BOTH SIDES • 1 x 13mm Gyprock Fyrchek MR Plasterboard.	(a) Nil	41/34	44/38
			(c) 75 Acoustigard 11kg	52/43	54/46
			(f) 50 Acoustigard 14kg	52/43	54/46
			(g) 70 Soundscreen 2.0	54/43	56/46
			(h) 75 MAB Polyester 11kg	48/40	50/43
			Wall Thickness mm	118	176
– /60/60 **30/30/30** (from both sides) FC 12946	**CSR 3162** 	BOTH SIDES • 1 x 13mm Gyprock EC08 Complete.	(a) Nil	43/36	46/40
			(c) 75 Acoustigard 11kg	54/45	56/48
			(e) 88 Soundscreen 2.5	57/47	60/**51**
			(f) 50 Acoustigard 14kg	54/45	56/48
			(h) 50 MAB Polyester 11kg	49/41	51/44
			Wall Thickness mm	118	176
– /60/60 **30/30/30** (from both sides) FC 12946	**CSR 10010** 	BOTH SIDES • 1 x 13mm Gyprock EC08 Extreme.	(a) Nil	43/36	46/40
			(c) 75 Acoustigard 11kg	54/45	56/48
			(e) 88 Soundscreen 2.5	57/47	60/**51**
			(f) 50 Acoustigard 14kg	54/45	56/48
			(h) 50 MAB Polyester 11kg	49/41	51/44
			Wall Thickness mm	118	176
– /90/90 **30/30/30** (from both sides) FC 12946	**CSR 1260** 	SIDE ONE • 1 x 13mm Gyprock Fyrchek Plasterboard. SIDE TWO • 2 x 13mm Gyprock Fyrchek Plasterboard.	(a) Nil	46/39	49/43
			(c) 75 Acoustigard 11kg	56/47	58/**50**
			(f) 50 Acoustigard 14kg	56/47	58/**50**
			(g) 70 Soundscreen 2.0	58/47	60/**50**
			(h) 75 MAB Polyester 11kg	52/44	54/47
			Wall Thickness mm	131	189



NOTE: Polyester insulation may NOT be used where the system has non-combustible construction requirements.

SYSTEM SPECIFICATION Refer to Gyprock Red Book 3 & Cemintel Wallboard Guide			ACOUSTIC REPORT: PKA Predictor V16 Not Deemed Discontinuous Construction		
FRL Report	**SYSTEM Nº**	**WALL LININGS**	**CAVITY DEPTH mm**	**92**	**150**
			STUD DEPTH/BMT mm	**64/0.5**	**92/0.55**
			CAVITY INFILL (Refer to TABLE B6)	**R_w / R_w+C_{tr}**	
– /90/90 **30/30/30** (from both sides) FC 12946	**CSR 1264**	BOTH SIDES (ANY ORDER) • 1 x 6mm CeminSeal Wallboard. • 1 x 13mm Gyprock Fyrchek Plasterboard.	(a) Nil	49/43	52/46
			(c) 75 Acoustigard 11kg	58/**50**	60/**52**
			(f) 50 Acoustigard 14kg	58/**50**	60/**52**
			(g) 70 Soundscreen 2.0	60/**50**	62/**52**
			(h) 75 MAB Polyester 14kg	56/49	58/**51**
			Wall Thickness mm	130	188
– /90/90 **60/60/60** (from both sides) FC 12946	**CSR 1275**	BOTH SIDES (ANY ORDER) • 1 x 16mm Gyprock Fyrchek Plasterboard. • 1 x 13mm Gyprock Soundchek Plasterboard.	(a) Nil	52/46	54/48
			(c) 75 Acoustigard 11kg	61/**53**	62/**54**
			(f) 50 Acoustigard 14kg	61/**53**	62/**54**
			(g) 70 Soundscreen 2.0	63/**53**	64/**54**
			(h) 75 MAB Polyester 14kg	59/**52**	60/**53**
			Wall Thickness mm	150	208
– /90/90 **60/60/60** (from both sides) FC 12946	**CSR 1280**	BOTH SIDES • 1 x 16mm Gyprock Fyrchek Plasterboard.	(a) Nil	41/34	44/38
			(c) 75 Acoustigard 11kg	52/43	54/46
			(f) 50 Acoustigard 14kg	52/43	54/46
			(g) 70 Soundscreen 2.0	54/43	56/46
			(h) 75 MAB Polyester 11kg	48/40	50/43
			Wall Thickness mm	124	182
– /90/90 **60/60/60** (from both sides) FC 12946	**CSR 1281**	SIDE ONE • 1 x 16mm Gyprock Fyrchek MR Plasterboard. SIDE TWO • 1 x 16mm Gyprock Fyrchek Plasterboard.	(a) Nil	42/35	45/39
			(c) 75 Acoustigard 11kg	53/44	55/47
			(f) 50 Acoustigard 14kg	53/44	55/47
			(g) 70 Soundscreen 2.0	55/44	57/47
			(h) 75 MAB Polyester 11kg	49/41	51/44
			Wall Thickness mm	124	182
– /90/90 **60/60/60** (from both sides) FC 12946	**CSR 1282**	BOTH SIDES • 1 x 16mm Gyprock Fyrchek MR Plasterboard.	(a) Nil	43/36	46/40
			(c) 75 Acoustigard 11kg	54/45	56/48
			(f) 50 Acoustigard 14kg	54/45	56/48
			(g) 70 Soundscreen 2.0	56/45	58/48
			(h) 75 MAB Polyester 11kg	50/42	52/45
			Wall Thickness mm	124	182

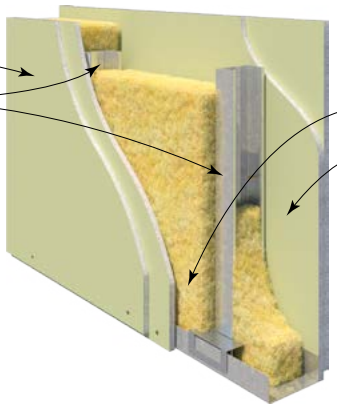
Steel Frame Internal Wall Systems – Staggered Stud



NOTE: Polyester insulation may NOT be used where the system has non-combustible construction requirements.

SYSTEM SPECIFICATION Refer to Gyprock Red Book 3 & Cemintel Wallboard Guide			ACOUSTIC REPORT: PKA Predictor V16 Not Deemed Discontinuous Construction		
FRL Report	**SYSTEM Nº**	**WALL LININGS**	**CAVITY DEPTH mm**	**92**	**150**
			STUD DEPTH/BMT mm	**64/0.5**	**92/0.55**
			CAVITY INFILL (Refer to TABLE B6)	**R_w / R_w+C_{tr}**	
– /120/120 **90/90/90** (from both sides) FC 12946	**CSR 1285**	BOTH SIDES • 2 x 13mm Gyprock Fyrchek Plasterboard.	(a) Nil	50/44	52/46
			(c) 75 Acoustigard 11kg	59/**51**	60/**52**
			(f) 50 Acoustigard 14kg	59/**51**	60/**52**
			(g) 70 Soundscreen 2.0	61/**51**	62/**52**
			(h) 75 MAB Polyester 14kg	59/**50**	58/**51**
			Wall Thickness mm	144	202
– /120/120 **90/90/90** (from both sides) FC 12946	**CSR 1286**	SIDE ONE • 2 x 13mm Gyprock Fyrchek MR Plasterboard. SIDE TWO • 2 x 13mm Gyprock Fyrchek Plasterboard.	(a) Nil	50/44	52/46
			(c) 75 Acoustigard 11kg	59/**51**	60/**52**
			(f) 50 Acoustigard 14kg	59/**51**	60/**52**
			(g) 70 Soundscreen 2.0	61/**51**	62/**52**
			(h) 75 MAB Polyester 11kg	55/48	56/49
			Wall Thickness mm	144	202
– /120/120 **90/90/90** (from both sides) FC 12946	**CSR 1287**	BOTH SIDES • 2 x 13mm Gyprock Fyrchek MR Plasterboard.	(a) Nil	50/44	52/46
			(c) 75 Acoustigard 11kg	59/**51**	60/**52**
			(f) 50 Acoustigard 14kg	59/**51**	60/**52**
			(g) 70 Soundscreen 2.0	61/**51**	62/**52**
			(h) 75 MAB Polyester 11kg	55/48	56/49
			Wall Thickness mm	144	202
– /120/120 **90/90/90** (from both sides) FC 12946	**CSR 3172**	BOTH SIDES • 2 x 13mm Gyprock EC08 Complete.	(a) Nil	52/46	54/48
			(c) 75 Acoustigard 11kg	61/**53**	62/**54**
			(e) 88 Soundscreen 2.5	64/**55**	66/**57**
			(f) 50 Acoustigard 14kg	61/**53**	62/**54**
			(g) 50 MAB Polyester 11kg	56/49	57/**50**
			Wall Thickness mm	144	202
– /120/120 **90/90/90** (from both sides) FC 12946	**CSR 10011**	BOTH SIDES • 2 x 13mm Gyprock EC08 Extreme.	(a) Nil	52/46	54/48
			(c) 75 Acoustigard 11kg	61/**53**	62/**54**
			(e) 88 Soundscreen 2.5	64/**55**	66/**57**
			(f) 50 Acoustigard 14kg	61/**53**	62/**54**
			(g) 50 MAB Polyester 11kg	56/49	57/**50**
			Wall Thickness mm	144	202

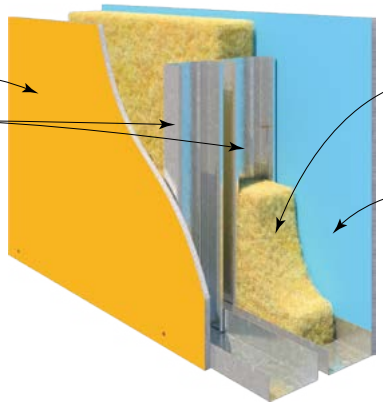
Steel Frame Internal Wall Systems – Staggered Stud



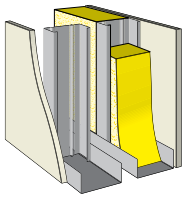
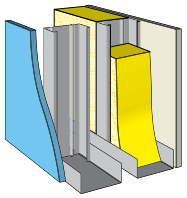
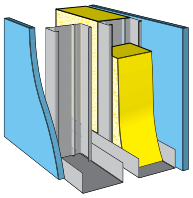
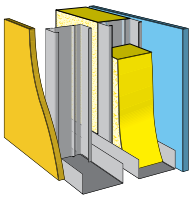
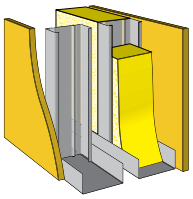
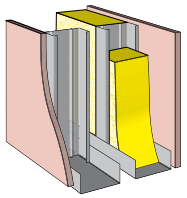
NOTE: Polyester insulation may NOT be used where the system has non-combustible construction requirements.

‡ Unique height restrictions apply. Refer to The Red Book 3, height selection tables.

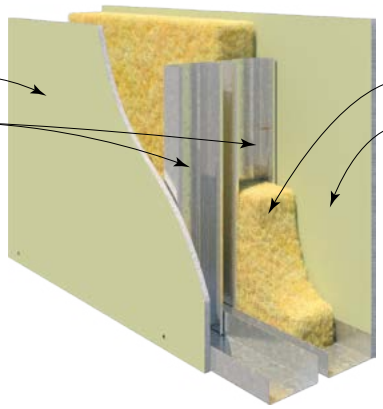
SYSTEM SPECIFICATION Refer to Gyprock Red Book 3 & Cemintel Wallboard Guide			ACOUSTIC REPORT: PKA Predictor V16 Not Deemed Discontinuous Construction		
FRL Report	**SYSTEM Nº**	**WALL LININGS**	**CAVITY DEPTH mm**	**92**	**150**
			STUD DEPTH/BMT mm	**64/0.5**	**92/0.55**
			CAVITY INFILL (Refer to TABLE B6)	**R_w / R_w+C_{tr}**	
– /180/180‡ **120/120/120** (from both sides) FC 12946	**CSR 1290**	BOTH SIDES • 2 x 16mm Gyprock Fyrchek Plasterboard.	(a) Nil	50/44	52/46
			(c) 75 Acoustigard 11kg	59/**51**	60/**52**
			(f) 50 Acoustigard 14kg	59/**51**	60/**52**
			(g) 70 Soundscreen 2.0	61/**51**	62/**52**
			(h) 75 MAB Polyester 11kg	55/48	56/49
			Wall Thickness mm	156	214
– /180/180‡ **120/120/120** (from both sides) FC 12946	**CSR 1291**	SIDE ONE • 2 x 16mm Gyprock Fyrchek MR Plasterboard. SIDE TWO • 2 x 16mm Gyprock Fyrchek Plasterboard.	(a) Nil	51/45	53/47
			(c) 75 Acoustigard 11kg	60/**52**	61/**53**
			(f) 50 Acoustigard 14kg	60/**52**	61/**53**
			(g) 70 Soundscreen 2.0	62/**52**	63/**53**
			(h) 75 MAB Polyester 11kg	56/49	57/**50**
			Wall Thickness mm	156	214
– /180/180‡ **120/120/120** (from both sides) FC 12946	**CSR 1292**	BOTH SIDES • 2 x 16mm Gyprock Fyrchek MR Plasterboard.	(a) Nil	52/46	54/48
			(c) 75 Acoustigard 11kg	61/**53**	62/**54**
			(f) 50 Acoustigard 14kg	61/**53**	62/**54**
			(g) 70 Soundscreen 2.0	63/**53**	64/**54**
			(h) 75 MAB Polyester 11kg	57/**50**	58/**51**
			Wall Thickness mm	156	214



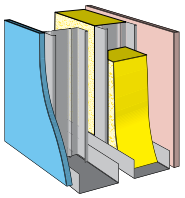
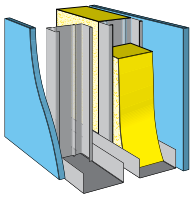
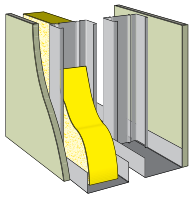
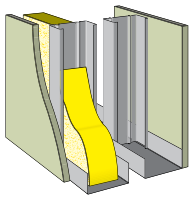
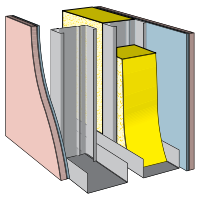
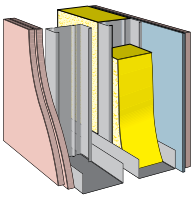
NOTE: Polyester insulation may NOT be used where the system has non-combustible construction requirements.

SYSTEM SPECIFICATION Refer to Gyprock Red Book 3 & Cemintel Wallboard Guide			ACOUSTIC REPORT: PKA Predictor V16 Discontinuous Construction				
			CAVITY WIDTH mm	**148**	**200**	**250**	**300**
FRL Report	**SYSTEM Nº**	**WALL LININGS**	**MINIMUM STUD DEPTH/BMT mm**	**64/Any**			
			CAVITY INFILL (Refer to TABLE B6)	**R_w / R_w+C_{tr}**			
– / – / –	**CSR 10029** 	BOTH SIDES • 1 x 13mm Gyprock Standard Plasterboard.	(a) Nil	39/32	42/36	43/37	43/37
			(c) 75 Acoustigard 11kg	52/42	54/45	55/46	55/46
			(f) 50 Acoustigard 14kg	50/40	53/44	54/45	54/45
			(g) 70 Soundscreen 2.0	53/41	56/45	57/46	57/46
			(h) 50 MAB Polyester 11kg	45/37	48/41	49/42	49/42
			Wall Thickness mm	174	226	276	326
– / – / –	**CSR 10030** 	SIDE ONE • 1 x 13mm Gyprock Fyrchek MR Plasterboard. SIDE TWO • 1 x 13mm Gyprock Fyrchek Plasterboard.	(a) Nil	42/36	44/38	45/39	45/39
			(c) 75 Acoustigard 11kg	55/46	56/47	57/48	57/48
			(f) 50 Acoustigard 14kg	53/44	55/46	56/47	56/47
			(g) 70 Soundscreen 2.0	56/45	58/47	59/48	59/48
			(h) 50 MAB Polyester 11kg	48/41	50/43	51/44	51/44
			Wall Thickness mm	174	226	276	326
– / – / –	**CSR 1305** 	BOTH SIDES • 1 x 13mm Gyprock Aquachek Plasterboard.	(a) Nil	41/34	43/37	44/38	45/39
			(c) 75 Acoustigard 11kg	54/44	55/46	56/47	57/48
			(f) 50 Acoustigard 14kg	52/42	54/45	55/46	56/47
			(g) 70 Soundscreen 2.0	55/43	57/46	58/47	59/48
			(h) 50 MAB Polyester 11kg	47/39	49/42	50/43	51/44
			Wall Thickness mm	174	226	276	326
– / – / –	**CSR 1306** 	SIDE ONE • 1 x 13mm Gyprock Soundchek Plasterboard. SIDE TWO • 1 x 13mm Gyprock Aquachek Plasterboard.	(a) Nil	43/36	44/38	45/39	46/40
			(c) 75 Acoustigard 11kg	56/46	56/47	57/48	58/49
			(f) 50 Acoustigard 14kg	54/44	55/46	56/47	57/48
			(g) 70 Soundscreen 2.0	57/45	58/47	59/48	60/49
			(h) 50 MAB Polyester 11kg	49/41	50/43	51/44	52/45
			Wall Thickness mm	174	226	276	326
– / – / –	**CSR 1307** 	BOTH SIDES • 1 x 13mm Gyprock Soundchek Plasterboard.	(a) Nil	43/37	44/38	45/39	46/40
			(c) 75 Acoustigard 11kg	56/47	56/47	57/48	58/49
			(f) 50 Acoustigard 14kg	54/45	55/46	56/47	57/48
			(g) 70 Soundscreen 2.0	57/46	58/47	59/48	60/49
			(h) 50 MAB Polyester 11kg	49/42	50/43	51/44	52/45
			Wall Thickness mm	174	226	276	326
– /60/60 **30/30/30** (from both sides) FC 12946	**CSR 1320** 	BOTH SIDES • 1 x 13mm Gyprock Fyrchek Plasterboard.	(a) Nil	42/36	43/37	44/38	45/39
			(c) 75 Acoustigard 11kg	55/46	55/46	56/47	57/48
			(f) 50 Acoustigard 14kg	53/44	54/45	55/46	56/47
			(h) 50 MAB Polyester 11kg	48/41	49/42	50/43	51/44
			(g) 70 Soundscreen 2.0	56/45	57/46	58/47	59/48
			Wall Thickness mm	174	226	276	326

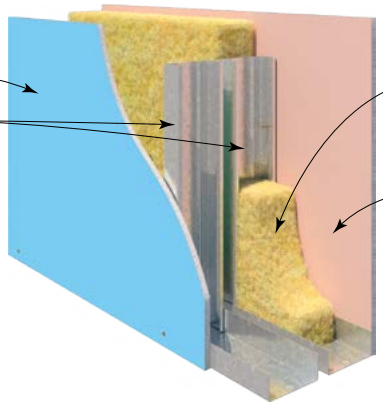
Steel Frame Internal Wall Systems – Double Stud



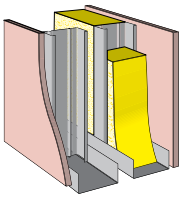
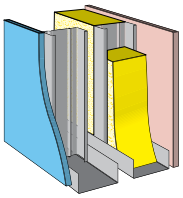
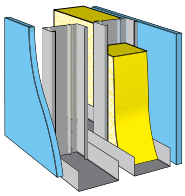
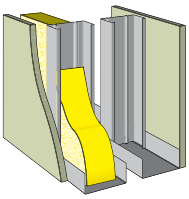
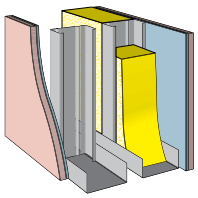
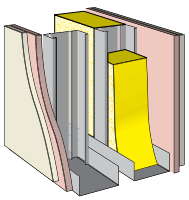
NOTE: Polyester insulation may NOT be used where the system has non-combustible construction requirements.

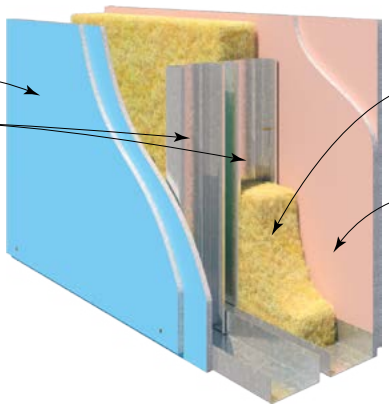
SYSTEM SPECIFICATION Refer to Gyprock Red Book 3 & Cemintel Wallboard Guide			ACOUSTIC REPORT: PKA Predictor V16 Discontinuous Construction				
			CAVITY WIDTH mm	**148**	**200**	**250**	**300**
			MINIMUM STUD DEPTH/BMT mm	**64/Any**			
FRL Report	**SYSTEM Nº**	**WALL LININGS**	**CAVITY INFILL** (Refer to TABLE B6)	**R_w / R_w+C_{tr}**			
– /60/60 **30/30/30** (from both sides) FC 12946	**CSR 1321** 	SIDE ONE • 1 x 13mm Gyprock Fyrchek MR Plasterboard. SIDE TWO • 1 x 13mm Gyprock Fyrchek Plasterboard.	(a) Nil	42/36	44/38	45/39	45/39
			(c) 75 Acoustigard 11kg	55/46	56/47	57/48	57/48
			(f) 50 Acoustigard 14kg	53/44	55/46	56/47	56/47
			(g) 70 Soundscreen 2.0	56/45	58/47	59/48	59/48
			(h) 50 MAB Polyester 11kg	48/41	50/43	51/44	51/44
			Wall Thickness mm	174	226	276	326
– /60/60 **30/30/30** (from both sides) FC 12946	**CSR 1322** 	BOTH SIDES • 1 x 13mm Gyprock Fyrchek MR Plasterboard.	(a) Nil	42/36	44/38	45/39	45/39
			(c) 75 Acoustigard 11kg	55/46	56/47	57/48	57/48
			(f) 50 Acoustigard 14kg	53/44	55/46	56/47	56/47
			(g) 70 Soundscreen 2.0	56/45	58/47	59/48	59/48
			(h) 50 MAB Polyester 11kg	48/41	50/43	51/44	51/44
			Wall Thickness mm	174	226	276	326
– /60/60 **30/30/30** (from both sides) FC 12946	**CSR 3222** 	BOTH SIDES • 1 x 13mm Gyprock EC08 Complete.	(a) Nil	44/38	45/39	46/40	47/41
			(c) 75 Acoustigard 11kg	57/48	57/48	58/49	59/**50**
			(e) 88 Soundscreen 2.5	60/**50**	60/**50**	61/**51**	62/**52**
			(f) 50 Acoustigard 14kg	55/46	56/47	57/48	58/49
			(h) 50 MAB Polyester 11kg	50/43	51/44	52/45	53/46
			Wall Thickness mm	174	226	276	326
– /60/60 **30/30/30** (from both sides) FC 12946	**CSR 10012** 	BOTH SIDES • 1 x 13mm Gyprock EC08 Extreme.	(a) Nil	44/38	45/39	46/40	47/41
			(c) 75 Acoustigard 11kg	57/48	57/48	58/49	59/**50**
			(e) 88 Soundscreen 2.5	60/**50**	60/**50**	61/**51**	62/**52**
			(f) 50 Acoustigard 14kg	55/46	56/47	57/48	58/49
			(h) 50 MAB Polyester 11kg	50/43	51/44	52/45	53/46
			Wall Thickness mm	174	226	276	326
– /90/90 **30/30/30** (from both sides) FC 12946	**CSR 1330** 	BOTH SIDES (ANY ORDER) • 1 x 6mm CeminSeal Wallboard. • 1 x 13mm Gyprock Fyrchek Plasterboard.	(a) Nil	50/44	51/45	52/46	53/47
			(c) 75 Acoustigard 11kg	61/**52**	61/**52**	62/**53**	63/**54**
			(f) 50 Acoustigard 14kg	59/**50**	60/**51**	61/**52**	62/**53**
			(g) 70 Soundscreen 2.0	62/**51**	63/**52**	64/**53**	65/**54**
			(h) 50 MAB Polyester 11kg	54/47	55/48	56/49	57/**50**
			Wall Thickness mm	186	238	288	338
– /90/90 **30/30/30** (from both sides) FC 12946	**CSR 1333** 	SIDE ONE • 2 x 13mm Gyprock Fyrchek Plasterboard. SIDE TWO (ANY ORDER) • 1 x 6mm CeminSeal Wallboard. • 1 x 13mm Gyprock Fyrchek Plasterboard.	(a) Nil	50/44	51/45	52/46	53/47
			(c) 75 Acoustigard 11kg	61/**52**	61/**52**	62/**53**	63/**54**
			(f) 50 Acoustigard 14kg	59/**50**	60/**51**	61/**52**	62/**53**
			(g) 70 Soundscreen 2.0	62/**51**	63/**52**	64/**53**	65/**54**
			(h) 50 MAB Polyester 11kg	54/47	55/48	56/49	57/**50**
			Wall Thickness mm	193	245	295	345

Steel Frame Internal Wall Systems – Double Stud

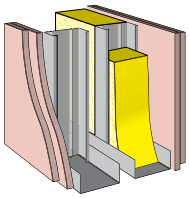
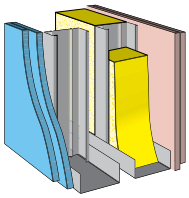
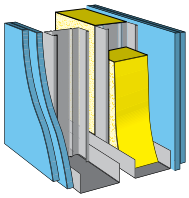
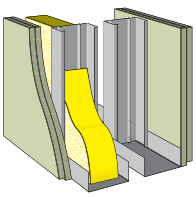
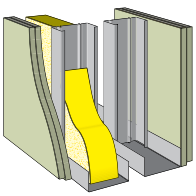


NOTE: Polyester insulation may NOT be used where the system has non-combustible construction requirements.

SYSTEM SPECIFICATION Refer to Gyprock Red Book 3 & Cemintel Wallboard Guide			ACOUSTIC REPORT: PKA Predictor V16 Discontinuous Construction				
			CAVITY WIDTH mm	**148**	**200**	**250**	**300**
			MINIMUM STUD DEPTH/BMT mm	**64/Any**			
FRL Report	**SYSTEM Nº**	**WALL LININGS**	**CAVITY INFILL** (Refer to TABLE B6)	**R_w / R_w+C_{tr}**			
– /90/90 **60/60/60** (from both sides) FC 12946	**CSR 1340** 	BOTH SIDES • 1 x 16mm Gyprock Fyrchek Plasterboard.	(a) Nil	42/36	43/37	44/38	45/39
			(c) 75 Acoustigard 11kg	55/46	55/46	56/47	57/48
			(f) 50 Acoustigard 14kg	53/44	54/45	55/46	56/47
			(g) 70 Soundscreen 2.0	56/45	57/46	58/47	59/48
			(h) 50 MAB Polyester 11kg	48/41	49/42	50/43	51/44
			Wall Thickness mm	180	232	282	332
– /90/90 **60/60/60** (from both sides) FC 12946	**CSR 1341** 	SIDE ONE • 1 x 16mm Gyprock Fyrchek MR Plasterboard. SIDE TWO • 1 x 16mm Gyprock Fyrchek Plasterboard.	(a) Nil	43/37	44/38	45/39	46/40
			(c) 75 Acoustigard 11kg	56/47	56/47	57/48	58/49
			(f) 50 Acoustigard 14kg	54/45	55/46	56/47	57/48
			(g) 70 Soundscreen 2.0	57/46	58/47	59/48	60/49
			(h) 50 MAB Polyester 11kg	49/42	50/43	51/44	52/45
			Wall Thickness mm	180	232	282	332
– /90/90 **60/60/60** (from both sides) FC 12946	**CSR 1342** 	BOTH SIDES • 1 x 16mm Gyprock Fyrchek MR Plasterboard.	(a) Nil	44/38	45/39	46/40	47/41
			(c) 75 Acoustigard 11kg	57/48	57/48	58/49	59**/50**
			(f) 50 Acoustigard 14kg	55/46	56/47	57/48	58/49
			(g) 70 Soundscreen 2.0	58/47	59/48	60/49	61**/50**
			(h) 50 MAB Polyester 11kg	50/43	51/44	52/45	53/46
			Wall Thickness mm	180	232	282	332
– /90/90 **60/60/60** (from both sides) FC 12946	**CSR 3232** 	BOTH SIDES • 1 x 16mm Gyprock EC08 Complete.	(a) Nil	45/39	46/40	47/41	48/42
			(c) 75 Acoustigard 11kg	58/49	58/49	59**/50**	60**/51**
			(f) 50 Acoustigard 14kg	56/47	57/48	58/49	59**/50**
			(g) 70 Soundscreen 2.0	59/48	60/49	61**/50**	62**/51**
			(h) 50 MAB Polyester 11kg	51/44	53/45	53/46	54/47
			Wall Thickness mm	180	232	282	332
– /90/90 **60/60/60** (from both sides) FC 12946	**CSR 1345** 	BOTH SIDES (ANY ORDER) • 1 x 6mm CeminSeal Wallboard. • 1 x 16mm Gyprock Fyrchek Plasterboard.	(a) Nil	50/44	52/46	53/47	53/47
			(c) 75 Acoustigard 11kg	61**/52**	62**/53**	63**/54**	63**/54**
			(f) 50 Acoustigard 14kg	59**/50**	61**/52**	62**/53**	62**/53**
			(g) 70 Soundscreen 2.0	62**/51**	64**/53**	65**/54**	65**/54**
			(h) 50 MAB Polyester 11kg	54/47	56/49	57**/50**	57**/50**
			Wall Thickness mm	192	244	294	344
– /90/90 **60/60/60** (from both sides) FC 12946	**CSR 1348** 	BOTH SIDES (ANY ORDER) • 1 x 10mm Gyprock Plus Plasterboard. • 1 x 16mm Gyprock Fyrchek Plasterboard.	(a) Nil	49/43	50/43	51/45	52/46
			(c) 75 Acoustigard 11kg	60**/51**	60**/51**	61**/52**	62**/53**
			(f) 50 Acoustigard 14kg	58/49	59**/50**	60**/51**	61**/52**
			(g) 70 Soundscreen 2.0	61**/50**	62**/51**	63**/52**	64**/53**
			(h) 50 MAB Polyester 11kg	53/46	54/47	55/48	56/49
			Wall Thickness mm	200	252	302	352

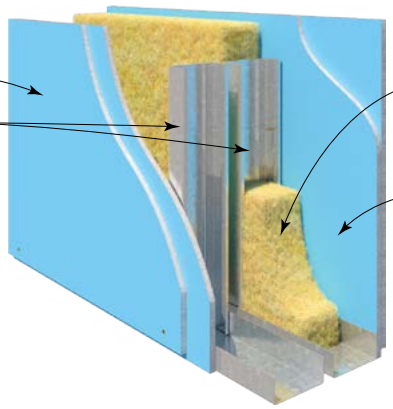


NOTE: Polyester insulation may NOT be used where the system has non-combustible construction requirements.

SYSTEM SPECIFICATION Refer to Gyprock Red Book 3 & Cemintel Wallboard Guide			ACOUSTIC REPORT: PKA Predictor V16 Discontinuous Construction				
			CAVITY WIDTH mm	**148**	**200**	**250**	**300**
			MINIMUM STUD DEPTH/BMT mm	**64/Any**			
FRL Report	**SYSTEM Nº**	**WALL LININGS**	**CAVITY INFILL** (Refer to TABLE B6)	**R_w / R_w+C_{tr}**			
– /120/120 **90/90/90** (from both sides) FC 12946	**CSR 1355** 	BOTH SIDES • 2 x 13mm Gyprock Fyrchek Plasterboard.	(a) Nil	50/44	51/45	52/46	53/47
			(c) 75 Acoustigard 11kg	61/**52**	61/**52**	62/**53**	63/**54**
			(f) 50 Acoustigard 14kg	59/**50**	60/**51**	61/**52**	62/**53**
			(g) 70 Soundscreen 2.0	62/**51**	63/**52**	64/**53**	65/**54**
			(h) 50 MAB Polyester 11kg	54/47	55/48	56/49	57/**50**
			Wall Thickness mm	200	252	302	352
– /120/120 **90/90/90** (from both sides) FC 12946	**CSR 1356** 	SIDE ONE • 2 x 13mm Gyprock Fyrchek MR Plasterboard. SIDE TWO • 2 x 13mm Gyprock Fyrchek Plasterboard.	(a) Nil	50/44	52/46	53/47	53/47
			(c) 75 Acoustigard 11kg	61/**52**	62/**53**	63/**54**	63/**54**
			(f) 50 Acoustigard 14kg	59/**50**	61/**52**	62/**53**	62/**53**
			(g) 70 Soundscreen 2.0	62/**51**	64/**53**	65/**54**	65/**54**
			(h) 50 MAB Polyester 11kg	54/47	56/49	57/**50**	57/**50**
			Wall Thickness mm	200	252	302	352
– /120/120 **90/90/90** (from both sides) FC 12946	**CSR 1357** 	BOTH SIDES • 2 x 13mm Gyprock Fyrchek MR Plasterboard.	(a) Nil	50/44	52/46	53/47	53/47
			(c) 75 Acoustigard 11kg	61/**52**	62/**53**	63/**54**	63/**54**
			(f) 50 Acoustigard 14kg	59/**50**	61/**52**	62/**53**	62/**53**
			(g) 70 Soundscreen 2.0	62/**51**	64/**53**	65/**54**	65/**54**
			(h) 50 MAB Polyester 11kg	54/47	56/49	57/**50**	57/**50**
			Wall Thickness mm	200	252	302	352
– /120/120 **90/90/90** (from both sides) FC 12946	**CSR 3242** 	BOTH SIDES • 2 x 13mm Gyprock EC08 Complete.	(a) Nil	52/46	53/47	54/48	55/49
			(c) 75 Acoustigard 11kg	63/**54**	63/**54**	64/**55**	65/**56**
			(e) 88 Soundscreen 2.5	66/**56**	66/**56**	67/**57**	68/**58**
			(f) 50 Acoustigard 14kg	61/**52**	62/**53**	63/**54**	64/**55**
			(h) 50 MAB Polyester 11kg	56/49	57/**50**	58/**51**	59/**52**
			Wall Thickness mm	200	252	302	352
– /120/120 **90/90/90** (from both sides) FC 12946	**CSR 10013** 	BOTH SIDES • 2 x 13mm Gyprock EC08 Extreme.	(a) Nil	52/46	53/47	54/48	55/49
			(c) 75 Acoustigard 11kg	63/**54**	63/**54**	64/**55**	65/**56**
			(e) 88 Soundscreen 2.5	66/**56**	66/**56**	67/**57**	68/**58**
			(f) 50 Acoustigard 14kg	61/**52**	62/**53**	63/**54**	64/**55**
			(h) 50 MAB Polyester 11kg	56/49	57/**50**	58/**51**	59/**52**
			Wall Thickness mm	200	252	302	352

Lining material as per system table.

2 rows of steel studs at 600mm maximum centres with 20mm minimum gap.

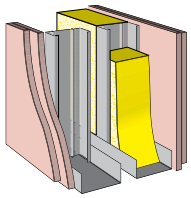
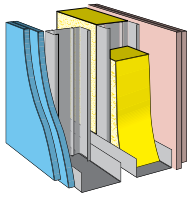
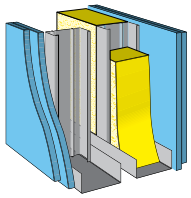
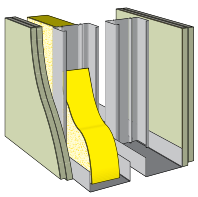


Cavity insulation as per system table. (Unless otherwise specified, cavity insulation is required in one stud row only).

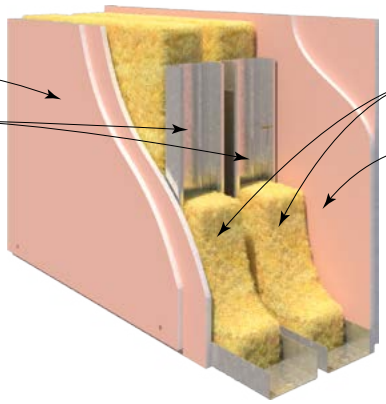
Lining material as per system table.

NOTE: Polyester insulation may NOT be used where the system has non-combustible construction requirements.

‡ Unique height restrictions apply. Refer to The Red Book 3, height selection tables.

SYSTEM SPECIFICATION Refer to Gyprock Red Book 3 & Cemintel Wallboard Guide			ACOUSTIC REPORT: PKA Predictor V16 Discontinuous Construction				
FRL Report	**SYSTEM Nº**	**WALL LININGS**	**CAVITY WIDTH mm**	**148**	**200**	**250**	**300**
			MINIMUM STUD DEPTH/BMT mm	**64/Any**			
			CAVITY INFILL (Refer to TABLE B6)	**R_w / R_w+C_{tr}**			
– /180/180‡ 120/120/120 (from both sides) FC 12946	**CSR 1360** 	BOTH SIDES • 2 x 16mm Gyprock Fyrchek Plasterboard.	(a) Nil	50/44	51/45	52/46	53/47
			(c) 75 Acoustigard 11kg	61/**52**	61/**52**	62/**53**	63/**54**
			(f) 50 Acoustigard 14kg	59/**50**	60/**51**	61/**52**	62/**53**
			(g) 70 Soundscreen 2.0	62/**51**	63/**52**	64/**53**	65/**54**
			(h) 75 MAB Polyester 14kg	57/**50**	57/**50**	58/**51**	59/**52**
			Wall Thickness mm	212	264	314	364
– /180/180‡ 120/120/120 (from both sides) FC 12946	**CSR 1361** 	SIDE ONE • 2 x 16mm Gyprock Fyrchek MR Plasterboard. SIDE TWO • 2 x 16mm Gyprock Fyrchek Plasterboard.	(a) Nil	51/45	52/46	53/47	54/48
			(c) 75 Acoustigard 11kg	62/**53**	62/**53**	63/**54**	64/**55**
			(f) 50 Acoustigard 14kg	60/**51**	61/**52**	62/**53**	63/**54**
			(g) 70 Soundscreen 2.0	63/**52**	64/**53**	65/**54**	66/**55**
			(h) 75 MAB Polyester 14kg	58/**51**	58/**51**	59/**52**	60/**53**
			Wall Thickness mm	212	264	314	364
– /180/180‡ 120/120/120 (from both sides) FC 12946	**CSR 1362** 	BOTH SIDES • 2 x 16mm Gyprock Fyrchek MR Plasterboard.	(a) Nil	52/46	53/47	54/48	55/49
			(c) 75 Acoustigard 11kg	63/**54**	63/**54**	64/**55**	65/**56**
			(f) 50 Acoustigard 14kg	61/**52**	62/**53**	63/**54**	64/**55**
			(g) 70 Soundscreen 2.0	64/**53**	65/**54**	66/**55**	67/**56**
			(h) 75 MAB Polyester 14kg	59/**52**	59/**52**	60/**53**	61/**54**
			Wall Thickness mm	212	264	314	364
– /180/180‡ 120/120/120 (from both sides) FC 12946	**CSR 3260** 	BOTH SIDES • 2 x 16mm Gyprock EC08 Complete.	(a) Nil	53/47	54/48	55/49	56/**50**
			(c) 75 Acoustigard 11kg	64/**55**	64/**55**	65/**56**	66/**57**
			(f) 50 Acoustigard 14kg	62/**53**	63/**54**	64/**55**	65/**56**
			(g) 70 Soundscreen 2.0	65/**54**	66/**55**	67/**56**	68/**57**
			(h) 75 MAB Polyester 14kg	60/**53**	60/**53**	61/**54**	62/**55**
			Wall Thickness mm	212	264	314	364

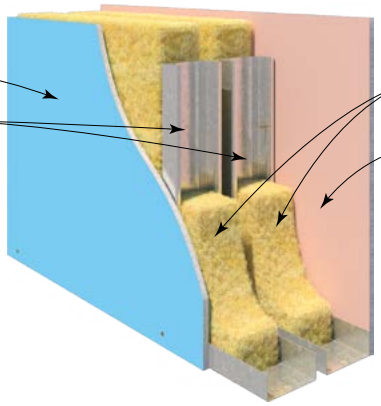
Steel Frame Internal Wall Systems – Double Stud with Two Rows Insulation



NOTE: Polyester insulation may NOT be used where the system has non-combustible construction requirements.

SYSTEM SPECIFICATION Refer to Gyprock Red Book 3 & Cemintel Wallboard Guide			ACOUSTIC REPORT: PKA Predictor V16 Discontinuous Construction				
FRL Report	SYSTEM Nº	WALL LININGS	CAVITY WIDTH mm	148	200	250	300
			MIN. STUD DEPTH/BMT mm	64/Any			
			CAVITY INFILL (Refer to TABLE B6)	R_w / R_w+C_{tr}			
– /90/90 **30/30/30** (from both sides) FC 12946	**CSR 1382**	SIDE ONE • 2 x 13mm Gyprock Fyrchek Plasterboard. SIDE TWO • 1 x 13mm Gyprock Fyrchek Plasterboard.	(a) Nil	47/41	48/42	49/43	50/44
			(c) 2 x 75 Acoustigard 11kg	62/**53**	63/**54**	64/**55**	64/**55**
			(f) 2 x 50 Acoustigard 14kg	61/**52**	61/**52**	62/**53**	63/**54**
			(g) 2 x 70 Soundscreen 2.0	63/**53**	64/**54**	65/**55**	65/**55**
			(h) 2 x 50 MAB Polyester 11kg	57/48	57/49	58/**50**	58/**50**
			Wall Thickness mm	187	239	289	339
– /90/90 **30/30/30** (from both sides) FC 12946	**CSR 1383**	SIDE ONE • 2 x 13mm Gyprock Fyrchek Plasterboard. SIDE TWO • 1 x 13mm Gyprock Fyrchek MR Plasterboard.	(a) Nil	47/41	48/42	49/43	50/44
			(c) 2 x 75 Acoustigard 11kg	62/**53**	63/**54**	64/**55**	64/**55**
			(f) 2 x 50 Acoustigard 14kg	61/**52**	61/**52**	62/**53**	63/**54**
			(g) 2 x 70 Soundscreen 2.0	63/**53**	64/**54**	65/**55**	65/**55**
			(h) 2 x 50 MAB Polyester 11kg	56/48	57/49	58/**50**	58/**50**
			Wall Thickness mm	187	239	289	339
– /120/120 **90/90/90** (from both sides) FC 12946	**CSR 10022**	BOTH SIDES • 2 x 13mm Gyprock Fyrchek Plasterboard.	(a) Nil	50/44	51/45	52/46	53/47
			(c) 2 x 75 Acoustigard 14kg	64/**55**	65/**58**	66/**57**	66/**57**
			(f) 2 x 50 Acoustigard 14kg	63/**54**	63/**54**	64/**55**	65/**56**
			(g) 2 x 70 Soundscreen 2.0	65/**55**	66/**56**	67/**57**	67/**57**
			(h) 2 x 50 MAB Polyester 11kg	58/**50**	59/**51**	60/**52**	60/**52**
			Wall Thickness mm	200	252	302	352
– /120/120 **90/90/90** (from both sides) FC 12946	**CSR 10023**	SIDE ONE • 2 x 13mm Gyprock Fyrchek MR Plasterboard. SIDE TWO • 2 x 13mm Gyprock Fyrchek Plasterboard.	(a) Nil	50/44	52/46	53/47	53/47
			(c) 2 x 75 Acoustigard 14kg	64/**55**	66/**57**	67/**58**	66/**57**
			(f) 2 x 50 Acoustigard 14kg	63/**54**	64/**55**	65/**56**	65/**56**
			(g) 2 x 70 Soundscreen 2.0	65/**55**	67/**57**	68/**58**	67/**57**
			(h) 2 x 50 MAB Polyester 11kg	58/**50**	60/**52**	61/**53**	60/**52**
			Wall Thickness mm	200	252	302	352
– /120/120 **90/90/90** (from both sides) FC 12946	**CSR 10024**	BOTH SIDES • 2 x 13mm Gyprock Fyrchek MR Plasterboard.	(a) Nil	50/44	52/46	53/47	53/47
			(c) 2 x 75 Acoustigard 14kg	64/**55**	66/**57**	67/**58**	66/**57**
			(f) 2 x 50 Acoustigard 14kg	63/**54**	64/**55**	65/**56**	65/**56**
			(g) 2 x 70 Soundscreen 2.0	65/**55**	67/**57**	68/**58**	67/**57**
			(h) 2 x 50 MAB Polyester 11kg	58/**50**	60/**52**	61/**53**	60/**52**
			Wall Thickness mm	200	252	302	352

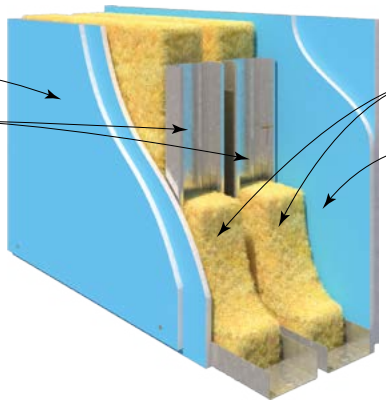
Steel Frame Internal Wall Systems – Double Stud with Two Rows Insulation



NOTE: Polyester insulation may NOT be used where the system has non-combustible construction requirements.

SYSTEM SPECIFICATION Refer to Gyprock Red Book 3 & Cemintel Wallboard Guide			ACOUSTIC REPORT: PKA Predictor V16 Discontinuous Construction				
			CAVITY WIDTH mm	**148**	**200**	**250**	**300**
FRL Report	**SYSTEM Nº**	**WALL LININGS**	**MIN. STUD DEPTH/BMT mm**	**64/Any**			
			CAVITY INFILL (Refer to TABLE B6)	**R_w / R_w+C_{tr}**			
– /120/120 90/90/90 (from both sides) FC 12946	**CSR 10028**	BOTH SIDES • 2 x 13mm Gyprock EC08 Extreme.	(a) Nil	52/46	53/4	54/48	55/49
			(c) 2 x 75 Acoustigard 14kg	66/**57**	67/**58**	68/**59**	68/**59**
			(f) 2 x 50 Acoustigard 14kg	65/**56**	65/**56**	66/**57**	67/**58**
			(g) 2 x 70 Soundscreen 2.0	67/**57**	68/**58**	69/**59**	69/**59**
			(h) 2 x 50 MAB Polyester 11kg	60/**52**	61/**53**	62/**54**	62/**54**
			Wall Thickness mm	200	252	302	352
– /90/90 60/60/60 (from both sides) FC 12946	**CSR 1385**	BOTH SIDES • 1 x 16mm Gyprock Fyrchek Plasterboard.	(a) Nil	42/36	43/37	44/38	45/39
			(c) 2 x 75 Acoustigard 14kg	59/**50**	60/**51**	61/**52**	61/**52**
			(f) 2 x 50 Acoustigard 14kg	57/48	57/48	58/49	59/**50**
			(g) 2 x 70 Soundscreen 2.0	59/49	60/**50**	61/**51**	61/**51**
			(h) 2 x 50 MAB Polyester 11kg	52/44	53/45	54/46	54/46
			Wall Thickness mm	180	232	282	332
– /90/90 60/60/60 (from both sides) FC 12946	**CSR 1386**	SIDE ONE • 1 x 16mm Gyprock Fyrchek MR Plasterboard. SIDE TWO • 1 x 16mm Gyprock Fyrchek Plasterboard.	(a) Nil	43/37	44/38	45/39	46/40
			(c) 2 x 75 Acoustigard 11kg	59/**50**	60/**51**	61/**52**	61/**52**
			(f) 2 x 50 Acoustigard 14kg	58/49	58/49	59/**50**	60/**51**
			(g) 2 x 70 Soundscreen 2.0	60/**50**	61/**51**	62/**52**	62/**52**
			(h) 2 x 50 MAB Polyester 11kg	53/45	54/46	55/47	55/47
			Wall Thickness mm	180	232	282	332
– /90/90 60/60/60 (from both sides) FC 12946	**CSR 1387**	BOTH SIDES • 1 x 16mm Gyprock Fyrchek MR Plasterboard.	(a) Nil	44/38	45/39	46/40	47/41
			(c) 2 x 75 Acoustigard 11kg	60/**51**	61/**52**	62/**53**	62/**53**
			(f) 2 x 50 Acoustigard 14kg	59/**50**	59/**50**	60/**51**	61/**52**
			(g) 2 x 70 Soundscreen 2.0	61/**51**	62/**52**	63/**53**	63/**53**
			(h) 2 x 50 MAB Polyester 11kg	54/46	55/47	56/48	56/48
			Wall Thickness mm	180	232	282	332
– /90/90 60/60/60 (from both sides) FC 12946	**CSR 3270**	BOTH SIDES • 1 x 16mm Gyprock EC08 Complete.	(a) Nil	45/39	46/40	47/41	48/42
			(c) 2 x 75 Acoustigard 11kg	61/**52**	62/**53**	63/**54**	63/**54**
			(f) 2 x 50 Acoustigard 14kg	60/**51**	60/**51**	61/**52**	62/**53**
			(g) 2 x 70 Soundscreen 2.0	62/**52**	63/**53**	64/**54**	64/**54**
			(h) 2 x 50 MAB Polyester 11kg	55/47	56/48	57/49	57/49
			Wall Thickness mm	180	232	282	332

Steel Frame Internal Wall Systems – Double Stud with Two Rows Insulation



NOTE: Polyester insulation may NOT be used where the system has non-combustible construction requirements.

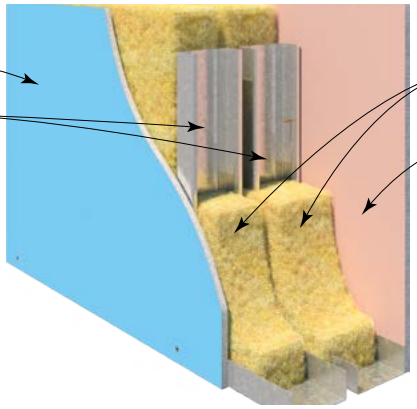
‡ Unique height restrictions apply. Refer to The Red Book 3, height selection tables.

SYSTEM SPECIFICATION Refer to Gyprock Red Book 3 & Cemintel Wallboard Guide			ACOUSTIC REPORT: PKA Predictor V16 Discontinuous Construction				
FRL Report	SYSTEM Nº	WALL LININGS	CAVITY WIDTH mm	148	200	250	300
			MIN. STUD DEPTH/BMT mm	64/Any			
			CAVITY INFILL (Refer to TABLE B6)	R_w / R_w+C_{tr}			
– /180/180‡ 120/120/120 (from both sides) FC 12946	**CSR 10025**	BOTH SIDES • 2 x 16mm Gyprock Fyrchek Plasterboard.	(a) Nil	50/44	51/45	52/46	53/47
			(c) 2 x 75 Acoustigard 11kg	64/**55**	65/**56**	66/**57**	66/**57**
			(f) 2 x 50 Acoustigard 14kg	63/**54**	63/**54**	64/**55**	65/**56**
			(g) 2 x 70 Soundscreen 2.0	65/**55**	66/**56**	67/**57**	67/**57**
			(h) 2 x 50 MAB Polyester 11kg	58/**50**	59/**51**	60/**52**	60/**52**
			Wall Thickness mm	212	264	314	364
– /180/180‡ 120/120/120 (from both sides) FC 12946	**CSR 10026**	SIDE ONE • 2 x 16mm Gyprock Fyrchek MR Plasterboard. SIDE TWO • 2 x 16mm Gyprock Fyrchek Plasterboard.	(a) Nil	51/45	52/46	53/47	54/48
			(c) 2 x 75 Acoustigard 11kg	65/**56**	66/**57**	67/**58**	67/**58**
			(f) 2 x 50 Acoustigard 14kg	64/**55**	64/**55**	65/**56**	65/**57**
			(g) 2 x 70 Soundscreen 2.0	66/**56**	67/**57**	68/**58**	68/**58**
			(h) 2 x 50 MAB Polyester 11kg	59/**51**	60/**52**	61/**53**	61/**53**
			Wall Thickness mm	212	264	314	364
– /180/180‡ 120/120/120 (from both sides) FC 12946	**CSR 10027**	BOTH SIDES • 2 x 16mm Gyprock Fyrchek MR Plasterboard.	(a) Nil	52/46	53/47	54/48	55/49
			(c) 2 x 75 Acoustigard 11kg	66/**57**	67/**58**	68/**59**	68/**59**
			(f) 2 x 50 Acoustigard 14kg	65/**56**	65/**56**	66/**57**	67/**58**
			(g) 2 x 70 Soundscreen 2.0	67/**57**	68/**58**	69/**59**	69/**59**
			(h) 2 x 50 MAB Polyester 11kg	60/**52**	61/**53**	62/**54**	62/**54**
			Wall Thickness mm	212	264	314	364

Steel Frame Internal Wall Systems – Double Stud with Two Rows Insulation

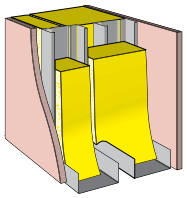
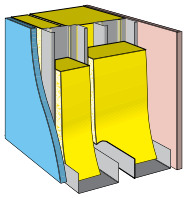
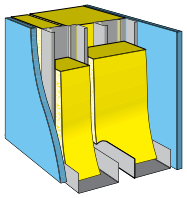
Lining material as per system table.

2 rows of steel studs at 600mm maximum centres with 44mm minimum gap.

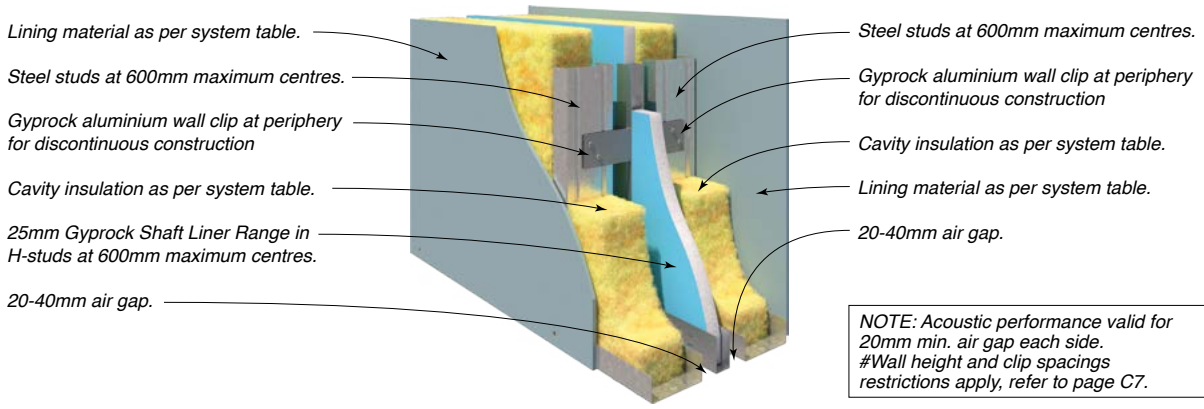


Cavity insulation as per system table. (Insulation in each stud row required).

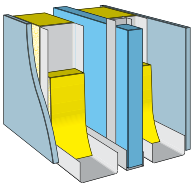
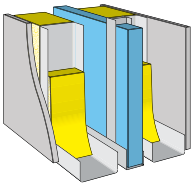
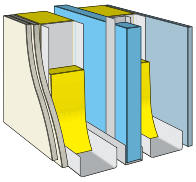
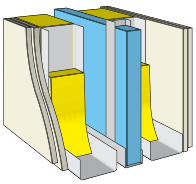
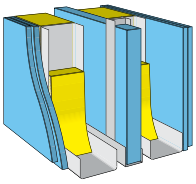
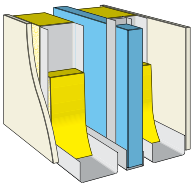
Lining material as per system table.

SYSTEM SPECIFICATION Refer to Gyprock Red Book 3 & Cemintel Wallboard Guide			ACOUSTIC REPORT: PKA-A128 Discontinuous Construction	
			CAVITY WIDTH mm	**2x64 studs + 44 gap = 172**
FRL Report	**SYSTEM Nº**	**WALL LININGS**	**STUD DEPTH/BMT mm**	**64/0.5**
			CAVITY INFILL (Refer to TABLE B6)	**R_w / R_w+C_{tr}**
– /60/60 **30/30/30** (from both sides) FC 12946	**CSR 1390** 	SIDE ONE • 1 x 13mm Gyprock Fyrchek Plasterboard. SIDE TWO • 1 x 16mm Gyprock Fyrchek Plasterboard.	(b) 165 Acoustigard 11kg + 50 Acoustigard 14kg	55/**50**
			Wall Thickness mm	201
– /60/60 **30/30/30** (from both sides) FC 12946	**CSR 1391** 	SIDE ONE • 1 x 13mm Gyprock Fyrchek MR Plasterboard. SIDE TWO • 1 x 16mm Gyprock Fyrchek Plasterboard.	(b) 165 Acoustigard 11kg + 50 Acoustigard 14kg	55/**50**
			Wall Thickness mm	201
– /60/60 **30/30/30** (from both sides) FC 12946	**CSR 1392** 	SIDE ONE • 1 x 13mm Gyprock Fyrchek MR Plasterboard. SIDE TWO • 1 x 16mm Gyprock Fyrchek MR Plasterboard.	(b) 165 Acoustigard 11kg + 50 Acoustigard 14kg	56/**51**
			Wall Thickness mm	201

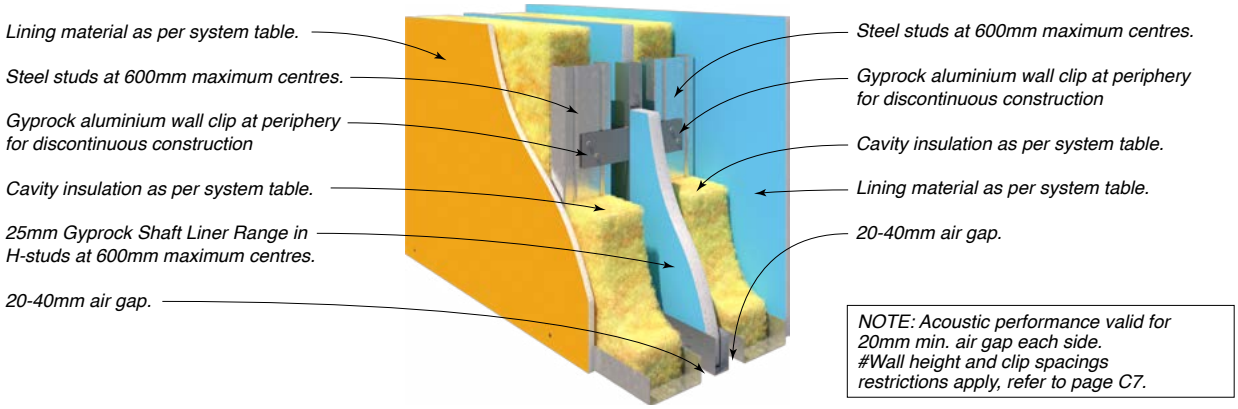
Steel Frame Internal Wall Systems – Party Wall



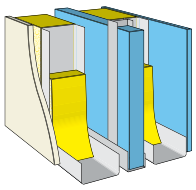
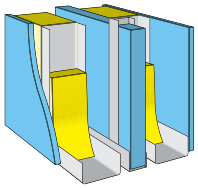
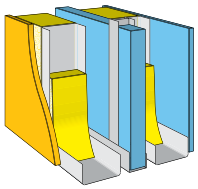
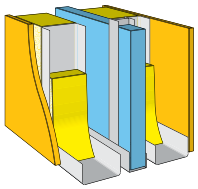
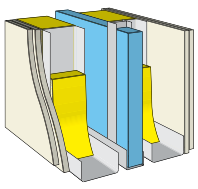
NOTE: Acoustic performance valid for 20mm min. air gap each side.
#Wall height and clip spacings restrictions apply, refer to page C7.

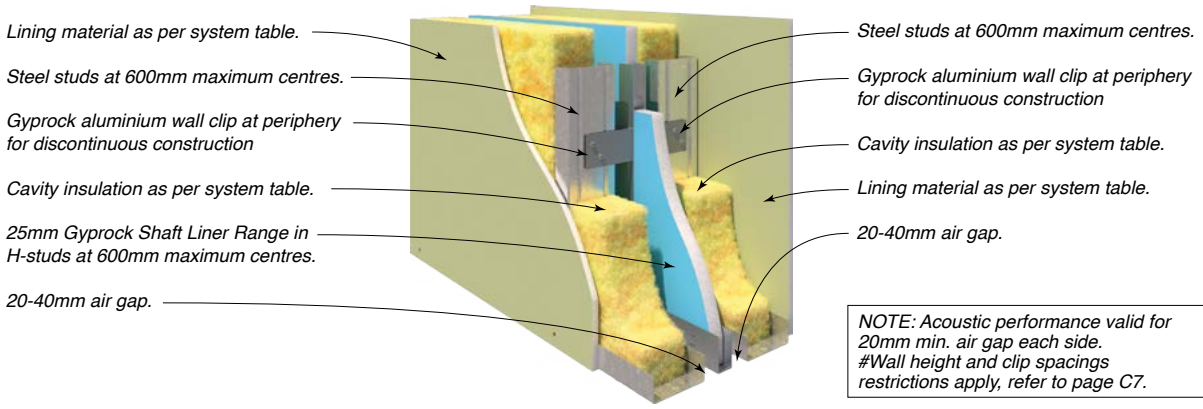
SYSTEM SPECIFICATION Refer to GYP513, Gyprock Party Wall Design Guide for further information			ACOUSTIC REPORT: PKA Predictor V16 Discontinuous Construction				
			STUD DEPTH mm	**64**	**70**	**76**	**90/92**
			STUD BMT mm	**0.50**	**0.55**	**0.55**	**0.55**
FRL Report	**SYSTEM Nº**	**WALL LININGS**	**CAVITY INFILL BOTH SIDES** (Refer to TABLE B6)	**R_w / R_w+C_{tr}**			
60/60/60# WF 45743	**CSR 1502** 	BOTH SIDES • 1 x 6mm CeminSeal Wallboard	(b) 75 Acoustigard 14kg	62/49	62/49	63/**50**	64/**52**
			(d) 110 Acoustigard 11kg	62/49	62/49	64/**51**	64/**52**
			(c) 88 Soundscreen 2.5	63/**50**	63/**50**	64/**51**	65/**53**
			Minimum Wall Thickness mm	205	217	229	261
60/60/60# WF 45743	**CSR 10144** 	BOTH SIDES • 1 x 10mm Gyprock HD Plasterboard.	(a) 50 Acoustigard 14kg	60/46	60/47	61/48	61/49
			(b) 75 Acoustigard 14kg	62/48	62/49	63/**50**	63/**51**
			(c) 88 Soundscreen 2.5	63/49	63/**50**	64/**51**	64/**52**
			Minimum Wall Thickness mm	213	225	237	269
60/60/60# WF 45743	**CSR 1507** 	SIDE ONE • 2 x 10mm Gyprock Plus Plasterboard. SIDE TWO • 1 x 6mm CeminSeal Wallboard	(b) 75 Acoustigard 14kg	63/**50**	63/**50**	63/**50**	64/**52**
			(d) 110 Acoustigard 11kg	63/**50**	63/**50**	64/**51**	64/**52**
			(c) 88 Soundscreen 2.5	64/**51**	64/**51**	64/**51**	65/**53**
			Minimum Wall Thickness mm	219	231	243	275
60/60/60# WF 45743	**CSR 1510** 	BOTH SIDES • 2 x 10mm Gyprock Plus Plasterboard.	(a) 75 Acoustigard 14kg	63/**50**	63/**50**	64/**52**	64/**52**
			(b) 110 Acoustigard 11kg	63/**50**	63/**50**	65/**53**	64/**52**
			(c) 88 Soundscreen 2.5	64/**51**	64/**51**	65/**53**	65/**53**
			Minimum Wall Thickness mm	233	245	257	289
60/60/60# WF 45743	**CSR 1516** 	BOTH SIDES • 2 x 10mm Gyprock Aquachek Plasterboard.	(a) 75 Acoustigard 14kg	64/**52**	65/**53**	65/**53**	66/**54**
			(b) 110 Acoustigard 11kg	64/**52**	65/**53**	66/**54**	66/**54**
			(c) 88 Soundscreen 2.5	65/**53**	66/**54**	66/**54**	67/**55**
			Minimum Wall Thickness mm	233	245	257	289
60/60/60# WF 45743	**CSR 1523** 	BOTH SIDES • 1 x 13mm Gyprock Standard Plasterboard.	(a) 50 Acoustigard 14kg	60/46	60/47	61/48	61/49
			(b) 75 Acoustigard 14kg	62/48	62/49	63/**50**	63/**51**
			(c) 88 Soundscreen 2.5	63/49	63/**50**	64/**51**	64/**52**
			Minimum Wall Thickness mm	219	231	243	275

Steel Frame Internal Wall Systems – Party Wall

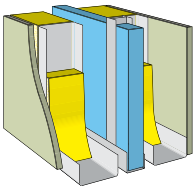
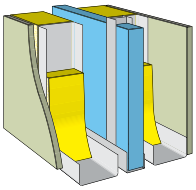
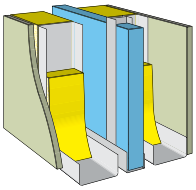


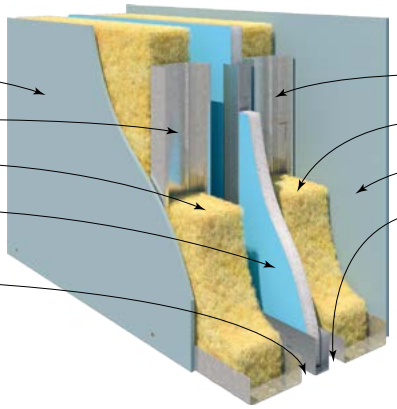
NOTE: Acoustic performance valid for 20mm min. air gap each side. #Wall height and clip spacings restrictions apply, refer to page C7.

SYSTEM SPECIFICATION Refer to GYP513, Gyprock Party Wall Design Guide for further information			ACOUSTIC REPORT: PKA Predictor V16 Discontinuous Construction				
			STUD DEPTH mm	**64**	**70**	**76**	**90/92**
			STUD BMT mm	**0.50**	**0.55**	**0.55**	**0.55**
FRL Report	**SYSTEM Nº**	**WALL LININGS**	**CAVITY INFILL BOTH SIDES** (Refer to TABLE B6)	**R_w / R_w+C_{tr}**			
60/60/60# WF 45743	**CSR 1524** 	SIDE ONE • 1 x 13mm Gyprock Standard Plasterboard. SIDE TWO • 1 x 13mm Gyprock Aquachek Plasterboard.	(a) 50 Acoustigard 14kg	60/46	61/48	61/48	62/**50**
			(b) 75 Acoustigard 14kg	62/48	63/**50**	63/**50**	64/**52**
			(c) 88 Soundscreen 2.5	63/49	64/**51**	64/**51**	65/**53**
			Minimum Wall Thickness mm	219	231	243	275
60/60/60# WF 45743	**CSR 1525** 	BOTH SIDES • 1 x 13mm Gyprock Aquachek Plasterboard.	(a) 75 Acoustigard 14kg	63/**50**	63/**50**	63/**50**	64/**52**
			(b) 110 Acoustigard 11kg	63/**50**	63/**50**	64/**51**	64/**52**
			(c) 88 Soundscreen 2.5	64/**51**	64/**51**	64/**51**	65/**53**
			Minimum Wall Thickness mm	219	231	243	275
60/60/60# WF 45743	**CSR 1530** 	SIDE ONE • 1 x 13mm Gyprock Soundchek Plasterboard. SIDE TWO • 1 x 13mm Gyprock Aquachek Plasterboard.	(a) 75 Acoustigard 14kg	63/**50**	64/**51**	64/**51**	65/**53**
			(b) 110 Acoustigard 11kg	63/**50**	64/**51**	65/**52**	65/**53**
			(c) 88 Soundscreen 2.5	64/**51**	65/**52**	65/**52**	66/**54**
			Minimum Wall Thickness mm	219	231	243	275
60/60/60# WF 45743	**CSR 1535** 	BOTH SIDES • 1 x 13mm Gyprock Soundchek Plasterboard.	(a) 75 Acoustigard 14kg	64/**52**	64/**52**	64/**52**	65/**53**
			(b) 110 Acoustigard 11kg	64/**52**	64/**52**	65/**53**	65/**53**
			(c) 88 Soundscreen 2.5	65/**53**	65/**53**	65/**53**	66/**54**
			Minimum Wall Thickness mm	219	231	243	275
60/60/60# WF 45743	**CSR 1540** 	BOTH SIDES • 2 x 13mm Gyprock Standard Plasterboard.	(a) 75 Acoustigard 14kg	65/**53**	65/**53**	66/**54**	66/**54**
			(b) 110 Acoustigard 11kg	65/**53**	65/**53**	67/**55**	66/**54**
			(c) 88 Soundscreen 2.5	66/**54**	66/**54**	67/**55**	67/**55**
			Minimum Wall Thickness mm	245	257	269	301

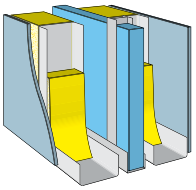
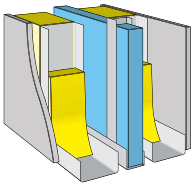
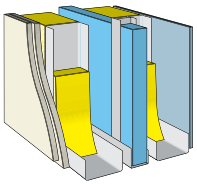
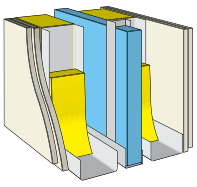
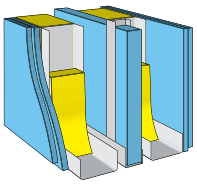
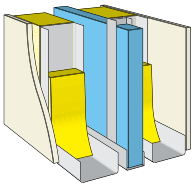


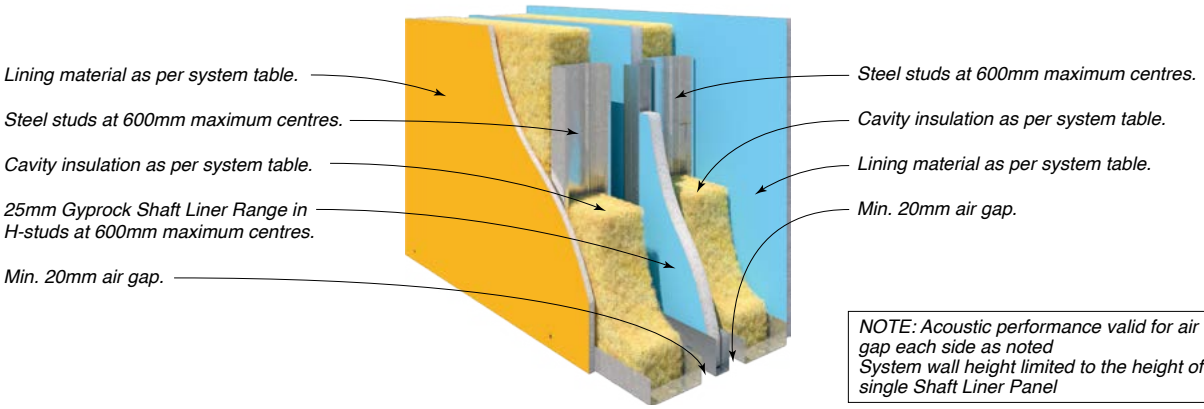
NOTE: Acoustic performance valid for 20mm min. air gap each side.
#Wall height and clip spacings restrictions apply, refer to page C7.

SYSTEM SPECIFICATION Refer to GYP513, Gyprock Party Wall Design Guide for further information			ACOUSTIC REPORT: PKA Predictor V16 Discontinuous Construction				
			STUD DEPTH mm	**64**	**70**	**76**	**90/92**
			STUD BMT mm	**0.50**	**0.55**	**0.55**	**0.55**
FRL Report	**SYSTEM Nº**	**WALL LININGS**	**CAVITY INFILL BOTH SIDES** (Refer to TABLE B6)	**R_w / R_w+C_{tr}**			
60/60/60# WF 45743	**CSR 3312** 	BOTH SIDES • 1 x 13mm Gyprock EC08 Complete.	(a) 75 Acoustigard 11kg	63/**50**	63/**51**	63/**51**	64/**52**
			(b) 88 Soundscreen 2.5	65/**52**	65/**53**	65/**53**	66/**54**
			(c) 110 Acoustigard 11kg	64/**51**	64/**52**	65/**53**	65/**53**
			Minimum Wall Thickness mm	219	231	243	275
60/60/60# WF 45743	**CSR 10014** 	BOTH SIDES • 1 x 13mm Gyprock EC08 Extreme.	(a) 75 Acoustigard 11kg	63/**50**	63/**51**	63/**51**	64/**52**
			(b) 88 Soundscreen 2.5	65/**52**	65/**53**	65/**53**	66/**54**
			(c) 110 Acoustigard 11kg	64/**51**	64/**52**	65/**53**	65/**53**
			Minimum Wall Thickness mm	219	231	243	275
60/60/60# WF 45743	**CSR 3332** 	BOTH SIDES • 1 x 16mm Gyprock EC08 Complete.	(a) 75 Acoustigard 11kg	63/**51**	64/**52**	64/**52**	65/**53**
			(b) 88 Soundscreen 2.5	65/**53**	66/**54**	66/**54**	67/**55**
			(c) 110 Acoustigard 11kg	64/**52**	65/**53**	66/**54**	66/**54**
			Minimum Wall Thickness mm	225	237	249	281

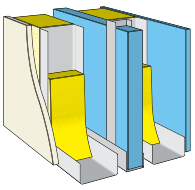
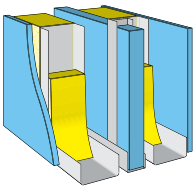
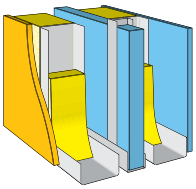
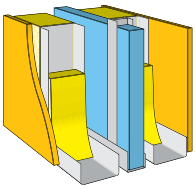
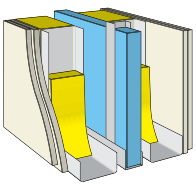


NOTE: Acoustic performance valid for air gap each side as noted
System wall height limited to the height of a single Shaft Liner Panel

SYSTEM SPECIFICATION Refer to GYP949, Gyprock StrataWall Design Guide for further information			ACOUSTIC REPORT: PKA Predictor V16 Discontinuous Construction					
FRL Report	SYSTEM N°	WALL LININGS	STUD DEPTH mm	Min. Air Gap (mm)	64	70	76	90/92
			STUD BMT mm		0.50	0.55	0.55	0.55
			CAVITY INFILL BOTH SIDES (Refer to TABLE B6)		R_w / R_w+C_{tr}			
–/60/60 FAS 230119	**CSR 10250** 	BOTH SIDES • 1 x 6mm CeminSeal Wallboard.	(a) 75 Acoustigard 11kg	20	61/48	62/49	62/49	63/**51**
				40	62/49	62/**50**	63/**51**	63/**51**
			(b) 110 Acoustigard 11kg	20	62/49	63/**50**	64/**51**	64/**52**
				40	63/**50**	63/**51**	64/**52**	64/**52**
			(c) 88 Soundscreen 2.5	20	63/**50**	64/**51**	64/**51**	65/**53**
			Minimum Wall Thickness mm	20	205	217	229	261
				40	245	257	269	301
– /60/60 FAS 230119	**CSR 10251** 	BOTH SIDES • 1 x 10mm Gyprock HD Plasterboard.	(a) 75 Acoustigard 11kg	20	61/47	62/48	62/49	62/**50**
				40	62/49	62/**50**	62/**50**	63/**51**
			(b) 110 Acoustigard 11kg	20	62/48	62/49	64/**51**	63/**51**
				40	63/**50**	63/**51**	63/**51**	64/**52**
			(c) 88 Soundscreen 2.5	20	63/49	63/**50**	64/**51**	64/**52**
			Minimum Wall Thickness mm	20	213	225	237	269
				40	253	265	277	309
–/60/60 FAS 230119	**CSR 10252** 	SIDE ONE • 2 x 10mm Gyprock Plus Plasterboard. SIDE TWO • 1 x 6mm CeminSeal Wallboard.	(a) 75 Acoustigard 11kg	20	62/49	62/49	62/49	63/**51**
				40	63/**50**	63/**51**	63/**51**	64/**52**
			(b) 110 Acoustigard 11kg	20	63/**50**	63/**50**	64/**51**	64/**52**
				40	64/**51**	64/**52**	64/**52**	65/**53**
			(c) 88 Soundscreen 2.5	20	64/**51**	64/**51**	64/**51**	65/**53**
			Minimum Wall Thickness mm	20	219	231	243	275
				40	259	271	283	315
– /60/60 FAS 230119	**CSR 10253** 	BOTH SIDES • 2 x 10mm Gyprock Plus Plasterboard.	(a) 75 Acoustigard 11kg	20	62/49	62/49	63/**51**	63/**51**
				40	63/**51**	63/**51**	64/**52**	64/**52**
			(b) 110 Acoustigard 11kg	20	63/**50**	63/**50**	65/**53**	64/**52**
				40	64/**52**	64/**52**	65/**53**	65/**53**
			(c) 88 Soundscreen 2.5	20	64/**51**	64/**51**	65/**53**	65/**53**
			Minimum Wall Thickness mm	20	233	245	257	289
				40	273	285	297	329
– /60/60 FAS 230119	**CSR 10254** 	BOTH SIDES • 2 x 10mm Gyprock Aquachek Plasterboard.	(a) 75 Acoustigard 11kg	20	63/**51**	64/**52**	64/**52**	65/**53**
				40	64/**52**	64/**52**	65/**53**	65/**54**
			(b) 110 Acoustigard 11kg	20	64/**52**	65/**53**	66/**54**	66/**54**
				40	65/**53**	65/**53**	65/**54**	66/**55**
			(c) 88 Soundscreen 2.5	20	65/**53**	66/**54**	66/**54**	67/**55**
			Minimum Wall Thickness mm	20	233	245	257	289
				40	273	285	297	329
– /60/60 FAS 230119	**CSR 10255** 	BOTH SIDES • 1 x 13mm Gyprock Standard Plasterboard.	(a) 75 Acoustigard 11kg	20	61/47	61/48	62/49	62/**50**
				40	62/49	62/**50**	62/**50**	63/**51**
			(b) 110 Acoustigard 11kg	20	62/48	62/49	64/**51**	63/**51**
				40	63/**50**	63/**51**	63/**51**	64/**52**
			(c) 88 Soundscreen 2.5	20	63/49	63/**50**	64/**51**	64/**52**
			Minimum Wall Thickness mm	20	219	231	243	275
				40	259	271	283	315



NOTE: Acoustic performance valid for air gap each side as noted
System wall height limited to the height of a single Shaft Liner Panel

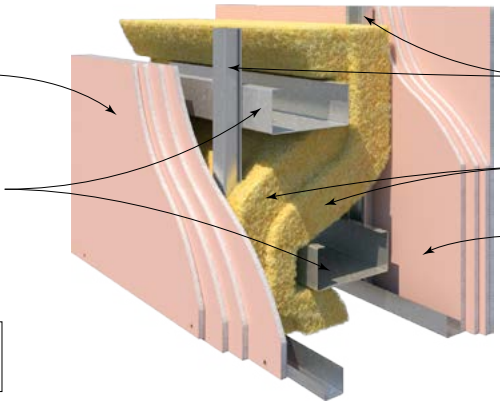
SYSTEM SPECIFICATION Refer to GYP949, Gyprock StrataWall Design Guide for further information			ACOUSTIC REPORT: PKA Predictor V16 Discontinuous Construction					
FRL Report	SYSTEM Nº	WALL LININGS	STUD DEPTH mm	Min. Air Gap (mm)	64	70	76	90/92
			STUD BMT mm		0.50	0.55	0.55	0.55
			CAVITY INFILL BOTH SIDES (Refer to TABLE B6)		R_w / R_w+C_{tr}			
– /60/60 FAS 230119	**CSR 10256** 	SIDE ONE • 1 x 13mm Gyprock Standard Plasterboard. SIDE TWO • 1 x 13mm Gyprock Aquachek Plasterboard.	(a) 75 Acoustigard 11kg	20	61/47	62/49	62/49	63/**51**
				40	62/49	63/**51**	63/**51**	63/**51**
			(b) 110 Acoustigard 11kg	20	62/48	63/**50**	64/**52**	64/**52**
				40	63/**50**	64/**52**	64/**52**	64/**52**
			(c) 88 Soundscreen 2.5	20	63/49	64/**51**	64/**51**	65/**53**
			Minimum Wall Thickness mm	20	219	231	243	275
				40	259	271	283	315
– /60/60 FAS 230119	**CSR 10257** 	BOTH SIDES • 1 x 13mm Gyprock Aquachek Plasterboard.	(a) 75 Acoustigard 11kg	20	62/49	62/49	62/49	63/**51**
				40	63/**51**	63/**51**	63/**51**	64/**52**
			(b) 110 Acoustigard 11kg	20	63/**50**	63/**50**	64/**51**	64/**52**
				40	64/**52**	64/**52**	64/**52**	65/**53**
			(c) 88 Soundscreen 2.5	20	64/**51**	64/**51**	64/**51**	65/**53**
			Minimum Wall Thickness mm	20	219	231	243	275
				40	259	271	283	315
– /60/60 FAS 230119	**CSR 10258** 	SIDE ONE • 1 x 13mm Gyprock Soundchek Plasterboard. SIDE TWO • 1 x 13mm Gyprock Aquachek Plasterboard.	(a) 75 Acoustigard 11kg	20	62/49	63/**50**	63/**50**	64/**52**
				40	63/**51**	64/**52**	64/**52**	64/**52**
			(b) 110 Acoustigard 11kg	20	63/**50**	64/**51**	65/**52**	65/**53**
				40	64/**52**	65/**53**	65/**53**	65/**53**
			(c) 88 Soundscreen 2.5	20	64/**51**	65/**52**	65/**52**	66/**54**
			Minimum Wall Thickness mm	20	219	231	243	275
				40	259	271	283	315
– /60/60 FAS 230119	**CSR 10259** 	BOTH SIDES • 1 x 13mm Gyprock Soundchek Plasterboard.	(a) 75 Acoustigard 11kg	20	63/**51**	63/**51**	63/**51**	64/**52**
				40	64/**52**	64/**52**	64/**52**	65/**54**
			(b) 110 Acoustigard 11kg	20	64/**52**	64/**52**	65/**53**	65/**53**
				40	65/**53**	65/**53**	65/**53**	66/**55**
			(c) 88 Soundscreen 2.5	20	65/**53**	65/**53**	65/**53**	66/**54**
			Minimum Wall Thickness mm	20	219	231	243	275
				40	259	271	283	315
– /60/60 FAS 230119	**CSR 10260** 	BOTH SIDES • 2 x 13mm Gyprock Standard Plasterboard.	(a) 75 Acoustigard 11kg	20	64/**52**	64/**52**	65/**53**	65/**54**
				40	65/**53**	65/**53**	65/**54**	66/**55**
			(b) 110 Acoustigard 11kg	20	64/**52**	64/**52**	65/**53**	65/**54**
				40	66/**54**	66/**54**	66/**55**	67/**56**
			(c) 88 Soundscreen 2.5	20	65/**53**	65/**53**	67/**55**	66/**55**
			Minimum Wall Thickness mm	20	245	257	269	301
				40	285	297	309	341

Steel Frame Internal Wall Systems – Cinema Wall

Lining material as per system table.

Steel columns to engineer's design (not shown).

Girts fixed to columns with Gyprock Cinema Wall Mounts.

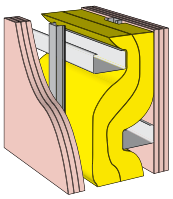
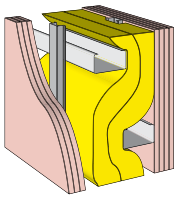
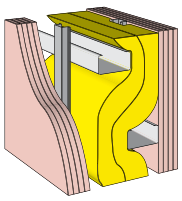


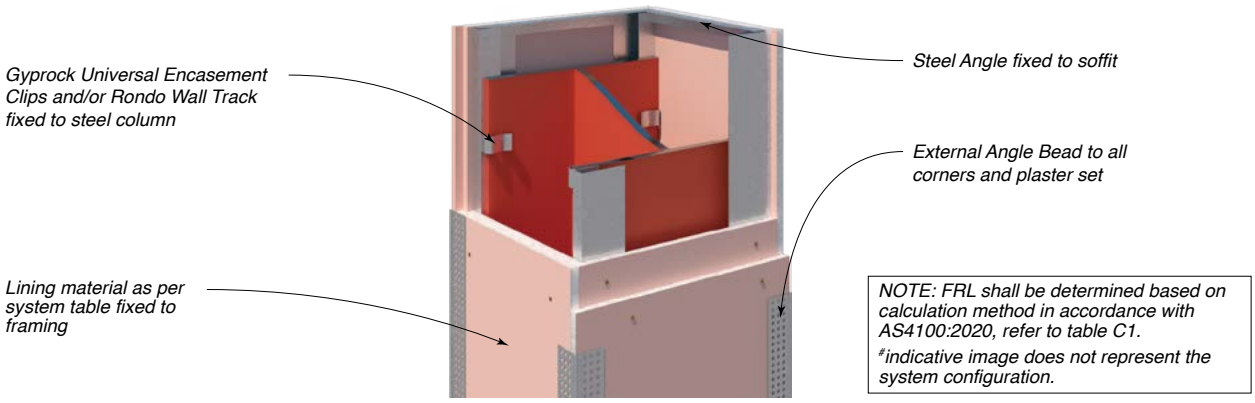
Top hat sections at 900mm maximum centres to each side of girts to engineer's design.

2 x layers of glasswool or polyester insulation as per system table.

Lining material as per system table.

NOTE: Polyester insulation may NOT be used where the system has non-combustible construction requirements.

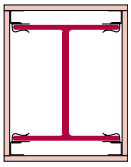
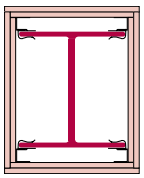
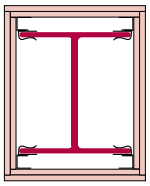
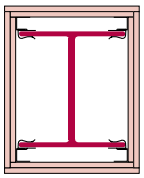
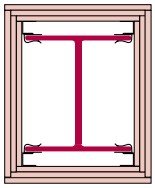
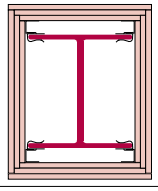
SYSTEM SPECIFICATION Refer to GYP512, Gyprock Cinema Wall Installation Guide for further information			ACOUSTIC REPORT: PKA-A117 (Test ATF428 ❶) Not Deemed Discontinuous Construction	
FRL Report	**SYSTEM Nº**	**WALL LININGS**	**CAVITY INFILL** (Refer to TABLE B6)	**R_w / R_w+C_{tr}**
120/120/120 FC 12946	**CSR 1700** 	BOTH SIDES • 3 x 16mm Gyprock Fyrchek Plasterboard.	(a) 2 x 110 Glasswool Building Blanket	77/71❶
			(d) 2 x 100mm Absorb XHD Polyester	77/71
			Minimum Wall Thickness mm	471
120/120/120 FC 12946	**CSR 1710** 	SIDE ONE • 3 x 16mm Gyprock Fyrchek Plasterboard. SIDE TWO • 4 x 16mm Gyprock Fyrchek Plasterboard.	(a) 2 x 110 Glasswool Building Blanket	79/73
			(d) 2 x 100mm Absorb XHD Polyester	79/73
			Minimum Wall Thickness mm	487
120/120/120 FC 12946	**CSR 1720** 	BOTH SIDES • 4 x 16mm Gyprock Fyrchek Plasterboard.	(a) 2 x 110 Glasswool Building Blanket	81/75
			(d) 2 x 100mm Absorb XHD Polyester	81/75
			Minimum Wall Thickness mm	503

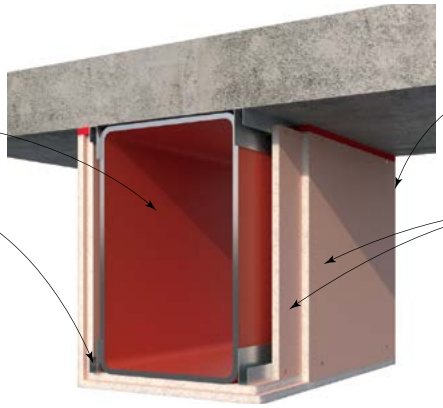


NOTE: FRL shall be determined based on calculation method in accordance with AS4100:2020, refer to table C1.

#indicative image does not represent the system configuration.

SYSTEM SPECIFICATION
Refer to Book 3 Commercial & Multi-Residential Installation Guide

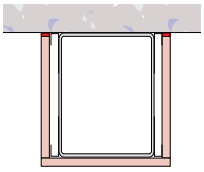
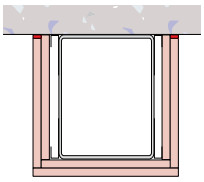
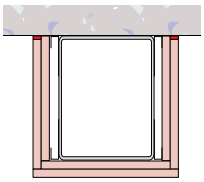
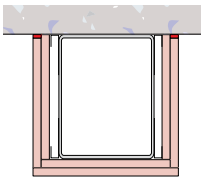
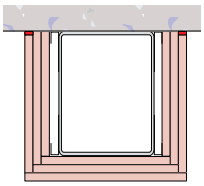
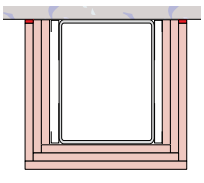
FRL	SYSTEM Nº	PLASTERBOARD LININGS	PROTECTION	STEEL SECTION
Refer to TABLE C4 FC 16125	**CSR 10095** 	• 1 x 13mm Gyprock Fyrchek plasterboard.	2,3 or 4 sides	**Hollow section** • CHS • RHS • SHS **I-section** • UB • UC • WB • WC **C-section** • PFC Refer to TABLE C1
	CSR 10096 	• 2 x 13mm Gyprock Fyrchek plasterboard.		
	CSR 10400 	• 1 x 13mm Gyprock Fyrchek plasterboard. • 1 x 16mm Gyprock Fyrchek plasterboard. (any order)		
	CSR 10097 	• 2 x 16mm Gyprock Fyrchek plasterboard.		
	CSR 10098 	• 3 x 13mm Gyprock Fyrchek plasterboard.		
	CSR 10401 	• 3 x 16mm Gyprock Fyrchek plasterboard.		



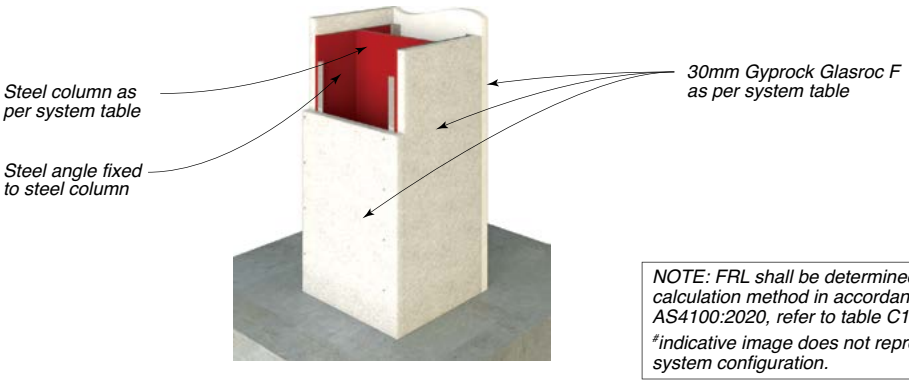
NOTE: FRL shall be determined based on calculation method in accordance with AS4100:2020, refer to table C1.

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SYSTEM SPECIFICATION
Refer to Book 3 Commercial & Multi-Residential Installation Guide

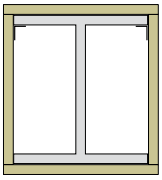
FRL Report	SYSTEM Nº	PLASTERBOARD LININGS	PROTECTION	STEEL SECTION
Refer to TABLE C4 FC 16125	**CSR 10099** 	• 1 x 13mm Gyprock Fyrchek plasterboard.	2,3 or 4 sides	**Hollow section** • CHS • RHS • SHS **I-section** • UB • UC • WB • WC **C-section** • PFC Refer to TABLE C1
	CSR 10100 	• 2 x 13mm Gyprock Fyrchek plasterboard.		
	CSR 10402 	• 1 x 13mm Gyprock Fyrchek plasterboard. • 1 x 16mm Gyprock Fyrchek plasterboard. (any order)		
	CSR 10101 	• 2 x 16mm Gyprock Fyrchek plasterboard.		
	CSR 10102 	• 3 x 13mm Gyprock Fyrchek plasterboard.		
	CSR 10403 	• 3 x 16mm Gyprock Fyrchek plasterboard.		

SYSTEM SPECIFICATIONS Steel Column Systems with I-Beam/Universal Beam or RHS



NOTE: FRL shall be determined based on calculation method in accordance with AS4100:2020, refer to table C1.

#indicative image does not represent the system configuration.

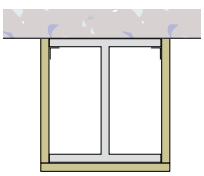
SYSTEM SPECIFICATION Refer to Book 3 Commercial & Multi-Residential Installation Guide				
FRL Report	**SYSTEM Nº**	**PLASTERBOARD LININGS**	**PROTECTION**	**STEEL SECTION**
Refer to TABLE C2 FAR 4876	**CSR 10103** 	• 30mm Gyprock Glasroc F.	3 or 4 sides	• RHS • SHS • CHS • PFC • I Section (i.e. UB, UC,WB, WC) Refer to TABLE C1

SYSTEM SPECIFICATIONS Steel Beam Systems with I-Beam/Universal Beam or RHS



NOTE: FRL shall be determined based on calculation method in accordance with AS4100:2020, refer to table C1.

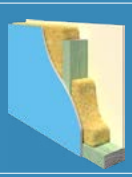
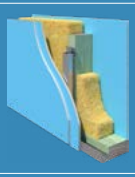
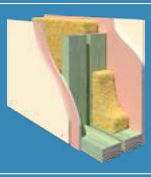
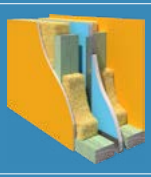
#indicative image does not represent the system configuration.

SYSTEM SPECIFICATION Refer to Book 3 Commercial & Multi-Residential Installation Guide				
FRL Report	**SYSTEM Nº**	**PLASTERBOARD LININGS**	**PROTECTION**	**STEEL SECTION**
Refer to TABLE C3 FAR 4876	**CSR 10104** 	• 30mm Gyprock Glasroc F.	3 or 4 sides	• RHS • SHS • CHS • PFC • I Section (i.e. UB, UC,WB, WC) Refer to TABLE C1

TIMBER FRAMED WALL SYSTEMS

D

SECTION CONTENTS

Introduction	**D2**
Design Considerations	**D2**
Installation	**D4**
System Selection Tables	
 Single Stud	**D6**
 Resilient Mount	**D12**
 Staggered Stud	**D15**
 Double Stud	**D20**
 Party Wall	**D25**

INTRODUCTION

This section provides important design information and detailed selection tables necessary for the correct use of CSR timber frame wall systems.

CSR Gyprock & Cemintel timber frame wall systems are assemblies constructed from timber components with one or more layers of Gyprock plasterboard and/or Cemintel linings fixed to one or both sides.

Timber frame wall systems are typically used in single dwellings and multi-residential applications.

A wide range of systems are available including fire rated walls for non-loadbearing and loadbearing applications, as well as acoustic walls and party wall applications.

For external timber framed walls, refer to Section F External Wall Systems in this guide.

This Design Guide should be read in conjunction with the relevant Gyprock Installation Guide, available from www.gyprock.com.au.

DESIGN CONSIDERATIONS

DESIGNER RESPONSIBILITY

It remains the responsibility of the customer (in conjunction with their designer or engineer, when applicable) to ensure that CSR's products/systems are suitable for their chosen application for any given project. CSR recommends that a comprehensive assessment of the performance requirements be undertaken prior to selection, including in respect of project-specific matters such as, but not limited structural adequacy, seismic, acoustic, fire resistance/combustibility, thermal, condensation and weatherproofing requirements.

CSR offers online digital tools for the most updated information, including but not limited to update of products/components, inclusion of new and modified systems, to meet the requirements of the National Construction Code of Australia (NCC) and any relevant Australian Standards.

For the most up-to-date product & system performance information, visit:

CSR System Selector: https://apps.csr.com.au/systemselector/search-option

CSR Thermal Calculator: https://apps.csr.com.au/thermalcalculator

STRUCTURAL DESIGN

All walls must be designed for the applied loads. For loadbearing walls and walls subject to wind pressures, walls shall be designed to the appropriate Australian Standards or construction manuals.

Seismic Loads

Seismic actions must be considered for building elements in accordance with the NCC. The loads and effects of earthquakes may be determined in accordance with AS 1170.4 'Earthquake Actions in Australia'. The Standard has design procedures for houses (Class 1), and to buildings (Classes 2 to 9) with importance levels 2, 3 or 4 as defined in the NCC.

Non-Loadbearing Walls

It is recommended that non-loadbearing walls are designed for a minimum design pressure of 0.25kPa and a maximum deflection of (height ÷ 240) or 30mm maximum. (Based on NCC2022 Clause S6C6(b) [NCC2019: Spec C1.8: 3.4(b)]).

Loadbearing Walls

Walls designed as loadbearing, with studs at 600mm maximum centres and lined with Gyprock Fyrchek, meet the requirements of NCC2022 Clause S6C6 [NCC2019: Spec C1.8: 3.4] – Walls generally.

The building designer must ensure loadbearing walls have been designed:

- To resist all applied loads.
- To be in accordance with AS 1720.1 or AS 1684 Series.
- Assuming no contribution to axial strength is required of the wall linings.

Wind Loads

All linings and framing are to be designed for the appropriate wind loads. Contact CSR for loads higher than stated in this manual.

Buildings often have exterior operable doors and windows, resulting in internal walls being subject to wind pressure. In these cases, walls must be designed for the appropriate loads in accordance to AS4055 or AS/NZS1170.2.

Refer to framing selection information in Section B, TABLE B12 and TABLE B13 for maximum framing centres.

CONTROL JOINTS

Control joints must be installed to allow for structural movement. Allowance for movement must be made through the frame, lining and any tiles.

Vertical control joints in stud walls are to be constructed using two studs with a 15-20mm gap between.

Door frames extending from floor to ceiling constitute control joints. For doors less than ceiling height, a control joint extending from one corner of the frame may be used.

Control joints must be installed at all construction joints in the building and at the following locations:

- Non-tiled internal walls with plasterboard outer layer – at 12m maximum centres.
- Non-tiled internal walls with fibre cement outer layer – at 7.2m maximum centres.
- Tiled internal walls – at 4.8m maximum centres.
- Horizontal control joint at internal mid-floor position.
- At junctions with other building elements.
- At changes of lining material.
- At changes of structural support systems.
- At each storey or rise of studs.

Refer to the relevant installation guides for appropriate details.

FIRE RESISTANCE

The timber frame wall systems in this manual are suitable for the stated FRL when designed in accordance with the structural considerations above. Wall system ratings apply in either direction unless noted otherwise.

To protect structural beams and columns within a wall, the FRL of the wall system must be at least equivalent to that required by the structural member. For example, a wall system with FRL 90/90/90 provides FRL 90/–/– for a timber column within the wall.

The fire design of timber framing is based on the principle that a level of char is acceptable without compromising the performance of the wall. CSR has carried out testing to verify the char limit, and where it is exceeded, the allowable axial capacity of the stud is reduced to account for the loss of section. The systems are noted with an Axial Capacity Reduction (ACR) Group number in TABLE D1. In these systems, the designer must increase the applied vertical loads by the ACR to compensate for the axial capacity reduction.

TABLE D1: AXIAL CAPACITY REDUCTION (%) DUE TO THE EFFECT OF TIMBER CHAR

Timber Size	Group 1	Group 2	Group 3
90 x 45	0%	0%	25%
90 x 35	0%	10%	30%
70 x 45	3%	25%	40%
70 x 35	8%	35%	45%

Framing & Lining

Timber stud walls required to have an FRL must comply with the following:

- Studs must be minimum 70 x 35mm and spaced at 600mm maximum centres, with minimum loads in accordance with NCC2022 Specification 6 [NCC2019: Spec C1.8].
- Fire walls in Class 2 to 9 buildings and Class 1a buildings outside the scope of AS4055 (over 8.5m high) require wall plates be fixed to fire rated supporting structure, using engineered steel fasteners to timber or steel supporting elements and AS5216 compliant anchors to concrete elements.
- In wet areas, Gyprock Fyrchek MR (or other approved Gyprock moisture grade and fire resistant plasterboard) should be used in lieu of Gyprock Fyrchek.
- Joints in the outer layer of all systems lined with plasterboard or Wallboard must be set with Gyprock paper tape. As a minimum, a single coat finish may be used.

For additional information on frame design and detailing, including treatment at junctions, sub floor and roof areas, cavity barriers and penetrations, refer to Forest and Wood Products publication Timber Framed Construction for Multi-Residential Buildings.

ACCEPTABLE VARIATIONS TO FIRE SYSTEMS

The Fire Resistance Level (FRL) of the systems detailed in this section will not be detrimentally affected by;

- Increasing the thickness of the wall.
- Increasing the cross-sectional dimensions of the framing elements.
- Decreasing the stud spacing.
- Decreasing the fixing centres of wall sheet materials.
- The inclusion of bulk cavity insulation materials such as glasswool, rockwool and polyester.
- The use of Fyrchek MR, Impactchek, the EC08 range of plasterboards in lieu of Fyrchek plasterboard of the same thickness.
- Additional layers of plasterboard or fibre cement.
- Curved walls (in plan) with a radius of curvature no less than 3m.
- The attachment of light weight fixtures through to the framing.
- The addition of steel or timber sheeting against the stud and behind the lining.

Perimeters & Penetrations

All perimeters, control joints and penetrations must be treated appropriately to maintain the fire rating. Treatment may include caulking with approved fire rated sealants, or by the use of fire collars, dampers, etc, to an approved detail.

COMBUSTIBILITY

Polyester insulation may NOT be selected where the system has non-combustible construction requirements.

In accordance with NCC2022 Clause C2D10 [NCC2019: C1.9], plasterboard and fibre cement sheet may be used wherever a non-combustible material is required by the Code.

ACOUSTIC PERFORMANCE

The acoustic performance of wall systems is expressed in terms of R_W and R_W+C_{tr} where appropriate. The performance of the as-built system may be affected by: sound flanking, the effectiveness of workmanship and caulking, the presence and treatment of penetrations, and the inclusion of structural elements and bridging items. Refer to appropriate information on addressing these issues detailed in Section B, Products & Design and Section J, Flanking Path Systems in this guide.

General Notes

- The acoustic performance of systems may be adversely affected by the use of wider studs or closer stud spacings than that specified.
- In non-fire rated systems, to attain the stated acoustic performance, use Gyprock Wet Area Acrylic Sealant, Gyprock Fire Mastic, CSR FireSeal or other tested acoustic rated material of equivalent or better performance.

The acoustic performance of CSR wall systems is not adversely affected by changing the order of lining sheets that are fixed direct to framing.

INSTALLATION

FRAMING

Timber sizes indicated are nominal. For kiln-dried timber, protect frames from wetting prior to and during construction by wrapping exposed sections as soon as practicable after erection. The timber should have a maximum of 15% moisture content at the time of lining.

Accurate setting-out is required where 35mm wide framing is used as the narrower member width is less able to accommodate misalignment.

For detailed information on non-fire rated timber wall junctions, intersections, frame attachments and curved walls refer to Book 2 Residential Installation Guide.

For detailed information on fire rated wall junctions, intersections, frame attachments and curved walls, refer to Forest and Wood Products publication Timber Framed Construction for Multi-Residential Buildings.

PLASTERBOARD & WALLBOARD FIXING

Interior walls may be built to achieve a particular ‘Level of Finish’ as defined in AS/NZS 2589. The Level of Finish specified can have requirements for frame alignment, jointing and back blocking methods, and sheet orientation. CeminSeal Wallboard and Gyprock plasterboard may be installed vertically or horizontally, although for some Levels of Finish, horizontal sheeting must be used.

Interior walls lined with Gyprock plasterboard or CeminSeal Wallboard may be finished with tiles. Sheets used as a substrate for tiles must be fastener fixed only. Adhesive/fastener fixing is not acceptable.

GYPROCK PARTY WALL SYSTEMS

Gyprock Party Wall comprises a double frame wall with a 25mm Shaft Liner central fire barrier between the frames. The basis of the fire performance is the central fire barrier that provides the primary fire resistance, with the frame lining (or cavity insulations) on each side contributing to some extent. This allows the wall linings to be installed as for normal decorative linings, and to incorporate penetrations.

The basis of the acoustic performance is the double cavity system that provides effective sound transmission performance, as well as impact isolation. Insulation in both cavities is used to deliver a range of performance levels, including allowance for certain penetrations and services that may occur.

Wall clips must be installed only at the periphery of the wall, specifically within the designated floor and ceiling zones as illustrated in the detail drawings. Installing additional clips within the vertical span of the wall (storey height) will compromise the wall's acoustic performance and will result in non-compliance with the requirements for discontinuous construction.

TABLE D2 and TABLE D3 provides the overall wall height and lateral support (clip spacing) limitations for stud frames lined with plasterboard or fibre cement linings. The targeted FRL in the system table has considered the stated overall wall height and lateral support (clip spacing) limitations determined in accordance with AS1530.4.

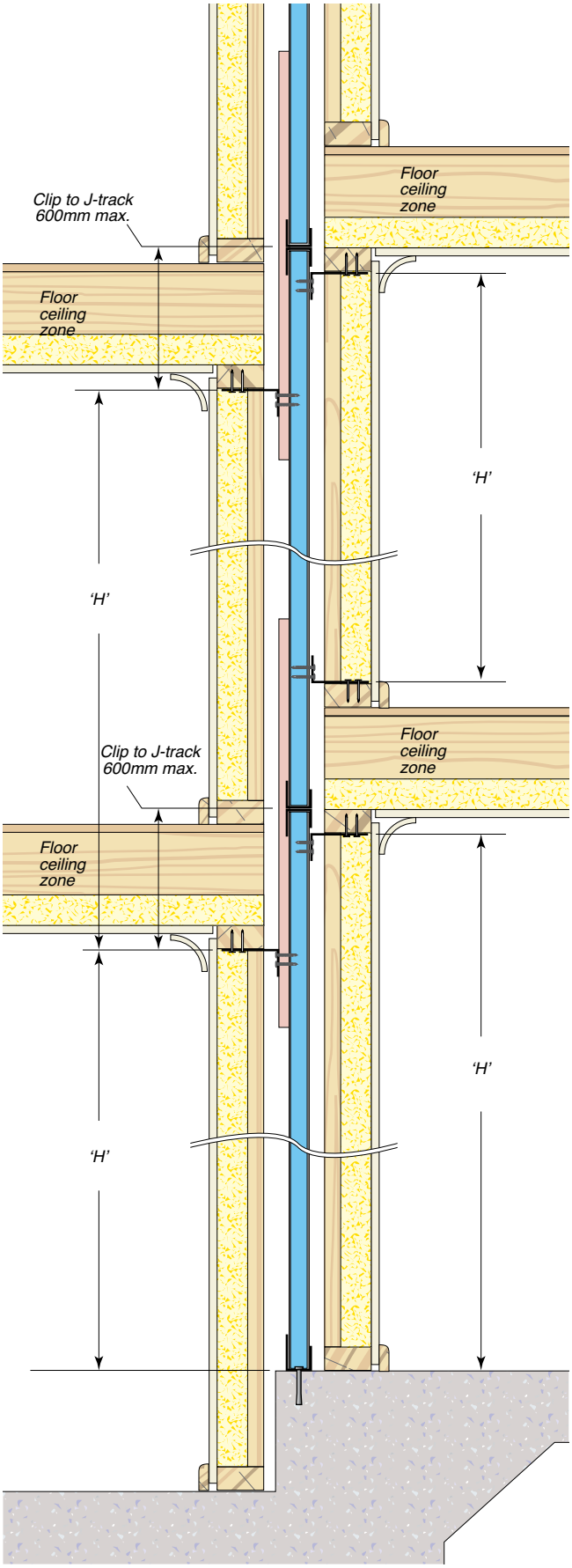
TABLE D2: Party Wall lateral support (clip spacing) locations for plasterboard linings on both sides

Overall Wall Height	'H'
Up to 14m	Max. 2.6m
Up to 12m	Max. 2.8m
Up to 10.8m	Max. 3.0m
Up to 9m	Max. 3.4m

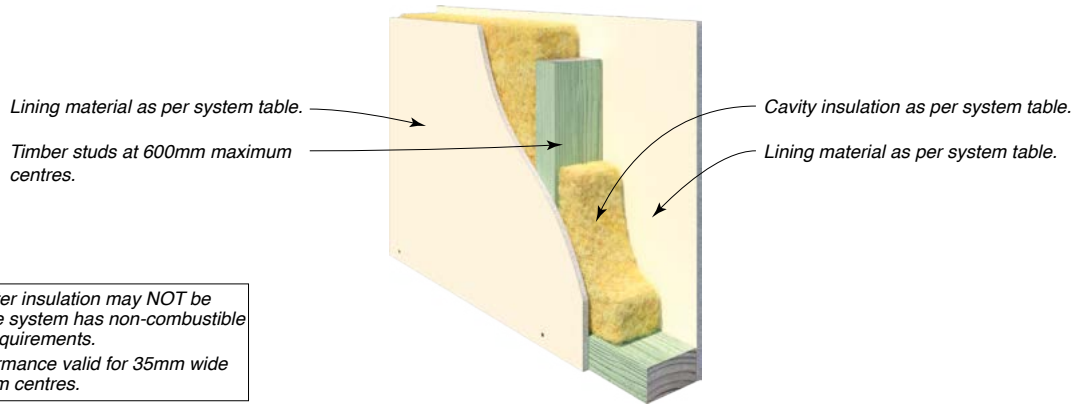
TABLE D3: Party Wall lateral support (clip spacing) locations for fibre cement linings on one side or both sides

Overall Wall Height	'H'
Up to 7m	Max. 2.6m
Up to 6m	Max. 2.8m
Up to 5m	Max. 3.0m

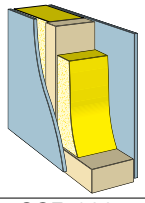
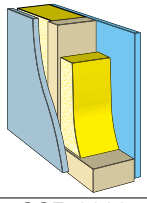
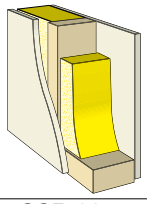
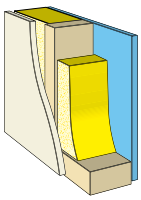
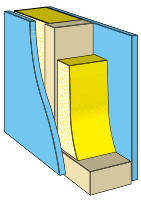
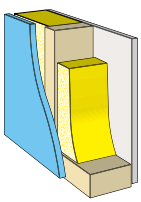
FIG D1: GYPROCK PARTY WALL HIGHT LIMITATIONS



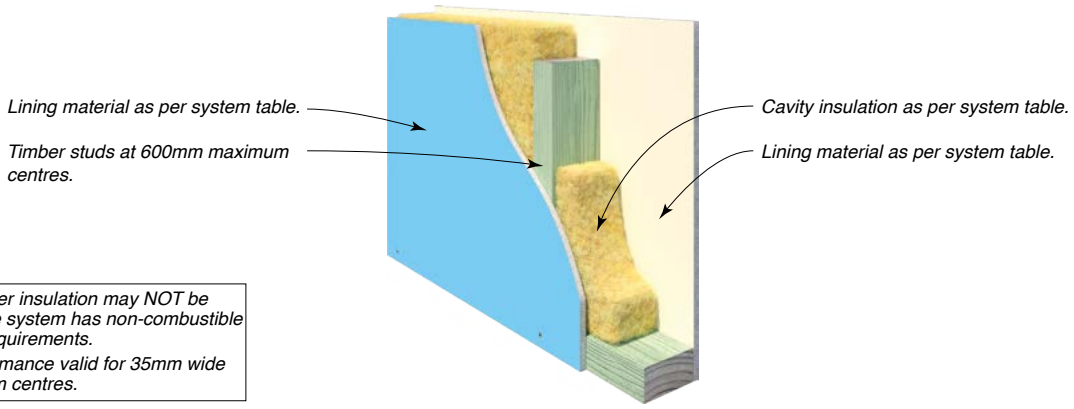
Timber Frame Internal Wall Systems – Single Stud



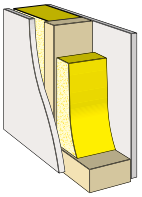
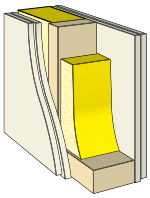
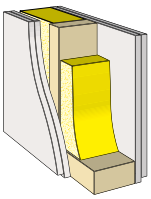
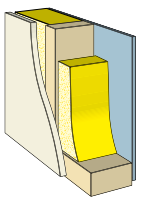
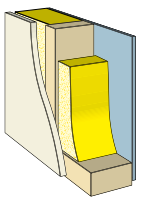
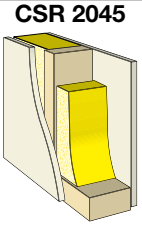
NOTE: Polyester insulation may NOT be used where the system has non-combustible construction requirements.
Acoustic performance valid for 35mm wide studs at 600mm centres.

SYSTEM OPTIONS Refer to Book 2 Residential Installation Guide			ACOUSTIC REPORT: PKA Predictor V16				
FRL Report	SYSTEM Nº	WALL LININGS	STUD DEPTH mm	70	90	120	140
			CAVITY INFILL (Refer to TABLE B6)	R_w / R_w+C_{tr}			
– / – / –	CSR 2000 	BOTH SIDES • 1 x 6mm CeminSeal Wallboard.	(a) Nil	33/26	34/27	36/29	37/30
			(c) 70 Soundscreen 2.0	39/30	40/31	42/33	42/33
			(e) 75 Gold Batts R2.0	38/29	39/30	41/42	42/33
			(f) 50 MAB Polyester 11kg	36/28	37/29	39/31	39/31
			Wall Thickness mm	82	102	132	152
– / – / –	CSR 2007 	SIDE ONE • 1 x 6mm CeminSeal Wallboard. SIDE TWO • 1 x 10mm Gyprock Aquachek Plasterboard.	(a) Nil	31/24	33/26	35/28	36/29
			(c) 70 Soundscreen 2.0	37/28	39/30	41/32	41/32
			(e) 75 Gold Batts R2.0	36/27	38/29	40/31	41/32
			(f) 50 MAB Polyester 11kg	34/26	36/28	38/30	38/30
			Wall Thickness mm	86	106	136	156
– / – / –	CSR 2009 	BOTH SIDES • 1 x 10mm Gyprock Plus Plasterboard.	(a) Nil	27/19	28/21	31/24	31/24
			(c) 70 Soundscreen 2.0	33/23	34/25	37/28	36/27
			(e) 75 Gold Batts R2.0	32/22	33/24	36/27	36/27
			Wall Thickness mm	90	110	140	160
– / – / –	CSR 2011 	SIDE ONE • 1 x 10mm Gyprock Plus Plasterboard. SIDE TWO • 1 x 10mm Gyprock Aquachek Plasterboard.	(a) Nil	28/20	30/23	32/25	32/25
			(c) 70 Soundscreen 2.0	34/24	36/27	38/29	37/28
			(e) 75 Gold Batts R2.0	33/23	35/26	37/28	37/28
			(f) 50 MAB Polyester 11kg	31/22	33/25	35/27	34/26
			Wall Thickness mm	90	110	140	160
– / – / –	CSR 2017 	BOTH SIDES • 1 x 10mm Gyprock Aquachek Plasterboard.	(a) Nil	29/22	32/25	33/26	35/28
			(c) 70 Soundscreen 2.0	35/26	38/29	39/30	40/31
			(e) 75 Gold Batts R2.0	34/25	37/28	38/29	40/31
			(f) 50 MAB Polyester 11kg	32/24	35/27	36/28	37/29
			Wall Thickness mm	90	110	140	160
– / – / –	CSR 10145 	SIDE ONE • 1 x 10mm Gyprock Aquachek Plasterboard. SIDE TWO • 1 x 10mm Gyprock HD Plasterboard.	(a) Nil	30/23	32/25	35/28	35/28
			(b) 70 Soundscreen 2.0	36/27	38/29	41/32	40/31
			(c) 50 MAB Polyester 11kg	33/25	36/28	38/30	38/30
			(d) 75 Gold Batts R2.0	35/26	37/28	40/31	40/31
			Wall Thickness mm	90	110	140	160

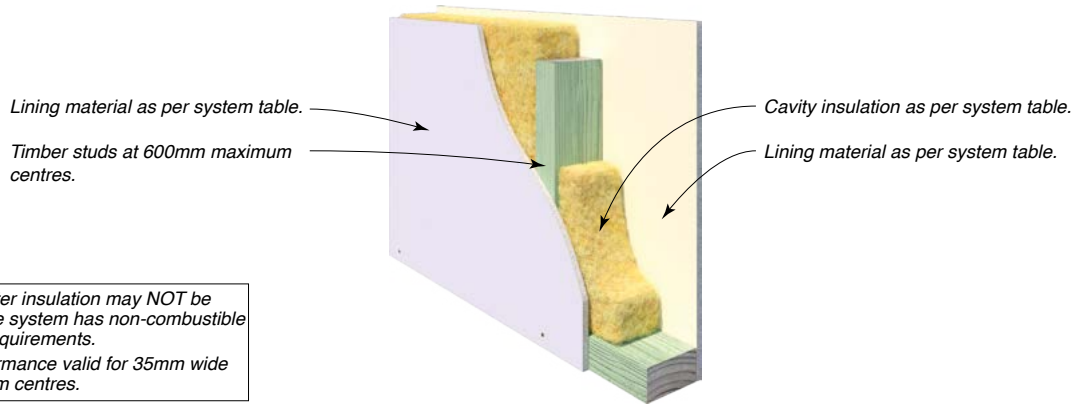
Timber Frame Internal Wall Systems – Single Stud



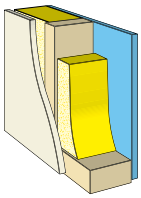
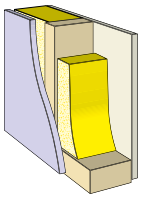
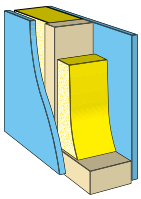
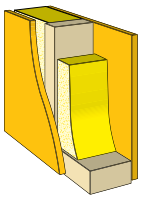
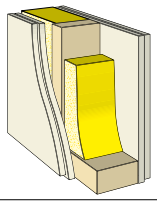
NOTE: Polyester insulation may NOT be used where the system has non-combustible construction requirements.
Acoustic performance valid for 35mm wide studs at 600mm centres.

SYSTEM OPTIONS Refer to Book 2 Residential Installation Guide			ACOUSTIC REPORT: PKA Predictor V16				
FRL Report	SYSTEM Nº	WALL LININGS	STUD DEPTH mm	70	90	120	140
			CAVITY INFILL (Refer to TABLE B6)	R_w / R_w+C_{tr}			
– / – / –	**CSR 10146** 	BOTH SIDES • 1 x 10mm Gyprock HD Plasterboard.	(a) Nil	32/25	33/26	35/28	36/29
			(b) 70 Soundscreen 2.0	38/29	39/30	41/32	41/32
			(c) 50 MAB Polyester 11kg	35/27	36/28	38/30	38/30
			(d) 75 Gold Batts R2.0	37/28	38/29	40/31	41/32
			Wall Thickness mm	90	110	140	160
– / – / –	**CSR 2026** 	BOTH SIDES • 2 x 10mm Gyprock Plus Plasterboard.	(a) Nil	34/27	36/29	38/31	39/33
			(c) 70 Soundscreen 2.0	40/31	42/33	44/35	44/36
			(e) 75 Gold Batts R2.0	39/30	41/32	43/34	44/36
			(f) 50 MAB Polyester 11kg	37/29	39/31	41/33	41/34
			Wall Thickness mm	110	130	160	180
– / – / –	**CSR 10147** 	BOTH SIDES • 2 x 10mm Gyprock HD Plasterboard.	(a) Nil	39/32	41/35	42/36	43/37
			(b) 70 Soundscreen 2.0	45/36	47/39	48/40	48/40
			(c) 50 MAB Polyester 11kg	42/34	42/37	45/38	45/38
			(d) 75 Gold Batts R2.0	44/35	46/38	47/39	48/40
			Wall Thickness mm	110	130	160	180
– / – / –	**CSR 2040** 	SIDE ONE • 1 x 13mm Gyprock Standard Plasterboard. SIDE TWO • 1 x 6mm CeminSeal Wallboard.	(a) Nil	32/25	33/26	36/29	36/29
			(c) 70 Soundscreen 2.0	38/29	39/30	42/33	41/32
			(e) 75 Gold Batts R2.0	37/28	38/29	41/32	41/32
			(f) 50 MAB Polyester 11kg	35/27	36/28	39/31	38/30
			Wall Thickness mm	89	109	139	159
– / – / –	**CSR 2042** 	SIDE ONE • 1 x 13mm Gyprock Standard Plasterboard. SIDE TWO • 1 x 9mm CeminSeal Wallboard.	(a) Nil	34/27	36/29	38/31	38/31
			(c) 70 Soundscreen 2.0	40/31	42/33	44/35	43/34
			(e) 75 Gold Batts R2.0	39/30	41/32	43/34	43/34
			Wall Thickness mm	92	112	142	162
– / – / –	**CSR 2045** 	BOTH SIDES • 1 x 13mm Gyprock Standard Plasterboard.	(a) Nil	32/25	33/26	35/28	36/29
			(c) 70 Soundscreen 2.0	38/29	39/30	41/32	41/32
			(e) 75 Gold Batts R2.0	37/28	38/29	40/31	41/32
			Wall Thickness mm	96	116	146	166

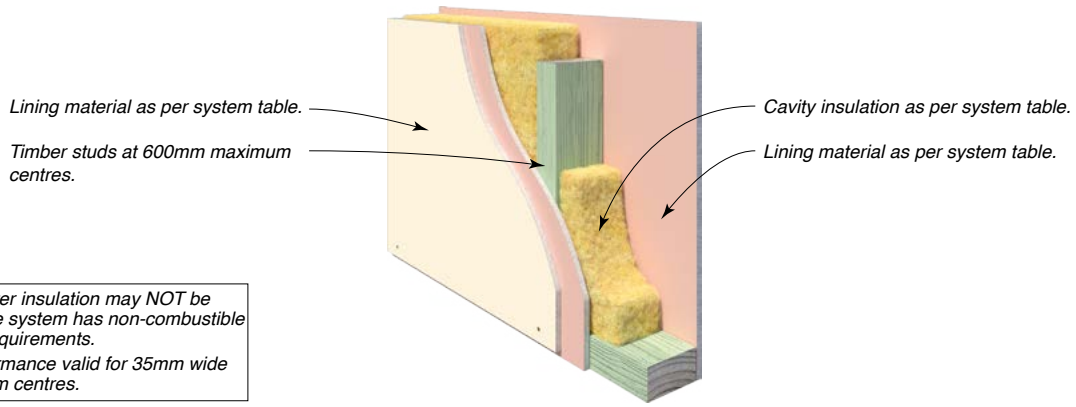
Timber Frame Internal Wall Systems – Single Stud



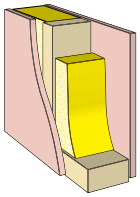
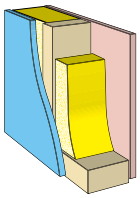
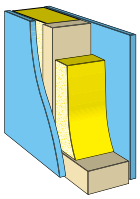
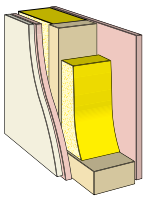
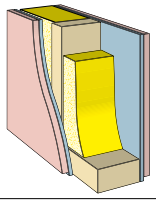
NOTE: Polyester insulation may NOT be used where the system has non-combustible construction requirements.
Acoustic performance valid for 35mm wide studs at 600mm centres.

SYSTEM OPTIONS Refer to Book 2 Residential Installation Guide			ACOUSTIC REPORT: PKA Predictor V16				
FRL Report	**SYSTEM Nº**	**WALL LININGS**	**STUD DEPTH mm**	**70**	**90**	**120**	**140**
			CAVITY INFILL (Refer to TABLE B6)	**R_w / R_w+C_{tr}**			
– / – / –	**CSR 2047** 	SIDE ONE • 1 x 13mm Gyprock Standard Plasterboard. SIDE TWO • 1 x 13mm Gyprock Aquachek Plasterboard.	(a) Nil	33/26	34/27	36/29	37/30
			(c) 70 Soundscreen 2.0	39/30	40/31	42/33	42/33
			(e) 75 Gold Batts R2.0	38/29	39/30	41/32	42/33
			(f) 50 MAB Polyester 11kg	36/28	37/29	39/31	39/31
			Wall Thickness mm	96	116	146	166
– / – / –	**CSR 2049** 	SIDE ONE • 1 x 13mm Gyprock Impactchek Plasterboard. SIDE TWO • 1 x 13mm Gyprock Standard Plasterboard.	(a) Nil	33/26	34/27	36/29	37/30
			(c) 70 Soundscreen 2.0	39/30	40/31	42/33	42/33
			(e) 75 Gold Batts R2.0	38/29	39/30	41/32	42/33
			Wall Thickness mm	96	116	146	166
– / – / –	**CSR 2053** 	BOTH SIDES • 1 x 13mm Gyprock Aquachek Plasterboard.	(a) Nil	33/26	34/27	37/30	37/30
			(c) 70 Soundscreen 2.0	39/30	40/31	43/34	42/33
			(e) 75 Gold Batts R2.0	38/29	39/30	42/33	42/33
			(f) 50 MAB Polyester 11kg	36/28	37/29	40/32	39/31
			Wall Thickness mm	96	116	146	166
– / – / –	**CSR 2055** 	BOTH SIDES • 1 x 13mm Gyprock Soundchek Plasterboard.	(a) Nil	36/29	37/30	39/33	40/34
			(c) 70 Soundscreen 2.0	42/33	43/34	45/37	45/37
			(d) Polymax 2.0	42/33	43/34	45/37	46/38
			(e) 75 Gold Batts R2.0	41/32	42/33	44/36	45/37
			Wall Thickness mm	96	116	146	166
– / – / –	**CSR 2059** 	BOTH SIDES • 2 x 13mm Gyprock Standard Plasterboard.	(a) Nil	39/32	41/35	42/36	43/37
			(c) 70 Soundscreen 2.0	45/36	47/39	48/40	48/40
			(e) 75 Gold Batts R2.0	44/37	46/38	47/39	48/40
			(f) 50 MAB Polyester 11kg	42/34	44/37	45/38	45/38
			Wall Thickness mm	122	142	172	192

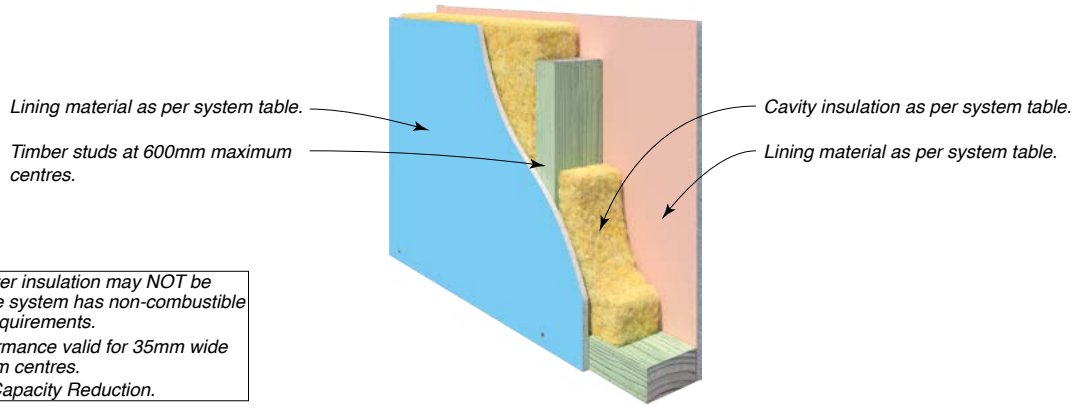
Timber Frame Internal Wall Systems – Single Stud



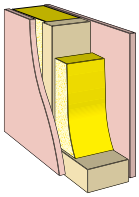
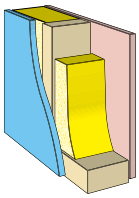
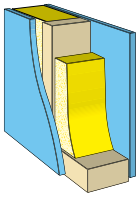
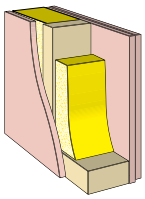
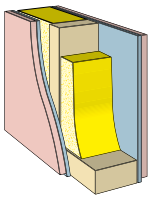
NOTE: Polyester insulation may NOT be used where the system has non-combustible construction requirements.
Acoustic performance valid for 35mm wide studs at 600mm centres.

SYSTEM OPTIONS Refer to Book 2 Residential Installation Guide			ACOUSTIC REPORT: PKA Predictor V16				
FRL Report	**SYSTEM Nº**	**WALL LININGS**	**STUD DEPTH mm**	**70**	**90**	**120**	**140**
			CAVITY INFILL (Refer to TABLE B6)	**R_w / R_w+C_{tr}**			
– /60/60 **30/30/30** FC 12969	**CSR 2060** 	BOTH SIDES • 1 x 13mm Gyprock Fyrchek Plasterboard.	(a) Nil	34/27	36/29	37/30	38/32
			(c) 70 Soundscreen 2.0	40/31	42/33	43/34	43/35
			(e) 75 Gold Batts R2.0	39/30	41/32	42/33	43/35
			(f) 50 MAB Polyester 11kg	37/29	39/31	40/32	40/33
			Wall Thickness mm	96	116	146	166
– /60/60 **30/30/30** FC 12969	**CSR 2061** 	SIDE ONE • 1 x 13mm Gyprock Fyrchek MR Plasterboard. SIDE TWO • 1 x 13mm Gyprock Fyrchek Plasterboard.	(a) Nil	34/27	36/29	37/30	39/33
			(c) 70 Soundscreen 2.0	40/31	42/33	43/34	44/36
			(e) 75 Gold Batts R2.0	39/30	41/32	42/33	44/36
			(f) 50 MAB Polyester 11kg	37/29	39/31	40/32	41/34
			Wall Thickness mm	96	116	146	166
– /60/60 **30/30/30** FC 12969	**CSR 2062** 	BOTH SIDES • 1 x 13mm Gyprock Fyrchek MR Plasterboard.	(a) Nil	34/27	36/29	37/30	39/33
			(c) 70 Soundscreen 2.0	40/31	42/33	43/34	44/36
			(e) 75 Gold Batts R2.0	39/30	41/32	42/33	44/36
			(f) 50 MAB Polyester 11kg	37/29	39/31	40/32	41/34
			Wall Thickness mm	96	116	146	166
– /60/60 **30/30/30** FC 12969	**CSR 2065** 	SIDE ONE (ANY ORDER) • 1 x 10mm Gyprock Plus Plasterboard. • 1 x 13mm Gyprock Fyrchek Plasterboard. SIDE TWO • 1 x 13mm Gyprock Fyrchek Plasterboard.	(a) Nil	36/29	38/31	40/33	41/35
			(c) 70 Soundscreen 2.0	42/33	44/35	46/37	46/38
			(e) 75 Gold Batts R2.0	41/32	42/33	44/36	45/37
			(f) 50 MAB Polyester 11kg	39/31	41/33	43/35	43/36
			Wall Thickness mm	106	126	156	176
– /60/60 **60/60/60** FC 12969	**CSR 2067** 	BOTH SIDES • 1 x 6mm CeminSeal Wallboard (against studs). • 1 x 13mm Gyprock Fyrchek Plasterboard.	(a) Nil	40/33	42/36	44/38	44/38
			(c) 70 Soundscreen 2.0	46/37	48/40	50/42	49/41
			(e) 75 Gold Batts R2.0	45/36	47/39	49/41	49/41
			(f) 50 MAB Polyester 11kg	43/35	45/38	47/40	46/39
			Wall Thickness mm	108	128	158	178

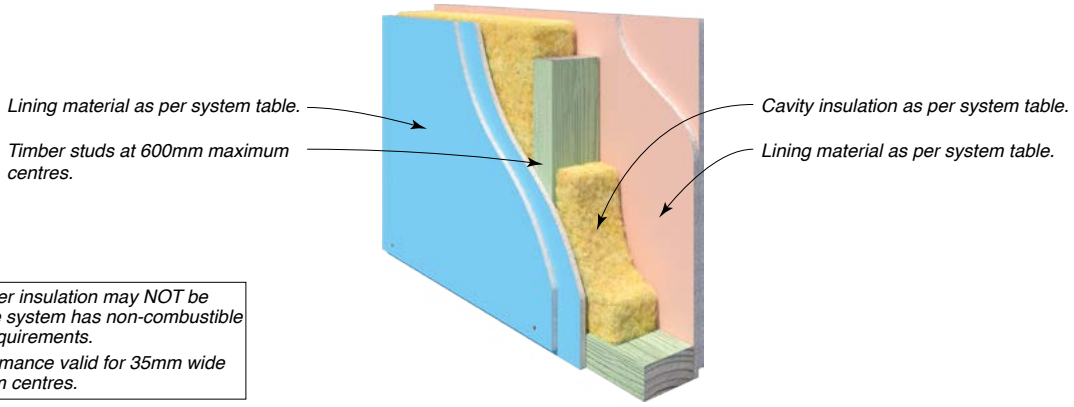
Timber Frame Internal Wall Systems – Single Stud



NOTE: Polyester insulation may NOT be used where the system has non-combustible construction requirements.
Acoustic performance valid for 35mm wide studs at 600mm centres.
**ACR = Axial Capacity Reduction.*

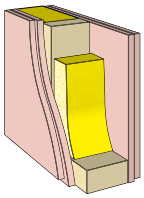
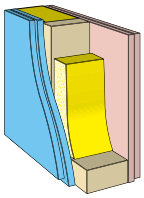
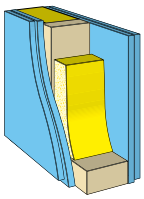
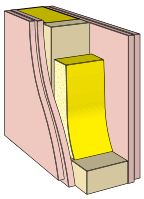
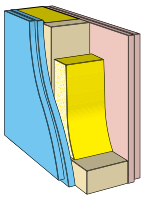
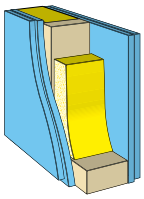
SYSTEM OPTIONS Refer to Book 2 Residential Installation Guide			ACOUSTIC REPORT: PKA Predictor V16				
FRL Report	SYSTEM Nº	WALL LININGS	STUD DEPTH mm	70	90	120	140
			CAVITY INFILL (Refer to TABLE B6)	R_w / R_w+C_{tr}			
– /60/60 60/60/60 FC 12969	CSR 2070 	BOTH SIDES • 1 x 16mm Gyprock Fyrchek Plasterboard.	(a) Nil	33/26	36/29	38/32	38/32
			(c) 70 Soundscreen 2.0	39/30	42/33	44/36	43/35
			(e) 75 Gold Batts R2.0	38/29	41/32	42/35	43/35
			(f) 50 MAB Polyester 11kg	36/28	39/31	41/34	40/33
			Wall Thickness mm	102	122	152	172
– /60/60 60/60/60 FC 12969	CSR 2071 	SIDE ONE • 1 x 16mm Gyprock Fyrchek MR Plasterboard. SIDE TWO • 1 x 16mm Gyprock Fyrchek Plasterboard.	(a) Nil	35/28	37/30	39/33	40/34
			(c) 70 Soundscreen 2.0	41/32	43/34	45/37	45/37
			(e) 75 Gold Batts R2.0	40/31	42/33	44/36	45/37
			(f) 50 MAB Polyester 11kg	38/30	40/32	42/35	42/35
			Wall Thickness mm	102	122	152	172
– /60/60 60/60/60 FC 12969	CSR 2072 	BOTH SIDES • 1 x 16mm Gyprock Fyrchek MR Plasterboard.	(a) Nil	37/30	38/31	40/34	41/35
			(c) 70 Soundscreen 2.0	43/34	44/35	46/38	46/38
			(e) 75 Gold Batts R2.0	42/33	43/34	45/37	46/38
			(f) 50 MAB Polyester 11kg	40/32	41/33	43/36	43/36
			Wall Thickness mm	102	122	152	172
– /90/90 60/60/60 FC 12969	CSR 2075 	SIDE ONE • 1 x 16mm Gyprock Fyrchek Plasterboard. SIDE TWO • 2 x 16mm Gyprock Fyrchek Plasterboard.	(a) Nil	38/31	40/33	41/35	42/36
			(c) 70 Soundscreen 2.0	44/35	46/37	47/39	47/39
			(e) 75 Gold Batts R2.0	43/34	45/36	46/38	47/38
			(f) 50 MAB Polyester 11kg	41/33	43/35	44/37	44/37
			Wall Thickness mm	118	138	168	188
– /90/90 90/90/90* *ACR Group 3 FC 12969	CSR 2080 	BOTH SIDES • 1 x 6mm CeminSeal Wallboard (against studs). • 1 x 16mm Gyprock Fyrchek Plasterboard.	(a) Nil	42/36	43/37	44/38	45/39
			(c) 70 Soundscreen 2.0	48/40	49/41	50/42	50/42
			(e) 75 Gold Batts R2.0	47/39	48/40	49/41	50/42
			(f) 50 MAB Polyester 11kg	45/38	46/39	47/40	47/40
			Wall Thickness mm	114	134	164	184

Timber Frame Internal Wall Systems – Single Stud

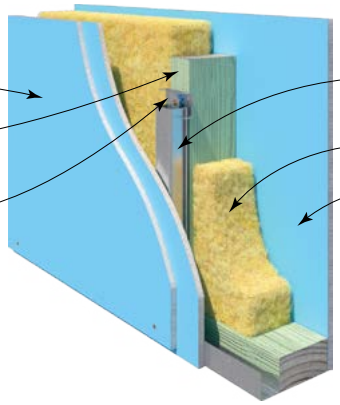


NOTE: Polyester insulation may NOT be used where the system has non-combustible construction requirements.

Acoustic performance valid for 35mm wide studs at 600mm centres.

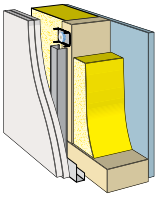
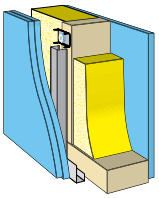
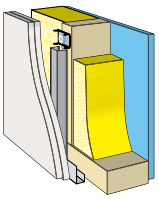
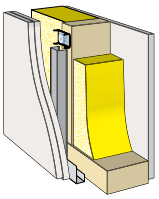
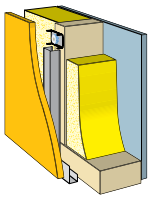
SYSTEM OPTIONS Refer to Book 2 Residential Installation Guide			ACOUSTIC REPORT: PKA Predictor V16				
FRL Report	**SYSTEM Nº**	**WALL LININGS**	**STUD DEPTH mm**	**70**	**90**	**120**	**140**
			CAVITY INFILL (Refer to TABLE B6)	**R_w / R_w+C_{tr}**			
– /120/120 90/90/90 FC 12969	**CSR 2090** 	BOTH SIDES • 2 x 13mm Gyprock Fyrchek Plasterboard.	(a) Nil	41/35	43/37	44/38	45/39
			(c) 70 Soundscreen 2.0	47/39	49/41	50/42	50/42
			(e) 75 Gold Batts R2.0	46/38	48/40	49/41	50/42
			(f) 50 MAB Polyester 11kg	44/37	46/39	47/40	47/40
			Wall Thickness mm	122	142	172	192
– /120/120 90/90/90 FC 12969	**CSR 2091** 	SIDE ONE • 2 x 13mm Gyprock Fyrchek MR Plasterboard. SIDE TWO • 2 x 13mm Gyprock Fyrchek Plasterboard.	(a) Nil	42/36	43/37	44/38	45/39
			(c) 70 Soundscreen 2.0	48/40	49/41	50/42	50/42
			(e) 75 Gold Batts R2.0	47/39	48/40	49/41	50/42
			(f) 50 MAB Polyester 11kg	45/38	46/39	47/40	47/40
			Wall Thickness mm	122	142	172	192
– /120/120 90/90/90 FC 12969	**CSR 2092** 	BOTH SIDES • 2 x 13mm Gyprock Fyrchek MR Plasterboard.	(a) Nil	42/36	43/37	45/39	45/39
			(c) 70 Soundscreen 2.0	48/40	49/41	51/43	50/42
			(e) 75 Gold Batts R2.0	47/39	48/40	50/42	50/42
			(f) 50 MAB Polyester 11kg	45/38	46/39	48/41	47/40
			Wall Thickness mm	122	142	172	192
– /120/120 120/120/120 FC 12969	**CSR 2095** 	BOTH SIDES • 2 x 16mm Gyprock Fyrchek Plasterboard.	(a) Nil	41/35	43/37	44/38	44/38
			(c) 70 Soundscreen 2.0	47/39	49/41	50/42	49/41
			(e) 75 Gold Batts R2.0	46/38	48/40	49/41	49/41
			(f) 50 MAB Polyester 11kg	44/37	46/39	47/40	46/39
			Wall Thickness mm	134	154	184	204
– /120/120 120/120/120 FC 12969	**CSR 2096** 	SIDE ONE • 2 x 16mm Gyprock Fyrchek MR Plasterboard. SIDE TWO • 2 x 16mm Gyprock Fyrchek Plasterboard.	(a) Nil	43/37	44/38	45/39	46/40
			(c) 70 Soundscreen 2.0	49/41	50/42	51/43	51/43
			(e) 75 Gold Batts R2.0	48/40	49/41	50/42	51/43
			(f) 50 MAB Polyester 11kg	46/39	47/40	48/41	48/41
			Wall Thickness mm	134	154	184	204
– /120/120 120/120/120 FC 12969	**CSR 2097** 	BOTH SIDES • 2 x 16mm Gyprock Fyrchek MR Plasterboard.	(a) Nil	44/38	45/39	46/40	47/41
			(c) 70 Soundscreen 2.0	50/42	51/43	52/44	52/44
			(e) 75 Gold Batts R2.0	49/41	50/42	51/43	52/44
			(f) 50 MAB Polyester 11kg	47/40	48/41	49/42	49/42
			Wall Thickness mm	134	154	184	204

Timber Frame Internal Wall Systems – Single Stud with Resilient Mount

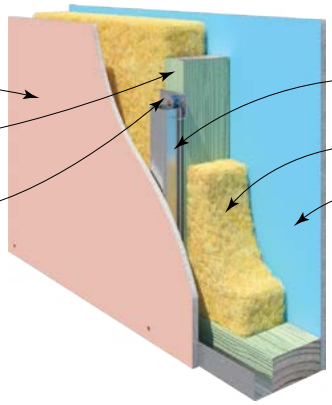


NOTE: Polyester insulation may NOT be used where the system has non-combustible construction requirements.

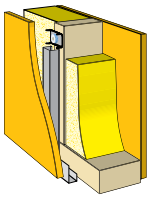
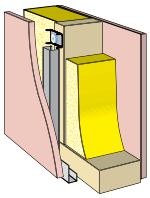
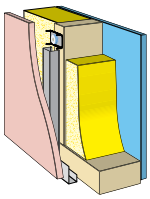
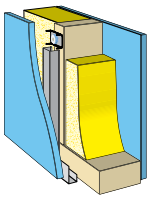
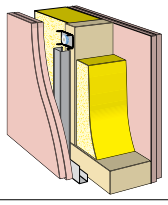
Acoustic performance valid for 35mm wide studs at 600mm centres.

SYSTEM SPECIFICATION Refer to Book 2 Residential Installation Guide			ACOUSTIC REPORT: PKA Predictor V16 Not Deemed Discontinuous Construction				
FRL Report	**SYSTEM Nº**	**WALL LININGS**	**STUD DEPTH mm**	**70**	**90**	**120**	**140**
			CAVITY INFILL (Refer to TABLE B6)	**R_w / R_w+C_{tr}**			
– / – / –	**CSR 10148** 	SIDE ONE • 2 x 10mm Gyprock HD Plasterboard. SIDE TWO • 1 x 6mm CeminSeal Wallboard.	(a) Nil	43/36	44/37	46/39	47/41
			(b) 70 Soundscreen 2.0	53/43	54/44	55/45	56/47
			(c) 50 MAB Polyester 11kg	47/39	48/40	49/41	50/43
			(d) 75 Gold Batts R2.0	51/42	52/43	54/45	54/46
			Minimum Wall Thickness mm	124	144	174	194
– / – / –	**CSR 2110** 	SIDE ONE • 2 x 10mm Gyprock Aquachek Plasterboard. SIDE TWO • 1 x 10mm Gyprock Aquachek Plasterboard.	(a) Nil	41/34	42/35	43/36	45/38
			(c) 70 Soundscreen 2.0	51/41	52/42	52/42	54/44
			(e) 75 Gold Batts R2.0	49/40	50/41	51/42	52/43
			(f) 50 MAB Polyester 11kg	45/37	46/38	46/38	48/40
			Minimum Wall Thickness mm	128	148	178	198
– / – / –	**CSR 10149** 	SIDE ONE • 2 x 10mm Gyprock HD Plasterboard. SIDE TWO • 1 x 10mm Gyprock Aquachek Plasterboard.	(a) Nil	43/36	43/36	45/38	46/39
			(b) 70 Soundscreen 2.0	53/43	53/43	54/44	55/45
			(c) 50 MAB Polyester 11kg	4739	47/39	48/40	49/41
			(d) 75 Gold Batts R2.0	51/42	51/42	53/44	53/44
			Minimum Wall Thickness mm	128	148	178	198
– / – / –	**CSR 10150** 	SIDE ONE • 2 x 10mm Gyprock HD Plasterboard. SIDE TWO • 1 x 10mm Gyprock HD Plasterboard.	(a) Nil	43/36	43/36	45/38	46/39
			(b) 70 Soundscreen 2.0	53/43	53/43	54/44	55/45
			(c) 50 MAB Polyester 11kg	47/39	48/40	49/41	49/41
			(d) 75 Gold Batts R2.0	51/42	51/42	53/44	53/44
			Minimum Wall Thickness mm	128	148	178	198
– / – / –	**CSR 2130** 	SIDE ONE • 1 x 13mm Gyprock Soundchek Plasterboard. SIDE TWO • 1 x 6mm CeminSeal Wallboard.	(a) Nil	42/35	43/36	45/38	45/39
			(c) 70 Soundscreen 2.0	52/42	53/43	54/44	54/45
			(e) 75 Gold Batts R2.0	50/41	51/42	53/44	52/44
			(f) 50 MAB Polyester 11kg	46/38	47/39	48/40	48/41
			Minimum Wall Thickness mm	117	137	167	187

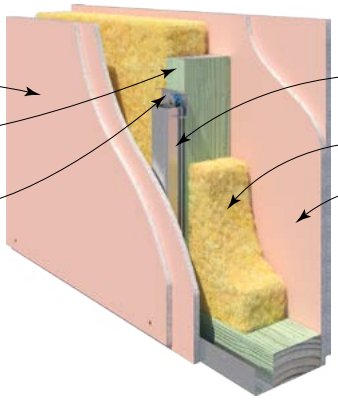
Timber Frame Internal Wall Systems – Single Stud with Resilient Mount



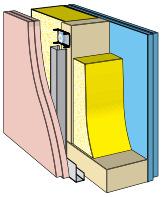
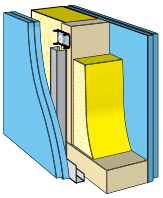
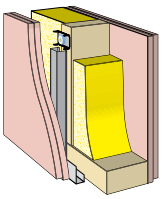
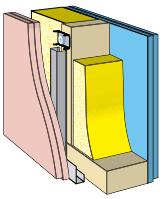
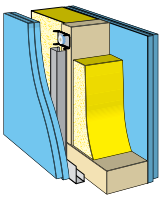
NOTE: Polyester insulation may NOT be used where the system has non-combustible construction requirements.
Acoustic performance valid for 35mm wide studs at 600mm centres.

SYSTEM SPECIFICATION Refer to Book 2 Residential Installation Guide			ACOUSTIC REPORT: PKA Predictor V16 Not Deemed Discontinuous Construction				
FRL Report	**SYSTEM** **N°**	**WALL LININGS**	**STUD DEPTH mm**	**70**	**90**	**120**	**140**
			CAVITY INFILL (Refer to TABLE B6)	**R_w / R_w+C_{tr}**			
– / – / –	**CSR 2135** 	BOTH SIDES • 1 x 13mm Gyprock Soundchek Plasterboard.	(a) Nil	42/35	44/38	45/39	46/40
			(c) 70 Soundscreen 2.0	52/42	54/45	54/45	55/46
			(e) 75 Gold Batts R2.0	50/41	52/44	53/45	53/45
			(f) 50 MAB Polyester 11kg	46/38	48/41	48/41	49/42
			Minimum Wall Thickness mm	124	144	174	194
– /60/60 **60/60/60** FC 12969	**CSR 2150** 	BOTH SIDES • 1 x 16mm Gyprock Fyrchek Plasterboard.	(a) Nil	41/34	43/37	44/38	44/38
			(c) 70 Soundscreen 2.0	51/41	53/44	53/44	53/44
			(e) 75 Gold Batts R2.0	49/40	51/43	52/44	51/43
			(f) 50 MAB Polyester 11kg	45/37	47/40	47/40	47/40
			Minimum Wall Thickness mm	130	150	180	200
– /60/60 **60/60/60** FC 12969	**CSR 2151** 	SIDE ONE • 1 x 16mm Gyprock Fyrchek Plasterboard. SIDE TWO • 1 x 16mm Gyprock Fyrchek MR Plasterboard.	(a) Nil	42/35	44/38	45/39	45/39
			(c) 70 Soundscreen 2.0	52/42	54/45	54/45	54/45
			(e) 75 Gold Batts R2.0	50/41	52/44	53/45	52/44
			(f) 50 MAB Polyester 11kg	46/38	48/41	48/41	48/41
			Minimum Wall Thickness mm	130	150	180	200
– /60/60 **60/60/60** FC 12969	**CSR 2152** 	BOTH SIDES • 1 x 16mm Gyprock Fyrchek MR Plasterboard.	(a) Nil	43/36	45/39	46/40	46/40
			(c) 70 Soundscreen 2.0	53/43	55/46	55/46	55/46
			(e) 75 Gold Batts R2.0	51/42	53/45	54/46	53/45
			(f) 50 MAB Polyester 11kg	47/39	49/42	49/42	49/42
			Minimum Wall Thickness mm	130	150	180	200
– /120/120 **90/90/90** FC 12969	**CSR 2160** 	BOTH SIDES • 2 x 13mm Gyprock Fyrchek Plasterboard.	(a) Nil	48/42	49/43	50/44	51/45
			(c) 70 Soundscreen 2.0	58/49	59/**50**	59/**50**	60/**51**
			(e) 75 Gold Batts R2.0	56/48	57/49	58/**50**	58/**50**
			(f) 50 MAB Polyester 11kg	52/45	53/46	53/46	54/47
			Minimum Wall Thickness mm	150	170	200	220

Timber Frame Internal Wall Systems – Single Stud with Resilient Mount



NOTE: Polyester insulation may NOT be used where the system has non-combustible construction requirements.
Acoustic performance valid for 35mm wide studs at 600mm centres.

SYSTEM SPECIFICATION Refer to Book 2 Residential Installation Guide			ACOUSTIC REPORT: PKA Predictor V16 Not Deemed Discontinuous Construction				
FRL Report	**SYSTEM Nº**	**WALL LININGS**	**STUD DEPTH mm**	**70**	**90**	**120**	**140**
			CAVITY INFILL (Refer to TABLE B6)	**R_w / R_w+C_{tr}**			
– /120/120 **90/90/90** FC 12969	**CSR 2161** 	SIDE ONE • 2 x 13mm Gyprock Fyrchek Plasterboard. SIDE TWO • 2 x 13mm Gyprock Fyrchek MR Plasterboard.	(a) Nil	49/43	49/43	50/44	51/45
			(c) 70 Soundscreen 2.0	59/**50**	59/**50**	59/**50**	60/**51**
			(e) 75 Gold Batts R2.0	57/49	57/49	58/**50**	58/**50**
			(f) 50 MAB Polyester 11kg	53/46	53/46	53/46	54/47
			Minimum Wall Thickness mm	150	170	200	220
– /120/120 **90/90/90** FC 12969	**CSR 2162** 	BOTH SIDES • 2 x 13mm Gyprock Fyrchek MR Plasterboard.	(a) Nil	49/43	49/43	50/44	51/45
			(c) 70 Soundscreen 2.0	59/**50**	59/**50**	59/**50**	60/**51**
			(e) 75 Gold Batts R2.0	57/49	57/49	58/**50**	58/**50**
			(f) 50 MAB Polyester 11kg	53/46	53/46	53/46	54/47
			Minimum Wall Thickness mm	150	170	200	220
– /120/120 **120/120/120** FC 12969	**CSR 2170** 	BOTH SIDES • 2 x 16mm Gyprock Fyrchek Plasterboard.	(a) Nil	48/42	49/43	50/44	50/44
			(c) 70 Soundscreen 2.0	58/49	59/**50**	59/**50**	59/**50**
			(e) 75 Gold Batts R2.0	56/48	57/49	58/**50**	57/49
			(f) 50 MAB Polyester 11kg	52/45	53/46	53/46	53/46
			Minimum Wall Thickness mm	162	182	212	232
– /120/120 **120/120/120** FC 12969	**CSR 2171** 	SIDE ONE • 2 x 16mm Gyprock Fyrchek Plasterboard. SIDE TWO • 2 x 16mm Gyprock Fyrchek MR Plasterboard.	(a) Nil	49/43	50/44	51/45	51/45
			(c) 70 Soundscreen 2.0	59/**50**	60/**51**	60/**51**	60/**51**
			(e) 75 Gold Batts R2.0	57/49	58/**50**	59/**51**	58/**50**
			(f) 50 MAB Polyester 11kg	53/46	54/47	54/47	54/47
			Minimum Wall Thickness mm	162	182	212	232
– /120/120 **120/120/120** FC 12969	**CSR 2172** 	BOTH SIDES • 2 x 16mm Gyprock Fyrchek MR Plasterboard.	(a) Nil	50/44	51/45	52/46	53/47
			(c) 70 Soundscreen 2.0	60/**51**	61/**52**	61/**52**	62/**53**
			(e) 75 Gold Batts R2.0	58/**50**	59/**51**	60/**52**	60/**52**
			(f) 50 MAB Polyester 11kg	54/47	55/48	55/48	56/49
			Minimum Wall Thickness mm	162	182	212	232

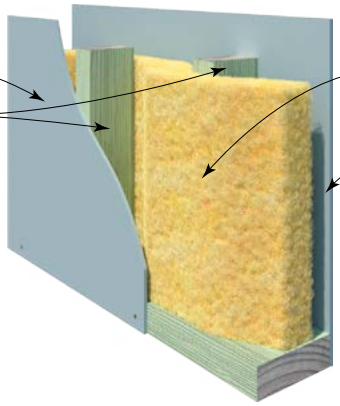
Timber Frame Internal Wall Systems – Staggered Stud

Lining material as per system table.

Staggered timber studs at 600mm maximum centres each side.

Minimum 20mm clearance between stud and opposing lining.

No Noggings or any connection between studs.

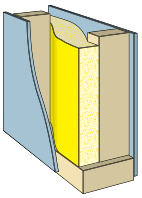
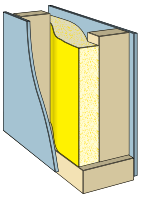
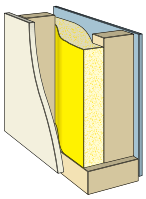
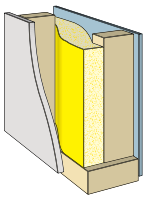
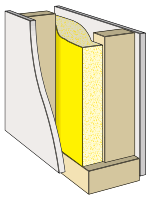
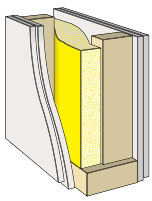


Cavity insulation as per system table. (Insulation may be cut and fitted between studs).

Lining material as per system table.

NOTE: Polyester insulation may NOT be used where the system has non-combustible construction requirements.

Acoustic performance valid for 35mm wide studs at 600mm centres.

SYSTEM SPECIFICATION Refer to Book 2 Residential Installation Guide			ACOUSTIC REPORT: PKA Predictor V16 Not Deemed Discontinuous Construction			
FRL Report	SYSTEM Nº	WALL LININGS	PLATE WIDTH mm	90	120	140
			CAVITY INFILL (Refer to TABLE B6)	R_w / R_w+C_{tr}		
– / – / –	CSR 2200 	BOTH SIDES • 1 x 6mm CeminSeal Wallboard.	(a) Nil	37/30	39/32	40/33
			(c) 70 Soundscreen 2.0	48/38	50/40	50/40
			(e) 75 Gold Batts R2.0	46/37	48/39	50/41
			(f) 50 MAB Polyester 11kg	42/35	44/37	44/37
			Wall Thickness mm	102	132	152
– / – / –	CSR 2202 	BOTH SIDES • 1 x 9mm CeminSeal Wallboard.	(a) Nil	41/34	42/36	44/38
			(c) 70 Soundscreen 2.0	52/42	53/44	54/45
			(e) 75 Gold Batts R2.0	50/41	52/44	54/46
			(f) 50 MAB Polyester 11kg	46/39	47/41	48/42
			Wall Thickness mm	108	138	158
– / – / –	CSR 2205 	SIDE ONE • 1 x 10mm Gyprock Plus Plasterboard. SIDE TWO • 1 x 6mm CeminSeal Wallboard.	(a) Nil	35/28	37/30	37/30
			(c) 70 Soundscreen 2.0	46/36	48/38	47/37
			(e) 75 Gold Batts R2.0	44/35	46/37	48/39
			(f) 50 MAB Polyester 11kg	40/33	42/35	41/34
			Wall Thickness mm	106	136	156
– / – / –	CSR 10151 	SIDE ONE • 1 x 10mm Gyprock HD Plasterboard. SIDE TWO • 1 x 6mm CeminSeal Wallboard.	(a) Nil	39/32	41/34	42/35
			(b) 70 Soundscreen 2.0	50/40	51/41	52/42
			(c) 50 MAB Polyester 11kg	44/37	45/38	46/39
			(d) 75 Gold Batts R2.0	48/39	50/41	50/41
			Wall Thickness mm	106	136	156
– / – / –	CSR 10152 	BOTH SIDES • 1 x 10mm Gyprock HD Plasterboard.	(a) Nil	38/31	41/34	42/35
			(b) 70 Soundscreen 2.0	49/39	51/41	52/42
			(c) 50 MAB Polyester 11kg	46/36	45/38	46/39
			(d) 75 Gold Batts R2.0	47/38	50/41	50/41
			Wall Thickness mm	110	140	160
– /–/–	CSR 10153 	BOTH SIDES • 2 x 10mm Gyprock HD Plasterboard.	(a) Nil	45/39	46/40	47/41
			(b) 70 Soundscreen 2.0	56/47	56/47	57/48
			(c) 50 MAB Polyester 11kg	50/44	50/44	51/45
			(d) 75 Gold Batts R2.0	54/46	55/47	55/47
			Wall Thickness mm	130	160	180

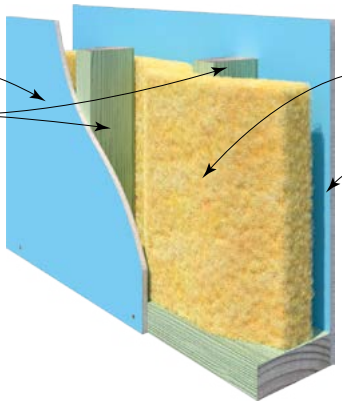
Timber Frame Internal Wall Systems – Staggered Stud

Lining material as per system table.

Staggered timber studs at 600mm maximum centres each side.

Minimum 20mm clearance between stud and opposing lining.

No Noggings or any connection between studs.

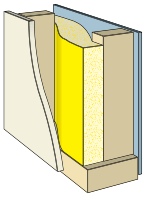
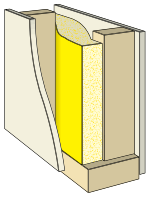
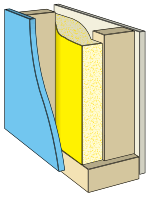
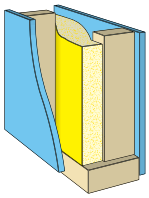


Cavity insulation as per system table. (Insulation may be cut and fitted between studs).

Lining material as per system table.

NOTE: Polyester insulation may NOT be used where the system has non-combustible construction requirements.

Acoustic performance valid for 35mm wide studs at 600mm centres.

SYSTEM SPECIFICATION Refer to Book 2 Residential Installation Guide			ACOUSTIC REPORT: PKA Predictor V16 Not Deemed Discontinuous Construction			
FRL Report	**SYSTEM** **Nº**	**WALL LININGS**	**PLATE WIDTH mm**	**90**	**120**	**140**
			CAVITY INFILL (Refer to TABLE B6)	**R_w / R_w+C_{tr}**		
– / – / –	**CSR 2220** 	SIDE ONE • 1 x 13mm Gyprock Standard Plasterboard. SIDE TWO • 1 x 6mm CeminSeal Wallboard.	(a) Nil	37/30	38/31	40/33
			(c) 70 Soundscreen 2.0	48/38	49/39	50/40
			(e) 75 Gold Batts R2.0	46/37	48/39	50/41
			(f) 50 MAB Polyester 11kg	42/35	43/36	44/37
			Wall Thickness mm	109	139	159
– / – / –	**CSR 2225** 	BOTH SIDES • 1 x 13mm Gyprock Standard Plasterboard.	(a) Nil	37/30	38/31	40/33
			(c) 70 Soundscreen 2.0	48/38	49/39	50/40
			(e) 75 Gold Batts R2.0	46/37	47/38	50/41
			(f) 50 MAB Polyester 11kg	42/35	43/36	44/37
			Wall Thickness mm	116	146	166
– / – / –	**CSR 2226** 	SIDE ONE • 1 x 13mm Gyprock Aquachek Plasterboard. SIDE TWO • 1 x 13mm Gyprock Standard Plasterboard.	(a) Nil	37/30	39/32	40/33
			(c) 70 Soundscreen 2.0	48/38	50/40	50/40
			(e) 75 Gold Batts R2.0	46/37	48/39	50/41
			(f) 50 MAB Polyester 11kg	42/35	44/37	44/37
			Wall Thickness mm	116	146	166
– / – / –	**CSR 2227** 	BOTH SIDES • 1 x 13mm Gyprock Aquachek Plasterboard.	(a) Nil	38/31	40/33	41/34
			(c) 70 Soundscreen 2.0	49/39	51/41	51/41
			(e) 75 Gold Batts R2.0	47/38	49/40	50/41
			(f) 50 MAB Polyester 11kg	43/36	45/38	45/38
			Wall Thickness mm	116	146	166

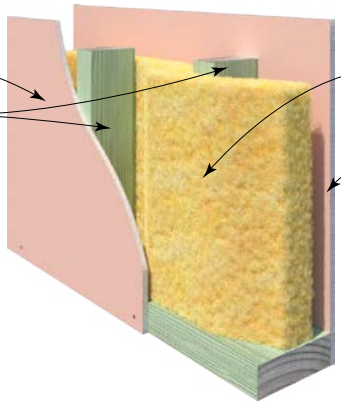
Timber Frame Internal Wall Systems – Staggered Stud

Lining material as per system table.

Staggered timber studs at 600mm maximum centres each side.

Minimum 20mm clearance between stud and opposing lining.

No Noggings or any connection between studs.



Cavity insulation as per system table. (Insulation may be cut and fitted between studs).

Lining material as per system table.

NOTE: Polyester insulation may NOT be used where the system has non-combustible construction requirements.

Acoustic performance valid for 35mm wide studs at 600mm centres.

SYSTEM SPECIFICATION Refer to Book 2 Residential Installation Guide			ACOUSTIC REPORT: PKA Predictor V16 Not Deemed Discontinuous Construction			
FRL Report	**SYSTEM Nº**	**WALL LININGS**	**PLATE WIDTH mm**	**90**	**120**	**140**
			CAVITY INFILL (Refer to TABLE B6)	**R_w / R_w+C_{tr}**		
– /60/60 **30/30/30** FC 12969	**CSR 2240**	BOTH SIDES • 1 x 13mm Gyprock Fyrchek Plasterboard.	(a) Nil	38/31	41/34	41/35
			(c) 70 Soundscreen 2.0	49/39	52/42	51/42
			(e) 75 Gold Batts R2.0	47/38	50/41	51/43
			(f) 50 MAB Polyester 11kg	43/36	46/39	45/39
			Wall Thickness mm	116	146	166
– /60/60 **30/30/30** FC 12969	**CSR 2241**	SIDE ONE • 1 x 13mm Gyprock Fyrchek MR Plasterboard. SIDE TWO • 1 x 13mm Gyprock Fyrchek Plasterboard.	(a) Nil	38/31	41/34	41/35
			(c) 70 Soundscreen 2.0	49/39	52/42	51/42
			(e) 75 Gold Batts R2.0	47/38	50/41	51/43
			(f) 50 MAB Polyester 11kg	43/36	46/39	45/39
			Wall Thickness mm	116	146	166
– /60/60 **30/30/30** FC 12969	**CSR 2242**	BOTH SIDES • 1 x 13mm Gyprock Fyrchek MR Plasterboard.	(a) Nil	38/31	41/34	41/35
			(c) 70 Soundscreen 2.0	49/39	52/42	51/42
			(e) 75 Gold Batts R2.0	47/38	50/41	51/43
			(f) 50 MAB Polyester 11kg	43/36	46/39	45/39
			Wall Thickness mm	116	146	166
– /60/60 **60/60/60** FC 12969	**CSR 2245**	BOTH SIDES • 1 x 6mm CeminSeal Wallboard (against studs). • 1 x 13mm Gyprock Fyrchek Plasterboard.	(a) Nil	47/41	47/41	48/42
			(c) 70 Soundscreen 2.0	58/49	57/48	58/49
			(d) Polymax 2.0	56/**50**	56/**50**	57/**51**
			(e) 75 Gold Batts R2.0	56/48	56/48	56/48
			Wall Thickness mm	128	158	178
– /60/60 **60/60/60** FC 12969	**CSR 2255**	BOTH SIDES • 1 x 16mm Gyprock Fyrchek Plasterboard.	(a) Nil	39/32	40/34	41/35
			(c) 70 Soundscreen 2.0	50/40	51/42	51/42
			(e) 75 Gold Batts R2.0	48/39	49/41	50/42
			(f) 50 MAB Polyester 11kg	44/37	45/39	45/39
			Wall Thickness mm	122	152	172
– /60/60 **60/60/60** FC 12969	**CSR 2256**	SIDE ONE • 1 x 16mm Gyprock Fyrchek MR Plasterboard. SIDE TWO • 1 x 16mm Gyprock Fyrchek Plasterboard.	(a) Nil	40/33	41/35	43/37
			(c) 70 Soundscreen 2.0	51/41	52/43	53/44
			(e) 75 Gold Batts R2.0	49/40	50/42	51/43
			(f) 50 MAB Polyester 11kg	45/38	46/40	47/41
			Wall Thickness mm	122	152	172

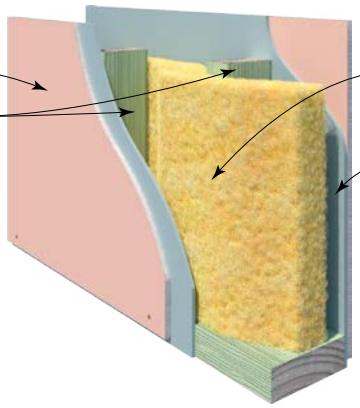
Timber Frame Internal Wall Systems – Staggered Stud

Lining material as per system table.

Staggered timber studs at 600mm maximum centres each side.

Minimum 20mm clearance between stud and opposing lining.

No Noggings or any connection between studs.



Cavity insulation as per system table. (Insulation may be cut and fitted between studs).

Lining material as per system table.

NOTE: Polyester insulation may NOT be used where the system has non-combustible construction requirements.

Acoustic performance valid for 35mm wide studs at 600mm centres.

**ACR = Axial Capacity Reduction.*

SYSTEM SPECIFICATION Refer to Book 2 Residential Installation Guide			ACOUSTIC REPORT: PKA Predictor V16 Not Deemed Discontinuous Construction			
FRL Report	**SYSTEM Nº**	**WALL LININGS**	**PLATE WIDTH mm**	**90**	**120**	**140**
			CAVITY INFILL (Refer to TABLE B6)	**R_w / R_w+C_{tr}**		
– /60/60 **60/60/60** FC 12969	**CSR 2257**	BOTH SIDES • 1 x 16mm Gyprock Fyrchek MR Plasterboard.	(a) Nil	40/33	41/35	43/37
			(c) 70 Soundscreen 2.0	51/41	52/43	53/44
			(e) 75 Gold Batts R2.0	49/40	51/42	52/44
			(f) 50 MAB Polyester 11kg	45/38	46/40	47/41
			Wall Thickness mm	122	152	172
– /60/60 **60/60/60** FC 12969	**CSR 2265**	BOTH SIDES • 1 x 16mm Gyprock Fyrchek Plasterboard (against studs). • 1 x 6mm CeminSeal Wallboard.	(a) Nil	46/40	47/41	48/42
			(c) 70 Soundscreen 2.0	57/48	58/49	58/49
			(e) 75 Gold Batts R2.0	55/47	56/48	57/49
			(f) 50 MAB Polyester 11kg	51/45	52/46	52/46
			Wall Thickness mm	134	164	184
– /90/90 **90/90/90*** *ACR Group 3 FC 12969	**CSR 2266**	BOTH SIDES • 1 x 6mm CeminSeal Wallboard (against studs). • 1 x 16mm Gyprock Fyrchek Plasterboard.	(a) Nil	46/40	47/41	48/42
			(c) 70 Soundscreen 2.0	57/48	58/49	58/49
			(e) 75 Gold Batts R2.0	55/47	56/48	57/49
			(f) 50 MAB Polyester 11kg	51/45	52/46	52/46
			Wall Thickness mm	134	164	184
– /120/120 **90/90/90** FC 12969	**CSR 2275**	BOTH SIDES • 2 x 13mm Gyprock Fyrchek Plasterboard.	(a) Nil	46/40	47/41	48/42
			(c) 70 Soundscreen 2.0	57/48	58/49	58/49
			(d) Polymax 2.0	55/49	56/**50**	57/**51**
			(e) 75 Gold Batts R2.0	55/47	56/48	57/49
			Wall Thickness mm	142	172	192
– /120/120 **90/90/90** FC 12969	**CSR 2276**	SIDE ONE • 2 x 13mm Gyprock Fyrchek Plasterboard. SIDE TWO • 2 x 13mm Gyprock Fyrchek MR Plasterboard.	(a) Nil	46/40	47/41	48/42
			(c) 70 Soundscreen 2.0	57/48	58/49	58/49
			(e) 75 Gold Batts R2.0	55/47	56/48	57/49
			(f) 50 MAB Polyester 11kg	51/45	52/46	52/46
			Wall Thickness mm	142	172	192

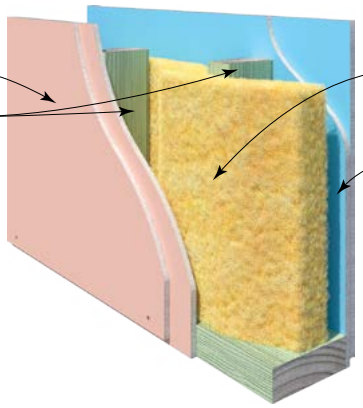
Timber Frame Internal Wall Systems – Staggered Stud

Lining material as per system table.

Staggered timber studs at 600mm maximum centres each side.

Minimum 20mm clearance between stud and opposing lining.

No Noggings or any connection between studs.



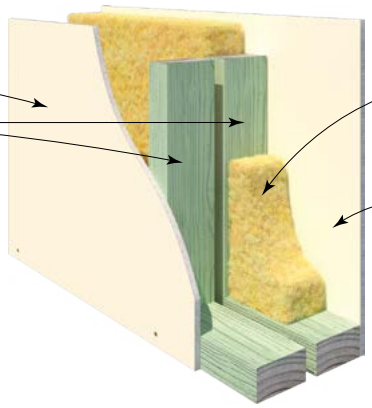
Cavity insulation as per system table. (Insulation may be cut and fitted between studs).

Lining material as per system table.

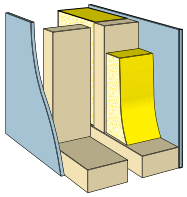
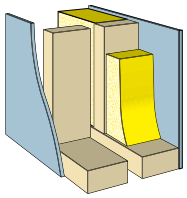
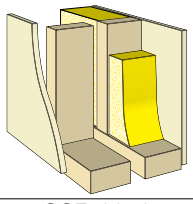
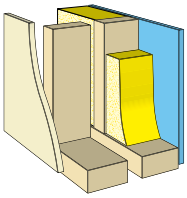
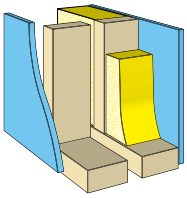
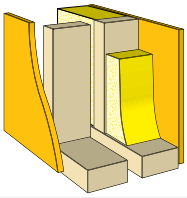
NOTE: Polyester insulation may NOT be used where the system has non-combustible construction requirements.

Acoustic performance valid for 35mm wide studs at 600mm centres.

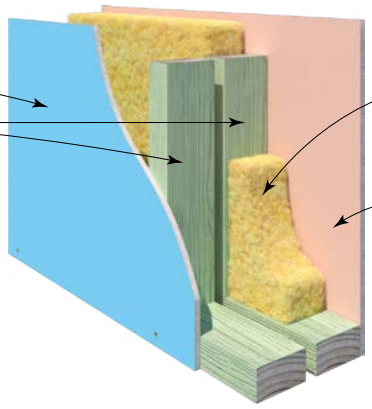
SYSTEM SPECIFICATION Refer to Book 2 Residential Installation Guide			ACOUSTIC REPORT: PKA Predictor V16 Not Deemed Discontinuous Construction			
FRL Report	**SYSTEM Nº**	**WALL LININGS**	**PLATE WIDTH mm**	**90**	**120**	**140**
			CAVITY INFILL (Refer to TABLE B6)	**R_w / R_w+C_{tr}**		
– /120/120 **90/90/90** FC 12969	**CSR 2277**	BOTH SIDES • 2 x 13mm Gyprock Fyrchek MR Plasterboard.	(a) Nil	46/40	47/41	48/42
			(c) 70 Soundscreen 2.0	57/48	58/49	58/49
			(e) 75 Gold Batts R2.0	55/47	56/48	57/49
			(f) 50 MAB Polyester 11kg	51/45	52/46	52/46
			Wall Thickness mm	142	172	192
– /120/120 **120/120/120** FC 12969	**CSR 2285**	BOTH SIDES • 2 x 16mm Gyprock Fyrchek Plasterboard.	(a) Nil	45/39	46/40	47/41
			(c) 70 Soundscreen 2.0	56/47	57/48	57/48
			(e) 75 Gold Batts R2.0	54/46	55/47	56/48
			(f) 50 MAB Polyester 11kg	50/44	51/45	51/45
			Wall Thickness mm	154	184	204
– /120/120 **120/120/120** FC 12969	**CSR 2286**	SIDE ONE • 2 x 16mm Gyprock Fyrchek Plasterboard. SIDE TWO • 2 x 16mm Gyprock Fyrchek MR Plasterboard.	(a) Nil	46/40	47/41	48/42
			(c) 70 Soundscreen 2.0	57/48	58/49	58/49
			(e) 75 Gold Batts R2.0	55/47	57/49	57/49
			(f) 50 MAB Polyester 11kg	51/45	52/46	52/46
			Wall Thickness mm	154	184	204
– /120/120 **120/120/120** FC 12969	**CSR 2287**	BOTH SIDES • 2 x 16mm Gyprock Fyrchek MR Plasterboard.	(a) Nil	47/41	49/43	49/43
			(c) 70 Soundscreen 2.0	58/49	60/**51**	59/**50**
			(e) 75 Gold Batts R2.0	56/48	58/**50**	59/**51**
			(f) 50 MAB Polyester 11kg	52/46	54/48	53/47
			Wall Thickness mm	154	184	204



NOTE: Polyester insulation may NOT be used where the system has non-combustible construction requirements.
Acoustic performance valid for 35mm wide studs at 600mm centres.

SYSTEM SPECIFICATION Refer to Book 2 Residential Installation Guide			ACOUSTIC REPORT: PKA Predictor V16 Discontinuous Construction				
FRL Report	SYSTEM Nº	WALL LININGS	STUD DEPTH mm	70	90	120	140
			CAVITY INFILL (Refer to TABLE B6)	R_w / R_w+C_{tr}			
– / – / –	CSR 2300 	BOTH SIDES • 1 x 6mm CeminSeal Wallboard.	(a) Nil	42/35	43/37	46/40	47/41
			(c) 70 Soundscreen 2.0	56/45	57/47	60/**50**	61/**51**
			(e) 75 Gold Batts R2.0	54/44	55/46	58/49	59/**50**
			(f) 50 MAB Polyester 11kg	48/41	49/43	52/46	53/47
			Minimum Wall Thickness mm	172	212	272	312
– / – / –	CSR 2302 	BOTH SIDES • 1 x 9mm CeminSeal Wallboard.	(a) Nil	46/40	47/41	48/42	49/43
			(c) 70 Soundscreen 2.0	60/**50**	61/**51**	62/**52**	63/**53**
			(e) 75 Gold Batts R2.0	58/49	59/**50**	60/**51**	61/**52**
			(f) 50 MAB Polyester 11kg	52/46	53/47	54/48	55/49
			Minimum Wall Thickness mm	178	218	278	318
– / – / –	CSR 2310 	BOTH SIDES • 1 x 13mm Gyprock Standard Plasterboard.	(a) Nil	41/34	43/37	45/39	46/40
			(c) 70 Soundscreen 2.0	55/44	57/47	59/49	60/**50**
			(e) 75 Gold Batts R2.0	53/43	55/46	57/48	58/49
			(f) 50 MAB Polyester 11kg	47/40	49/43	51/45	52/46
			Minimum Wall Thickness mm	186	226	286	326
– / – / –	CSR 2312 	SIDE ONE • 1 x 13mm Gyprock Standard Plasterboard. SIDE TWO • 1 x 13mm Gyprock Aquachek Plasterboard.	(a) Nil	42/35	44/38	46/40	47/41
			(c) 70 Soundscreen 2.0	56/45	58/48	60/**50**	61/**51**
			(e) 75 Gold Batts R2.0	54/44	56/47	58/49	59/**50**
			(f) 50 MAB Polyester 11kg	48/41	50/44	52/46	53/47
			Minimum Wall Thickness mm	186	226	286	326
– / – / –	CSR 2314 	BOTH SIDES • 1 x 13mm Gyprock Aquachek Plasterboard.	(a) Nil	42/36	45/39	46/40	47/41
			(c) 70 Soundscreen 2.0	56/46	59/49	60/**50**	61/**51**
			(e) 75 Gold Batts R2.0	54/45	57/48	58/49	59/**50**
			(f) 50 MAB Polyester 11kg	48/42	51/45	52/46	53/47
			Minimum Wall Thickness mm	186	226	286	326
– / – / –	CSR 2316 	BOTH SIDES • 1 x 13mm Gyprock Soundchek Plasterboard.	(a) Nil	44/38	46/40	47/41	48/42
			(c) 70 Soundscreen 2.0	58/48	60/**50**	61/**51**	62/**52**
			(e) 75 Gold Batts R2.0	56/47	58/49	59/**50**	60/**51**
			(f) 50 MAB Polyester 11kg	50/44	52/46	53/47	54/48
			Minimum Wall Thickness mm	186	226	286	326

Timber Frame Internal Wall Systems – Double Stud

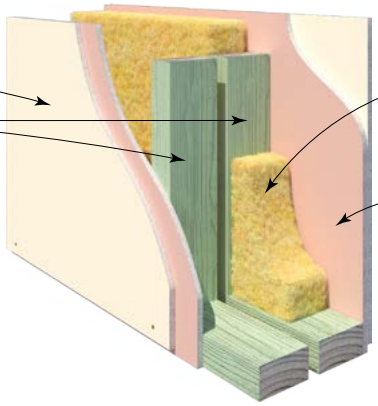


NOTE: Polyester insulation may NOT be used where the system has non-combustible construction requirements.

Acoustic performance valid for 35mm wide studs at 600mm centres.

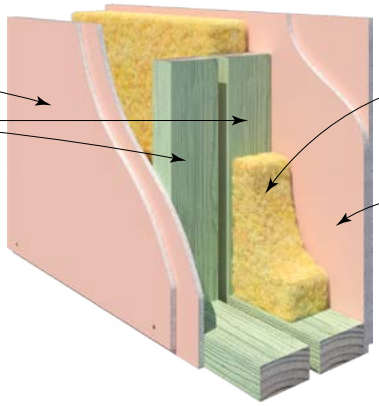
SYSTEM SPECIFICATION Refer to Book 2 Residential Installation Guide			ACOUSTIC REPORT: PKA Predictor V16 Discontinuous Construction				
FRL Report	**SYSTEM Nº**	**WALL LININGS**	**STUD DEPTH mm**	**70**	**90**	**120**	**140**
			CAVITY INFILL (Refer to TABLE B6)	**R_w / R_w+C_{tr}**			
– /60/60 30/30/30 FC 12969	**CSR 2330**	BOTH SIDES • 1 x 13mm Gyprock Fyrchek Plasterboard.	(a) Nil	43/37	45/39	47/41	48/42
			(c) 70 Soundscreen 2.0	57/47	59/49	61/**51**	62/**52**
			(e) 75 Gold Batts R2.0	55/46	57/48	59/**50**	60/**51**
			(f) 50 MAB Polyester 11kg	49/43	51/45	53/47	54/48
			Minimum Wall Thickness mm	186	226	286	326
– /60/60 30/30/30 FC 12969	**CSR 2331**	SIDE ONE • 1 x 13mm Gyprock Fyrchek MR Plasterboard. SIDE TWO • 1 x 13mm Gyprock Fyrchek Plasterboard.	(a) Nil	44/38	45/39	47/41	48/42
			(c) 70 Soundscreen 2.0	58/48	59/49	61/**51**	62/**52**
			(e) 75 Gold Batts R2.0	56/47	57/48	59/**50**	60/**51**
			(f) 50 MAB Polyester 11kg	50/44	51/45	53/47	54/48
			Minimum Wall Thickness mm	186	226	286	326
– /60/60 30/30/30 FC 12969	**CSR 2332**	BOTH SIDES • 1 x 13mm Gyprock Fyrchek MR Plasterboard.	(a) Nil	44/38	45/39	47/41	48/42
			(c) 70 Soundscreen 2.0	58/48	59/49	61/**51**	62/**52**
			(e) 75 Gold Batts R2.0	56/47	57/48	59/**50**	60/**51**
			(f) 50 MAB Polyester 11kg	50/44	51/44	53/47	54/48
			Minimum Wall Thickness mm	186	226	286	326
– /60/60 30/30/30 FC 12969	**CSR 2336**	BOTH SIDES • 1 x 13mm Gyprock Fyrchek Plasterboard. • 1 x 13mm Gyprock Standard Plasterboard.	(a) Nil	48/42	50/44	51/45	52/46
			(c) 70 Soundscreen 2.0	62/**52**	64/**54**	65/**55**	66/**56**
			(e) 75 Gold Batts R2.0	60/**51**	62/**53**	63/**54**	64/**55**
			(f) 50 MAB Polyester 11kg	54/48	56/**50**	57/**51**	58/**52**
			Minimum Wall Thickness mm	212	252	312	352
– /60/60 60/60/60 FC 12969	**CSR 2340**	BOTH SIDES • 1 x 6mm CeminSeal Wallboard (against studs). • 1 x 13mm Gyprock Fyrchek plasterboard.	(a) Nil	49/43	50/44	51/45	52/46
			(c) 70 Soundscreen 2.0	63/**53**	64/**54**	65/**55**	66/**56**
			(e) 75 Gold Batts R2.0	61/**52**	62/**53**	63/**54**	64/**55**
			(f) 50 MAB Polyester 11kg	55/49	56/**50**	57/**51**	58/**52**
			Minimum Wall Thickness mm	198	238	298	338

Timber Frame Internal Wall Systems – Double Stud

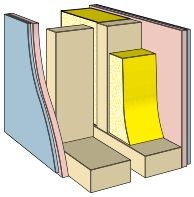
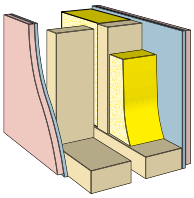
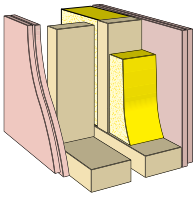
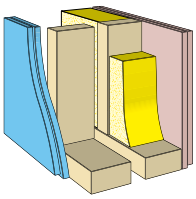
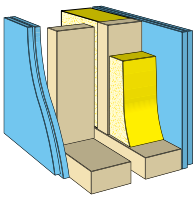
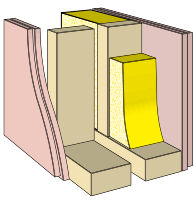


NOTE: Polyester insulation may NOT be used where the system has non-combustible construction requirements.
Acoustic performance valid for 35mm wide studs at 600mm centres.

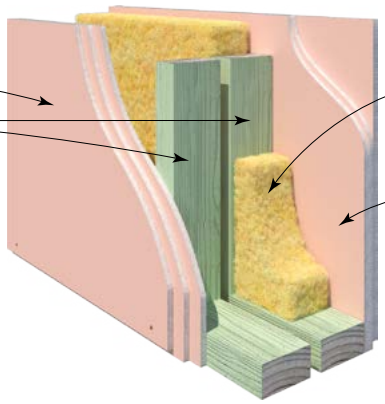
SYSTEM SPECIFICATION Refer to Book 2 Residential Installation Guide			ACOUSTIC REPORT: PKA Predictor V16 Discontinuous Construction				
FRL Report	**SYSTEM Nº**	**WALL LININGS**	**STUD DEPTH mm**	**70**	**90**	**120**	**140**
			CAVITY INFILL (Refer to TABLE B6)	**R_W / R_W+C_{tr}**			
– /60/60 **60/60/60** FC 12969	**CSR 2350**	BOTH SIDES • 1 x 16mm Gyprock Fyrchek Plasterboard.	(a) Nil	43/37	44/38	46/40	47/41
			(c) 70 Soundscreen 2.0	57/47	58/48	60/**50**	61/**51**
			(e) 75 Gold Batts R2.0	55/46	56/47	58/49	59/**50**
			(f) 50 MAB Polyester 11kg	49/43	50/44	52/46	53/47
			Minimum Wall Thickness mm	192	232	292	332
– /60/60 **60/60/60** FC 12969	**CSR 2355**	BOTH SIDES • 1 x 16mm Gyprock Fyrchek Plasterboard.	(a) Nil	43/37	44/38	46/40	47/41
			(c) 2 x 70 Soundscreen 2.0	60/**51**	61/**52**	63/**54**	63/**54**
			(e) 2 x 75 Gold Batts R2.0	58/49	59/**50**	61/**52**	61/**52**
			(f) 2 x 50 MAB Polyester 11kg	53/46	54/47	55/48	56/49
			Minimum Wall Thickness mm	192	232	292	332
– /60/60 **60/60/60** FC 12969	**CSR 2356**	SIDE ONE • 1 x 16mm Gyprock Fyrchek MR Plasterboard. SIDE TWO • 1 x 16mm Gyprock Fyrchek Plasterboard.	(a) Nil	44/38	45/39	47/41	48/42
			(c) 70 Soundscreen 2.0	58/48	59/49	61/**51**	62/**52**
			(e) 75 Gold Batts R2.0	56/47	57/48	59/**50**	60/**51**
			(f) 50 MAB Polyester 11kg	50/44	51/45	53/47	54/48
			Minimum Wall Thickness mm	192	232	292	332
– /60/60 **60/60/60** FC 12969	**CSR 2357**	BOTH SIDES • 1 x 16mm Gyprock Fyrchek MR Plasterboard.	(a) Nil	45/39	47/41	48/42	49/43
			(c) 70 Soundscreen 2.0	59/49	61/**51**	62/**52**	63/**53**
			(e) 75 Gold Batts R2.0	57/48	59/**50**	60/**51**	61/**52**
			(f) 50 MAB Polyester 11kg	51/45	53/47	54/48	55/49
			Minimum Wall Thickness mm	192	232	292	332
– /60/60 **60/60/60** FC 12969	**CSR 2360**	SIDE ONE • 1 x 16mm Gyprock Fyrchek Plasterboard. SIDE TWO (ANY ORDER) • 1 x 16mm Gyprock Fyrchek Plasterboard. • 1 x 6mm CeminSeal Wallboard.	(a) Nil	46/40	48/42	49/43	50/44
			(c) 70 Soundscreen 2.0	60/**50**	62/**52**	63/**53**	64/**54**
			(e) 75 Gold Batts R2.0	58/49	60/**51**	61/**52**	62/**53**
			(f) 50 MAB Polyester 11kg	52/46	54/48	55/49	56/**50**
			Minimum Wall Thickness mm	198	238	298	338
– /60/60 **60/60/60** FC 12969	**CSR 2365**	BOTH SIDES • 1 x 16mm Gyprock Fyrchek plasterboard. • 1 x 10mm Gyprock Plus Plasterboard.	(a) Nil	48/42	49/43	51/45	51/45
			(c) 70 Soundscreen 2.0	62/**52**	63/**53**	65/**55**	65/**55**
			(e) 75 Gold Batts R2.0	60/**51**	61/**52**	63/**54**	63/**54**
			(f) 50 MAB Polyester 11kg	54/48	55/49	57/**51**	57/**51**
			Minimum Wall Thickness mm	212	252	312	352



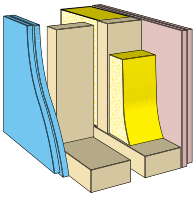
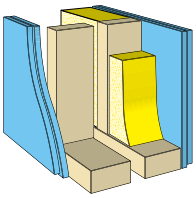
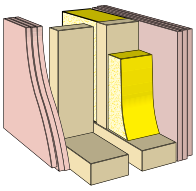
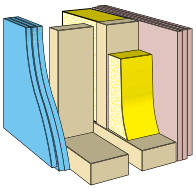
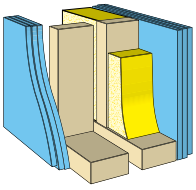
NOTE: Polyester insulation may NOT be used where the system has non-combustible construction requirements.
Acoustic performance valid for 35mm wide studs at 600mm centres.
**ACR = Axial Capacity Reduction.*

SYSTEM SPECIFICATION Refer to Book 2 Residential Installation Guide			ACOUSTIC REPORT: PKA Predictor V16 Discontinuous Construction				
FRL Report	SYSTEM Nº	WALL LININGS	STUD DEPTH mm	70	90	120	140
			CAVITY INFILL (Refer to TABLE B6)	R_w / R_w+C_{tr}			
– /60/60 60/60/60 FC 12969	CSR 2367 	BOTH SIDES • 1 x 16mm Gyprock Fyrchek plasterboard (against studs). • 1 x 6mm CeminSeal Wallboard.	(a) Nil	49/43	50/44	52/46	53/47
			(c) 70 Soundscreen 2.0	63/**53**	64/**54**	66/**56**	67/**57**
			(e) 75 Gold Batts R2.0	61/**52**	62/**53**	64/**55**	65/**56**
			(f) 50 MAB Polyester 11kg	55/49	56/**50**	58/**52**	59/**53**
			Minimum Wall Thickness mm	204	244	304	344
– /90/90 90/90/90* *ACR Group 3 FC 12969	CSR 2368 	BOTH SIDES • 1 x 6mm CeminSeal Wallboard (against studs). • 1 x 16mm Gyprock Fyrchek plasterboard.	(a) Nil	49/43	50/44	52/46	53/47
			(c) 70 Soundscreen 2.0	63/**53**	64/**54**	66/**56**	67/**57**
			(e) 75 Gold Batts R2.0	61/**52**	62/**53**	64/**55**	65/**56**
			(f) 50 MAB Polyester 11kg	55/49	56/**50**	58/**52**	59/**53**
			Minimum Wall Thickness mm	204	244	304	344
– /120/120 90/90/90 FC 12969	CSR 2375 	Both Sides • 2 x 13mm Gyprock Fyrchek plasterboard.	(a) Nil	49/43	50/44	52/46	52/46
			(c) 70 Soundscreen 2.0	63/**53**	64/**54**	66/**56**	66/**56**
			(e) 75 Gold Batts R2.0	61/**52**	62/**53**	64/**55**	64/**55**
			(f) 50 MAB Polyester 11kg	55/49	56/**50**	58/**52**	58/**52**
			Minimum Wall Thickness mm	212	252	312	352
– /120/120 90/90/90 FC 12969	CSR 2376 	SIDE ONE • 2 x 13mm Gyprock Fyrchek MR Plasterboard. SIDE TWO • 2 x 13mm Gyprock Fyrchek Plasterboard.	(a) Nil	49/43	50/44	52/46	53/47
			(c) 70 Soundscreen 2.0	63/**53**	64/**54**	66/**56**	67/**57**
			(e) 75 Gold Batts R2.0	61/**52**	62/**53**	64/**55**	65/**56**
			(f) 50 MAB Polyester 11kg	55/49	56/**50**	58/**52**	59/**53**
			Minimum Wall Thickness mm	212	252	312	352
– /120/120 90/90/90 FC 12969	CSR 2377 	BOTH SIDES • 2 x 13mm Gyprock Fyrchek MR Plasterboard.	(a) Nil	49/43	51/45	52/46	53/47
			(c) 70 Soundscreen 2.0	63/**53**	65/**55**	66/**56**	67/**57**
			(e) 75 Gold Batts R2.0	61/**52**	63/**54**	64/**55**	65/**56**
			(f) 50 MAB Polyester 11kg	55/49	57/**51**	58/**52**	59/**53**
			Minimum Wall Thickness mm	212	252	312	352
– /120/120 120/120/120 FC 12969	CSR 2385 	BOTH SIDES • 2 x 16mm Gyprock Fyrchek plasterboard.	(a) Nil	49/43	50/44	51/45	52/46
			(c) 70 Soundscreen 2.0	63/**53**	64/**54**	65/**55**	66/**56**
			(e) 75 Gold Batts R2.0	61/**52**	62/**53**	63/**54**	64/**55**
			(f) 50 MAB Polyester 11kg	55/49	56/**50**	57/**51**	58/**52**
			Minimum Wall Thickness mm	224	264	324	364

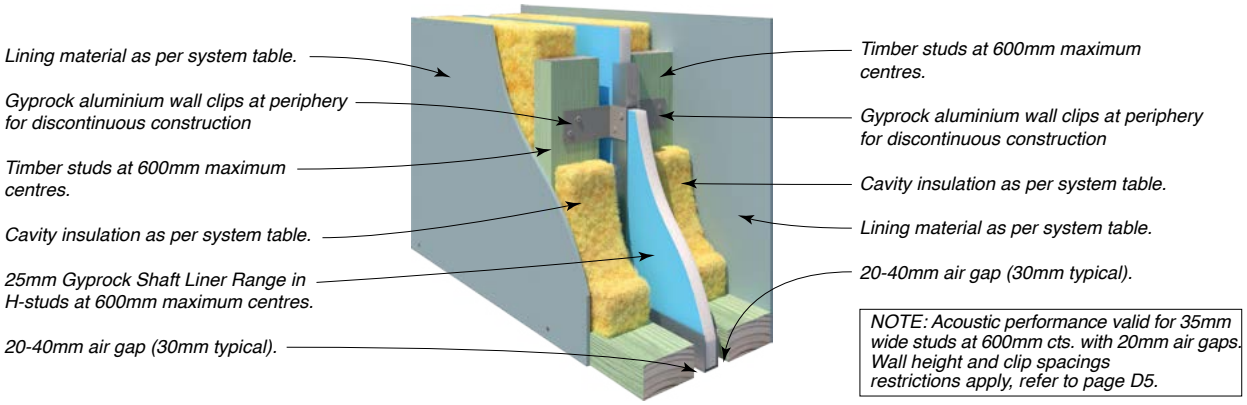
Timber Frame Internal Wall Systems – Double Stud



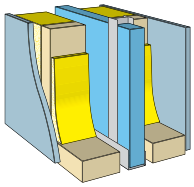
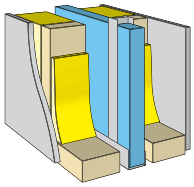
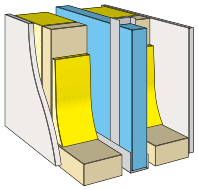
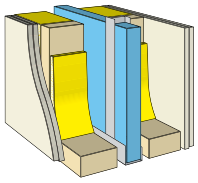
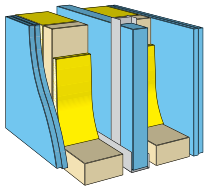
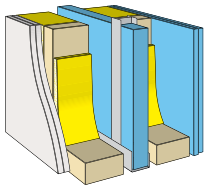
NOTE: Polyester insulation may NOT be used where the system has non-combustible construction requirements.
Acoustic performance valid for 35mm wide studs at 600mm centres.

SYSTEM SPECIFICATION Refer to Book 2 Residential Installation Guide			ACOUSTIC REPORT: PKA Predictor V16 Discontinuous Construction				
FRL Report	**SYSTEM Nº**	**WALL LININGS**	**STUD DEPTH mm**	**70**	**90**	**120**	**140**
			CAVITY INFILL (Refer to TABLE B6)	**R_w / R_w+C_{tr}**			
– /120/120 **120/120/120** FC 12969	**CSR 2386** 	SIDE ONE • 2 x 16mm Gyprock Fyrchek MR Plasterboard. SIDE TWO • 2 x 16mm Gyprock Fyrchek Plasterboard.	(a) Nil	50/44	51/45	52/46	53/47
			(c) 70 Soundscreen 2.0	64/**54**	65/**55**	66/**56**	67/**57**
			(e) 75 Gold Batts R2.0	62/**53**	63/**54**	64/**55**	65/**56**
			(f) 50 MAB Polyester 11kg	56/**50**	57/**51**	58/**52**	59/**53**
			Minimum Wall Thickness mm	224	264	324	364
– /120/120 **120/120/120** FC 12969	**CSR 2387** 	BOTH SIDES • 2 x 16mm Gyprock Fyrchek MR Plasterboard.	(a) Nil	51/45	52/46	53/47	54/48
			(c) 70 Soundscreen 2.0	65/**55**	66/**56**	67/**57**	68/**58**
			(e) 75 Gold Batts R2.0	63/**54**	64/**55**	65/**56**	66/**57**
			(f) 50 MAB Polyester 11kg	57/**51**	58/**52**	59/**53**	60/**54**
			Minimum Wall Thickness mm	224	264	324	364
– /120/120 **120/120/120** FC 12969	**CSR 2392** 	BOTH SIDES • 3 x 16mm Gyprock Fyrchek plasterboard.	(a) Nil	52/46	53/47	54/48	55/49
			(c) 70 Soundscreen 2.0	66/**56**	67/**57**	68/**58**	69/**59**
			(e) 75 Gold Batts R2.0	64/**55**	65/**56**	66/**57**	67/**58**
			(f) 50 MAB Polyester 11kg	58/**52**	59/**53**	60/**54**	61/**55**
			Minimum Wall Thickness mm	256	296	356	396
– /120/120 **120/120/120** FC 12969	**CSR 2393** 	SIDE ONE • 3 x 16mm Gyprock Fyrchek MR Plasterboard. SIDE TWO • 3 x 16mm Gyprock Fyrchek Plasterboard.	(a) Nil	53/47	54/48	55/49	56/**50**
			(c) 70 Soundscreen 2.0	67/**57**	68/**58**	69/**59**	70/**60**
			(e) 75 Gold Batts R2.0	65/**56**	66/**57**	67/**58**	68/**59**
			(f) 50 MAB Polyester 11kg	59/**53**	60/**54**	61/**55**	62/**56**
			Minimum Wall Thickness mm	256	296	356	396
– /120/120 **120/120/120** FC 12969	**CSR 2394** 	BOTH SIDES • 3 x 16mm Gyprock Fyrchek MR Plasterboard.	(a) Nil	54/48	55/49	57/**51**	57/**51**
			(c) 70 Soundscreen 2.0	68/**58**	69/**59**	71/**61**	71/**61**
			(e) 75 Gold Batts R2.0	66/**57**	67/**58**	69/**60**	69/**60**
			(f) 50 MAB Polyester 11kg	60/**54**	61/**55**	63/**57**	63/**57**
			Minimum Wall Thickness mm	256	296	356	396

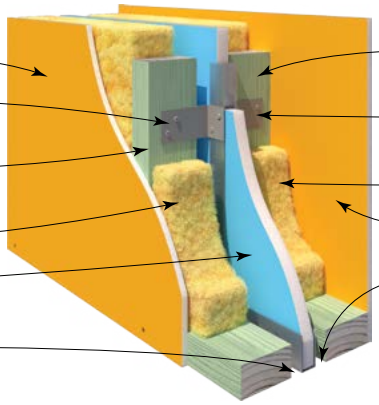
Timber Frame Internal Wall Systems – Party Wall with 25mm Fire Barrier



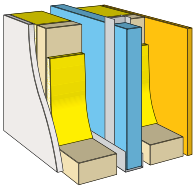
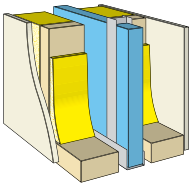
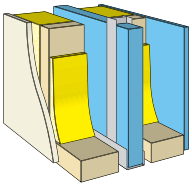
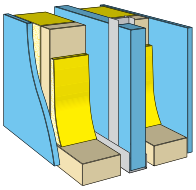
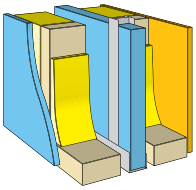
NOTE: Acoustic performance valid for 35mm wide studs at 600mm cts. with 20mm air gaps. Wall height and clip spacings restrictions apply, refer to page D5.

SYSTEM SPECIFICATION Refer to GYP513 Gyprock Party Wall Installation Guide for further information			ACOUSTIC REPORT: PKA Predictor V16 Discontinuous Construction		
FRL Report	**SYSTEM Nº**	**WALL LININGS**	**STUD DEPTH mm**	**70**	**90**
			CAVITY INFILL (Both Sides) (Refer to TABLE B6)	**R_w / R_w+C_{tr}**	
60/60/60 WF 45743	**CSR 2402** 	BOTH SIDES • 1 x 6mm CeminSeal Wallboard.	(a) 75 Gold Batts 2.0	61/48	62/**50**
			(b) 90 Gold Batts 2.7	63/**50**	64/**52**
			(c) 88 Soundscreen 2.5	64/**51**	65/**53**
			(d) 110 Acoustigard 11kg	63/**50**	64/**52**
			Typical Wall Thickness mm	237	277
60/60/60 WF 45743	**CSR 2459** 	BOTH SIDES • 7.5mm Cemintel Texture Base Sheet.	(a) 75 Gold Batts 2.0	62/49	63/**51**
			(b) 90 Gold Batts 2.7	64/**51**	65/**53**
			(c) 88 Soundscreen 2.5	65/**52**	66/**54**
			(d) 110 Acoustigard 11kg	64/**51**	65/**53**
			Typical Wall Thickness mm	240	280
60/60/60 WF 45743	**CSR 10154** 	BOTH SIDES • 1 x 10mm Gyprock HD Plasterboard.	(a) 75 Gold Batts 2.0	61/48	62/**50**
			(b) 90 Gold Batts 2.7	63/**50**	64/**52**
			(c) 88 Soundscreen 2.5	64/**51**	65/**53**
			(d) 110 Acoustigard 11kg	63/**50**	64/**52**
			Typical Wall Thickness mm	245	285
60/60/60 WF 45743	**CSR 2415** 	BOTH SIDES • 2 x 10mm Gyprock Plus Plasterboard.	(a) 75 Gold Batts 2.0	62/49	63/**51**
			(b) 90 Gold Batts 2.7	64/**51**	65/**53**
			(c) 88 Soundscreen 2.5	65/**52**	66/**54**
			(d) 110 Acoustigard 11kg	64/**51**	65/**53**
			Typical Wall Thickness mm	265	305
60/60/60 WF 45743	**CSR 2421** 	BOTH SIDES • 2 x 10mm Gyprock Aquachek Plasterboard.	(a) 75 Gold Batts 2.0	63/**51**	64/**52**
			(b) 90 Gold Batts 2.7	65/**53**	66/**54**
			(c) 88 Soundscreen 2.5	66/**54**	67/**55**
			(d) 110 Acoustigard 11kg	65/**53**	66/**54**
			Typical Wall Thickness mm	265	305
60/60/60 WF 45743	**CSR 10038** 	SIDE ONE • 2 x 10mm Gyprock HD Plasterboard. SIDE TWO • 2 x 10mm Gyprock Aquachek Plasterboard.	(a) 75 Gold Batts 2.0	62/49	63/**51**
			(b) 90 Gold Batts 2.7	64/**51**	65/**53**
			(c) 88 Soundscreen 2.5	65/**52**	66/**54**
			(d) 110 Acoustigard 11kg	64/**51**	65/**53**
			Typical Wall Thickness mm	265	305

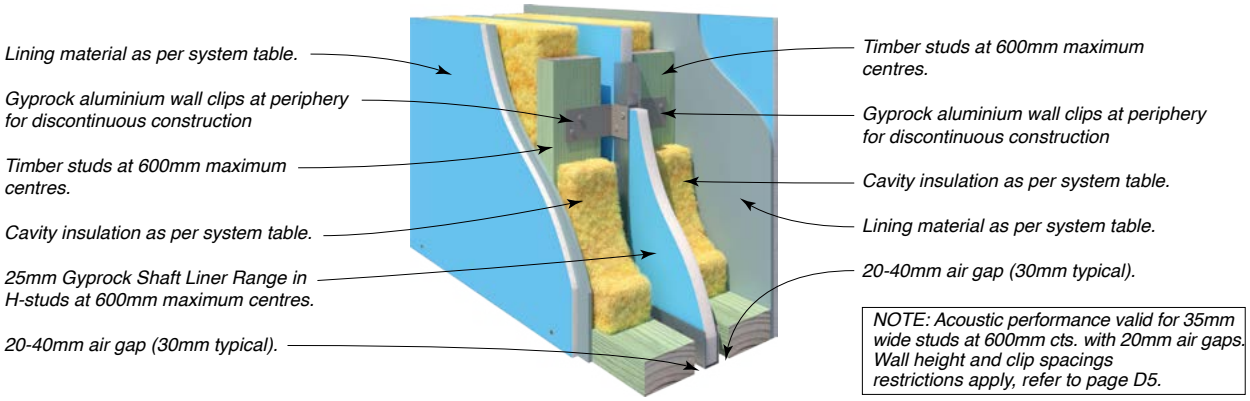
Timber Frame Internal Wall Systems – Party Wall with 25mm Fire Barrier



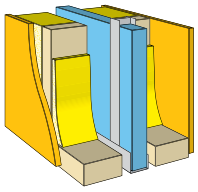
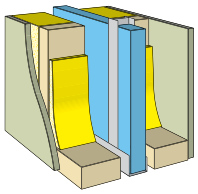
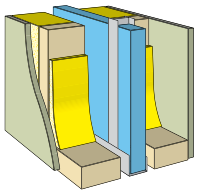
NOTE: Acoustic performance valid for 35mm wide studs at 600mm cts. with 20mm air gaps. Wall height and clip spacings restrictions apply, refer to page D5.

SYSTEM SPECIFICATION Refer to GYP513 Gyprock Party Wall Installation Guide for further information			ACOUSTIC REPORT: PKA Predictor V16 Discontinuous Construction		
FRL Report	**SYSTEM Nº**	**WALL LININGS**	**STUD DEPTH mm**	**70**	**90**
			CAVITY INFILL (Both Sides) (Refer to TABLE B6)	**R_w / R_w+C_{tr}**	
60/60/60 WF 45743	**CSR 10039** 	SIDE ONE • 1 x 10mm Gyprock HD Plasterboard. SIDE TWO • 1 x 13mm Gyprock Soundchek Plasterboard.	(a) 75 Gold Batts 2.0	62/49	63/**51**
			(b) 90 Gold Batts 2.7	64/**51**	65/**53**
			(c) 88 Soundscreen 2.5	65/**52**	66/**54**
			(d) 110 Acoustigard 11kg	64/**51**	65/**53**
			Typical Wall Thickness mm	248	288
60/60/60 WF 45743	**CSR 2441** 	BOTH SIDES • 1 x 13mm Gyprock Standard Plasterboard.	(a) 75 Gold Batts 2.0	61/48	62/**50**
			(b) 90 Gold Batts 2.7	63/**50**	64/**52**
			(c) 88 Soundscreen 2.5	64/**51**	65/**53**
			(d) 110 Acoustigard 11kg	63/**50**	64/**52**
			Typical Wall Thickness mm	251	291
60/60/60 WF 45743	**CSR 2443** 	SIDE ONE • 1 x 13mm Gyprock Standard Plasterboard. SIDE TWO • 1 x 13mm Gyprock Aquachek Plasterboard.	(a) 75 Gold Batts 2.0	61/48	62/**50**
			(b) 90 Gold Batts 2.7	63/**50**	64/**52**
			(c) 88 Soundscreen 2.5	64/**51**	65/**53**
			(d) 110 Acoustigard 11kg	63/**50**	64/**52**
			Typical Wall Thickness mm	251	291
60/60/60 WF 45743	**CSR 2445** 	BOTH SIDES • 1 x 13mm Gyprock Aquachek Plasterboard.	(a) 75 Gold Batts 2.0	62/49	63/**51**
			(b) 90 Gold Batts 2.7	64/**51**	65/**53**
			(c) 88 Soundscreen 2.5	65/**52**	66/**54**
			(d) 110 Acoustigard 11kg	64/**51**	65/**53**
			Typical Wall Thickness mm	251	291
60/60/60 WF 45743	**CSR 2450** 	SIDE ONE • 1 x 13mm Gyprock Aquachek Plasterboard. SIDE TWO • 1 x 13mm Gyprock Soundchek Plasterboard.	(a) 75 Gold Batts 2.0	62/49	63/**51**
			(b) 90 Gold Batts 2.7	64/**51**	65/**53**
			(c) 88 Soundscreen 2.5	65/**52**	66/**54**
			(d) 110 Acoustigard 11kg	64/**51**	65/**53**
			Typical Wall Thickness mm	251	291

Timber Frame Internal Wall Systems – Party Wall with 25mm Fire Barrier



NOTE: Acoustic performance valid for 35mm wide studs at 600mm cts. with 20mm air gaps. Wall height and clip spacings restrictions apply, refer to page D5.

SYSTEM SPECIFICATION Refer to GYP513 Gyprock Party Wall Installation Guide for further information			ACOUSTIC REPORT: PKA Predictor V16 Discontinuous Construction		
FRL Report	**SYSTEM Nº**	**WALL LININGS**	**STUD DEPTH mm**	**70**	**90**
			CAVITY INFILL (Both Sides) (Refer to TABLE B6)	**R_w / R_w+C_{tr}**	
60/60/60 WF 45743	**CSR 2455** 	BOTH SIDES • 1 x 13mm Gyprock Soundchek Plasterboard.	(a) 75 Gold Batts 2.0	63/**51**	64/**52**
			(b) 90 Gold Batts 2.7	65/**53**	66/**54**
			(c) 88 Soundscreen 2.5	66/**54**	67/**55**
			(d) 110 Acoustigard 11kg	65/**53**	66/**54**
			Typical Wall Thickness mm	251	291
60/60/60 WF 45743	**CSR 3372** 	BOTH SIDES • 1 x 13mm Gyprock EC08 Complete.	(a) 75 Gold Batts 2.0	63/**51**	64/**52**
			(b) 90 Gold Batts 2.7	65/**53**	66/**54**
			(c) 88 Soundscreen 2.5	66/**54**	67/**55**
			(d) 110 Acoustigard 11kg	65/**53**	66/**54**
			Typical Wall Thickness mm	251	291
60/60/60 WF 45743	**CSR 10016** 	BOTH SIDES • 1 x 13mm Gyprock EC08 Extreme.	(a) 75 Gold Batts 2.0	63/**51**	64/**52**
			(b) 90 Gold Batts 2.7	65/**53**	66/**54**
			(c) 88 Soundscreen 2.5	66/**54**	67/**55**
			(d) 110 Acoustigard 11kg	65/**53**	66/**54**
			Typical Wall Thickness mm	251	291

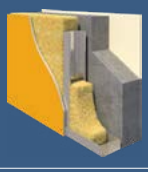
NOTES

CONCRETE & MASONRY WALL SYSTEMS

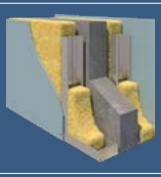
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SECTION CONTENTS

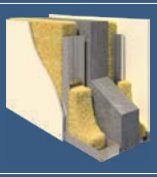
Introduction	**E2**
Design Considerations	**E2**
Installation	**E5**
System Selection Tables	



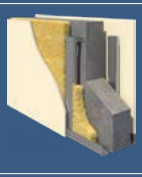
Stud One Side **E6**



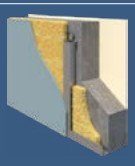
Stud Both Sides **E9**



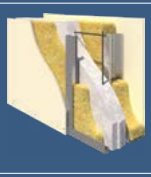
Stud Side One & Furring Side Two **E12**



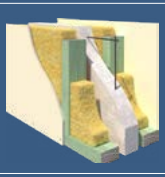
Furring Both Sides **E17**



Furring One Side **E19**



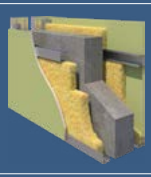
PowerPanel with Steel Stud/Furring **E23**



PowerPanel Intertenancy System with Timber Studs Both Sides **E24**



AFS Rediwall® **E25**



Blade Columns **E27**

INTRODUCTION

This section provides important design information for the selection and specification of concrete and masonry wall systems that incorporate Gyprock and Cemintel linings. The linings may be fixed directly, to timber, or to steel framing.

Gyprock plasterboard and CeminSeal Wallboard can be used with masonry walls for effective fire and acoustic solutions. These linings can eliminate the need for render, increase the fire rating of the masonry, or provide an acoustic performance to meet sound transmission and sound impact ratings.

Systems incorporating an insulated cavity are generally used where there is a requirement for excellent acoustic performance and discontinuous construction. The provision of a cavity also allows for the inclusion of services.

Gyprock plasterboard may be directly applied to the masonry substrate, screw fixed to metal furring channels that are fixed to the masonry or may be fixed to separate stud framing. CeminSeal Wallboard may be fixed to furring channels or to studs.

DESIGN CONSIDERATIONS

DESIGNER RESPONSIBILITY

It remains the responsibility of the customer (in conjunction with their designer or engineer, when applicable) to ensure that CSR's products/systems are suitable for their chosen application for any given project. CSR recommends that a comprehensive assessment of the performance requirements be undertaken prior to selection, including in respect of project-specific matters such as, but not limited structural adequacy, seismic, acoustic, fire resistance/combustibility, thermal, condensation and weatherproofing requirements.

CSR offers online digital tools for the most updated information, including but not limited to update of products/components, inclusion of new and modified systems, to meet the requirements of the National Construction Code of Australia (NCC) and any relevant Australian Standards.

For the most up-to-date product & system performance information, visit:

CSR System Selector: https://apps.csr.com.au/systemselector/search-option

CSR Thermal Calculator: https://apps.csr.com.au/thermalcalculator

Systems in this section are suitable for a wide range of masonry products. These are typically clay and concrete blocks, autoclaved aerated concrete blocks and panels. Concrete elements can be pre-cast or formed in-situ. Minimum performance conditions apply to the substrates to achieve some system performance values, and these are stated in the system specifications. Specific fixing details apply to each type of substrate.

These wall systems are generally used in internal applications in commercial, industrial, institutional, domestic and high-rise domestic construction, or in the renovation of older buildings. For external masonry veneer walls, please refer to Section F, External Wall Systems.

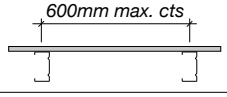
STRUCTURAL DESIGN

All wall elements must be designed for the applied loads. Vertical loads may be supported by the masonry element of the wall, or for non-fire rated walls, by the stud framing. Lateral loads should be considered separately for framed and masonry parts of a wall. To achieve the specified sound performance, ties from masonry to the stud framing must not be used.

TABLE E4: RONDO FRAMING SPACING & SPAN FOR BLADE COLUMN ENCASEMENT

Rondo Framing Section	Spacing (mm)	Maximum Span (mm) Wind Pressure kPa (Ult.)		
		0.375	0.5	1.0
Nº129 Furring Channel	600	1400	1350	1070
	400	1600	1550	1230
	300	1760	1710	1360
M515 Top Hat	600	1090	1050	830
	400	1250	1200	950
	300	1370	1320	1050
H515 Top Hat	600	1220	1180	930
	400	1400	1350	1070
	300	1540	1480	1180

TABLE E3: MAXIMUM WALL HEIGHTS FOR RONDO LIPPED WALL STUDS – NON-LOADBEARING INTERNAL WALLS

Lining Configuration	64mm Stud		76mm Stud		92mm Stud	
	0.50BMT	0.75BMT	0.55BMT	0.75BMT	0.55BMT	0.75BMT
	2720	3130	3200	3580	3610	4130

NOTES:
- 600mm maximum stud spacing
- Pressures Pultimate = 0.375kPa, Pservice = 0.25kPa
- Minimum linings 6mm fibre cement sheet or 10mm plasterboard
- No allowance for wall tiles or shelf loads

Framed Wall Elements

TABLE E3 shows maximum wall heights for Rondo steel studs to suit most applications. For other brands of studs, studs that are required to be loadbearing, and for studs subject to higher lateral pressures, contact the manufacturer for design information. For timber stud framing, walls should be designed to the appropriate Australian standards.

Tall multi-residential buildings often have exterior operable doors and windows, resulting in internal walls being subject to wind pressure. In these cases, walls must be designed for the appropriate loads.

Stud frames that are part of a masonry wall system may be loadbearing. A qualified person must complete the structural design of loadbearing wall systems. Walls with shelving attached also require specific design.

Steel framing utilising horizontal furring channels or top hats has been designed to allow wall linings to encase short blade columns of concrete, including those formed with AFS formwork, and masonry. There is no connection between the framing and the column for effective acoustic performance, and the column length that can be accommodated is given as the span of the framing in TABLE E4.

Concrete & Masonry Wall Elements

All brick and block wall elements are to be designed in accordance with AS 3700 Masonry Structures. Concrete walls must be designed to AS 3600: Concrete Structures, and Hebel PowerPanel must be designed in accordance with CSR Hebel literature.

Seismic Loads

Seismic actions must be considered for building elements in accordance with the NCC. The loads and effects of earthquakes may be determined in accordance with AS1170.4 'Earthquake Actions in Australia'. The Standard has design procedures for houses (Class 1), and to buildings (Classes 2 to 9) with importance levels 2, 3 or 4 as defined in the NCC.

CONTROL JOINTS

Control joints must be installed to allow for structural movement. Allowance for movement must be made through the frame, lining and any tiles. Door frames extending from floor to ceiling constitute control joints. For doors less than ceiling height, a control joint extending from one corner of the frame may be used. Control joints must be installed at all construction joints in the building, and at the following locations:

For masonry with any direct fixed lining or lining fixed to furring channels:

- At control joints in masonry (refer to masonry manufacturer.)
- At 12m maximum centres.
- At change of substrate material.

For stud framed wall elements:

- Non-tiled internal walls with plasterboard outer layer – at 12m maximum centres.
- Non-tiled internal walls with fibre cement outer layer – at 7.2m maximum centres.
- Tiled internal walls – at 4.8m maximum centres.
- At junctions with other building elements.
- At changes of lining material.
- At changes of structural support systems.
- At each storey or rise of studs.

For AFS wall systems:

- Refer to AFS manuals for guidelines and recommendations.
- Engineer to review spacing greater than 16m.

FIRE RESISTANCE

For blade column encasement systems, the plasterboard linings are not intended to act as fire protection to the column. Systems with fire grade plasterboard provide the fire separation rating (FRL) as for double stud framed wall systems with the same linings.

For wall systems without a stated Fire Resistance Level (FRL), the system FRL is equal to the FRL of the masonry or concrete wall element. The FRL of masonry walls is dependent on the height and width of the wall. Contact the manufacturer or appropriate design standard for more information. The fire rating of concrete elements may be determined in accordance with AS 3600 Concrete Structures.

To achieve the required fire performance of a wall, it is essential that installation is in accordance with the masonry manufacturer's details and relevant installation standards. This should include fire sealing at the wall head and perimeters, and filling of mortar joints. All gaps and penetrations should be effectively fire sealed.

The Fire Resistance Level (FRL) of the systems detailed in this section will not be detrimentally affected by the use of Fyrchek MR, Impactchek or EC08 range plasterboard in lieu of Fyrchek plasterboard of the same thickness.

ACCEPTABLE VARIATIONS TO FIRE SYSTEMS

The Fire Resistance Level (FRL) of the systems detailed in this section will not be detrimentally affected by:

- Increasing the thickness of the wall.
- Increasing the cross-sectional dimensions of the framing elements.
- Decreasing the stud spacing.
- The inclusion of cavity insulation materials such as glasswool , rockwool and polyester provided any noncombustible requirements have been considered for the certain wall applications.
- The use of Fyrchek MR, Impactchek or EC08 range plasterboard in lieu of Fyrchek plasterboard of the same thickness.
- Additional layers of plasterboard or Cemintel fibre cement.

TABLE E1: MASONRY/CONCRETE GROUPS FOR USE WITH SYSTEM TABLES

Groups	Min. Thickness (mm)	Masonry Type	Min. Mass (kg/m²)
A	90	Brick	140
	140	Blockwork (Hollow)	140
B	90	Blockwork (Core-Filled)	150
	90	Blockwork (Solid)	150
	110	Brick	170
	140	Blockwork (Hollow)	170
C	140	Blockwork (Hollow)	200
	190	Blockwork (Hollow)	210
D	140	Blockwork (Core-Filled)	260
	290	Blockwork (Hollow)	290
	220	Brick (Double)	260
	120	Concrete	270
E	150	Concrete	360
	190	Blockwork (Core-Filled)	360

Note:
Walls from subsequent groups may be used to achieve the ratings in the system tables. For example where Group D is specified, walls in Group E may also be used.

TABLE E2: MATERIAL PROPERTIES FOR BLADE COLUMN SYSTEMS

Blade Column	Nominal thickness (mm)	Minimum mass (kg/m2)
Concrete	120	270
	150	360
	200	460
Core-filled blockwork	140	260
	190	360

COMBUSTIBILITY

Polyester insulation may NOT be used where the system has non-combustible construction requirements

ACOUSTIC PERFORMANCE

The acoustic performance of some systems is dependent on a minimum R_W of the concrete or masonry wall element. For masonry, this is to be the tested performance of the element without render or sheet linings and must be verified by the masonry unit manufacturer. Alternatively, a masonry wall may be chosen from TABLE E1. Installation of the masonry element of the wall must be in accordance with the manufacturer's details for the tested product.

The performance of concrete elements may be selected from TABLE E1 or be verified by an acoustic engineer.

For blade column encasement systems, the concrete and masonry elements must have properties as specified in TABLE E2.

Uninsulated cavities formed by fixing linings directly to masonry or concrete walls can have a deleterious effect on the rating of the unlined wall due to resonance effects. Systems in this section that have linings adhesive fixed to masonry may have a gap of up to 8mm maximum between the masonry surface and lining. If larger gaps are required it is recommended that a furring channel system is used, with insulation as noted in the relevant system table. Systems that meet the NCC requirements for discontinuous construction are noted in the system specifications. These have studs that are separated from the masonry by at least 20mm. Ties between masonry and stud framing must not be used.

Systems that use Gyprock Resilient Mounts with furring channels to create a cavity do not meet the requirements of discontinuous construction. The installation of services in these systems is not recommended as they can bridge the gap between the masonry and the linings.

The acoustic performance of wall systems may be affected by:

- Sound flanking.
- The effectiveness of workmanship and caulking.
- The presence and treatment of penetrations.
- The inclusion of structural elements and bridging items such as ties for external brick wall.
- Reducing the stated or implied cavity sizes.

The acoustic performance of wall systems will not be reduced by:

- The addition of Gyprock plasterboard or Cemintel linings.
- The use of deeper studs or larger cavities.
- The use of timber studs of at least equal depth in lieu of steel studs.

- Omitting the lining direct fixed to the concrete or masonry (except in Hebel systems).
- The use EC08 Extreme plasterboard in lieu of EC08 Complete plasterboard of the same thickness.

ACOUSTIC SEALING

To attain the stated acoustic rating the perimeters should be effectively sealed. In systems that do not rely on plasterboard for the fire rating, use Gyprock Wet Area Acrylic Sealant, CSR FireSeal, Gyprock Fire Mastic or other tested acoustic rated material of equivalent or better performance.

INSTALLATION

MASONRY

All brick and block walls are to be installed in accordance with AS 3700 Masonry Structures. CSR Hebel PowerPanel must be installed in accordance with CSR Hebel literature. AFS Rediwall™ systems must be installed in accordance with relevant manufacturers specifications.

For systems in this section, masonry may include clay or concrete blocks, and autoclaved aerated concrete blocks and panels. Brick and block substrates shall comply with AS 3700.

FRAMING

CSR recommends steel components manufactured by Rondo Building Services Pty Ltd. Additional information on the steel components can be obtained from the Rondo Building Services Pty Ltd.

Fixing clips include Gyprock Resilient Mount, Rondo direct fixing clips and BETAGRIP clips.

For systems using furring channels and fixing clips, furring channels are to be fitted into top and bottom tracks.

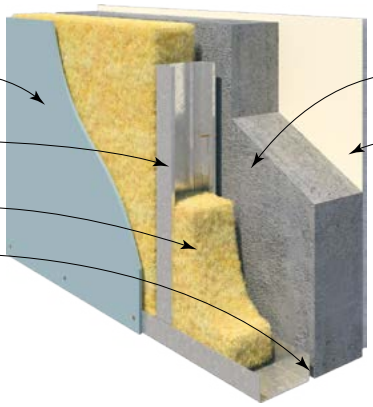
Refer to Book 3 Commercial & Multi-Residential Installation Guide for additional information.

PLASTERBOARD & WALLBOARD FIXING

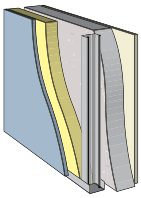
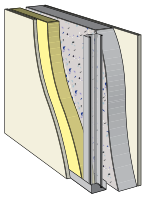
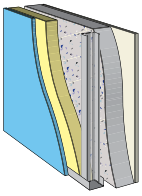
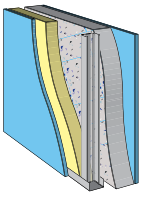
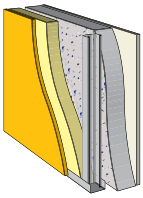
Walls may be built to achieve a particular 'Level of Finish' as defined in AS/NZS 2589.1. The Level of Finish specified can have requirements for frame alignment, jointing, back blocking methods and sheet orientation. CeminSeal Wallboard and Gyprock plasterboard may be installed vertically or horizontally, although for some Levels of Finish horizontal sheeting must be used.

A nominal 5mm has been allowed for adhesive thickness.

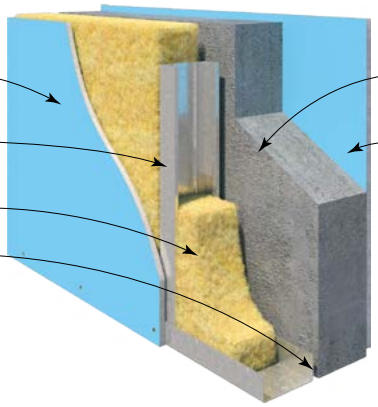
Masonry/Concrete Internal Wall Systems – Stud One Side



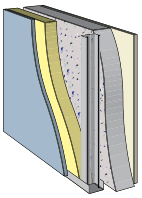
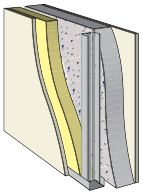
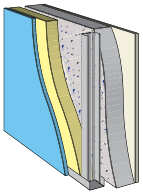
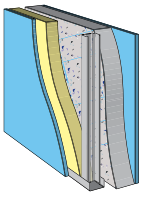
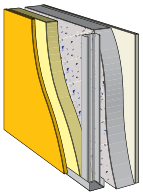
NOTE: Polyester insulation may NOT be used where the system has non-combustible construction requirements.

SYSTEM SPECIFICATION Refer to Book 3 Commercial & Multi-Residential Installation Guide			ACOUSTIC REPORT: PKA-A118 Discontinuous Construction		
WALL REQUIREMENTS	**SYSTEM Nº**	**WALL LININGS**	**STUD DEPTH mm**	**64**	**92**
			STUD BMT mm	**0.50**	**0.55**
			CAVITY INFILL (Refer to TABLE B6)	**R_W / R_W+C_{tr}**	
Tested Brick, Block or Concrete Wall with $R_W \geq 45$ **Wall from TABLE E1 Group B** Refer to Wall Manufacturer for FRL Details	**CSR 4005** 	STUD SIDE • 1 x 6mm CeminSeal Wallboard. MASONRY SIDE • 1 x 13mm Gyprock Standard Plasterboard.	(a) 75 Acoustigard 11kg	55/45	56/46
			(b) 90 Gold Batts 2.0	56/46	57/47
			(d) Nil	46/35	47/36
			(e) 75 MAB Polyester 11kg	54/44	55/45
			Additional Wall Thickness mm	103	131
	CSR 4010 	STUD SIDE • 1 x 13mm Gyprock Standard Plasterboard. MASONRY SIDE • 1 x 13mm Gyprock Standard Plasterboard.	(a) 75 Acoustigard 11kg	55/47	57/49
			(b) 90 Gold Batts 2.0	56/48	58/**50**
			(d) Nil	46/37	48/39
			(e) 75 MAB Polyester 11kg	54/46	56/48
			Additional Wall Thickness mm	110	138
	CSR 4015 	STUD SIDE • 1 x 13mm Gyprock Aquachek Plasterboard. MASONRY SIDE • 1 x 13mm Gyprock Standard Plasterboard.	(a) 75 Acoustigard 11kg	56/48	58/**50**
			(b) 90 Gold Batts 2.0	57/49	59/**51**
			(d) Nil	47/38	49/40
			(e) 75 MAB Polyester 11kg	55/47	57/49
			Additional Wall Thickness mm	110	138
	CSR 4020 	STUD SIDE • 1 x 13mm Gyprock Aquachek Plasterboard. MASONRY SIDE • 1 x 13mm Gyprock Aquachek Plasterboard.	(a) 75 Acoustigard 11kg	56/48	58/**50**
			(b) 90 Gold Batts 2.0	57/49	59/**51**
			(d) Nil	49/40	50/41
			(e) 75 MAB Polyester 11kg	55/47	57/49
			Additional Wall Thickness mm	110	138
	CSR 4025 	STUD SIDE • 1 x 13mm Gyprock Soundchek Plasterboard. MASONRY SIDE • 1 x 13mm Gyprock Standard Plasterboard.	(a) 75 Acoustigard 11kg	58/**50**	59/**51**
			(b) 90 Gold Batts 2.0	59/**51**	60/**52**
			(d) Nil	48/37	49/38
			(e) 75 MAB Polyester 11kg	57/49	58/**50**
			Additional Wall Thickness mm	110	138

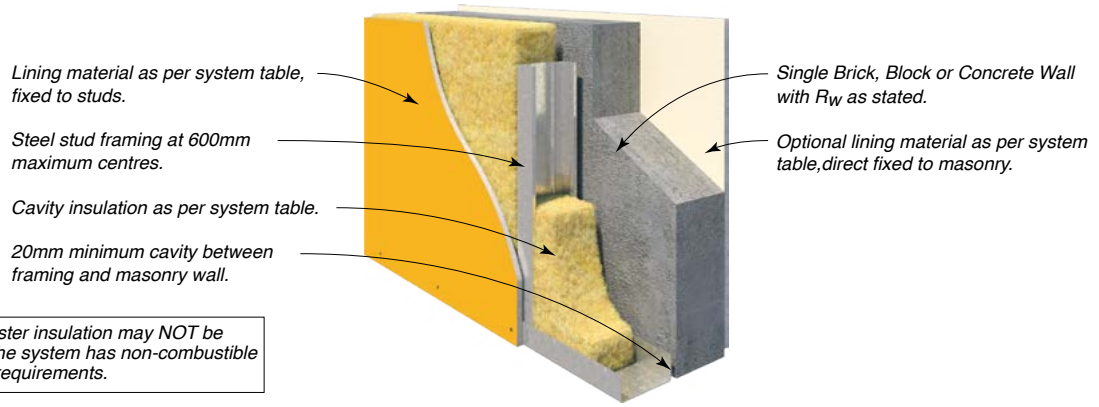
Masonry/Concrete Internal Wall Systems – Stud One Side



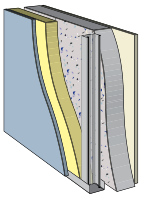
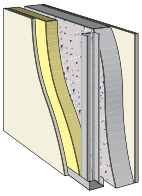
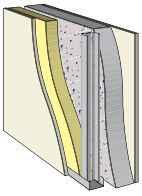
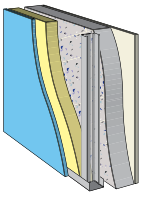
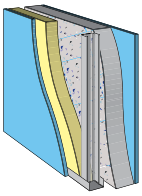
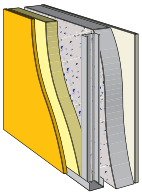
NOTE: Polyester insulation may NOT be used where the system has non-combustible construction requirements.

SYSTEM SPECIFICATION Refer to Book 3 Commercial & Multi-Residential Installation Guide			ACOUSTIC REPORT: PKA-A118 Discontinuous Construction		
WALL REQUIREMENTS	**SYSTEM Nº**	**WALL LININGS**	**STUD DEPTH mm**	**64**	**92**
			STUD BMT mm	**0.50**	**0.55**
			CAVITY INFILL (Refer to TABLE B6)	**R_W / R_W+C_{tr}**	
Tested Brick, Block or Concrete Wall with $R_W \geq 47$ **Wall from TABLE E1 Group C** Refer to Wall Manufacturer for FRL Details	**CSR 4030** 	STUD SIDE • 1 x 6mm CeminSeal Wallboard. MASONRY SIDE • 1 x 13mm Gyprock Standard Plasterboard.	(a) 75 Acoustigard 11kg	57/47	58/48
			(b) 90 Gold Batts 2.0	58/48	59/49
			(d) Nil	48/37	49/38
			(e) 75 MAB Polyester 11kg	56/46	57/47
			Additional Wall Thickness mm	103	131
	CSR 4035 	STUD SIDE • 1 x 13mm Gyprock Standard Plasterboard. MASONRY SIDE • 1 x 13mm Gyprock Standard Plasterboard.	(a) 75 Acoustigard 11kg	57/49	59/**51**
			(b) 90 Gold Batts 2.0	58/**50**	60/**52**
			(d) Nil	48/39	50/41
			(e) 75 MAB Polyester 11kg	56/48	58/**50**
			Additional Wall Thickness mm	110	138
	CSR 4040 	STUD SIDE • 1 x 13mm Gyprock Aquachek Plasterboard. MASONRY SIDE • 1 x 13mm Gyprock Standard Plasterboard.	(a) 75 Acoustigard 11kg	58/**50**	60/**52**
			(b) 90 Gold Batts 2.0	59/**51**	61/**53**
			(d) Nil	49/40	51/42
			(e) 75 MAB Polyester 11kg	57/49	59/**51**
			Additional Wall Thickness mm	110	138
	CSR 4045 	STUD SIDE • 1 x 13mm Gyprock Aquachek Plasterboard. MASONRY SIDE • 1 x 13mm Gyprock Aquachek Plasterboard.	(a) 75 Acoustigard 11kg	58/**50**	60/**52**
			(b) 90 Gold Batts 2.0	59/**51**	61/**53**
			(d) Nil	49/40	51/42
			(e) 75 MAB Polyester 11kg	57/49	59/**51**
			Additional Wall Thickness mm	110	138
	CSR 4050 	STUD SIDE • 1 x 13mm Gyprock Soundchek Plasterboard. MASONRY SIDE • 1 x 13mm Gyprock Standard Plasterboard.	(a) 75 Acoustigard 11kg	60/**52**	61/**53**
			(b) 90 Gold Batts 2.0	61/**53**	62/**54**
			(d) Nil	51/42	52/43
			(e) 75 MAB Polyester 11kg	59/**51**	60/**52**
			Additional Wall Thickness mm	110	138

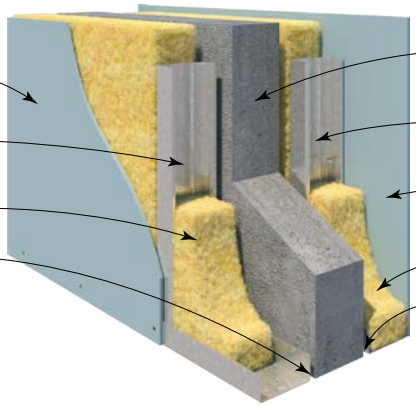
Masonry/Concrete Internal Wall Systems – Stud One Side



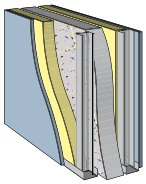
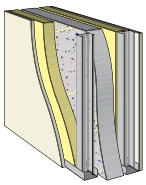
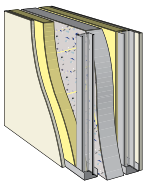
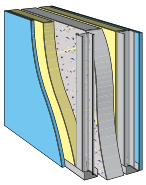
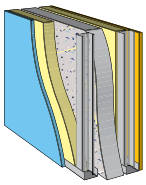
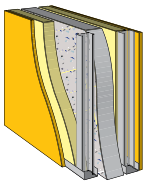
NOTE: Polyester insulation may NOT be used where the system has non-combustible construction requirements.

SYSTEM SPECIFICATION Refer to Book 3 Commercial & Multi-Residential Installation Guide			ACOUSTIC REPORT: PKA-A118 Discontinuous Construction		
WALL REQUIREMENTS	**SYSTEM Nº**	**WALL LININGS**	**STUD DEPTH mm**	**64**	**92**
			STUD BMT mm	**0.50**	**0.55**
			CAVITY INFILL (Refer to TABLE B6)	**R_W / R_W+C_{tr}**	
Tested Brick, Block or Concrete Wall with $R_W \geq 50$ **Wall from TABLE E1 Group D** Refer to Wall Manufacturer for FRL Details	**CSR 4055** 	STUD SIDE • 1 x 6mm CeminSeal Wallboard. MASONRY SIDE • 1 x 13mm Gyprock Standard Plasterboard.	(a) Nil	51/41	52/42
			(b) 75 Acoustigard 11kg	60/**51**	61/**52**
			(c) 90 Gold Batts 2.0	61/**52**	62/**53**
			(e) 75 MAB Polyester 11kg	59/**50**	60/**51**
			Additional Wall Thickness mm	103	131
	CSR 4060 	STUD SIDE • 1 x 10mm Gyprock Plus Plasterboard. MASONRY SIDE • 1 x 13mm Gyprock Standard Plasterboard.	(a) Nil	49/39	51/41
			(b) 75 Acoustigard 11kg	58/49	60/**51**
			(c) 90 Gold Batts 2.0	59/**50**	61/**52**
			(e) 75 MAB Polyester 11kg	57/48	59/**50**
			Additional Wall Thickness mm	107	135
	CSR 4065 	STUD SIDE • 1 x 13mm Gyprock Standard Plasterboard. MASONRY SIDE • 1 x 13mm Gyprock Standard Plasterboard.	(a) Nil	51/42	53/44
			(b) 75 Acoustigard 11kg	60/**52**	62/**54**
			(c) 90 Gold Batts 2.0	61/**53**	63/**55**
			(e) 75 MAB Polyester 11kg	59/**51**	61/**53**
			Additional Wall Thickness mm	110	138
	CSR 4070 	STUD SIDE • 1 x 13mm Gyprock Aquachek Plasterboard. MASONRY SIDE • 1 x 13mm Gyprock Standard Plasterboard.	(a) Nil	52/43	54/45
			(b) 75 Acoustigard 11kg	61/**53**	63/**55**
			(c) 90 Gold Batts 2.0	62/**54**	64/**56**
			(e) 75 MAB Polyester 11kg	60/**52**	62/**54**
			Additional Wall Thickness mm	110	138
	CSR 4075 	STUD SIDE • 1 x 13mm Gyprock Aquachek Plasterboard. MASONRY SIDE • 1 x 13mm Gyprock Aquachek Plasterboard.	(a) Nil	52/43	54/45
			(b) 75 Acoustigard 11kg	61/**53**	63/**55**
			(c) 90 Gold Batts 2.0	62/**54**	64/**56**
			(e) 75 MAB Polyester 11kg	60/**52**	62/**54**
			Additional Wall Thickness mm	110	138
	CSR 4080 	STUD SIDE • 1 x 13mm Gyprock Soundchek Plasterboard. MASONRY SIDE • 1 x 13mm Gyprock Standard Plasterboard.	(a) Nil	54/45	55/46
			(b) 75 Acoustigard 11kg	63/**55**	64/**56**
			(c) 90 Gold Batts 2.0	64/**56**	65/**57**
			(e) 75 MAB Polyester 11kg	62/**54**	63/**55**
			Additional Wall Thickness mm	110	138

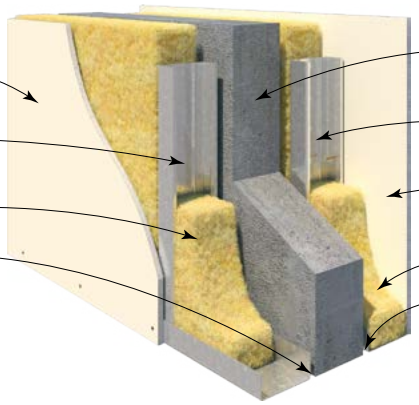
Masonry/Concrete Internal Wall Systems – Stud Both Sides



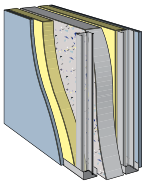
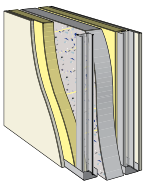
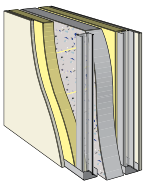
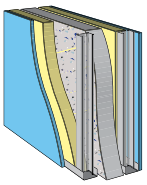
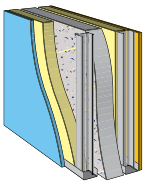
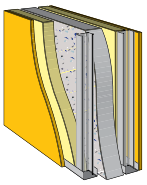
NOTE: Polyester insulation may NOT be used where the system has non-combustible construction requirements.

SYSTEM SPECIFICATION Refer to Book 3 Commercial & Multi-Residential Installation Guide			ACOUSTIC REPORT: PKA-A118 Discontinuous Construction		
WALL REQUIREMENTS	**SYSTEM Nº**	**WALL LININGS**	**STUD DEPTH mm**	**64**	**92**
			STUD BMT mm	**0.50**	**0.55**
			CAVITY INFILL (Both Sides) (Refer to TABLE B6)	**R_W / R_W+C_{tr}**	
Tested Brick, Block or Concrete Wall with $R_W \geq 42$ **Wall from TABLE E1 Group A** Refer to Wall Manufacturer for FRL Details	**CSR 4105** 	BOTH SIDES • 1 x 6mm CeminSeal Wallboard.	(a) 75 Acoustigard 11kg	60/46	61/47
			(b) 90 Gold Batts 2.0	61/47	62/48
			(d) 75 MAB Polyester 11kg	58/44	59/45
			Additional Wall Thickness mm	180	236
	CSR 4110 	BOTH SIDES • 1 x 10mm Gyprock Plus Plasterboard.	(a) 75 Acoustigard 11kg	59/46	60/47
			(b) 90 Gold Batts 2.0	60/47	61/48
			(d) 75 MAB Polyester 11kg	57/44	58/45
			Additional Wall Thickness mm	188	244
	CSR 4115 	BOTH SIDES • 1 x 13mm Gyprock Standard Plasterboard.	(a) 75 Acoustigard 11kg	60/48	61/49
			(b) 90 Gold Batts 2.0	61/49	62/**50**
			(d) 75 MAB Polyester 11kg	58/46	59/47
			Additional Wall Thickness mm	194	250
	CSR 4120 	BOTH SIDES • 1 x 13mm Gyprock Aquachek Plasterboard.	(a) 75 Acoustigard 11kg	61/49	62/**50**
			(b) 90 Gold Batts 2.0	62/**50**	63/**51**
			(d) 75 MAB Polyester 11kg	59/47	60/48
			Additional Wall Thickness mm	194	250
	CSR 4125 	SIDE ONE • 1 x 13mm Gyprock Aquachek Plasterboard. SIDE TWO • 1 x 13mm Gyprock Soundchek Plasterboard.	(a) 75 Acoustigard 11kg	62/**50**	63/**51**
			(b) 90 Gold Batts 2.0	63/**51**	64/**52**
			(d) 75 MAB Polyester 11kg	60/43	61/49
			Additional Wall Thickness mm	194	250
	CSR 4130 	BOTH SIDES • 1 x 13mm Gyprock Soundchek Plasterboard.	(a) 75 Acoustigard 11kg	63/**51**	64/**52**
			(b) 90 Gold Batts 2.0	64/**52**	65/**53**
			(d) 75 MAB Polyester 11kg	61/49	62/**50**
			Additional Wall Thickness mm	194	250

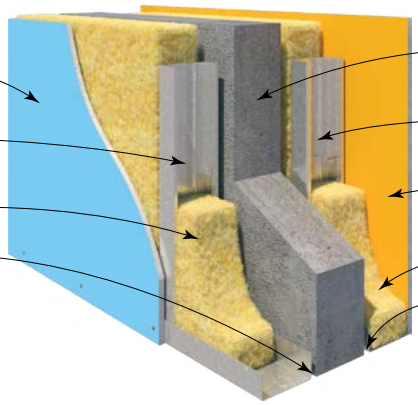
Masonry/Concrete Internal Wall Systems – Stud Both Sides



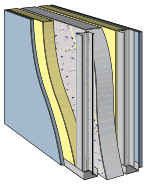
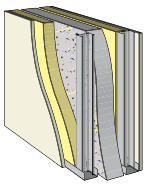
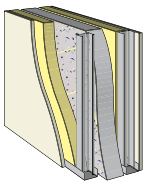
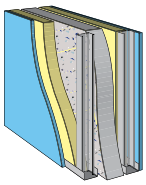
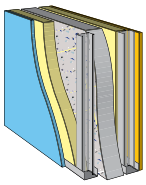
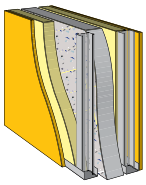
NOTE: Polyester insulation may NOT be used where the system has non-combustible construction requirements.

SYSTEM SPECIFICATION Refer to Book 3 Commercial & Multi-Residential Installation Guide			ACOUSTIC REPORT: PKA-A118 Discontinuous Construction		
WALL REQUIREMENTS	**SYSTEM Nº**	**WALL LININGS**	**STUD DEPTH mm**	**64**	**92**
			STUD BMT mm	**0.50**	**0.55**
			CAVITY INFILL (Both Sides) (Refer to TABLE B6)	**R_W / R_W+C_{tr}**	
Tested Brick, Block or Concrete Wall with $R_W \geq 45$ **Wall from TABLE E1 Group B** Refer to Wall Manufacturer for FRL Details	**CSR 4135** 	BOTH SIDES • 1 x 6mm CeminSeal Wallboard.	(a) 75 Acoustigard 11kg	62/48	63/49
			(b) 90 Gold Batts 2.0	63/49	64/**50**
			(d) 75 MAB Polyester 11kg	60/46	61/47
			Additional Wall Thickness mm	180	236
	CSR 4140 	BOTH SIDES • 1 x 10mm Gyprock Plus Plasterboard.	(a) 75 Acoustigard 11kg	62/49	63/**50**
			(b) 90 Gold Batts 2.0	63/**50**	64/**51**
			(d) 75 MAB Polyester 11kg	60/47	61/48
			Additional Wall Thickness mm	188	244
	CSR 4145 	BOTH SIDES • 1 x 13mm Gyprock Standard Plasterboard.	(a) 75 Acoustigard 11kg	63/**51**	64/**52**
			(b) 90 Gold Batts 2.0	64/**52**	65/**53**
			(d) 75 MAB Polyester 11kg	61/49	62/**50**
			Additional Wall Thickness mm	194	250
	CSR 4150 	BOTH SIDES • 1 x 13mm Gyprock Aquachek Plasterboard.	(a) 75 Acoustigard 11kg	63/**51**	64/**52**
			(b) 90 Gold Batts 2.0	64/**52**	65/**53**
			(d) 75 MAB Polyester 11kg	61/49	62/**50**
			Additional Wall Thickness mm	194	250
	CSR 4155 	SIDE ONE • 1 x 13mm Gyprock Aquachek Plasterboard. SIDE TWO • 1 x 13mm Gyprock Soundchek Plasterboard.	(a) 75 Acoustigard 11kg	64/**52**	65/**53**
			(b) 90 Gold Batts 2.0	65/**53**	66/**54**
			(d) 75 MAB Polyester 11kg	62/**50**	63/**51**
			Additional Wall Thickness mm	194	250
	CSR 4160 	BOTH SIDES • 1 x 13mm Gyprock Soundchek Plasterboard.	(a) 75 Acoustigard 11kg	65/**53**	66/**54**
			(b) 90 Gold Batts 2.0	66/**54**	67/**55**
			(d) 75 MAB Polyester 11kg	63/**51**	64/**52**
			Additional Wall Thickness mm	194	250

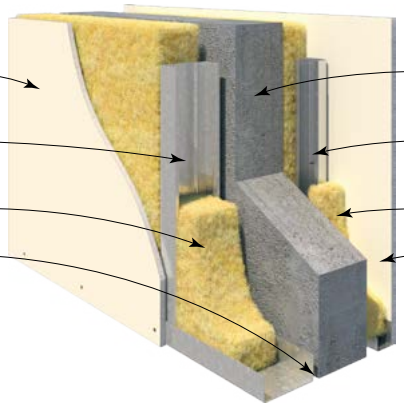
Masonry/Concrete Internal Wall Systems – Stud Both Sides



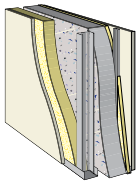
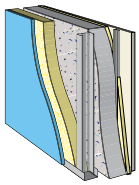
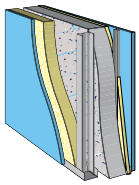
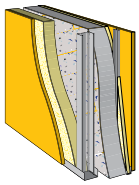
NOTE: Polyester insulation may NOT be used where the system has non-combustible construction requirements.

SYSTEM SPECIFICATION Refer to Book 3 Commercial & Multi-Residential Installation Guide			ACOUSTIC REPORT: PKA-A118 Discontinuous Construction		
WALL REQUIREMENTS	**SYSTEM Nº**	**WALL LININGS**	**STUD DEPTH mm**	**64**	**92**
			STUD BMT mm	**0.50**	**0.55**
			CAVITY INFILL (Both Sides) (Refer to TABLE B6)	**R_W / R_W+C_{tr}**	
Tested Brick, Block or Concrete Wall with $R_W \geq 47$ **Wall from TABLE E1 Group C** Refer to Wall Manufacturer for FRL Details	**CSR 4165** 	BOTH SIDES • 1 x 6mm CeminSeal Wallboard.	(a) 75 Acoustigard 11kg	65/**51**	66/**52**
			(b) 90 Gold Batts 2.0	66/**52**	67/**53**
			(d) 75 MAB Polyester 11kg	63/49	64/**50**
			Additional Wall Thickness mm	180	236
	CSR 4170 	BOTH SIDES • 1 x 10mm Gyprock Plus Plasterboard.	(a) 75 Acoustigard 11kg	64/**51**	65/**52**
			(b) 90 Gold Batts 2.0	65/**52**	66/**53**
			(d) 75 MAB Polyester 11kg	62/49	63/**50**
			Additional Wall Thickness mm	188	244
	CSR 4175 	BOTH SIDES • 1 x 13mm Gyprock Standard Plasterboard.	(a) 75 Acoustigard 11kg	65/**53**	66/**54**
			(b) 90 Gold Batts 2.0	66/**54**	67/**55**
			(d) 75 MAB Polyester 11kg	63/**51**	64/**52**
			Additional Wall Thickness mm	194	250
	CSR 4180 	BOTH SIDES • 1 x 13mm Gyprock Aquachek Plasterboard.	(a) 75 Acoustigard 11kg	65/**53**	66/**54**
			(b) 90 Gold Batts 2.0	66/**54**	67/**55**
			(d) 75 MAB Polyester 11kg	63/**51**	64/**52**
			Additional Wall Thickness mm	194	250
	CSR 4185 	SIDE ONE • 1 x 13mm Gyprock Aquachek Plasterboard. SIDE TWO • 1 x 13mm Gyprock Soundchek Plasterboard.	(a) 75 Acoustigard 11kg	66/**54**	67/**55**
			(b) 90 Gold Batts 2.0	67/**55**	68/**56**
			(d) 75 MAB Polyester 11kg	64/**52**	65/**53**
			Additional Wall Thickness mm	194	250
	CSR 4190 	BOTH SIDES • 1 x 13mm Gyprock Soundchek Plasterboard.	(a) 75 Acoustigard 11kg	67/**55**	68/**56**
			(b) 90 Gold Batts 2.0	68/**56**	69/**57**
			(d) 75 MAB Polyester 11kg	65/**53**	66/**54**
			Additional Wall Thickness mm	194	250

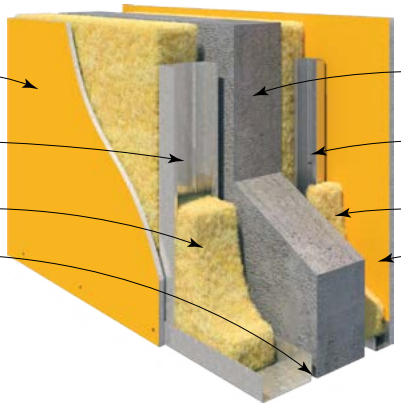
SYSTEM SPECIFICATIONS Masonry/Concrete Internal Wall Systems – Stud Side One + Furring Side Two



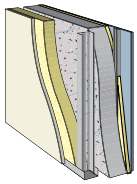
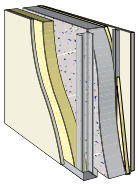
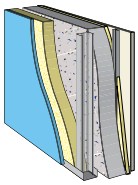
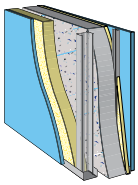
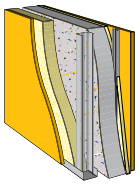
NOTE: Polyester insulation may NOT be used where the system has non-combustible construction requirements.

SYSTEM SPECIFICATION Refer to Book 3 Commercial & Multi-Residential Installation Guide			ACOUSTIC REPORT: PKA-A118 Discontinuous Construction			
					STUD DEPTH mm	**64** / **92**
					STUD BMT mm	**0.50** / **0.55**
WALL REQUIREMENTS	**SYSTEM Nº**	**WALL LININGS**	**STUD CAVITY INFILL** (Refer to TABLE B6)	**FURRING CAVITY INFILL** (Refer to TABLE B6)	**R_W / R_W+C_{tr}**	
Tested Brick, Block or Concrete Wall with $R_W \geq 42$ **Wall from TABLE E1 Group A** Refer to Wall Manufacturer for FRL Details	**CSR 4205** 	BOTH SIDES • 1 x 13mm Gyprock Standard Plasterboard.	(d) 50 Acoustigard 14kg	50 Acoustigard 14kg	57/45	59/47
			(e) 75 Acoustigard 11kg	50 Acoustigard 14kg	59/47	61/49
			(f) 75 MAB Polyester 14kg	25 MAB Polyester 20kg	56/44	58/46
			Additional Wall Thickness mm		150	178
	CSR 4210 	SIDE ONE • 1 x 13mm Gyprock Aquachek Plasterboard. SIDE TWO • 1 x 13mm Gyprock Standard Plasterboard.	(d) 50 Acoustigard 14kg	50 Acoustigard 14kg	58/46	59/47
			(e) 75 Acoustigard 11kg	50 Acoustigard 14kg	60/48	61/49
			(f) 75 MAB Polyester 14kg	25 MAB Polyester 20kg	57/45	58/46
			Additional Wall Thickness mm		150	178
	CSR 4215 	BOTH SIDES • 1 x 13mm Gyprock Aquachek Plasterboard.	(d) 50 Acoustigard 14kg	50 Acoustigard 14kg	58/46	59/47
			(e) 75 Acoustigard 11kg	50 Acoustigard 14kg	60/48	61/49
			(f) 75 MAB Polyester 14kg	25 MAB Polyester 20kg	57/45	58/46
			Additional Wall Thickness mm		150	178
	CSR 4220 	BOTH SIDES • 1 x 13mm Gyprock Soundchek Plasterboard.	(d) 50 Acoustigard 14kg	50 Acoustigard 14kg	59/47	60/49
			(e) 75 Acoustigard 11kg	50 Acoustigard 14kg	61/49	62/**51**
			(f) 75 MAB Polyester 14kg	25 MAB Polyester 20kg	58/46	59/48
			Additional Wall Thickness mm		150	178

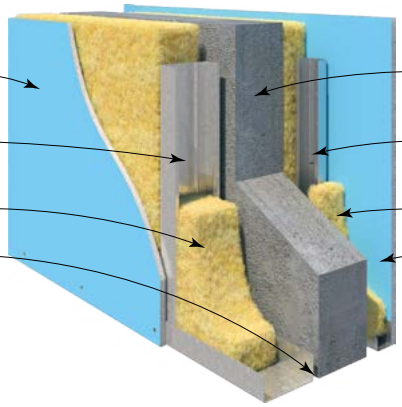
Masonry/Concrete Internal Wall Systems – Stud Side One + Furring Side Two



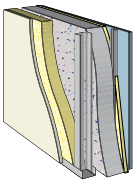
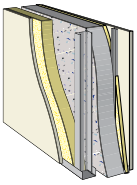
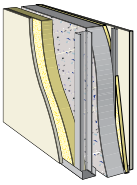
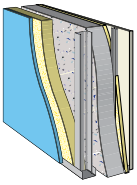
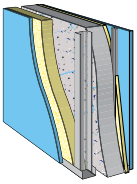
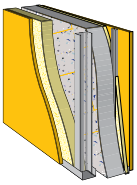
NOTE: Polyester insulation may NOT be used where the system has non-combustible construction requirements.

SYSTEM SPECIFICATION Refer to Book 3 Commercial & Multi-Residential Installation Guide			ACOUSTIC REPORT: PKA-A118 Discontinuous Construction			
				STUD DEPTH mm	64	92
				STUD BMT mm	0.50	0.55
WALL REQUIREMENTS	**SYSTEM Nº**	**WALL LININGS**	**STUD CAVITY INFILL** (Refer to TABLE B6)	**FURRING CAVITY INFILL** (Refer to TABLE B6)	**R_W / R_W+C_{tr}**	
Tested Brick, Block or Concrete Wall with $R_W \geq 45$ **Wall from TABLE E1 Group B** Refer to Wall Manufacturer for FRL Details	**CSR 4225** 	STUD SIDE • 1 x 13mm Gyprock Standard Plasterboard. FURRING SIDE • 1 x 6mm CeminSeal Wallboard.	(d) 50 Acoustigard 14kg	50 Acoustigard 14kg	60/47	62/49
			(e) 75 Acoustigard 11kg	50 Acoustigard 14kg	62/49	64/**51**
			(f) 75 MAB Polyester 14kg	25 MAB Polyester 20kg	59/46	61/48
			Additional Wall Thickness mm		143	171
	CSR 4230 	BOTH SIDES • 1 x 13mm Gyprock Standard Plasterboard.	(d) 50 Acoustigard 14kg	50 Acoustigard 14kg	61/49	63/**51**
			(e) 75 Acoustigard 11kg	50 Acoustigard 14kg	63/**51**	65/**53**
			(f) 75 MAB Polyester 14kg	25 MAB Polyester 20kg	59/47	61/49
			Additional Wall Thickness mm		150	178
	CSR 4235 	STUD SIDE • 1 x 13mm Gyprock Aquachek Plasterboard. FURRING SIDE • 1 x 13mm Gyprock Standard Plasterboard.	(d) 50 Acoustigard 14kg	50 Acoustigard 14kg	61/49	62/**50**
			(e) 75 Acoustigard 11kg	50 Acoustigard 14kg	63/**51**	64/**52**
			(f) 75 MAB Polyester 14kg	25 MAB Polyester 20kg	60/48	61/49
			Additional Wall Thickness mm		150	178
	CSR 4240 	BOTH SIDES • 1 x 13mm Gyprock Aquachek Plasterboard.	(d) 50 Acoustigard 14kg	50 Acoustigard 14kg	61/49	62/**50**
			(e) 75 Acoustigard 11kg	50 Acoustigard 14kg	63/**51**	64/**52**
			(f) 75 MAB Polyester 14kg	25 MAB Polyester 20kg	60/48	61/49
			Additional Wall Thickness mm		150	178
	CSR 4245 	BOTH SIDES • 1 x 13mm Gyprock Soundchek Plasterboard.	(d) 50 Acoustigard 14kg	50 Acoustigard 14kg	62/**50**	63/**52**
			(e) 75 Acoustigard 11kg	50 Acoustigard 14kg	64/**52**	65/**54**
			(f) 75 MAB Polyester 14kg	25 MAB Polyester 20kg	61/49	62/**51**
			Additional Wall Thickness mm		150	178

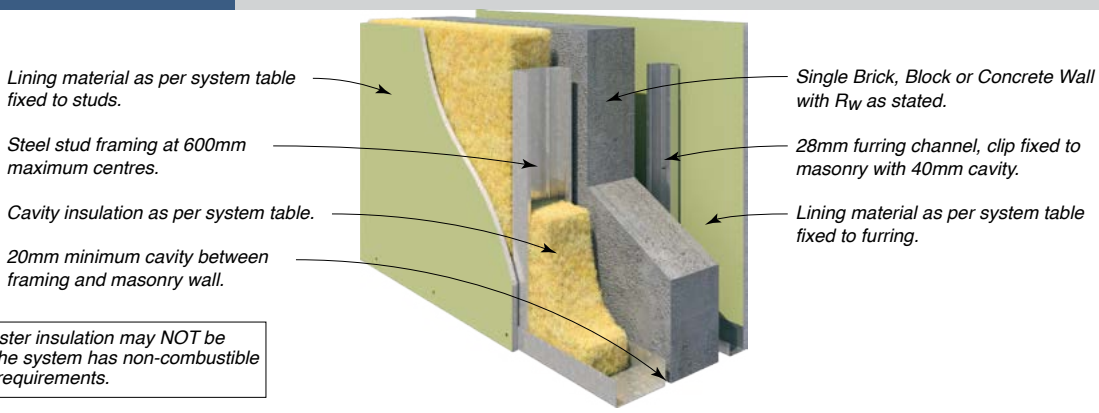
Masonry/Concrete Internal Wall Systems – Stud Side One + Furring Side Two



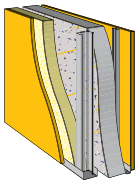
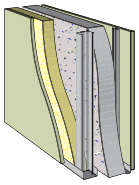
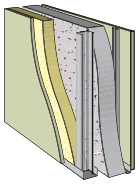
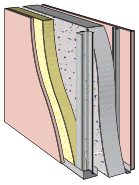
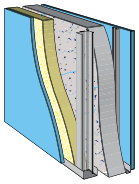
NOTE: Polyester insulation may NOT be used where the system has non-combustible construction requirements.

SYSTEM SPECIFICATION Refer to Book 3 Commercial & Multi-Residential Installation Guide			ACOUSTIC REPORT: PKA-A118 Discontinuous Construction			
					STUD DEPTH mm	**64** / **92**
					STUD BMT mm	**0.50** / **0.55**
WALL REQUIREMENTS	**SYSTEM Nº**	**WALL LININGS**	**STUD CAVITY INFILL** (Refer to TABLE B6)	**FURRING CAVITY INFILL** (Refer to TABLE B6)	**R_W / R_W+C_{tr}**	
Tested Brick, Block or Concrete Wall with $R_W \geq 47$ **Wall from TABLE E1 Group C** Refer to Wall Manufacturer for FRL Details	**CSR 4250** 	STUD SIDE • 1 x 13mm Gyprock Standard Plasterboard. FURRING SIDE • 1 x 6mm CeminSeal Wallboard.	(d) 50 Acoustigard 14kg	50 Acoustigard 14kg	62/49	64/**51**
			(e) 75 Acoustigard 11kg	50 Acoustigard 14kg	64/**51**	66/**53**
			(f) 75 MAB Polyester 14kg	25 MAB Polyester 20kg	61/48	63/**50**
			Additional Wall Thickness mm		143	171
	CSR 4255 	BOTH SIDES • 1 x 10mm Gyprock Plus Plasterboard.	(d) 50 Acoustigard 14kg	50 Acoustigard 14kg	61/47	63/**50**
			(e) 75 Acoustigard 11kg	50 Acoustigard 14kg	63/49	65/**52**
			(f) 75 MAB Polyester 14kg	25 MAB Polyester 20kg	59/45	61/48
			Additional Wall Thickness mm		144	172
	CSR 4260 	BOTH SIDES • 1 x 13mm Gyprock Standard Plasterboard.	(d) 50 Acoustigard 14kg	50 Acoustigard 14kg	62/**50**	64/**52**
			(e) 75 Acoustigard 11kg	50 Acoustigard 14kg	64/**52**	66/**54**
			(f) 75 MAB Polyester 14kg	25 MAB Polyester 20kg	61/49	63/**51**
			Additional Wall Thickness mm		150	178
	CSR 4265 	STUD SIDE • 1 x 13mm Gyprock Aquachek Plasterboard. FURRING SIDE • 1 x 13mm Gyprock Standard Plasterboard.	(d) 50 Acoustigard 14kg	50 Acoustigard 14kg	63/**51**	64/**52**
			(e) 75 Acoustigard 11kg	50 Acoustigard 14kg	65/**53**	66/**54**
			(f) 75 MAB Polyester 14kg	25 MAB Polyester 20kg	62/**50**	63/**51**
			Additional Wall Thickness mm		150	178
	CSR 4270 	BOTH SIDES • 1 x 13mm Gyprock Aquachek Plasterboard.	(d) 50 Acoustigard 14kg	50 Acoustigard 14kg	63/**51**	64/**52**
			(e) 75 Acoustigard 11kg	50 Acoustigard 14kg	65/**53**	66/**54**
			(f) 75 MAB Polyester 14kg	25 MAB Polyester 20kg	62/**50**	63/**51**
			Additional Wall Thickness mm		150	178
	CSR 4275 	BOTH SIDES • 1 x 13mm Gyprock Soundchek Plasterboard.	(d) 50 Acoustigard 14kg	50 Acoustigard 14kg	64/**52**	65/**54**
			(e) 75 Acoustigard 11kg	50 Acoustigard 14kg	66/**54**	67/**56**
			(f) 75 MAB Polyester 14kg	25 MAB Polyester 20kg	63/**51**	64/**53**
			Additional Wall Thickness mm		150	178

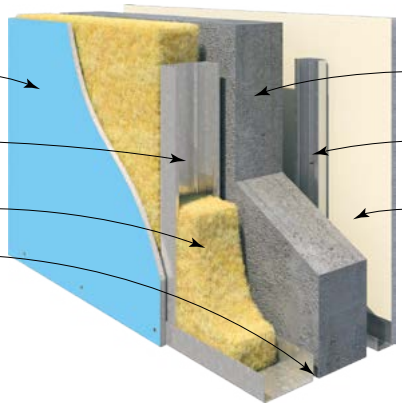
Masonry/Concrete Internal Wall Systems – Stud Side One + Furring Side Two



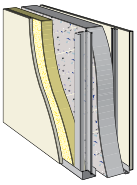
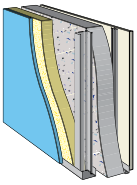
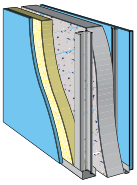
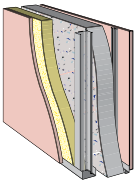
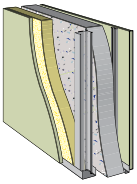
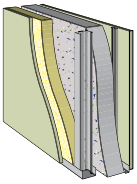
NOTE: Polyester insulation may NOT be used where the system has non-combustible construction requirements.

SYSTEM SPECIFICATION Refer to Book 3 Commercial & Multi-Residential Installation Guide			ACOUSTIC REPORT: PKA-A118 Discontinuous Construction		
WALL REQUIREMENTS	**SYSTEM Nº**	**WALL LININGS**		**STUD DEPTH mm**	**64**
				STUD BMT mm	**0.50**
			STUD CAVITY INFILL (Refer to TABLE B6)	**FURRING CAVITY INFILL** (Refer to TABLE B6)	**R_W / R_W+C_{tr}**
Tested Brick, Block or Concrete Wall with $R_W \geq 50$ **Wall from TABLE E1 Group D** Refer to Wall Manufacturer for FRL Details	**CSR 4259** 	BOTH SIDES • 1 x 13mm Gyprock Soundchek Plasterboard.	(b) 75 Acoustigard 11kg	Nil	62/**51**
			(d) 50 Acoustigard 14kg	Nil	61/**50**
			(e) 75 MAB Polyester 14kg	Nil	60/49
			Additional Wall Thickness mm		150
	CSR 4264 	BOTH SIDES • 1 x 13mm Gyprock EC08 Complete.	(b) 75 Acoustigard 11kg	Nil	62/**51**
			(d) 50 Acoustigard 14kg	Nil	61/**50**
			(e) 75 MAB Polyester 14kg	Nil	60/49
			Additional Wall Thickness mm		150
	CSR 10049 	BOTH SIDES • 1 x 13mm Gyprock EC08 Extreme.	(b) 75 Acoustigard 11kg	Nil	62/**51**
			(d) 50 Acoustigard 14kg	Nil	61/**50**
			(e) 75 MAB Polyester 14kg	Nil	60/49
			Additional Wall Thickness mm		150
	CSR 4269 	BOTH SIDES • 1 x 16mm Gyprock Fyrchek Plasterboard.	(b) 75 Acoustigard 11kg	Nil	62/**51**
			(d) 50 Acoustigard 14kg	Nil	61/**50**
			(e) 75 MAB Polyester 14kg	Nil	60/49
			Additional Wall Thickness mm		150
	CSR 4274 	BOTH SIDES • 1 x 16mm Gyprock Fyrchek MR Plasterboard.	(b) 75 Acoustigard 11kg	Nil	62/**51**
			(d) 50 Acoustigard 14kg	Nil	61/**50**
			(e) 75 MAB Polyester 14kg	Nil	60/49
			Additional Wall Thickness mm		150

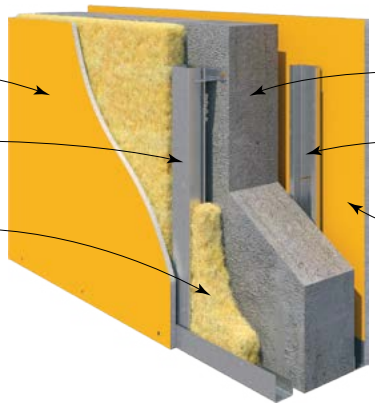
Masonry/Concrete Internal Wall Systems – Stud Side One + Furring Side Two



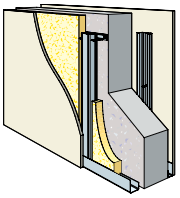
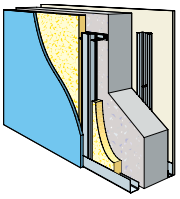
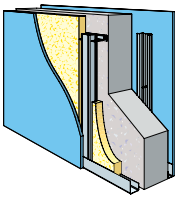
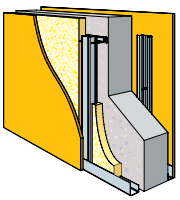
NOTE: Polyester insulation may NOT be used where the system has non-combustible construction requirements.

SYSTEM SPECIFICATION Refer to Book 3 Commercial & Multi-Residential Installation Guide			ACOUSTIC REPORT: PKA-A118 Discontinuous Construction		
			STUD DEPTH mm		**64**
			STUD BMT mm		**0.50**
WALL REQUIREMENTS	**SYSTEM Nº**	**WALL LININGS**	**STUD CAVITY INFILL** (Refer to TABLE B6)	**FURRING CAVITY INFILL** (Refer to TABLE B6)	**R_W / R_W+C_{tr}**
Tested Brick, Block or Concrete Wall with $R_W \geq 55$ **Wall from TABLE E1 Group E** Refer to Wall Manufacturer for FRL Details	**CSR 4276** 	BOTH SIDES • 1 x 13mm Gyprock Standard Plasterboard.	(b) 75 Acoustigard 11kg	Nil	63/**52**
			(d) 50 Acoustigard 14kg	Nil	62/**51**
			(e) 75 MAB Polyester 14kg	Nil	61/**50**
			Additional Wall Thickness mm		150
	CSR 4277 	STUD SIDE • 1 x 13mm Gyprock Aquachek Plasterboard. FURRING SIDE • 1 x 13mm Gyprock Standard Plasterboard.	(b) 75 Acoustigard 11kg	Nil	64/**53**
			(d) 50 Acoustigard 14kg	Nil	63/**52**
			(e) 75 MAB Polyester 14kg	Nil	62/**51**
			Additional Wall Thickness mm		150
	CSR 4278 	BOTH SIDES • 1 x 13mm Gyprock Aquachek Plasterboard.	(b) 75 Acoustigard 11kg	Nil	64/**53**
			(d) 50 Acoustigard 14kg	Nil	63/**52**
			(e) 75 MAB Polyester 14kg	Nil	62/**51**
			Additional Wall Thickness mm		150
	CSR 10050 	BOTH SIDES • 1 x 13mm Gyprock Fyrchek Plasterboard.	(a) 75 Acoustigard 11kg	Nil	65/**54**
			(c) 50 Acoustigard 14kg	Nil	64/**53**
			(d) 75 MAB Polyester 14kg	Nil	63/**52**
			Additional Wall Thickness mm		150
	CSR 10051 	BOTH SIDES • 1 x 13mm Gyprock EC08 Complete.	(a) 75 Acoustigard 11kg	Nil	66/**55**
			(c) 50 Acoustigard 14kg	Nil	65/**54**
			(d) 75 MAB Polyester 14kg	Nil	64/**53**
			Additional Wall Thickness mm		150
	CSR 10052 	BOTH SIDES • 1 x 13mm Gyprock EC08 Extreme.	(a) 75 Acoustigard 11kg	Nil	66/**55**
			(c) 50 Acoustigard 14kg	Nil	65/**54**
			(d) 75 MAB Polyester 14kg	Nil	64/**53**
			Additional Wall Thickness mm		150

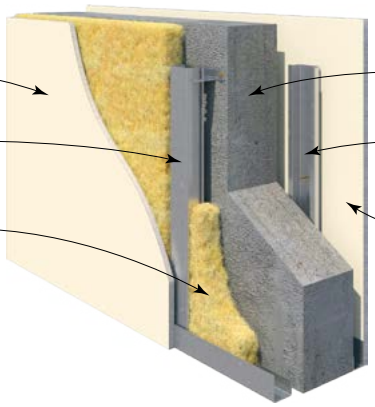
Masonry/Concrete Internal Wall Systems – Furring Channel Both Sides



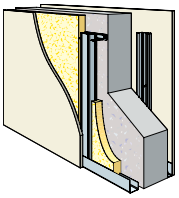
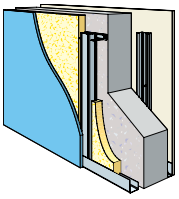
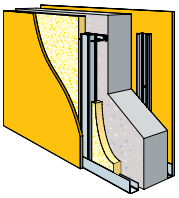
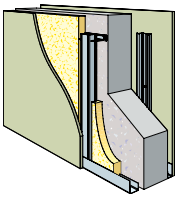
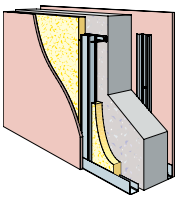
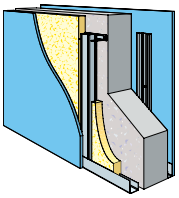
NOTE: Polyester insulation may NOT be used where the system has non-combustible construction requirements.

SYSTEM SPECIFICATION Refer to Book 3 Commercial & Multi-Residential Installation Guide			ACOUSTIC REPORT: PKA-A118 NOT Deemed Discontinuous Construction		
WALL REQUIREMENTS	**SYSTEM Nº**	**WALL LININGS**	**CAVITY INFILL SIDE 1** (Refer to TABLE B6)	**CAVITY INFILL SIDE 2** (Refer to TABLE B6)	**R_W / R_W+C_{tr}**
Tested Brick, Block or Concrete Wall with $R_W \geq 42$ **Wall from TABLE E1 Group A** Refer to Wall Manufacturer for FRL Details	**CSR 4280** 	BOTH SIDES • 1 x 13mm Gyprock Standard Plasterboard	(b) 50 Acoustigard 14kg	Nil	51/37
			(d) 50 MAB Polyester 11kg	Nil	48/34
				Additional Wall Thickness mm	84
	CSR 4281 	SIDE ONE • 1 x 13mm Gyprock Aquachek Plasterboard. SIDE TWO • 1 x 13mm Gyprock Standard Plasterboard.	(b) 50 Acoustigard 14kg	Nil	52/38
			(d) 50 MAB Polyester 11kg	Nil	49/35
				Additional Wall Thickness mm	84
	CSR 4282 	BOTH SIDES • 1 x 13mm Gyprock Aquachek Plasterboard.	(b) 50 Acoustigard 14kg	Nil	52/38
			(d) 50 MAB Polyester 11kg	Nil	49/35
				Additional Wall Thickness mm	84
	CSR 4283 	BOTH SIDES • 1 x 13mm Gyprock Soundchek Plasterboard	(b) 50 Acoustigard 14kg	Nil	53/40
			(d) 50 MAB Polyester 11kg	Nil	50/37
				Additional Wall Thickness mm	84

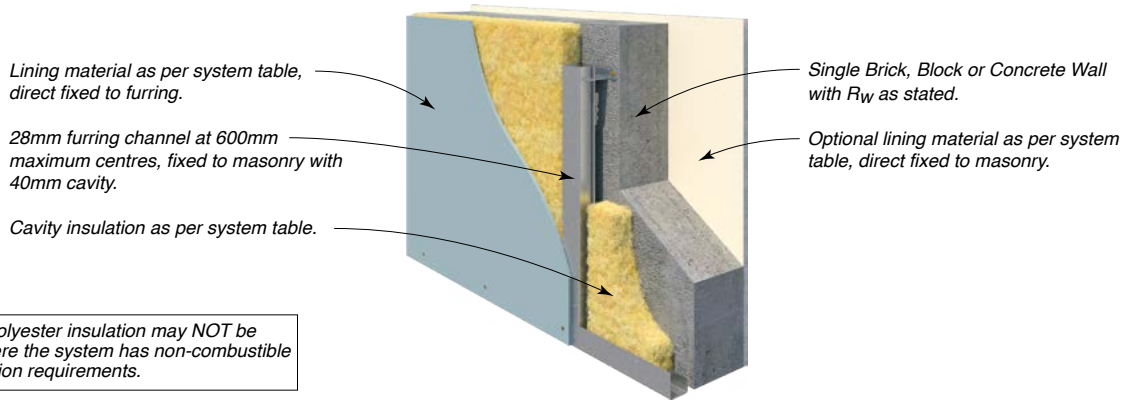
Masonry/Concrete Internal Wall Systems – Furring Channel Both Sides



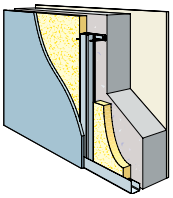
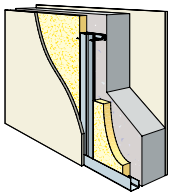
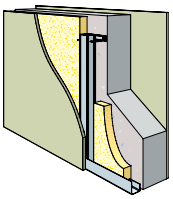
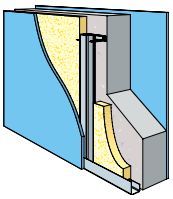
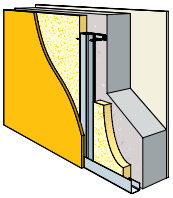
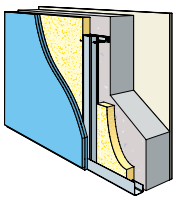
NOTE: Polyester insulation may NOT be used where the system has non-combustible construction requirements.

SYSTEM SPECIFICATION Refer to Book 3 Commercial & Multi-Residential Installation Guide			ACOUSTIC REPORT: PKA-A118 NOT Deemed Discontinuous Construction		
WALL REQUIREMENTS	**SYSTEM Nº**	**WALL LININGS**	**CAVITY INFILL SIDE 1** (Refer to TABLE B6)	**CAVITY INFILL SIDE 2** (Refer to TABLE B6)	**R_W / R_W+C_{tr}**
Tested Brick, Block or Concrete Wall with $R_W \geq 55$ **Wall from TABLE E1 Group E** Refer to Wall Manufacturer for FRL Details	**CSR 4290** 	BOTH SIDES • 1 x 13mm Gyprock Standard Plasterboard	(b) 50 Acoustigard 14kg	Nil	53/41
			(c) 25 Acoustigard 24kg	Nil	54/42
				Additional Wall Thickness mm	106
	CSR 4291 	SIDE ONE • 1 x 13mm Gyprock Aquachek Plasterboard. SIDE TWO • 1 x 13mm Gyprock Standard Plasterboard.	(b) 50 Acoustigard 14kg	Nil	54/42
			(c) 25 Acoustigard 24kg	Nil	55/43
				Additional Wall Thickness mm	106
	CSR 4292 	BOTH SIDES • 1 x 13mm Gyprock Soundchek Plasterboard.	(b) 50 Acoustigard 14kg	50 Acoustigard 14kg	64**/50**
			(c) 25 Acoustigard 24kg	25 Acoustigard 24kg	64**/50**
				Additional Wall Thickness mm	106
	CSR 4293 	BOTH SIDES • 1 x 13mm Gyprock EC08 Complete.	(b) 50 Acoustigard 14kg	50 Acoustigard 14kg	64**/50**
			(c) 25 Acoustigard 24kg	25 Acoustigard 24kg	64**/50**
				Additional Wall Thickness mm	106
	CSR 4294 	BOTH SIDES • 1 x 16mm Gyprock Fyrchek Plasterboard	(b) 50 Acoustigard 14kg	50 Acoustigard 14kg	64**/50**
			(c) 25 Acoustigard 24kg	25 Acoustigard 24kg	64**/50**
				Additional Wall Thickness mm	112
	CSR 4295 	BOTH SIDES • 1 x 16mm Gyprock Fyrchek MR Plasterboard	(b) 50 Acoustigard 14kg	50 Acoustigard 14kg	64**/50**
			(c) 25 Acoustigard 24kg	25 Acoustigard 24kg	64**/50**
				Additional Wall Thickness mm	112

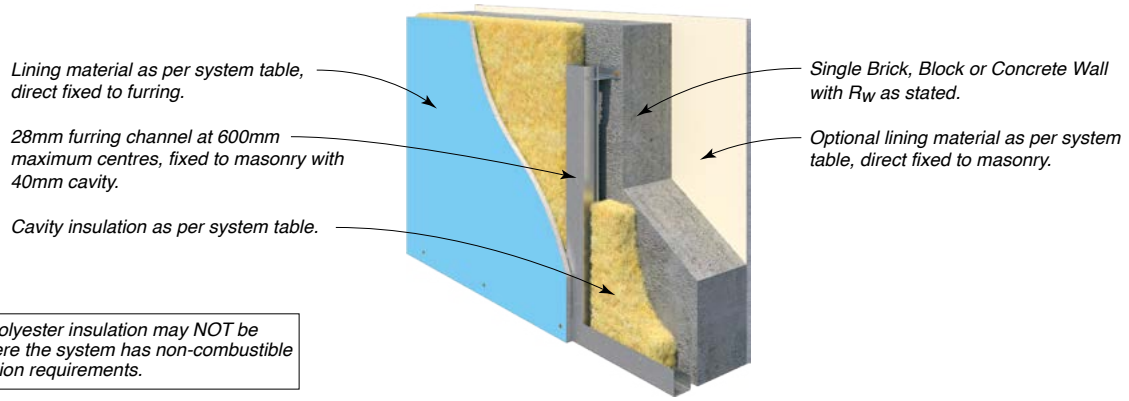
Masonry/Concrete Internal Wall Systems – Furring + Direct Fixed



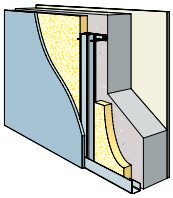
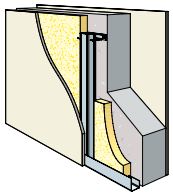
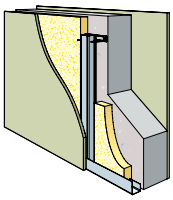
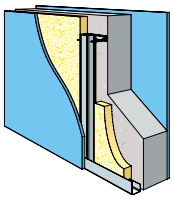
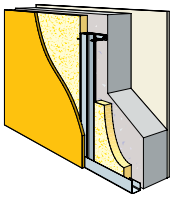
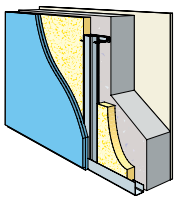
NOTE: Polyester insulation may NOT be used where the system has non-combustible construction requirements.

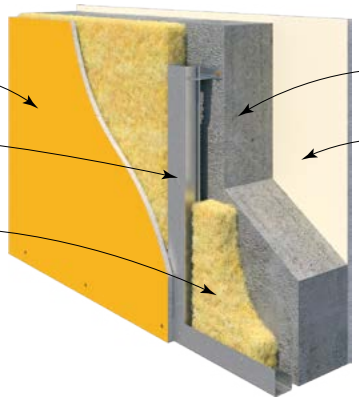
SYSTEM SPECIFICATION Refer to Book 3 Commercial & Multi-Residential Installation Guide			ACOUSTIC REPORT: PKA-A118 NOT Deemed Discontinuous Construction	
WALL REQUIREMENTS	**SYSTEM Nº**	**WALL LININGS**	**CAVITY INFILL** (Refer to TABLE B6)	**R_W / R_W+C_{tr}**
Tested Brick, Block or Concrete Wall with $R_W \geq 45$ **Wall from TABLE E1 Group B** Refer to Wall Manufacturer for FRL Details	**CSR 4400** 	MASONRY SIDE • 1 x 13mm Gyprock Standard Plasterboard. FURRING SIDE • 1 x 9mm CeminSeal Wallboard.	(b) 50 Acoustigard 14kg (d) 50 MAB Polyester 11kg Additional Wall Thickness mm	53/43 50/40 67
	CSR 4401 	MASONRY SIDE • 1 x 13mm Gyprock Standard Plasterboard. FURRING SIDE • 1 x 13mm Gyprock Standard Plasterboard.	(b) 50 Acoustigard 14kg (d) 50 MAB Polyester 11kg Additional Wall Thickness mm	50/40 47/37 71
	CSR 10058 	MASONRY SIDE • 1 x 13mm Gyprock EC08 Extreme. FURRING SIDE • 1 x 13mm Gyprock EC08 Extreme.	(a) 50 Acoustigard 14kg (c) 50 MAB Polyester 11kg Additional Wall Thickness mm	54/44 51/41 71
	CSR 4405 	MASONRY SIDE • 1 x 13mm Gyprock Aquachek Plasterboard. FURRING SIDE • 1 x 13mm Gyprock Aquachek Plasterboard.	(b) 50 Acoustigard 14kg (d) 50 MAB Polyester 11kg Additional Wall Thickness mm	51/41 48/38 71
	CSR 4406 	MASONRY SIDE • 1 x 13mm Gyprock Standard Plasterboard. FURRING SIDE • 1 x 13mm Gyprock Soundchek Plasterboard.	(b) 50 Acoustigard 14kg (d) 50 MAB Polyester 11kg Additional Wall Thickness mm	53/43 50/40 71
	CSR 4407 	MASONRY SIDE • 1 x 13mm Gyprock Standard Plasterboard. FURRING SIDE • 2 x 13mm Gyprock Aquachek Plasterboard.	(b) 50 Acoustigard 14kg (d) 50 MAB Polyester 11kg Additional Wall Thickness mm	54/45 51/42 84

Masonry/Concrete Internal Wall Systems – Furring + Direct Fixed

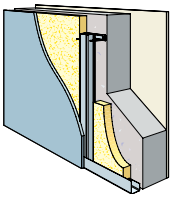
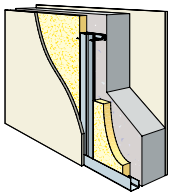
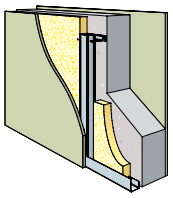
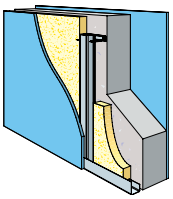
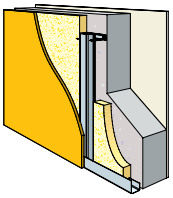
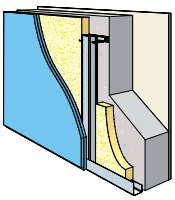


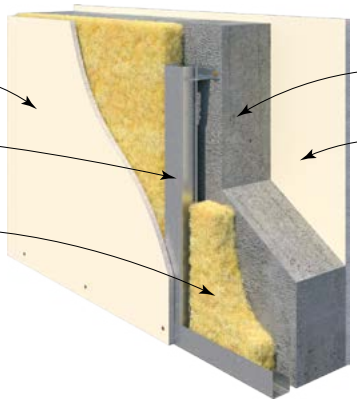
NOTE: Polyester insulation may NOT be used where the system has non-combustible construction requirements.

SYSTEM SPECIFICATION Refer to Book 3 Commercial & Multi-Residential Installation Guide			ACOUSTIC REPORT: PKA-A118 NOT Deemed Discontinuous Construction	
WALL REQUIREMENTS	**SYSTEM Nº**	**WALL LININGS**	**CAVITY INFILL** (Refer to TABLE B6)	**R_W / R_W+C_{tr}**
Tested Brick, Block or Concrete Wall with $R_W \geq 47$ **Wall from TABLE E1 Group C** Refer to Wall Manufacturer for FRL Details	**CSR 4412** 	MASONRY SIDE • 1 x 13mm Gyprock Standard Plasterboard. FURRING SIDE • 1 x 9mm CeminSeal Wallboard.	(b) 50 Acoustigard 14kg (d) 50 MAB Polyester 11kg Additional Wall Thickness mm	55/45 52/42 67
	CSR 4413 	MASONRY SIDE • 1 x 13mm Gyprock Standard Plasterboard. FURRING SIDE • 1 x 13mm Gyprock Standard Plasterboard.	(b) 50 Acoustigard 14kg (d) 50 MAB Polyester 11kg Additional Wall Thickness mm	52/42 49/39 71
	CSR 10063 	MASONRY SIDE • 1 x 13mm Gyprock EC08 Extreme. FURRING SIDE • 1 x 13mm Gyprock EC08 Extreme.	(a) 50 Acoustigard 14kg (c) 50 MAB Polyester 11kg Additional Wall Thickness mm	56/46 53/43 71
	CSR 4415 	MASONRY SIDE • 1 x 13mm Gyprock Aquachek Plasterboard. FURRING SIDE • 1 x 13mm Gyprock Aquachek Plasterboard.	(b) 50 Acoustigard 14kg (d) 50 MAB Polyester 11kg Additional Wall Thickness mm	53/43 50/40 71
	CSR 4418 	MASONRY SIDE • 1 x 13mm Gyprock Standard Plasterboard. FURRING SIDE • 1 x 13mm Gyprock Soundchek Plasterboard.	(b) 50 Acoustigard 14kg (d) 50 MAB Polyester 11kg Additional Wall Thickness mm	55/45 52/42 71
	CSR 4419 	MASONRY SIDE • 1 x 13mm Gyprock Standard Plasterboard. FURRING SIDE • 2 x 13mm Gyprock Aquachek Plasterboard.	(b) 50 Acoustigard 14kg (d) 50 MAB Polyester 11kg Additional Wall Thickness mm	56/47 53/44 84

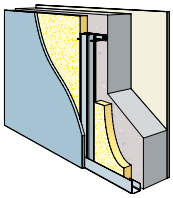
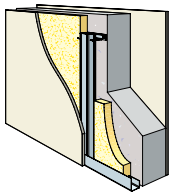
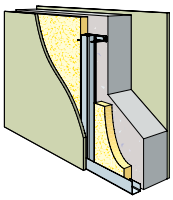
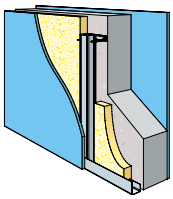
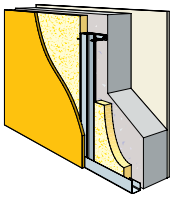
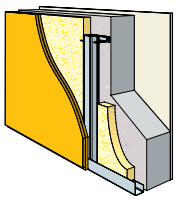


NOTE: Polyester insulation may NOT be used where the system has non-combustible construction requirements.

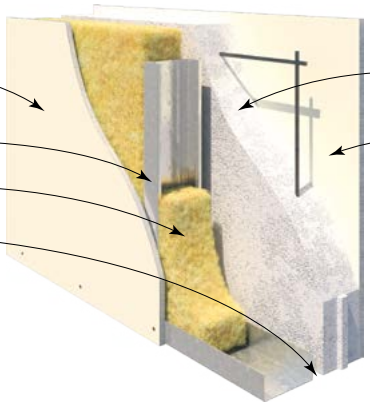
SYSTEM SPECIFICATION Refer to Book 3 Commercial & Multi-Residential Installation Guide			ACOUSTIC REPORT: PKA-A118 NOT Deemed Discontinuous Construction	
WALL REQUIREMENTS	**SYSTEM Nº**	**WALL LININGS**	**CAVITY INFILL** (Refer to TABLE B6)	**R_W / R_W+C_{tr}**
Tested Brick, Block or Concrete Wall with $R_W \geq 50$ **Wall from TABLE E1 Group D** Refer to Wall Manufacturer for FRL Details	**CSR 4422** 	MASONRY SIDE • 1 x 13mm Gyprock Standard Plasterboard. FURRING SIDE • 1 x 9mm CeminSeal Wallboard.	(b) 50 Acoustigard 14kg (d) 50 MAB Polyester 11kg Additional Wall Thickness mm	58/49 55/46 67
	CSR 4423 	MASONRY SIDE • 1 x 13mm Gyprock Standard Plasterboard. FURRING SIDE • 1 x 13mm Gyprock Standard Plasterboard.	(b) 50 Acoustigard 14kg (d) 50 MAB Polyester 11kg Additional Wall Thickness mm	55/46 52/43 71
	CSR 10068 	MASONRY SIDE • 1 x 13mm Gyprock EC08 Extreme. FURRING SIDE • 1 x 13mm Gyprock EC08 Extreme.	(a) 50 Acoustigard 14kg (c) 50 MAB Polyester 11kg Additional Wall Thickness mm	59/**50** 56/47 71
	CSR 4427 	MASONRY SIDE • 1 x 13mm Gyprock Aquachek Plasterboard. FURRING SIDE • 1 x 13mm Gyprock Aquachek Plasterboard.	(b) 50 Acoustigard 14kg (d) 50 MAB Polyester 11kg Additional Wall Thickness mm	56/47 53/44 71
	CSR 4428 	MASONRY SIDE • 1 x 13mm Gyprock Standard Plasterboard. FURRING SIDE • 1 x 13mm Gyprock Soundchek Plasterboard.	(b) 50 Acoustigard 14kg (d) 50 MAB Polyester 11kg Additional Wall Thickness mm	58/49 55/46 71
	CSR 4429 	MASONRY SIDE • 1 x 13mm Gyprock Standard Plasterboard. FURRING SIDE • 2 x 13mm Gyprock Aquachek Plasterboard.	(b) 50 Acoustigard 14kg (d) 50 MAB Polyester 11kg Additional Wall Thickness mm	59/**51** 56/48 84



NOTE: Polyester insulation may NOT be used where the system has non-combustible construction requirements.

SYSTEM SPECIFICATION Refer to Book 3 Commercial & Multi-Residential Installation Guide			ACOUSTIC REPORT: PKA-A118 NOT Deemed Discontinuous Construction	
WALL REQUIREMENTS	**SYSTEM Nº**	**WALL LININGS**	**CAVITY INFILL** (Refer to TABLE B6)	**R_W / R_W+C_{tr}**
Tested Brick, Block or Concrete Wall with $R_W \geq 55$ **Wall from TABLE E1 Group E** Refer to Wall Manufacturer for FRL Details	**CSR 4432** 	MASONRY SIDE • 1 x 13mm Gyprock Standard Plasterboard. FURRING SIDE • 1 x 9mm CeminSeal Wallboard.	(a) Nil (c) 50 Acoustigard 14kg (e) 50 MAB Polyester 11kg	55/46 62/**53** 59/**50**
			Additional Wall Thickness mm	67
	CSR 4433 	MASONRY SIDE • 1 x 13mm Gyprock Standard Plasterboard. FURRING SIDE • 1 x 13mm Gyprock Standard Plasterboard.	(a) Nil (c) 50 Acoustigard 14kg (e) 50 MAB Polyester 11kg	52/43 59/**50** 56/47
			Additional Wall Thickness mm	71
	CSR 10073 	MASONRY SIDE • 1 x 13mm Gyprock EC08 Extreme. FURRING SIDE • 1 x 13mm Gyprock EC08 Extreme.	(a) Nil (b) 50 Acoustigard 14kg (d) 50 MAB Polyester 11kg	56/47 63/**54** 60/**51**
			Additional Wall Thickness mm	71
	CSR 4437 	MASONRY SIDE • 1 x 13mm Gyprock Aquachek Plasterboard. FURRING SIDE • 1 x 13mm Gyprock Aquachek Plasterboard.	(a) Nil (c) 50 Acoustigard 14kg (e) 50 MAB Polyester 11kg	53/44 60/**51** 57/48
			Additional Wall Thickness mm	71
	CSR 4438 	MASONRY SIDE • 1 x 13mm Gyprock Standard Plasterboard. FURRING SIDE • 1 x 13mm Gyprock Soundchek Plasterboard.	(a) Nil (c) 50 Acoustigard 14kg (e) 50 MAB Polyester 11kg	55/46 62/**53** 59/**50**
			Additional Wall Thickness mm	71
	CSR 4439 	MASONRY SIDE • 1 x 13mm Gyprock Standard Plasterboard. FURRING SIDE • 2 x 13mm Gyprock Soundchek Plasterboard.	(b) 50 Acoustigard 14kg (d) 50 MAB Polyester 11kg	65/**57** 62/**54**
			Additional Wall Thickness mm	84

SYSTEM SPECIFICATIONS CSR Hebel Internal Wall Systems – Steel Stud + PowerPanel



Lining material as per system table, fixed to steel framing.

64mm steel studs at 600mm centres.

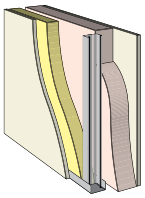
Cavity insulation as per system table.

Minimum 20mm gap.

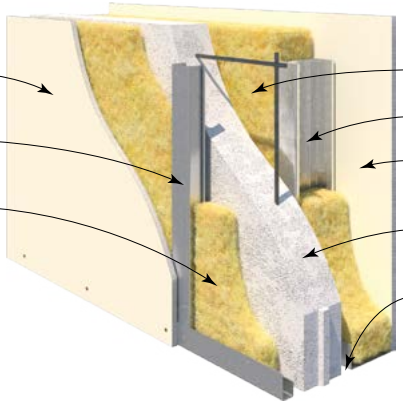
CSR Hebel PowerPanel (tongue and groove).

Lining material as per system table, direct fixed to Hebel panels.

*NOTE: *For wall heights up to 3.3m. Polyester insulation may NOT be used where the system has non-combustible construction requirements.*

SYSTEM SPECIFICATION Refer to Hebel for further information			ACOUSTIC LOGIC REPORT: 20210103.7/1608A/R2/TB Discontinuous Construction	
FRL Report	**SYSTEM** **Nº**	**WALL LININGS**	**CAVITY INFILL** (Refer to TABLE B6)	**R_w / R_w+C_{tr}**
Up to **– /90/90*** (from both sides) FCO 3035	**CSR 21070** 	BOTH SIDES • 1 x 13mm Gyprock Standard Plasterboard.	(a) 75 Acoustigard 11kg	61/**50**
			(c) 75 MAB Polyester 14kg	61/**50**
			Wall Thickness mm	185

SYSTEM SPECIFICATIONS CSR Hebel Internal Wall Systems – Steel Furring + PowerPanel + Steel Stud



Lining material as per system table, fixed to furring.

Rondo N°129 furring channel at 600mm maximum centres.

Cavity insulation as per system table in a 43mm cavity.

Cavity insulation as per system table.

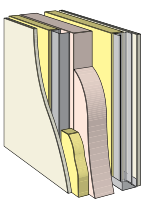
64mm steel studs at 600mm centres.

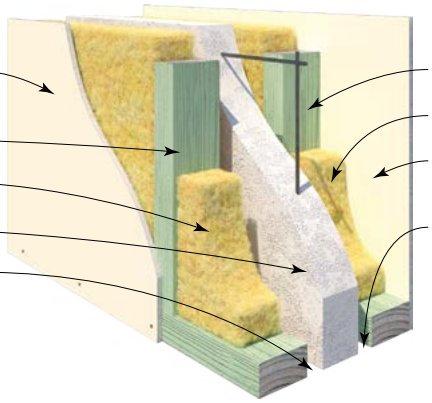
Lining material as per system table, direct fixed to framing.

75mm CSR Hebel PowerPanel (tongue and groove).

Minimum 35mm air gap.

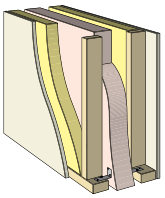
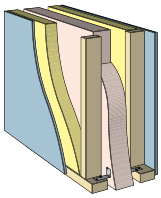
*NOTE: *For wall heights up to 3.3m. Polyester insulation may NOT be used where the system has non-combustible construction requirements.*

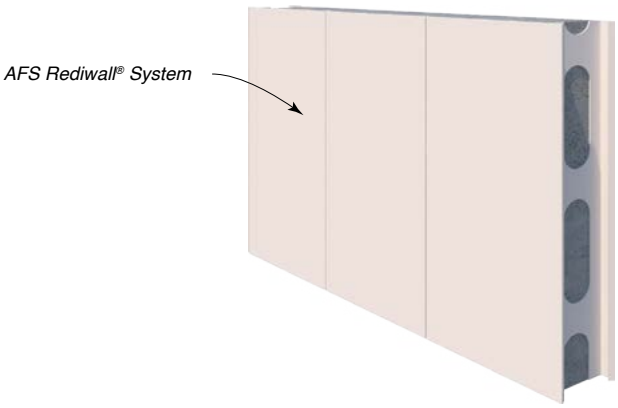
SYSTEM SPECIFICATION Refer to Hebel for further information			ACOUSTIC LOGIC REPORT: 20210103.7/1608A/R2/TB Discontinuous Construction		
FRL Report	**SYSTEM** **Nº**	**WALL LININGS**	**FURRING CAVITY INFILL** (Refer to TABLE B6)	**STUD CAVITY INFILL** (Refer to TABLE B6)	**R_w / R_w+C_{tr}**
Up to **– /90/90*** (from both sides) FCO 3035	**CSR 21072** 	BOTH SIDES • 1 x 13mm Gyprock Standard Plasterboard.	(a) 50 Acoustigard 14kg	75 Acoustigard 11kg	64/**50**
			(b) 50 Acoustigard 14kg	75 MAB Polyester 14kg	64/**50**
				Wall Thickness mm	243

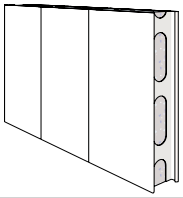
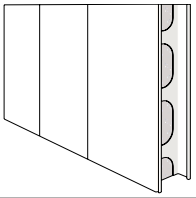
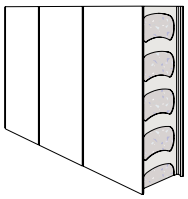
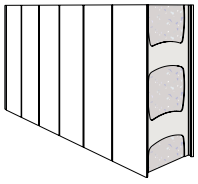


*NOTE: *Acoustic values in the table are based on a 10mm air gap between the PowerPanel50 and framing.*

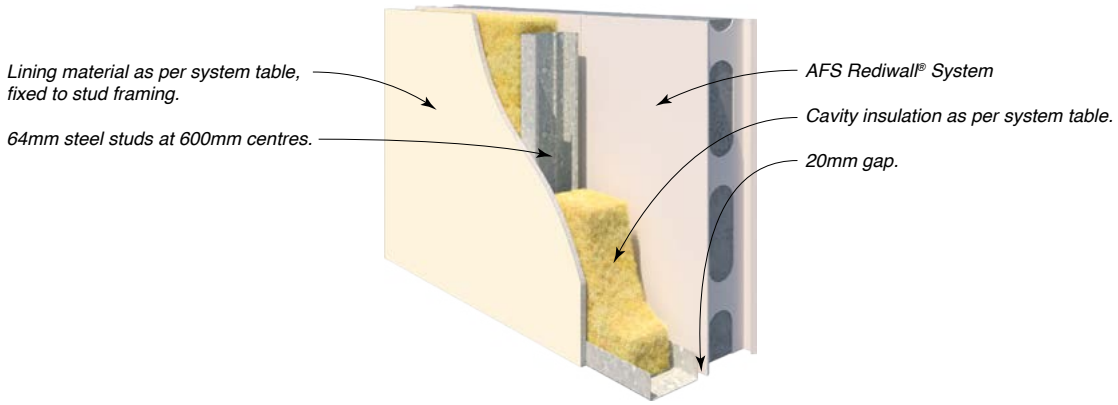
NOTE: Polyester insulation may NOT be used where the system has non-combustible construction requirements.
#Applicable only to walls supporting non-fire rated structures such as floors and roofs.

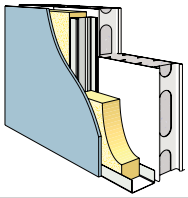
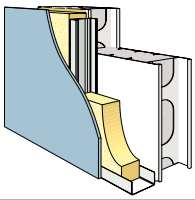
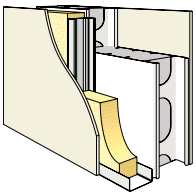
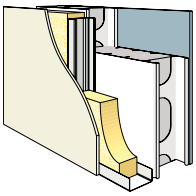
SYSTEM SPECIFICATION Refer to CSR for further information			ACOUSTIC LOGIC REPORT: 20140366.35/0202A/R6/GW Discontinuous Construction		
FRL Report	**System Icon**	**WALL LININGS**	**STUD DEPTH mm**	**70**	**90**
			SYSTEM Nº	**CAVITY INFILL (sides)** (Refer to TABLE B6)	**R_w / R_w+C_{tr}***	**R_w / R_w+C_{tr}***
–/90/90 **90/90/90#** FCO 3255		BOTH SIDES • 1 x 13mm Gyprock Standard Plasterboard.	**CSR 21245**	Nil	38/29	–
			CSR 21246	90 Gold Batts 2.0 – both sides	61/47	–
			CSR 21269	Nil	–	40/31
			CSR 21270	90 Gold Batts 2.0 – both sides	–	64/**50**
				Wall Thickness mm	236	276
–/90/90 **90/90/90#** FCO 3255		BOTH SIDES • 1 x 9mm CeminSeal Wallboard.	**CSR 21251**	Nil	39/30	–
			CSR 21252	90 Gold Batts 2.0 – both sides	64/**50**	–
			CSR 21275	Nil	–	40/31
			CSR 21276	90 Gold Batts 2.0 – both sides	–	67/**52**
				Wall Thickness mm	228	268



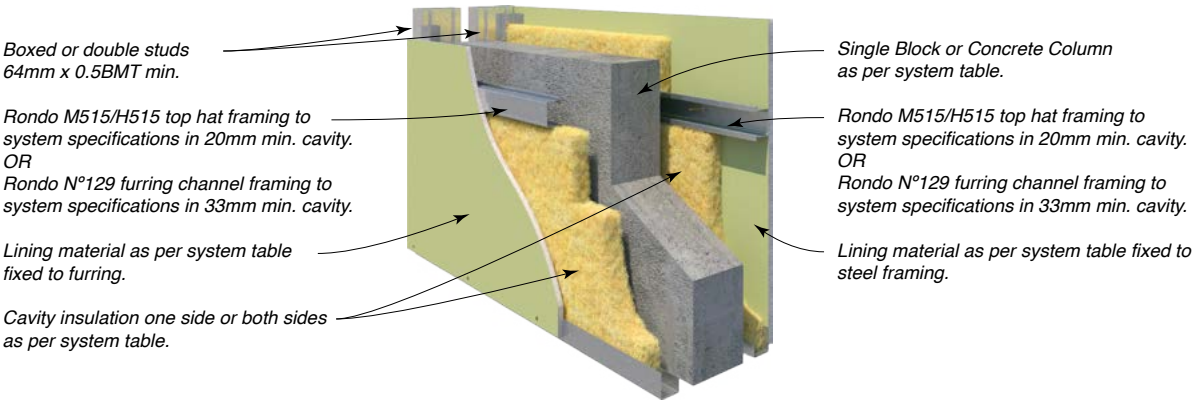
SYSTEM SPECIFICATION Refer to AFS Rediwall® Design Guide for further information			ACOUSTIC LOGIC REPORT: Refer to AFS NOT Deemed Discontinuous Construction	
FRL Report	**SYSTEM** **N°**	**SYSTEM DESCRIPTION**	**R_w / R_w+C_{tr}**	
90/90/90 Refer to AFS	**CSR 36001** 	AFS FORMWORK • RW110C Wall CONCRETE CORE • 105mm nominal	50/45	
			Wall Thickness mm	110
240/240/240 Refer to AFS	**CSR 37001** 	AFS FORMWORK • RW156C Wall CONCRETE CORE • 151mm nominal	**54/50**	
			Wall Thickness mm	156
240/240/240 Refer to AFS	**CSR 38001** 	AFS FORMWORK • RW200C Wall CONCRETE CORE • 195mm nominal	**58/53**	
			Wall Thickness mm	200
240/240/240 Refer to AFS	**CSR 39001** 	AFS FORMWORK • RW256C Wall CONCRETE CORE • 251mm nominal	**60/55**	
			Wall Thickness mm	256

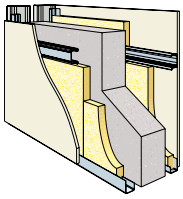
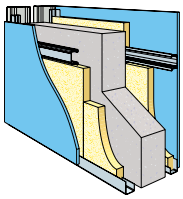
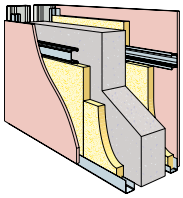
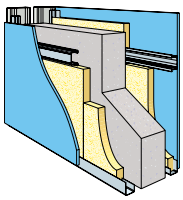
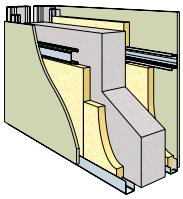
AFS Internal Wall Systems – Rediwall® + Steel Stud



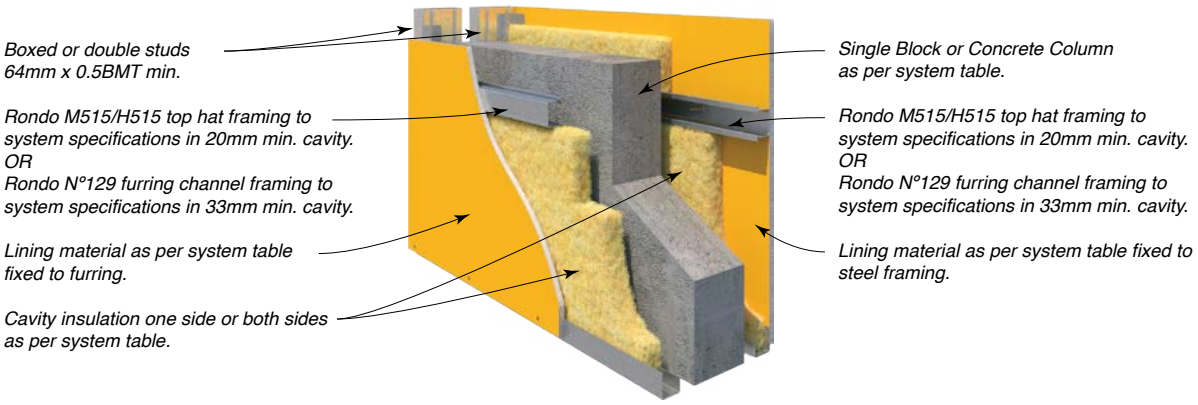
SYSTEM SPECIFICATION Refer to AFS Rediwall® Design Guide for further information				ACOUSTIC LOGIC REPORT: Refer to AFS Discontinuous Construction	
FRL Report	**SYSTEM Nº**	**SYSTEM DESCRIPTION**	**WALL LININGS**	**CAVITY INFILL** (Refer to TABLE B6)	**R_w / R_w+C_{tr}**
90/90/90 Refer to AFS	**CSR 36101** 	AFS FORMWORK • RW110C Wall CONCRETE CORE • 105mm nominal	EXTERNAL SIDE • Nil INTERNAL (STUD) SIDE • 1 x 6mm Cemintel Wallboard.	75 Acoustigard 14kg	62/**52**
				Min. Wall Thickness mm	200
240/240/240 Refer to AFS	**CSR 37101** 	AFS FORMWORK • RW156C Wall CONCRETE CORE • 151mm nominal	EXTERNAL SIDE • Nil INTERNAL (STUD) SIDE • 1 x 6mm Cemintel Wallboard.	75 Acoustigard 14kg	65/**55**
				Min. Wall Thickness mm	246
240/240/240 Refer to AFS	**CSR 37302** 	AFS FORMWORK • RW156C Wall CONCRETE CORE • 151mm nominal	SIDE ONE • 1 x 13mm Gyprock Standard Plasterboard. SIDE TWO • 1 x 13mm Gyprock Standard Plasterboard.	75 Acoustigard 14kg	65/**55**
				Min. Wall Thickness mm	266
240/240/240 Refer to AFS	**CSR 37503** 	AFS FORMWORK • RW156C Wall CONCRETE CORE • 151mm nominal	SIDE ONE • 1 x 13mm Gyprock Standard Plasterboard. SIDE TWO • 1 x 6mm Cemintel Wallboard.	75 Acoustigard 14kg	65/**55**
				Min. Wall Thickness mm	259

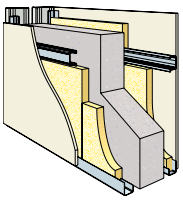
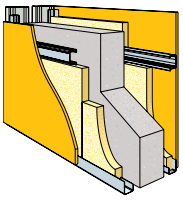
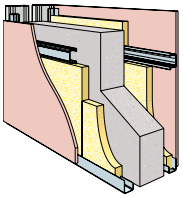
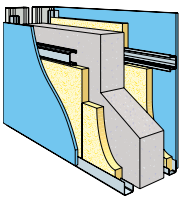
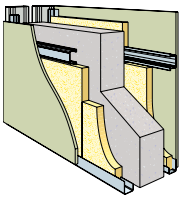
Masonry/Concrete Internal Wall Systems – Blade Columns – R_w



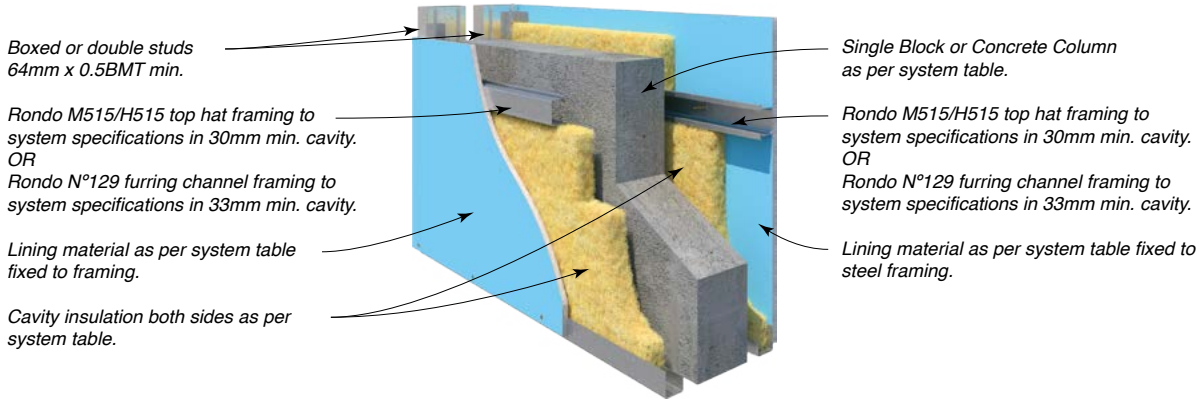
SYSTEM SPECIFICATION Refer to Book 3 Commercial & Multi-Residential Installation Guide					ACOUSTIC REPORT: PKA-A127 Deemed Discontinuous Construction	
COLUMN (Refer to TABLE E2)	**SYSTEM N°**	**WALL LININGS BOTH SIDES**	**CAVITY WIDTH MIN.**	**ADDITIONAL WIDTH MIN.**	**CAVITY INFILL (a) ONE SIDE (b) BOTH SIDES** (Refer to TABLE B6)	**R_w**
200mm Concrete OR 190mm Core Filled Blockwork For wall FRL refer to Section C Steel Framed Wall Systems	**CSR 4850** 	• 1 x 13mm Gyprock Standard Plasterboard.	20/33	66/92	(a) 25 Acoustigard 32kg (b) 25 Acoustigard 32kg	≥50 ≥55
	CSR 4852 	• 1 x 13mm Gyprock Aquachek Plasterboard.	20/33	66/92	(a) 25 Acoustigard 32kg (b) 25 Acoustigard 32kg	≥50 ≥55
	CSR 4854 	• 1 x 13mm Gyprock Fyrchek Plasterboard.	20/33	66/92	(a) 25 Acoustigard 32kg (b) 25 Acoustigard 32kg	≥50 ≥55
	CSR 4856 	• 1 x 13mm Gyprock Fyrchek MR Plasterboard.	20/33	66/92	(a) 25 Acoustigard 32kg (b) 25 Acoustigard 32kg	≥50 ≥55
	CSR 4858 	• 1 x 13mm Gyprock EC08 Complete Plasterboard.	20/33	66/92	(a) 25 Acoustigard 32kg (b) 25 Acoustigard 32kg	≥50 ≥55

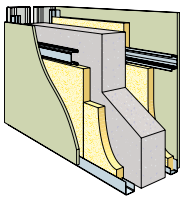
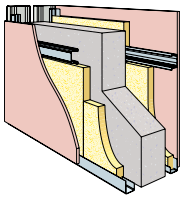
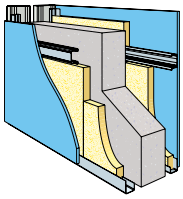
Masonry/Concrete Internal Wall Systems – Blade Columns – R_W



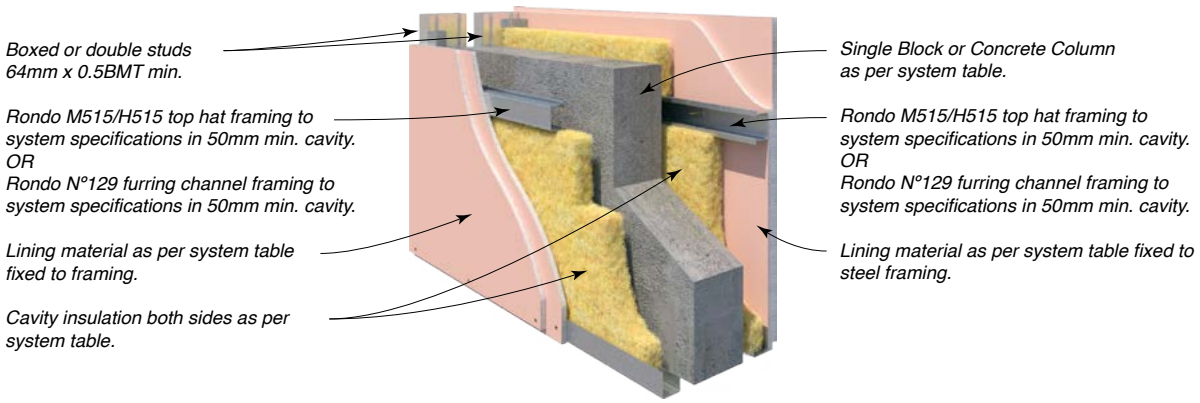
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COLUMN (Refer to TABLE E2)	**SYSTEM Nº**	**WALL LININGS BOTH SIDES**	**CAVITY WIDTH MIN.**	**ADDITIONAL WIDTH MIN.**	**CAVITY INFILL (a) ONE SIDE (b) BOTH SIDES** (Refer to TABLE B6)	**R_W**
150mm Concrete For wall FRL refer to Section C Steel Framed Wall Systems	**CSR 4859** 	• 1 x 13mm Gyprock Standard Plasterboard.	20/33	66/92	(a) 25 Acoustigard 32kg (b) 25 Acoustigard 32kg	≥50 ≥55
	CSR 4860 	• 1 x 13mm Gyprock Soundchek Plasterboard.	20/33	66/92	(a) 25 Acoustigard 32kg (b) 25 Acoustigard 32kg	≥50 ≥55
	CSR 4862 	• 1 x 13mm Gyprock Fyrchek Plasterboard.	20/33	66/92	(a) 25 Acoustigard 32kg (b) 25 Acoustigard 32kg	≥50 ≥55
	CSR 4864 	• 1 x 13mm Gyprock Fyrchek MR Plasterboard.	20/33	66/92	(a) 25 Acoustigard 32kg (b) 25 Acoustigard 32kg	≥50 ≥55
	CSR 4866 	• 1 x 13mm Gyprock EC08 Complete Plasterboard.	20/33	66/92	(a) 25 Acoustigard 32kg (b) 25 Acoustigard 32kg	≥50 ≥55

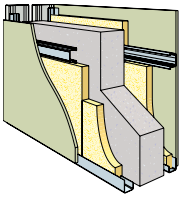
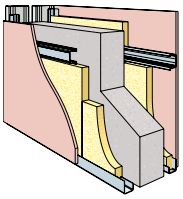
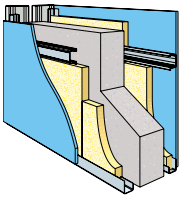
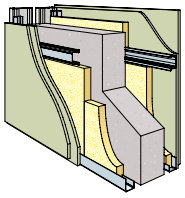
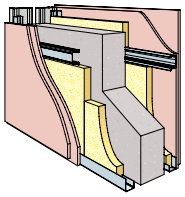
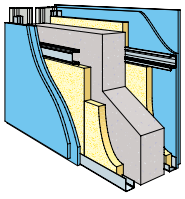
Masonry/Concrete Internal Wall Systems – Blade Columns – R_w+C_{tr}



SYSTEM SPECIFICATION Refer to Book 3 Commercial & Multi-Residential Installation Guide					ACOUSTIC REPORT: PKA-A127 Deemed Discontinuous Construction	
COLUMN (Refer to TABLE E2)	**SYSTEM N°**	**WALL LININGS BOTH SIDES**	**CAVITY WIDTH MIN.**	**ADDITIONAL WIDTH MIN.**	**CAVITY INFILL BOTH SIDES** (Refer to TABLE B6)	**R_w+C_{tr}**
200mm Concrete For wall FRL refer to Section C Steel Framed Wall Systems	**CSR 4870** 	• 1 x 13mm Gyprock EC08 Complete Plasterboard.	30/33	86/92	(b) 25 Acoustigard 24kg	≥50
	CSR 4872 	• 1 x 16mm Gyprock Fyrchek Plasterboard.	30/33	92/98	(b) 25 Acoustigard 24kg	≥50
	CSR 4874 	• 1 x 16mm Gyprock Fyrchek MR Plasterboard.	30/33	92/98	(b) 25 Acoustigard 24kg	≥50

Masonry/Concrete Internal Wall Systems – Blade Columns – R_w+C_{tr}



SYSTEM SPECIFICATION Refer to Book 3 Commercial & Multi-Residential Installation Guide					ACOUSTIC REPORT: PKA-A127 Deemed Discontinuous Construction	
COLUMN (Refer to TABLE E2)	**SYSTEM Nº**	**WALL LININGS BOTH SIDES**	**CAVITY WIDTH MIN.**	**ADDITIONAL WIDTH MIN.**	**CAVITY INFILL BOTH SIDES** (Refer to TABLE B6)	**R_w+C_{tr}**
150mm Concrete OR 190mm Core Filled Blockwork For wall FRL refer to Section C Steel Framed Wall Systems	**CSR 4876** 	• 1 x 13mm Gyprock EC08 Complete Plasterboard.	50	126	(b) 25 Acoustigard 24kg	≥50
	CSR 4878 	• 1 x 16mm Gyprock Fyrchek Plasterboard.	50	132	(b) 25 Acoustigard 24kg	≥50
	CSR 4880 	• 1 x 16mm Gyprock Fyrchek MR Plasterboard.	50	132	(b) 25 Acoustigard 24kg	≥50
120mm Concrete OR 140mm Core Filled Blockwork For wall FRL refer to Section C Steel Framed Wall Systems	**CSR 4882** 	• 2 x 13mm Gyprock EC08 Complete Plasterboard.	50	152	(b) 25 Acoustigard 24kg	≥50
	CSR 4884 	• 2 x 16mm Gyprock Fyrchek Plasterboard.	50	164	(b) 25 Acoustigard 24kg	≥50
	CSR 4886 	• 2 x 16mm Gyprock Fyrchek MR Plasterboard.	50	164	(b) 25 Acoustigard 24kg	≥50

EXTERNAL WALL SYSTEMS

F

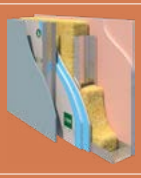
SECTION CONTENTS

Introduction F2

Design Considerations F2

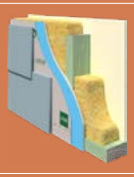
System Selection Tables

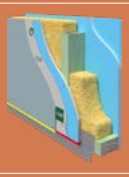

Direct Fix Steel Frame F7


Cavity Steel Frame F9


Cavity Steel Girt F15

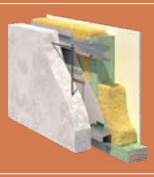

Masonry with Steel Frame F17


Direct Fix Timber Frame F18


Boundary Wall F22


Cavity Timber Frame F24


Masonry with Timber Frame F30


Hebel PowerPanel F32


Thermally Enhanced Systems Including Thermal Bridging Considerations F34


Glasroc X Systems F55

INTRODUCTION

This section provides important design information and detailed selection and specification tables necessary for the correct use of CSR external wall systems.

CSR Gyprock and Cemintel steel and timber framed external wall systems use Cemintel fibre cement exterior linings and may include one or more layers of Gyprock plasterboard fixed to one or both sides of the framing. A selection of masonry, concrete and steel sheet systems are also included. A wide range of systems is available for both fire rated and non-fire rated applications in non-loadbearing and loadbearing walls. Fire rating can apply from the outside only or in both directions.

These wall systems are suitable for many building types including commercial, industrial, institutional, and low, medium and high-rise residential construction.

This Guide should be read in conjunction with the relevant Cemintel system installation manual (available for download from www.cemintel.com.au), with Book 2 Residential Installation Guide and Book 3 Commercial & Multi-Residential Installation Guide (available for download from www.gyprock.com.au).

This section is divided into two parts:

- Total R-Values calculated in the first part on page F7 to page F33 DO NOT INCLUDE consideration of the effects of thermal bridging.
- Total R-Values calculated in the second part on page F34 to page F54 INCLUDE consideration of the effect of thermal bridging.

DESIGN CONSIDERATIONS

DESIGN RESPONSIBILITY

This guide represents good practice, though it is not intended as an exhaustive statement of all relevant information. It remains the responsibility of the building designer to verify that the chosen cladding system is suitable for the requirements of any given project. CSR recommends that a comprehensive assessment of the performance requirements for the external walls be undertaken prior to selection of the external wall and cladding system, including for:

- Structural design
- Weatherproofing
- Fire resistance
- Energy efficiency
- Acoustic performance
- Condensation management

CSR offers online digital tools for the most updated information, including but not limited to update of products/components, inclusion of new and modified systems, to meet the requirements of the National Construction Code of Australia (NCC) and any relevant Australian Standards. For the most up-to-date product & system performance information, visit:

CSR System Selector: https://apps.csr.com.au/systemselector/search-option

CSR Thermal Calculator: https://apps.csr.com.au/thermalcalculator

STRUCTURAL DESIGN

All walls must be designed for the applied loads. Loadbearing walls and walls subject to wind pressures shall be appropriately designed to meet the relevant Australian Standards or construction manuals. Walls lined with Gyprock fire grade plasterboard meet the requirements of NCC2022 Clause S6C6 [NCC2019: Spec C1.8: 3.4] Walls generally

Cladding

Cladding must be designed for the applicable wind loads. To determine the maximum framing spacing, any batten requirements, and the cladding fixing specifications, refer to the relevant Cemintel system installation guide. It is the responsibility of the building designer to determine the wind loads or classifications of the building and to assess the suitability of the system.

Internal Linings

Internal linings are to be designed for the applicable wind pressures calculated in accordance with AS/NZS 1170 series. For Gyprock plasterboard linings, the sheet fixing details are to be in accordance with Book 2 and 3. For other lining materials, consult the manufacturer.

Structural Bracing

External cladding materials, including Cemintel cladding, are not intended to provide wall bracing. Bracing must be provided in the structural framing in the normal manner by using methods such as strap bracing or sheet bracing.

Control Joints

Control joints for interior linings may be required to allow for structural movement, and allowance for movement must be made through the frame, linings and all elements within the wall. Control joints are also required for some cladding types. For further information refer to Book 2 and 3 and the relevant cladding installation manual for detailed information.

Seismic Loads

Seismic actions must be considered for building elements in accordance with the NCC. The loads and effects of earthquakes may be determined in accordance with AS 1170.4 'Earthquake Actions in Australia'. The Standard has design procedures for houses (Class 1), and to buildings (Classes 2 to 9) with importance levels 2, 3 or 4 as defined in the NCC.

WEATHERPROOFING

The control of water ingress to a building is the responsibility of the building designer. CSR recommends that a comprehensive risk assessment of the building be conducted prior to selection of the cladding system. It should be noted that cavity systems are the best method for weather proofing walls and should be considered for complex and high-risk building designs.

All framing, sarking, flashings, damp proof courses and sealants must be installed in accordance with the relevant product manufacturer's instructions, applicable standards and building codes.

Cladding System Types

Typical cladding systems used to achieve the objectives of the NCC in relation to weatherproofing include:

- Ventilated and Drained Cavity: A ventilated and drained cavity or "Rainscreen" is an open jointed, rear-ventilated (vented primarily at the head and base) cladding system. These systems reduce the risk of moisture entering the cavity by means of pressure equalisation. Any water which does enter can drain away or can evaporate due to airflow throughout the cavity. An effective air seal to the building frame must be provided behind the cavity and CSR recommends the use of Cemintel Rigid Air Barrier.
- Direct Fix System with Face Sealing: In many Australian residential applications, cladding is fixed directly to the frame. A degree of sealing is required at joints and gaps to prevent water ingress. Although not as effective as ventilated and drained cavity systems, direct fix systems can be an effective means of weatherproofing low risk buildings, i.e., in low rise buildings in low wind pressure areas.
- Unique System: A unique system uses methods or a combination of methods of achieving weatherproofing other than described above.

WALL WRAP/SARKING SELECTION

To ensure occupant comfort and protection of the building frame, the following factors should be considered during the selection of the correct wall wrap/sarking.

- Condensation Risk: This is a complex problem and can occur under a variety of conditions (not just in cold and tropical climates) so selection of the right wall wrap/sarking should consider the local climate, building use and orientation, material R-Value of the insulation, and the use of ventilation methods.
- Weather Barrier: Wind loads can produce lower air pressures within buildings than on the outside, forcing water through small gaps in the building envelope around penetrations and joints, even at low wind speeds.

Key selection characteristics for a suitable wall wrap/sarking are:

- The wall wrap/sarking must have a 'high' water barrier classification – an 'unclassified' rating is not suitable.
- Wall wrap/sarking must meet the requirements of AS/NZS 4200.1: Pliable building membranes and underlays – Materials, and be installed in accordance with AS/NZS 4200.2: Pliable building membranes and underlays – Installation requirements.

CSR recommends sealing the external wall wrap/sarking to maintain vapour performance and draught proofing effectiveness, as well as to ensure water barrier integrity. An air barrier such as Cemintel Rigid Air Barrier can also be installed as part of an effective cavity system. Additional literature on condensation control is available from CSIRO/BRANZ/ASHRAE/ABCB, and CSR Bradford can help with product and system selection.

CORROSIVITY CATEGORIES/ COASTAL AREAS

Corrosivity categories are as described in AS 4312 - Atmospheric corrosivity zones in Australia. The code has methods for determining categories as well as maps and tables of major population centres. It is recommended that the building designer assess the site in accordance with the standard and local conditions, and to specify appropriate components, protective coatings, and maintenance procedures and schedules.

The Standard describes six atmospheric corrosivity categories:

- C1 – Very Low: Generally inside buildings, semi-sheltered locations away from marine or industrial influence, and some alpine regions.
- C2 – Low: Dry, rural areas, away from the coast or sources of pollution. Most areas of Australia at least 50 kilometres from the coast, or over one kilometre from quiet, sheltered seas. Most inland towns that are more than one kilometre from the sea.
- C3 – Medium: Coastal areas with low salinity. Sheltered areas such as Port Philip Bay, 50 metres from the shoreline to about one kilometre inland. Around less sheltered bays to about 0.5 to between 5 and 15 kilometres inland. Along ocean front areas with breaking surf and significant salt spray, extending from about one kilometre inland to between 10 and 50 kilometres inland. Urban and industrial areas with low pollution levels, and for several kilometres around large industries such as steelworks and smelters.
- C4 – High: Around sheltered bays up to 50 metres inland from the shoreline. Areas with rough seas and surf, extending from several hundred metres in and to about one kilometre inland. Up to 1.5 kilometres downwind of large industrial plants. Damp interior environments such as for swimming pools and factories.
- C5 – Very High: around 50 to 500 m from shorelines with surf or very rough seas. Some aggressive industrial areas.
- CX – Extreme: Offshore and on the beach front in regions of rough seas and surf beaches, and inland for several hundred metres, Interior areas with permanent condensation or high pollution.

FIRE RESISTANCE

The wall systems in this manual are suitable for the stated FRL when designed in accordance with the structural design considerations above. Wall system fire ratings apply in either direction unless noted otherwise.

Most CSR fire rated steel stud wall systems have been designed with fire protection that limits the temperature of the steel framing to a maximum of 450°C at the FRL stated. Therefore, the structural design of the framing need only provide for normal temperature conditions, and no additional consideration of fire rating is required.

The fire design of timber framing is based on the principle that a level of char is acceptable without compromising the performance of the wall. CSR has carried out testing to verify the char limit, and where it is exceeded, the allowable axial capacity of the stud is reduced to account for the loss of section. The systems are noted with an Axial Capacity Reduction (ACR) Group number in TABLE F1. In these systems, the designer must increase the applied vertical loads by the ACR to compensate for the axial capacity reduction.

The stated FRL for a system is dependent on the linings extending for the full extent of the wall. Where linings are omitted, for example at intersecting wall, floor and roof junctions, the rating is reduced. For walls rated from outside only it may be possible to use a system with the required rating independent of the interior lining, and this typically involves additional layers of fire grade linings. Contact CSR DesignLINK for more information. In the case of timber framed construction rated up to 60/60/60 FRL there are options available to replace the interior linings with extra timber members. Details are available from Forest and Wood Products Australia at woodsolutions.com.au. In any case it is recommended that a fire engineer be consulted to achieve an acceptable solution.

External walls in some building types are required by the NCC to be non-combustible. This may exclude the use of timber framing, some insulation products, and some accessories such as thermal breaks.

To protect structural steel beams and columns that are entirely within a wall, the FRL of the wall system must be at least equivalent to that required by the structural member. For example, a wall system with FRL 90/90/90 provides FRL 90/–/– for a steel column within the wall.

TABLE F1: AXIAL CAPACITY REDUCTION (%) DUE TO THE EFFECT OF TIMBER CHAR

Timber Size	Group 1	Group 2	Group 3
90 x 45	0%	0%	25%
90 x 35	0%	10%	30%
70 x 45	3%	25%	40%
70 x 35	8%	35%	45%

ACCEPTABLE VARIATIONS TO FIRE SYSTEMS

The Fire Resistance Level (FRL) of the systems detailed in this section will not be detrimentally affected by:

- The use of alternative claddings in systems with cavities formed on battens or top hats.
- Increasing the thickness of the wall.

- Increasing the cross-sectional dimensions of the framing elements.
- Decreasing the stud spacing.
- Decreasing the fixing centres of wall sheet materials.
- The inclusion of bulk cavity insulation materials such as Glasswool, Rockwool and Polyester.
- Additional layers of plasterboard or Cemintel fibre cement.
- Wall curved in plan with a radius of curvature no less than 3m.
- The attachment of light weight fixtures through to the framing.
- The addition of timber sheeting or fibre cement sheets.

COMBUSTIBILITY

Polyester insulation may NOT be selected where the system has non-combustible construction requirements.

In accordance with NCC2022 Clause C2D10 [NCC2019: C1.9], plasterboard and fibre cement sheet may be used wherever a non-combustible material is required by the Code.

THERMAL PERFORMANCE

Energy efficiency requirements for buildings are set out in the NCC as performance requirements dependent on geographical climate zones. To meet the requirements, it is recommended that CSR Bradford batts be installed in the wall framing, with insulation values chosen with consideration for energy conservation and occupant comfort. Insulation also improves the acoustic performance of the wall against noise transmission.

The level of insulation provided in a wall is described by its R-Value, the higher the R-Value the greater the insulation provided. The system values provided have been calculated based on a thermal transmission path through the wall cavity and does not allow for any thermal bridging This method is in accordance with the requirements of NCC Volume 2, Class 1 and 10 buildings and may not be applicable for other building classes. $R_{t(SUM)}$ and $R_{t(WIN)}$ represent the system total R-Value calculated for heat flow inwards and heat flow outwards respectively.

A thermal break may be required where Cemintel cladding is fixed directly to steel framing of walls enclosing habitable or usable spaces. For detailed information refer to the NCC. The thermal break is used to ensure that the thermal performance of the wall is comparable to that of a timber framed wall. For systems with timber battens 20mm or thicker, no additional thermal break is required.

NCC 2022 includes changes to energy efficiency requirements. These requirements will express the R-Value of the building fabric as the Total R-Value. The Total R-Value will consider the project specific external wall configuration and materials used, so that the impact of the thermal bridging on the added insulation is captured.

Additional to the effects of thermal bridging through the framing paths of the structure, the designer will need to allow for gaps in the bulk insulation layer in the wall system due to structural framing (i.e., studs, noggings, perimeter of wall openings) and services obstructing or limiting wall insulation coverage, slab edge insulation, wall cavity ventilation, and the effects of air leakage due to unsealed architraves, unsealed door jambs, unsealed gaps between windows and the masonry wall or services penetrating the inner leaf. These effects are to be compensated for as outlined in NCC Volume One Section J.

THERMAL BRIDGING

For projects conforming to BCA versions prior to the NCC 2022, thermal bridging consideration is not required in the Total R-Value calculation for all building classes, such as:

- Class 2 to Class 9 buildings for NCC2016 Amdt. 1 Volume 1 and NCC2016 Amdt. 1 Volume 2 (and earlier).
- Class1 and Class 10 only for NCC2019 (incl. Amdt. 1) Volume 2.

For product information, refer to section B of this guide. Note, the insulation also improves the acoustic performance of the wall against noise transmission. Refer to page F34 for further information on systems where total R-Values include consideration of the effects of thermal bridging.

THERMAL BREAK

For some situations, e.g. Class 2 buildings or Class 4 parts of a building, an envelope consisting of a metal framed wall with an external fibre-cement cladding and an internal lining directly fixed to the frame, NCC2022 J3D6 (1) [2019: J0.5] requires a thermal break to be installed between all points of contact between the external fibrecement cladding and the metal frame.

The thermal break shall have a minimum R-Value of R0.2. The Australian Building and Construction Board (ABCB), “Energy efficiency NCC Volume One Handbook”, June 2019, advises a thermal break is not needed if a secondary framing member, orientated perpendicular to the metal frame, is installed between the metal frame and lightweight external cladding.

ACOUSTIC PERFORMANCE

The performance of the as-built system may be affected by sound flanking, the effectiveness of workmanship and caulking, the presence and treatment of penetrations, and the inclusion of structural elements and bridging items. Refer to appropriate information on addressing these issues detailed in Section B and Section J in this guide.

General Notes:

- The acoustic performance of systems may be adversely affected by the use of studs with closer spacings than those specified, studs with a different BMT, timber studs of greater width, or by the use of additional linings fixed on battens.
- The acoustic performance of CSR wall systems is not adversely affected by the order of lining sheets that are fixed direct to framing or by the use of deeper stud sections.

CEMINTEL CLADDING

Lightweight cladding materials have been selected from the Cemintel range.

Weatherboard products

- Headland
- Scarborough
- Balmoral
- Aspect
- Plank

Sheet products

- Cladding Sheet
- Texture Base Sheet
- SimpleLine
- Edge
- Mosaic

Wood particle fibre cement panels

- Territory

ExpressWall products

- ExpressPanel
- Barestone
- Surround



Cemintel Mosaic



Cemintel Commercial ExpressWall



Cemintel Scarborough Weatherboard



Cemintel Edge Cladding

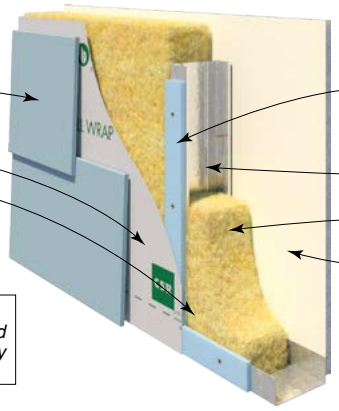


Cemintel Barestone

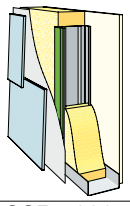
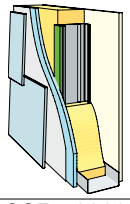
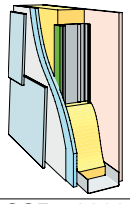
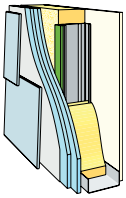
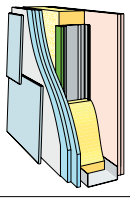


Cemintel Territory - Urban Grey

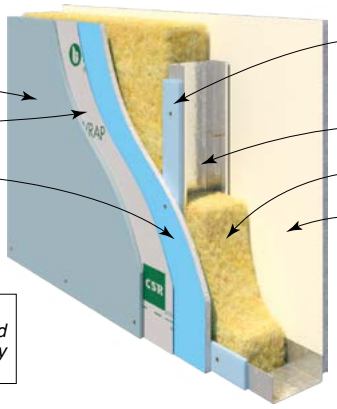
Cemintel Weatherboards – Direct Fixed – Steel Frame



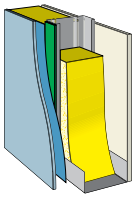
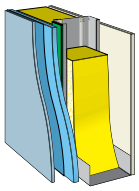
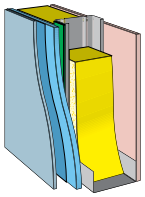
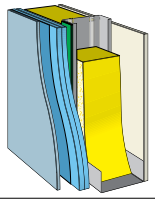
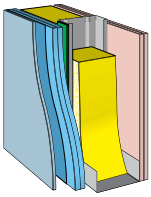
NOTE: Acoustic performance valid for studs with 0.75 BMT. The system thermal R-values provided have been calculated based on a thermal transmission path through the wall cavity and does not allow for the effects of thermal bridging.

SYSTEM SPECIFICATION			ACOUSTIC REPORT: PKA-A119				
FRL Report	**SYSTEM Nº**	**WALL LININGS**	**STUD DEPTH mm**	**70**		**90**	
			CAVITY INFILL (Refer to TABLE B6)	**R_w / R_w+C_{tr}**	**$R_{t(sum)}$ / $R_{t(win)}$**	**R_w / R_w+C_{tr}**	**$R_{t(sum)}$ / $R_{t(win)}$**
– /– / –	**CSR 5010** 	EXTERNAL WALL SIDE • Nil INTERNAL WALL SIDE • 1 x 10mm Gyprock Plus Plasterboard.	(b) 90 Gold Batts R2.0	–	–	41/32	2.1/2.3
			(c) 90 Gold Batts R2.5	–	–	42/33	2.6/2.8
			(d) 75 Gold Batts R2.0	40/31	2.1/2.2	41/32	2.3/2.5
			Wall Thickness Excluding Cladding mm	80		100	
60/60/60 (from outside only) FC 12946	**CSR 10087** 	EXTERNAL WALL SIDE • 1 x 16mm Gyprock Fyrchek MR Plasterboard INTERNAL WALL SIDE • 1 x 10mm Gyprock Plus Plasterboard.	(b) 90 Gold Batts R2.0	–	–	44/35	2.1/2.3
			(c) 90 Gold Batts R2.5	–	–	45/36	2.6/2.8
			(d) 75 Gold Batts R2.0	43/34	2.2/2.3	44/35	2.4/2.6
			Wall Thickness Excluding Cladding mm	96		116	
60/60/60 – /90/90 (from both sides) FC 12946	**CSR 10088** 	EXTERNAL WALL SIDE • 1 x 16mm Gyprock Fyrchek MR Plasterboard. INTERNAL WALL SIDE • 1 x 16mm Gyprock Fyrchek Plasterboard.	(b) 90 Gold Batts R2.0	–	–	48/40	2.1/2.3
			(c) 90 Gold Batts R2.5	–	–	49/41	2.6/2.8
			(d) 75 Gold Batts R2.0	47/39	2.2/2.4	48/40	2.4/2.6
			Wall Thickness Excluding Cladding mm	102		122	
90/90/90 (from outside only) FC 12946	**CSR 10089** 	EXTERNAL WALL SIDE • 2 x 13mm Gyprock Fyrchek MR Plasterboard. INTERNAL WALL SIDE • 1 x 10mm Gyprock Plus Plasterboard.	(b) 90 Gold Batts R2.0	–	–	47/38	2.1/2.3
			(c) 90 Gold Batts R2.5	–	–	48/39	2.6/2.8
			(d) 75 Gold Batts R2.0	46/37	2.2/2.4	47/38	2.4/2.6
			Wall Thickness Excluding Cladding mm	106		126	
90/90/90 – /120/120 (from both sides) FC 12946	**CSR 10090** 	EXTERNAL WALL SIDE • 2 x 13mm Gyprock Fyrchek MR Plasterboard. INTERNAL WALL SIDE • 2 x 13mm Gyprock Fyrchek Plasterboard.	(b) 90 Gold Batts R2.0	–	–	51/43	2.1/2.3
			(c) 90 Gold Batts R2.5	–	–	52/44	2.6/2.8
			(d) 75 Gold Batts R2.0	50/42	2.3/2.5	51/43	2.5/2.7
			Wall Thickness Excluding Cladding mm	122		142	

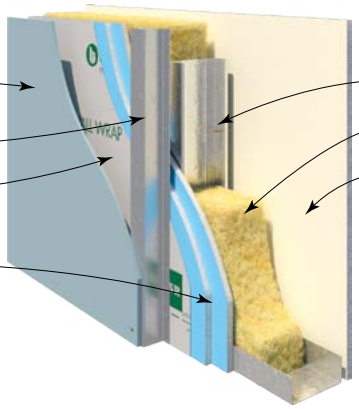
Cemintel Sheets – Direct Fixed – Steel Frame



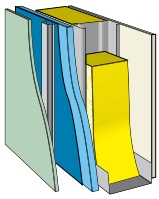
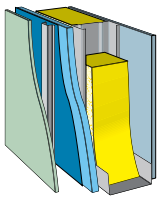
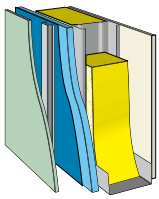
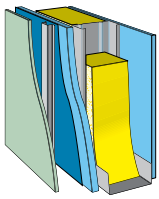
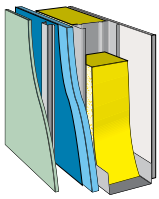
NOTE: Acoustic performance valid for studs with 0.75 BMT. The system thermal R-values provided have been calculated based on a thermal transmission path through the wall cavity and does not allow for the effects of thermal bridging.

SYSTEM SPECIFICATION			ACOUSTIC REPORT: PKA-A119				
			STUD DEPTH mm	**70**		**90**	
FRL Report	**SYSTEM Nº**	**WALL LININGS**	**CAVITY INFILL** (Refer to TABLE B6)	**Rw / Rw+Ctr**	**Rt(sum) / Rt(win)**	**Rw / Rw+Ctr**	**Rt(sum) / Rt(win)**
– /– / –	**CSR 5030** 	EXTERNAL WALL SIDE • Nil. INTERNAL WALL SIDE • 1 x 10mm Gyprock Plus Plasterboard.	(b) 90 Gold Batts R2.0	–	–	41/32	2.1/2.3
			(c) 90 Gold Batts R2.5	–	–	42/33	2.6/2.8
			(d) 75 Gold Batts R2.0	41/32	2.1/2.2	41/32	2.3/2.4
			Wall Thickness Excluding Cladding mm	80		100	
60/60/60 (from outside only) FC 12946	**CSR 10091** 	EXTERNAL WALL SIDE • 1 x 13mm Gyprock Fyrchek MR Plasterboard. INTERNAL WALL SIDE • 1 x 10mm Gyprock Plus Plasterboard.	(b) 90 Gold Batts R2.0	–	–	45/36	2.1/2.3
			(c) 90 Gold Batts R2.5	–	–	46/37	2.6/2.8
			(d) 75 Gold Batts R2.0	45/36	2.1/2.3	45/36	2.3/2.5
			Wall Thickness Excluding Cladding mm	93		113	
60/60/60 – /90/90 (from both sides) FC 12946	**CSR 10092** 	EXTERNAL WALL SIDE • 1 x 16mm Gyprock Fyrchek MR Plasterboard. INTERNAL WALL SIDE • 1 x 16mm Gyprock Fyrchek Plasterboard.	(b) 90 Gold Batts R2.0	–	–	50/42	2.1/2.3
			(c) 90 Gold Batts R2.5	–	–	51/43	2.6/2.8
			(d) 75 Gold Batts R2.0	50/42	2.2/2.3	50/42	2.4/2.6
			Wall Thickness Excluding Cladding mm	102		122	
90/90/90 (from outside only) FC 12946	**CSR 10093** 	EXTERNAL WALL SIDE • 2 x 13mm Gyprock Fyrchek MR Plasterboard. INTERNAL WALL SIDE • 1 x 10mm Gyprock Plus Plasterboard.	(b) 90 Gold Batts R2.0	–	–	49/40	2.1/2.3
			(c) 90 Gold Batts R2.5	–	–	50/41	2.6/2.8
			(d) 75 Gold Batts R2.0	49/40	2.2/2.4	49/40	2.4/2.6
			Wall Thickness Excluding Cladding mm	106		126	
90/90/90 – /120/120 (from both sides) FC 12946	**CSR 10094** 	EXTERNAL WALL SIDE • 2 x 13mm Gyprock Fyrchek MR Plasterboard. INTERNAL WALL SIDE • 2 x 13mm Gyprock Fyrchek Plasterboard.	(b) 90 Gold Batts R2.0	–	–	53/45	2.1/2.3
			(c) 90 Gold Batts R2.5	–	–	54/46	2.6/2.8
			(d) 75 Gold Batts R2.0	53/45	2.3/2.5	53/45	2.5/2.7
			Wall Thickness Excluding Cladding mm	122		142	

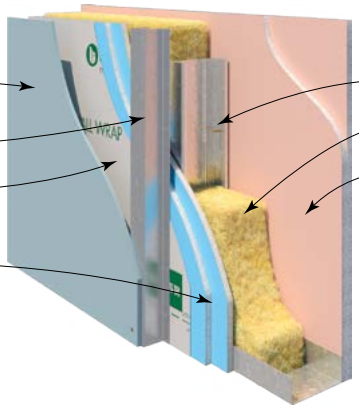
Cemintel Sheet or Weatherboards – With Cavity – Steel Frame



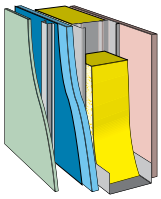
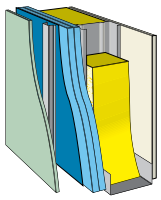
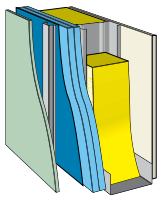
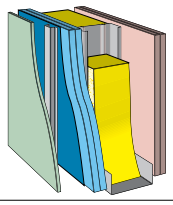
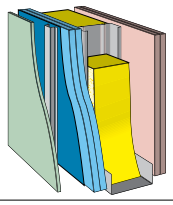
NOTE: Acoustic performance valid for studs with 0.75 BMT. The system thermal R-values provided have been calculated based on a thermal transmission path through the wall cavity and does not allow for the effects of thermal bridging.

SYSTEM SPECIFICATION			ACOUSTIC REPORT: PKA-A119				
			STUD DEPTH mm	**70**		**90**	
FRL Report	**SYSTEM Nº**	**WALL LININGS**	**CAVITY INFILL** (Refer to TABLE B6)	**R_w / R_w+C_{tr}**	**$R_{t(sum)}$ / $R_{t(win)}$**	**R_w / R_w+C_{tr}**	**$R_{t(sum)}$ / $R_{t(win)}$**
30/30/30 (from outside only) FC 12946	**CSR 5152** 	EXTERNAL WALL SIDE • 1 x 13mm Gyprock Fyrchek MR Plasterboard. INTERNAL WALL SIDE • 1 x 10mm Gyprock Plus Plasterboard.	(b) 90 Gold Batts R2.0	–	–	41/30	2.2/2.4
			(c) 90 Gold Batts R2.5	–	–	42/31	2.6/2.9
			(d) 75 Gold Batts R2.0	40/29	2.1/2.3	41/30	2.3/2.5
			Wall Thickness Excluding Cladding mm	112		132	
30/30/30 (from outside only) FC 12946	**CSR 5160** 	EXTERNAL WALL SIDE • 1 x 16mm Gyprock Fyrchek MR Plasterboard. INTERNAL WALL SIDE • 1 x 6mm CeminSeal Wallboard.	(b) 90 Gold Batts R2.0	–	–	45/35	2.2/2.4
			(c) 90 Gold Batts R2.5	–	–	46/36	2.6/2.9
			(d) 75 Gold Batts R2.0	44/34	2.1/2.2	45/35	2.3/2.5
			Wall Thickness Excluding Cladding mm	111		131	
60/60/60 (from outside only) FC 12946	**CSR 5161** 	EXTERNAL WALL SIDE • 1 x 16mm Gyprock Fyrchek MR Plasterboard. INTERNAL WALL SIDE • 1 x 10mm Gyprock Plus Plasterboard.	(b) 90 Gold Batts R2.0	–	–	42/31	2.2/2.4
			(c) 90 Gold Batts R2.5	–	–	43/32	2.6/2.9
			(d) 75 Gold Batts R2.0	41/30	2.1/2.3	42/31	2.3/2.5
			Wall Thickness Excluding Cladding mm	115		135	
60/60/60 (from outside only) FC 12946	**CSR 5163** 	EXTERNAL WALL SIDE • 1 x 16mm Gyprock Fyrchek MR Plasterboard. INTERNAL WALL SIDE • 1 x 10mm Gyprock Aquachek Plasterboard.	(b) 90 Gold Batts R2.0	–	–	43/32	2.2/2.4
			(c) 90 Gold Batts R2.5	–	–	44/33	2.6/2.9
			(d) 75 Gold Batts R2.0	42/31	2.1/2.3	43/32	2.3/2.5
			Wall Thickness Excluding Cladding mm	115		135	
60/60/60 (from outside only) FC 12946	**CSR 10155** 	EXTERNAL WALL SIDE • 1 x 16mm Gyprock Fyrchek MR Plasterboard. INTERNAL WALL SIDE • 1 x 10mm Gyprock HD Plasterboard.	(a) 90 Gold Batts R2.0	–	–	44/34	2.2/2.4
			(b) 90 Gold Batts R2.5	–	–	45/35	2.6/2.9
			(c) 75 Gold Batts R2.0	43/32	2.1/2.3	44/34	2.3/2.5
			Wall Thickness Excluding Cladding mm	115		135	

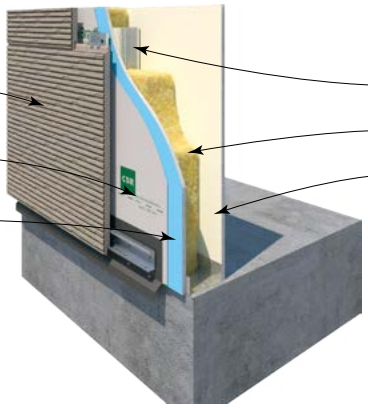
Cemintel Sheet or Weatherboards – With Cavity – Steel Frame



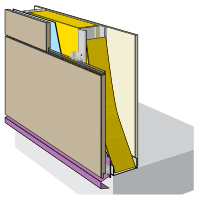
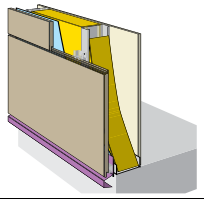
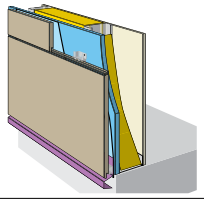
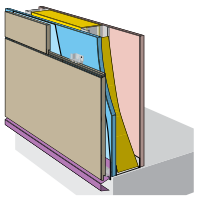
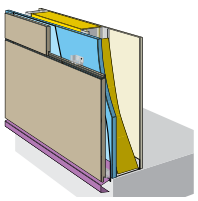
NOTE: Acoustic performance valid for studs with 0.75 BMT. The system thermal R-values provided have been calculated based on a thermal transmission path through the wall cavity and does not allow for the effects of thermal bridging.
‡ Unique height restrictions apply. Refer to The Red Book 3, height selection tables.

SYSTEM SPECIFICATION			ACOUSTIC REPORT: PKA-A119				
			STUD DEPTH mm	70		90	
FRL Report	SYSTEM Nº	WALL LININGS	CAVITY INFILL (Refer to TABLE B6)	R_w / R_w+C_{tr}	$R_{t(sum)}$ / $R_{t(win)}$	R_w / R_w+C_{tr}	$R_{t(sum)}$ / $R_{t(win)}$
60/60/60 – /90/90 (from both sides) FC 12946	**CSR 5168** 	EXTERNAL WALL SIDE • 1 x 16mm Gyprock Fyrchek MR Plasterboard. INTERNAL WALL SIDE • 1 x 16mm Gyprock Fyrchek Plasterboard.	(b) 90 Gold Batts R2.0	–	–	47/37	2.2/2.4
			(c) 90 Gold Batts R2.5	–	–	48/38	2.6/2.9
			(d) 75 Gold Batts R2.0	46/36	2.2/2.3	46/37	2.4/2.6
			Wall Thickness Excluding Cladding mm	121		141	
90/90/90 (from outside only) FC 12946	**CSR 5170** 	EXTERNAL WALL SIDE • 2 x 13mm Gyprock Fyrchek MR Plasterboard. INTERNAL WALL SIDE • 1 x 10mm Gyprock Plus Plasterboard.	(b) 90 Gold Batts R2.0	–	–	45/34	2.2/2.4
			(c) 90 Gold Batts R2.5	–	–	46/35	2.6/2.9
			(d) 75 Gold Batts R2.0	44/33	2.2/2.3	45/34	2.4/2.6
			Wall Thickness Excluding Cladding mm	125		145	
120/120/120 (from outside only) FC 12946	**CSR 5172** 	EXTERNAL WALL SIDE • 2 x 16mm Gyprock Fyrchek MR Plasterboard. INTERNAL WALL SIDE • 1 x 10mm Gyprock Plus Plasterboard.	(b) 90 Gold Batts R2.0	–	–	46/35	2.2/2.4
			(c) 90 Gold Batts R2.5	–	–	47/36	2.6/2.9
			(d) 75 Gold Batts R2.0	45/34	2.2/2.4	46/35	2.4/2.6
			Wall Thickness Excluding Cladding mm	131		151	
90/90/90 – /120/120 (from both sides) FC 12946	**CSR 5173** 	EXTERNAL WALL SIDE • 2 x 13mm Gyprock Fyrchek MR Plasterboard. INTERNAL WALL SIDE • 2 x 13mm Gyprock Fyrchek Plasterboard.	(b) 90 Gold Batts R2.0	–	–	50/41	2.2/2.4
			(c) 90 Gold Batts R2.5	–	–	51/41	2.6/2.9
			(d) 75 Gold Batts R2.0	49/40	2.3/2.4	50/41	2.5/2.7
			Wall Thickness Excluding Cladding mm	141		161	
120/120/120 – /180/180‡ (from both sides) FC 12946	**CSR 5174** 	EXTERNAL WALL SIDE • 2 x 16mm Gyprock Fyrchek MR Plasterboard. INTERNAL WALL SIDE • 2 x 16mm Gyprock Fyrchek Plasterboard.	(b) 90 Gold Batts R2.0	–	–	52/43	2.2/2.4
			(c) 90 Gold Batts R2.5	–	–	53/44	2.6/2.9
			(d) 75 Gold Batts R2.0	51/42	2.3/2.5	52/43	2.6/2.7
			Wall Thickness Excluding Cladding mm	153		173	

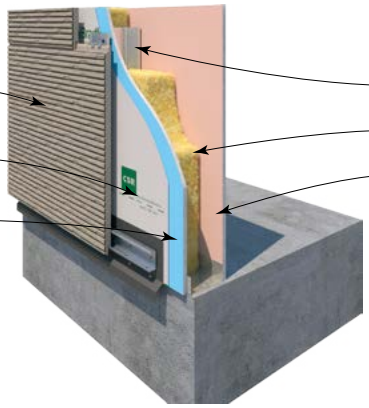
Cemintel Territory – With Cavity – Steel Frame



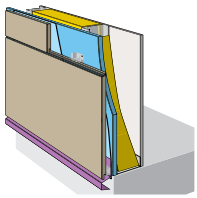
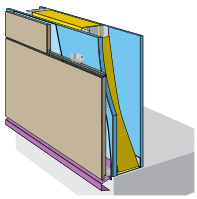
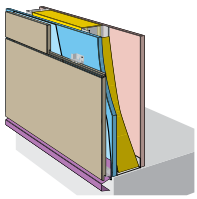
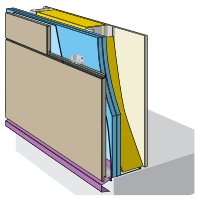
NOTE: Acoustic performance valid for studs with 0.75 BMT. The system thermal R-values provided have been calculated based on a thermal transmission path through the wall cavity and does not allow for the effects of thermal bridging.

SYSTEM SPECIFICATION			ACOUSTIC REPORT: PKA-A119				
			STUD DEPTH mm	**70**		**90**	
FRL Report	**SYSTEM Nº**	**WALL LININGS**	**CAVITY INFILL** (Refer to TABLE B6)	**R_w / R_w+C_{tr}**	**$R_{t(sum)}$ / $R_{t(win)}$**	**R_w / R_w+C_{tr}**	**$R_{t(sum)}$ / $R_{t(win)}$**
– /– / –	**CSR 5302** 	EXTERNAL WALL SIDE • Nil INTERNAL WALL SIDE • 1 x 10mm Gyprock Plus Plasterboard.	(b) 90 Gold Batts R2.0	–	–	46/37	2.1/2.3
			(c) 90 Gold Batts R2.5	–	–	47/38	2.6/2.8
			(d) 75 Gold Batts R2.0	44/35	2.0/2.2	46/37	2.2/2.4
			Wall Thickness mm	111		131	
– /– / –	**CSR 5303** 	EXTERNAL WALL SIDE • Nil INTERNAL WALL SIDE • 1 x 13mm Standard Plasterboard.	(b) 90 Gold Batts R2.0	–	–	46/37	2.1/2.3
			(c) 90 Gold Batts R2.5	–	–	47/38	2.6/2.8
			(d) 75 Gold Batts R2.0	47/38	2.1/2.2	48/39	2.3/2.4
			Wall Thickness mm	113		134	
30/30/30 (from outside only) FC 12946	**CSR 5305** 	EXTERNAL WALL SIDE • 1 x 13mm Gyprock Fyrchek MR Plasterboard. INTERNAL WALL SIDE • 1 x 10mm Gyprock Plus Plasterboard.	(b) 90 Gold Batts R2.0	–	–	44/33	2.1/2.3
			(c) 90 Gold Batts R2.5	–	–	45/34	2.6/2.8
			(d) 75 Gold Batts R2.0	43/32	2.1/2.3	44/33	2.3/2.5
			Wall Thickness mm	124		144	
30/30/30 – /60/60 (from both sides) FC 12946	**CSR 5308** 	EXTERNAL WALL SIDE • 1 x 13mm Gyprock Fyrchek MR Plasterboard. INTERNAL WALL SIDE • 1 x 13mm Gyprock Fyrchek Plasterboard.	(b) 90 Gold Batts R2.0	–	–	47/36	2.1/2.3
			(c) 90 Gold Batts R2.5	–	–	48/37	2.6/2.8
			(d) 75 Gold Batts R2.0	46/35	2.1/2.3	47/36	2.3/2.5
			Wall Thickness mm	127		147	
60/60/60 (from outside only) FC 12946	**CSR 5315** 	EXTERNAL WALL SIDE • 1 x 16mm Gyprock Fyrchek MR Plasterboard. INTERNAL WALL SIDE • 1 x 10mm Gyprock Plus Plasterboard.	(b) 90 Gold Batts R2.0	–	–	45/34	2.1/2.3
			(c) 90 Gold Batts R2.5	–	–	46/35	2.6/2.8
			(d) 75 Gold Batts R2.0	44/33	2.1/2.3	45/34	2.3/2.5
			Wall Thickness mm	127		147	

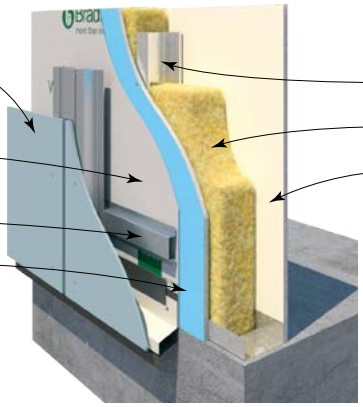
SYSTEM SPECIFICATIONS Cemintel Territory – With Cavity – Steel Frame



NOTE: Acoustic performance valid for studs with 0.75 BMT. The system thermal R-values provided have been calculated based on a thermal transmission path through the wall cavity and does not allow for the effects of thermal bridging.

SYSTEM SPECIFICATION			ACOUSTIC REPORT: PKA-A119				
			STUD DEPTH mm	**70**		**90**	
FRL Report	**SYSTEM Nº**	**WALL LININGS**	**CAVITY INFILL** (Refer to TABLE B6)	**R_w / R_w+C_{tr}**	**$R_{t(sum)}$ / $R_{t(win)}$**	**R_w / R_w+C_{tr}**	**$R_{t(sum)}$ / $R_{t(win)}$**
60/60/60 (from outside only) FC 12946	**CSR 10156** 	EXTERNAL WALL SIDE • 1 x 16mm Gyprock Fyrchek MR Plasterboard. INTERNAL WALL SIDE • 1 x 10mm Gyprock HD Plasterboard.	(a) 90 Gold Batts R2.0	–	–	47/37	2.1/2.3
			(b) 90 Gold Batts R2.5	–	–	48/38	2.6/2.8
			(c) 75 Gold Batts R2.0	46/36	2.1/2.3	47/37	2.3/2.5
			Wall Thickness mm	127		147	
60/60/60 (from outside only) FC 12946	**CSR 5320** 	EXTERNAL WALL SIDE • 1 x 16mm Gyprock Fyrchek MR Plasterboard. INTERNAL WALL SIDE • 1 x 10mm Gyprock Aquachek Plasterboard.	(b) 90 Gold Batts R2.0	–	–	46/35	2.1/2.3
			(c) 90 Gold Batts R2.5	–	–	47/36	2.6/2.8
			(d) 75 Gold Batts R2.0	45/34	2.1/2.3	46/35	2.3/2.5
			Wall Thickness mm	127		147	
60/60/60 – /90/90 (from both sides) FC 12946	**CSR 5321** 	EXTERNAL WALL SIDE • 1 x 16mm Gyprock Fyrchek MR Plasterboard. INTERNAL WALL SIDE • 1 x 16mm Gyprock Fyrchek Plasterboard.	(b) 90 Gold Batts R2.0	–	–	50/40	2.1/2.3
			(c) 90 Gold Batts R2.5	–	–	51/41	2.6/2.8
			(d) 75 Gold Batts R2.0	49/39	2.2/2.3	50/40	2.4/2.6
			Wall Thickness mm	133		153	
90/90/90 (from outside only) FC 12946	**CSR 5324** 	EXTERNAL WALL SIDE • 2 x 13mm Gyprock Fyrchek MR Plasterboard. INTERNAL WALL SIDE • 1 x 10mm Gyprock Plus Plasterboard.	(b) 90 Gold Batts R2.0	–	–	47/37	2.1/2.3
			(c) 90 Gold Batts R2.5	–	–	48/38	2.6/2.8
			(d) 75 Gold Batts R2.0	46/36	2.2/2.3	47/37	2.4/2.6
			Wall Thickness mm	137		157	

SYSTEM SPECIFICATIONS — Cemintel ExpressWall – With Cavity – Steel Frame



Cemintel ExpressPanel, Barestone or Surround panel on ventilated cavity cladding support system.

Wall wrap or 6mm Cemintel Rigid Air Barrier.

15mm top hat.

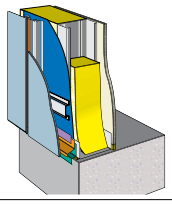
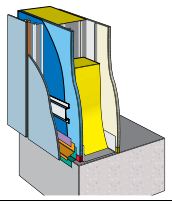
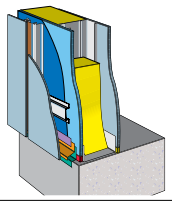
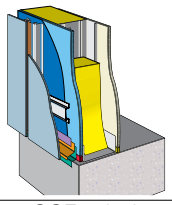
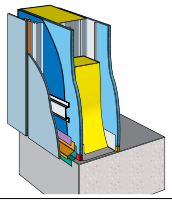
Lining material as per system table to external side.

Steel studs at 600mm maximum centres.

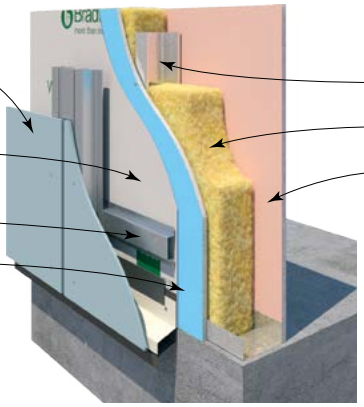
Cavity insulation as per system table.

Lining material as per system table to internal side.

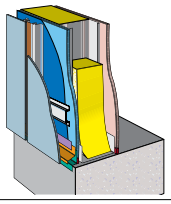
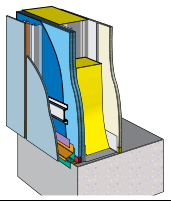
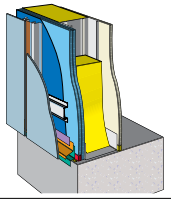
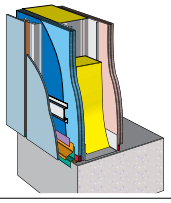
NOTE: Acoustic performance valid for studs with 0.75 BMT. The system thermal R-values provided have been calculated based on a thermal transmission path through the wall cavity and does not allow for the effects of thermal bridging.

SYSTEM SPECIFICATION			ACOUSTIC REPORT: PKA-A119				
			STUD DEPTH mm	**70**		**90**	
FRL Report	**SYSTEM Nº**	**WALL LININGS**	**CAVITY INFILL** (Refer to TABLE B6)	**R_w / R_w+C_{tr}**	**$R_{t(sum)}$ / $R_{t(win)}$**	**R_w / R_w+C_{tr}**	**$R_{t(sum)}$ / $R_{t(win)}$**
– /– / –	**CSR 5327** 	EXTERNAL WALL SIDE • Nil INTERNAL WALL SIDE • 1 x 13mm Gyprock Standard Plasterboard.	(b) 90 Gold Batts R2.0	–	–	49/40	2.1/2.3
			(c) 90 Gold Batts R2.5	–	–	50/41	2.6/2.8
			(d) 75 Gold Batts R2.0	48/39	2.1/2.2	49/40	2.3/2.4
			Wall Thickness Excluding Cladding mm	133		153	
30/30/30 (from outside only) FC 12946	**CSR 5332** 	EXTERNAL WALL SIDE • 1 x 13mm Gyprock Fyrchek MR Plasterboard. INTERNAL WALL SIDE • 1 x 10mm Gyprock Plus Plasterboard.	(b) 90 Gold Batts R2.0	–	–	43/32	2.2/2.4
			(c) 90 Gold Batts R2.5	–	–	44/33	2.6/2.9
			(d) 75 Gold Batts R2.0	42/31	2.1/2.3	43/32	2.3/2.5
			Wall Thickness Excluding Cladding mm	143		163	
30/30/30 (from outside only) FC 12946	**CSR 5340** 	EXTERNAL WALL SIDE • 1 x 16mm Gyprock Fyrchek MR Plasterboard. INTERNAL WALL SIDE • 1 x 6mm CeminSeal Wallboard.	(b) 90 Gold Batts R2.0	–	–	48/38	2.2/2.4
			(c) 90 Gold Batts R2.5	–	–	49/39	2.6/2.9
			(d) 75 Gold Batts R2.0	47/37	2.1/2.2	48/38	2.3/2.5
			Wall Thickness Excluding Cladding mm	142		162	
60/60/60 (from outside only) FC 12946	**CSR 5342** 	EXTERNAL WALL SIDE • 1 x 16mm Gyprock Fyrchek MR Plasterboard. INTERNAL WALL SIDE • 1 x 10mm Gyprock Plus Plasterboard.	(b) 90 Gold Batts R2.0	–	–	44/33	2.2/2.4
			(c) 90 Gold Batts R2.5	–	–	45/34	2.6/2.9
			(d) 75 Gold Batts R2.0	43/32	2.1/2.3	44/33	2.3/2.5
			Wall Thickness Excluding Cladding mm	146		166	
60/60/60 (from outside only) FC 12946	**CSR 5343** 	EXTERNAL WALL SIDE • 1 x 16mm Gyprock Fyrchek MR Plasterboard. INTERNAL WALL SIDE • 1 x 10mm Gyprock Aquachek Plasterboard.	(b) 90 Gold Batts R2.0	–	–	46/35	2.2/2.4
			(c) 90 Gold Batts R2.5	–	–	47/36	2.6/2.9
			(d) 75 Gold Batts R2.0	45/34	2.1/2.3	46/35	2.3/2.5
			Wall Thickness Excluding Cladding mm	146		166	

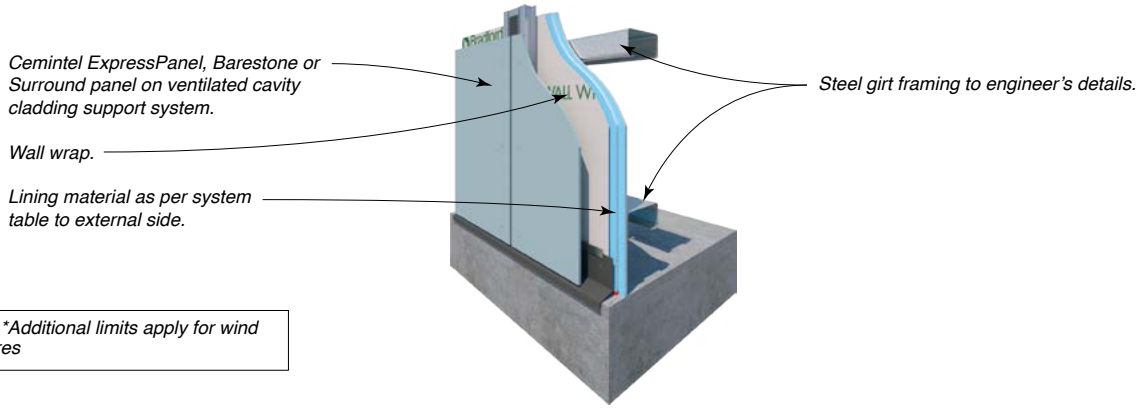
Cemintel ExpressWall – With Cavity – Steel Frame



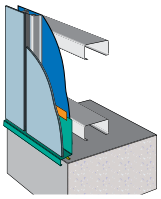
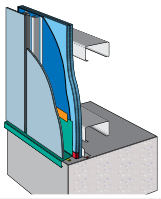
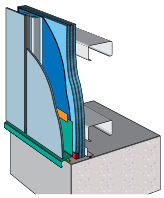
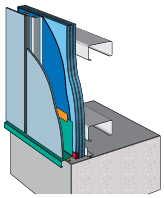
NOTE: Acoustic performance valid for studs with 0.75 BMT. The system thermal R-values provided have been calculated based on a thermal transmission path through the wall cavity and does not allow for the effects of thermal bridging.
‡ Unique height restrictions apply. Refer to The Red Book 3, height selection tables.

SYSTEM SPECIFICATION			ACOUSTIC REPORT: PKA-A119				
			STUD DEPTH mm	**70**		**90**	
FRL Report	**SYSTEM Nº**	**WALL LININGS**	**CAVITY INFILL** (Refer to TABLE B6)	**R_w / R_w+C_{tr}**	**$R_{t(sum)}$ / $R_{t(win)}$**	**R_w / R_w+C_{tr}**	**$R_{t(sum)}$ / $R_{t(win)}$**
60/60/60 – /90/90 (from both sides) FC 12946	**CSR 5345** 	EXTERNAL WALL SIDE • 1 x 16mm Gyprock Fyrchek MR Plasterboard. INTERNAL WALL SIDE • 1 x 16mm Gyprock Fyrchek Plasterboard.	(b) 90 Gold Batts R2.0	–	–	50/40	2.2/2.4
			(c) 90 Gold Batts R2.5	–	–	51/41	2.6/2.9
			(d) 75 Gold Batts R2.0	49/39	2.2/2.3	50/40	2.4/2.6
			Wall Thickness Excluding Cladding mm	152		172	
90/90/90 (from outside only) FC 12946	**CSR 5346** 	EXTERNAL WALL SIDE • 2 x 13mm Gyprock Fyrchek MR Plasterboard. INTERNAL WALL SIDE • 1 x 10mm Gyprock Plus Plasterboard.	(b) 90 Gold Batts R2.0	–	–	48/37	2.2/2.4
			(c) 90 Gold Batts R2.5	–	–	49/38	2.6/2.9
			(d) 75 Gold Batts R2.0	47/36	2.2/2.3	48/37	2.4/2.6
			Wall Thickness Excluding Cladding mm	156		176	
120/120/120 (from outside only) FC 12946	**CSR 5347** 	EXTERNAL WALL SIDE • 2 x 16mm Gyprock Fyrchek MR Plasterboard. INTERNAL WALL SIDE • 1 x 10mm Gyprock Plus Plasterboard.	(b) 90 Gold Batts R2.0	–	–	49/38	2.2/2.4
			(c) 90 Gold Batts R2.5	–	–	50/39	2.6/2.9
			(d) 75 Gold Batts R2.0	48/37	2.2/2.4	49/38	2.4/2.6
			Wall Thickness Excluding Cladding mm	162		182	
120/120/120 – /180/180‡ (from both sides) FC 12946	**CSR 5349** 	EXTERNAL WALL SIDE • 2 x 16mm Gyprock Fyrchek MR Plasterboard. INTERNAL WALL SIDE • 2 x 16mm Gyprock Fyrchek Plasterboard.	(b) 90 Gold Batts R2.0	–	–	55/46	2.2/2.4
			(c) 90 Gold Batts R2.5	–	–	56/47	2.6/2.9
			(d) 75 Gold Batts R2.0	54/45	2.3/2.5	55/46	2.6/2.7
			Wall Thickness Excluding Cladding mm	184		204	

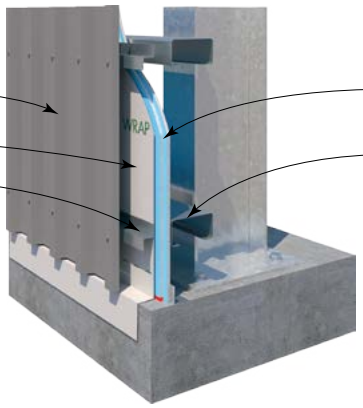
SYSTEM SPECIFICATIONS — Cemintel ExpressWall – With Cavity – Steel Girt Frame



*NOTE: *Additional limits apply for wind pressures*

SYSTEM SPECIFICATION			ACOUSTIC REPORT: PKA-A119	
FRL Report	**SYSTEM Nº**	**WALL LININGS**	***Maximum Girt Spacing (mm)**	**R_w / R_w+C_{tr}**
– /– / –	**CSR 5360** 	EXTERNAL WALL SIDE • Nil	–	33/30
60/60/60 (from outside only) FC 12946	**CSR 5365** 	EXTERNAL WALL SIDE • 2 x 16mm Gyprock Fyrchek MR Plasterboard.	600	38/28
90/90/90 (from outside only) FC 12946	**CSR 5368** 	EXTERNAL WALL SIDE • 3 x 13mm Gyprock Fyrchek MR Plasterboard.	900	41/31
120/120/120 (from outside only) FC 12946	**CSR 5371** 	EXTERNAL WALL SIDE • 3 x 16mm Gyprock Fyrchek MR Plasterboard.	1200	42/32

Metal Cladding – With Cavity – Steel Girt Frame



External metal cladding.

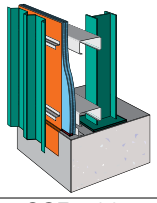
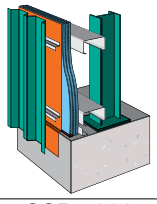
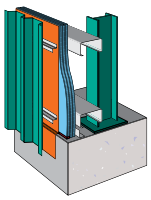
Wall wrap.

Galvanised steel battens (20mm depth min.) fixed through plasterboard to steel girts.

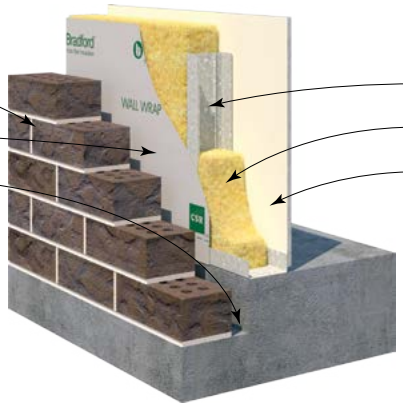
Lining material as per system table to external side.

Steel girts to engineer's detail.

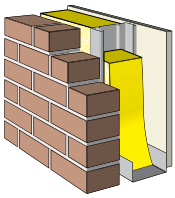
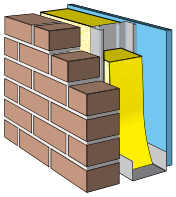
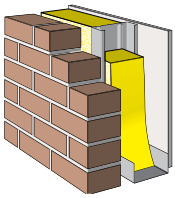
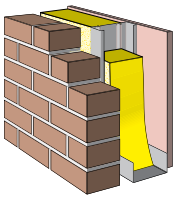
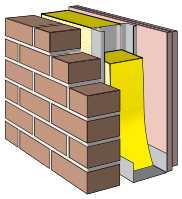
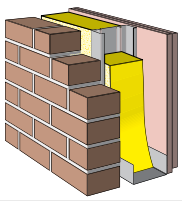
*NOTE: *Additional limits apply for wind pressures*

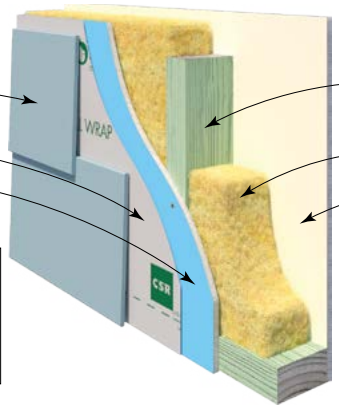
SYSTEM SPECIFICATION			ACOUSTIC REPORT: PKA-A119	
FRL Report	**SYSTEM Nº**	**WALL LININGS**	***MAXIMUM GIRT SPACING (mm)**	**R_w / R_w+C_{tr}**
60/60/60 (from outside only) FC 12946	**CSR 5380** 	EXTERNAL WALL SIDE • 2 x 16mm Gyprock Fyrchek MR Plasterboard.	600	33/25
90/90/90 (from outside only) FC 12946	**CSR 5385** 	EXTERNAL WALL SIDE • 3 x 13mm Gyprock Fyrchek MR Plasterboard.	900	35/27
120/120/120 (from outside only) FC 12946	**CSR 5390** 	EXTERNAL WALL SIDE • 3 x 16mm Gyprock Fyrchek MR Plasterboard.	1200	36/28

Masonry Veneer – With Cavity – Steel Frame

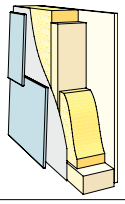
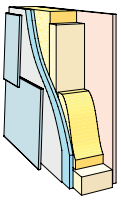
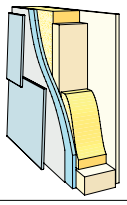


NOTE: To achieve stated acoustic performance masonry must be a minimum of 90mm thick and 170kg/m².
The system thermal R-values provided have been calculated based on a thermal transmission path through the wall cavity and does not allow for the effects of thermal bridging.

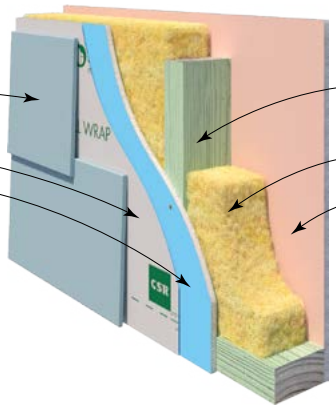
SYSTEM SPECIFICATION			ACOUSTIC REPORT: PKA-A120				
			STUD DEPTH mm	70		90	
FRL Report	**SYSTEM Nº**	**WALL LININGS**	**CAVITY INFILL** (Refer to TABLE B6)	**Rw / Rw+Ctr**	**Rt(sum) / Rt(win)**	**Rw / Rw+Ctr**	**Rt(sum) / Rt(win)**
60/60/60 (from outside only) refer to Masonry Manufacturer	**CSR 5403** 	EXTERNAL WALL SIDE • Masonry veneer wall with FRL 60/60/60. INTERNAL WALL SIDE • 1 x 10mm Gyprock Plus Plasterboard.	(b) 90 Gold Batts R2.0	–	–	59/**51**	2.3/2.6
			(c) 90 Gold Batts R2.5	–	–	59/**51**	2.8/3.1
			(d) 75 Gold Batts R2.0	57/48	2.3/2.5	58/**50**	2.5/2.7
			Wall Thickness Excluding Masonry & Cavity mm	80		100	
60/60/60 (from outside only) refer to Masonry Manufacturer	**CSR 5405** 	EXTERNAL WALL SIDE • Masonry veneer wall with FRL 60/60/60. INTERNAL WALL SIDE • 1 x 10mm Gyprock Aquachek Plasterboard	(b) 90 Gold Batts R2.0	–	–	60/**52**	2.3/2.6
			(c) 90 Gold Batts R2.5	–	–	60/**52**	2.8/3.1
			(d) 75 Gold Batts R2.0	58/49	2.3/2.5	59/**51**	2.5/2.7
			Wall Thickness Excluding Masonry & Cavity mm	80		100	
60/60/60 (from outside only) refer to Masonry Manufacturer	**CSR 10157** 	EXTERNAL WALL SIDE • Masonry veneer wall with FRL 60/60/60. INTERNAL WALL SIDE • 1 x 10mm Gyprock HD Plasterboard.	(a) 90 Gold Batts R2.0	–	–	60/**52**	2.3/2.6
			(b) 90 Gold Batts R2.5	–	–	60/**52**	2.8/3.1
			(c) 75 Gold Batts R2.0	58/49	2.3/2.5	59/**51**	2.5/2.7
			Wall Thickness Excluding Masonry & Cavity mm	80		100	
60/60/60 (from both sides) FC 12946 and refer to Masonry Manufacturer	**CSR 5410** 	EXTERNAL WALL SIDE • Masonry veneer wall with FRL 60/60/60. INTERNAL WALL SIDE • 1 x 16mm Gyprock Fyrchek Plasterboard.	(b) 90 Gold Batts R2.0	–	–	62/**55**	2.3/2.6
			(c) 90 Gold Batts R2.5	–	–	62/**55**	2.8/3.1
			(d) 75 Gold Batts R2.0	60/**52**	2.4/2.5	61/**54**	2.6/2.8
			Wall Thickness Excluding Masonry & Cavity mm	86		106	
90/90/90 (from both sides) FC 12946 and refer to Masonry Manufacturer	**CSR 5415** 	EXTERNAL WALL SIDE • Masonry veneer wall with FRL 90/90/90. INTERNAL WALL SIDE • 2 x 13mm Gyprock Fyrchek Plasterboard.	(b) 90 Gold Batts R2.0	–	–	63/**56**	2.3/2.6
			(c) 90 Gold Batts R2.5	–	–	63/**56**	2.8/3.1
			(d) 75 Gold Batts R2.0	61/**53**	2.4/2.6	62/**55**	2.6/2.8
			Wall Thickness Excluding Masonry & Cavity mm	96		116	
120/120/120 (from both sides) FC 12946 and refer to Masonry Manufacturer	**CSR 5420** 	EXTERNAL WALL SIDE • Masonry veneer wall with FRL 120/120/120. INTERNAL WALL SIDE • 2 x 16mm Gyprock Fyrchek Plasterboard.	(b) 90 Gold Batts R2.0	–	–	64/**57**	2.3/2.6
			(c) 90 Gold Batts R2.5	–	–	64/**57**	2.8/3.1
			(d) 75 Gold Batts R2.0	62/**54**	2.5/2.6	63/**56**	2.7/2.9
			Wall Thickness Excluding Masonry & Cavity mm	102		122	



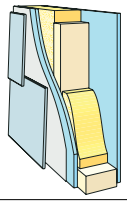
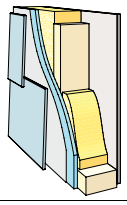
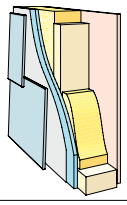
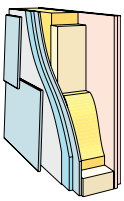
NOTE: Acoustic performance valid for 35mm wide studs at 600mm centres.
The system thermal R-values provided have been calculated based on a thermal transmission path through the wall cavity and does not allow for the effects of thermal bridging.
**ACR = Axial Capacity Reduction.*

SYSTEM SPECIFICATION			ACOUSTIC REPORT: PKA-A119				
			STUD DEPTH mm	**70**		**90**	
FRL Report	**SYSTEM Nº**	**WALL LININGS**	**CAVITY INFILL** (Refer to TABLE B6)	**R_w / R_w+C_{tr}**	**$R_{t(sum)}$ / $R_{t(win)}$**	**R_w / R_w+C_{tr}**	**$R_{t(sum)}$ / $R_{t(win)}$**
– /– / –	**CSR 5502** 	EXTERNAL WALL SIDE • Nil INTERNAL WALL SIDE • 1 x 10mm Gyprock Plus Plasterboard.	(b) 90 Gold Batts R2.0	–	–	38/29	2.1/2.3
			(c) 90 Gold Batts R2.5	–	–	39/30	2.6/2.8
			(d) 75 Gold Batts R2.0	37/28	2.1/2.2	38/29	2.3/2.5
			Wall Thickness Excluding Cladding mm	80		100	
30/30/30 (from both sides) FC 12969	**CSR 5505** 	EXTERNAL WALL SIDE • 1 x 13mm Gyprock Fyrchek MR Plasterboard. INTERNAL WALL SIDE • 1 x 13mm Gyprock Fyrchek Plasterboard.	(b) 90 Gold Batts R2.0	–	–	44/35	2.2/2.4
			(c) 90 Gold Batts R2.5	–	–	45/36	2.7/2.9
			(d) 75 Gold Batts R2.0	43/34	2.2/2.3	44/35	2.4/2.6
			Wall Thickness Excluding Cladding mm	96		116	
60/60/60* (from outside only) *ACR Group 2 FC 12969	**CSR 5510** 	EXTERNAL WALL SIDE • 1 x 16mm Gyprock Fyrchek MR Plasterboard. INTERNAL WALL SIDE • 1 x 10mm Gyprock Plus Plasterboard.	(b) 90 Gold Batts R2.0	–	–	41/32	2.2/2.4
			(c) 90 Gold Batts R2.5	–	–	42/33	2.7/2.9
			(d) 75 Gold Batts R2.0	40/31	2.2/2.3	41/32	2.4/2.6
			Wall Thickness Excluding Cladding mm	96		116	

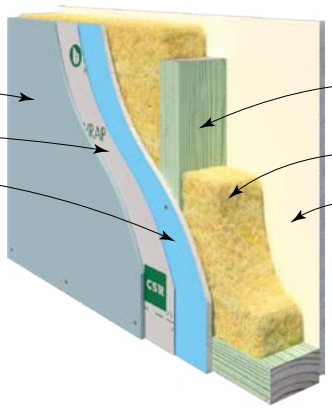
Cemintel Weatherboards – Direct Fixed – Timber Frame



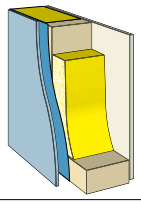
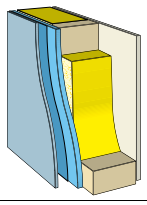
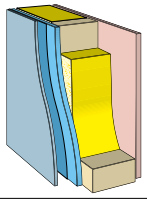
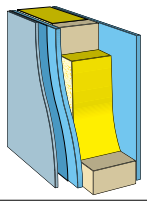
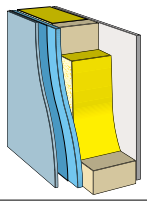
NOTE: Acoustic performance valid for 35mm wide studs at 600mm centres.
The system thermal R-values provided have been calculated based on a thermal transmission path through the wall cavity and does not allow for the effects of thermal bridging.
**ACR = Axial Capacity Reduction.*

SYSTEM SPECIFICATION			ACOUSTIC REPORT: PKA-A119				
			STUD DEPTH mm	**70**		**90**	
FRL Report	**SYSTEM Nº**	**WALL LININGS**	**CAVITY INFILL** (Refer to TABLE B6)	**R_w / R_w+C_{tr}**	**$R_{t(sum)}$ / $R_{t(win)}$**	**R_w / R_w+C_{tr}**	**$R_{t(sum)}$ / $R_{t(win)}$**
60/60/60* (from outside only) *ACR Group 2 FC 12969	**CSR 5512** 	EXTERNAL WALL SIDE • 1 x 16mm Gyprock Fyrchek MR Plasterboard. INTERNAL WALL SIDE • 1 x 10mm Gyprock Aquachek Plasterboard.	(b) 90 Gold Batts R2.0	–	–	42/33	2.2/2.4
			(c) 90 Gold Batts R2.5	–	–	43/34	2.7/2.9
			(d) 75 Gold Batts R2.0	41/32	2.2/2.3	42/33	2.4/2.6
			Wall Thickness Excluding Cladding mm	96		116	
60/60/60* (from outside only) *ACR Group 2 FC 12969	**CSR 10158** 	EXTERNAL WALL SIDE • 1 x 16mm Gyprock Fyrchek MR Plasterboard. INTERNAL WALL SIDE • 1 x 10mm Gyprock HD Plasterboard.	(a) 90 Gold Batts R2.0	–	–	43/34	2.2/2.4
			(b) 90 Gold Batts R2.5	–	–	44/35	2.7/2.9
			(c) 75 Gold Batts R2.0	42/33	2.2/2.3	43/34	2.4/2.6
			Wall Thickness Excluding Cladding mm	96		116	
60/60/60 (from both sides) FC 12969	**CSR 5520** 	EXTERNAL WALL SIDE • 1 x 16mm Gyprock Fyrchek MR Plasterboard. INTERNAL WALL SIDE • 1 x 16mm Gyprock Fyrchek Plasterboard.	(b) 90 Gold Batts R2.0	–	–	45/37	2.2/2.4
			(c) 90 Gold Batts R2.5	–	–	46/38	2.7/2.9
			(d) 75 Gold Batts R2.0	44/36	2.2/2.4	45/37	2.4/2.6
			Wall Thickness Excluding Cladding mm	102		122	
60/60/60 90/90/90* (from both sides) *ACR Group 3 FC 12969	**CSR 5527** 	EXTERNAL WALL SIDE • 1 x 6mm CeminSeal Wallboard (against frame) • 1 x 16mm Gyprock Fyrchek MR Plasterboard. INTERNAL WALL SIDE • 2 x 13mm Gyprock Fyrchek Plasterboard.	(b) 90 Gold Batts R2.0	–	–	49/41	2.2/2.4
			(c) 90 Gold Batts R2.5	–	–	50/42	2.7/2.9
			(d) 75 Gold Batts R2.0	48/40	2.3/2.4	49/41	2.5/2.7
			Wall Thickness Excluding Cladding mm	118		138	

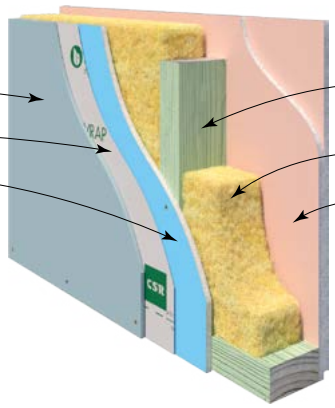
SYSTEM SPECIFICATIONS Cemintel Sheet – Direct Fixed – Timber Frame



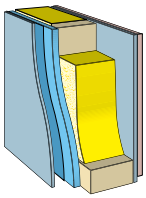
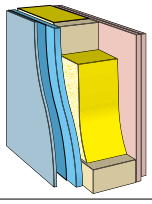
NOTE: Acoustic performance valid for 35mm wide studs at 600mm centres.
The system thermal R-values provided have been calculated based on a thermal transmission path through the wall cavity and does not allow for the effects of thermal bridging.
**ACR = Axial Capacity Reduction.*

SYSTEM SPECIFICATION			ACOUSTIC REPORT: PKA-A119				
			STUD DEPTH mm	70		90	
FRL Report	SYSTEM Nº	WALL LININGS	CAVITY INFILL (Refer to TABLE B6)	R_w / R_w+C_{tr}	$R_{t(sum)}$ / $R_{t(win)}$	R_w / R_w+C_{tr}	$R_{t(sum)}$ / $R_{t(win)}$
– /– / –	**CSR 5603** 	EXTERNAL WALL SIDE • Nil INTERNAL WALL SIDE • 1 x 10mm Gyprock Plus Plasterboard.	(b) 90 Gold Batts R2.0	–	–	38/29	2.1/2.3
			(c) 90 Gold Batts R2.5	–	–	39/30	2.6/2.8
			(d) 75 Gold Batts R2.0	37/28	2.1/2.2	38/29	2.3/2.4
			Wall Thickness Excluding Cladding mm	80		100	
60/60/60* (from outside only) *ACR Group 1 FC 12969	**CSR 5605** 	EXTERNAL WALL SIDE • 1 x 13mm Gyprock Fyrchek MR Plasterboard. INTERNAL WALL SIDE • 1 x 10mm Gyprock Plus Plasterboard.	(b) 90 Gold Batts R2.0	–	–	42/33	2.2/2.4
			(c) 90 Gold Batts R2.5	–	–	43/34	2.7/2.9
			(d) 75 Gold Batts R2.0	41/32	2.1/2.3	42/33	2.3/2.5
			Wall Thickness Excluding Cladding mm	93		113	
60/60/60* (from both sides) *ACR Group 1 FC 12969	**CSR 5608** 	EXTERNAL WALL SIDE • 1 x 13mm Gyprock Fyrchek MR Plasterboard. INTERNAL WALL SIDE • 1 x 16mm Gyprock Fyrchek Plasterboard.	(b) 90 Gold Batts R2.0	–	–	45/36	2.2/2.4
			(c) 90 Gold Batts R2.5	–	–	46/37	2.7/2.9
			(d) 75 Gold Batts R2.0	43/34	2.2/2.3	44/35	2.4/2.6
			Wall Thickness Excluding Cladding mm	99		119	
60/60/60 (from outside only) FC 12969	**CSR 5613** 	EXTERNAL WALL SIDE • 1 x 16mm Gyprock Fyrchek MR Plasterboard. INTERNAL WALL SIDE • 1 x 10mm Gyprock Aquachek Plasterboard.	(b) 90 Gold Batts R2.0	–	–	43/34	2.2/2.4
			(c) 90 Gold Batts R2.5	–	–	44/35	2.7/2.9
			(d) 75 Gold Batts R2.0	42/33	2.1/2.3	43/34	2.3/2.5
			Wall Thickness Excluding Cladding mm	96		116	
60/60/60 (from outside only) FC 12969	**CSR 10159** 	EXTERNAL WALL SIDE • 1 x 16mm Gyprock Fyrchek MR Plasterboard. INTERNAL WALL SIDE • 1 x 10mm Gyprock HD Plasterboard.	(a) 90 Gold Batts R2.0	–	–	44/35	2.2/2.4
			(b) 90 Gold Batts R2.5	–	–	45/36	2.7/2.9
			(c) 75 Gold Batts R2.0	43/34	2.1/2.3	44/35	2.3/2.5
			Wall Thickness Excluding Cladding mm	96		116	

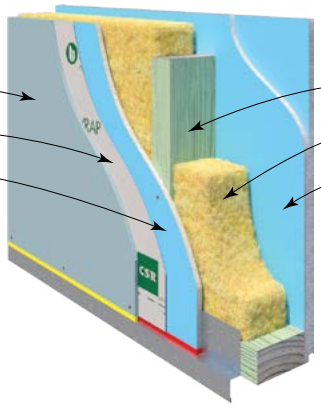
Cemintel Sheet – Direct Fixed – Timber Frame



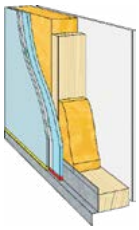
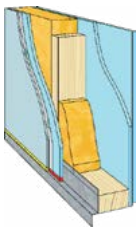
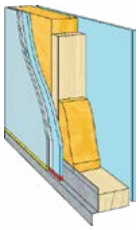
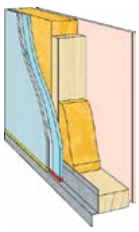
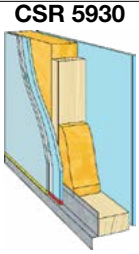
NOTE: Acoustic performance valid for 35mm wide studs at 600mm centres.
The system thermal R-values provided have been calculated based on a thermal transmission path through the wall cavity and does not allow for the effects of thermal bridging.
**ACR = Axial Capacity Reduction.*

SYSTEM SPECIFICATION			ACOUSTIC REPORT: PKA-A119				
			STUD DEPTH mm	**70**		**90**	
FRL Report	**SYSTEM Nº**	**WALL LININGS**	**CAVITY INFILL** (Refer to TABLE B6)	**R_w / R_w+C_{tr}**	**$R_{t(sum)}$ / $R_{t(win)}$**	**R_w / R_w+C_{tr}**	**$R_{t(sum)}$ / $R_{t(win)}$**
60/60/60 90/90/90* (from both sides) *ACR Group 3 FC 12969	**CSR 5618** 	EXTERNAL WALL SIDE • 1 x 16mm Gyprock Fyrchek MR Plasterboard. INTERNAL WALL SIDE • 1 x 6mm CeminSeal Wallboard (against frame) • 1 x 16mm Gyprock Fyrchek Plasterboard.	(b) 90 Gold Batts R2.0	–	–	49/41	2.2/2.4
			(c) 90 Gold Batts R2.5	–	–	50/42	2.7/2.9
			(d) 75 Gold Batts R2.0	48/40	2.2/2.4	49/41	2.4/2.6
			Wall Thickness Excluding Cladding mm	108		128	
60/60/60 90/90/90* (from both sides) *ACR Group 3 FC 12969	**CSR 5623** 	EXTERNAL WALL SIDE • 1 x 16mm Gyprock Fyrchek MR Plasterboard. INTERNAL WALL SIDE • 2 x 13mm Gyprock Fyrchek Plasterboard.	(b) 90 Gold Batts R2.0	–	–	49/41	2.2/2.4
			(c) 90 Gold Batts R2.5	–	–	50/42	2.7/2.9
			(d) 75 Gold Batts R2.0	48/40	2.2/2.4	49/41	2.4/2.6
			Wall Thickness Excluding Cladding mm	112		132	

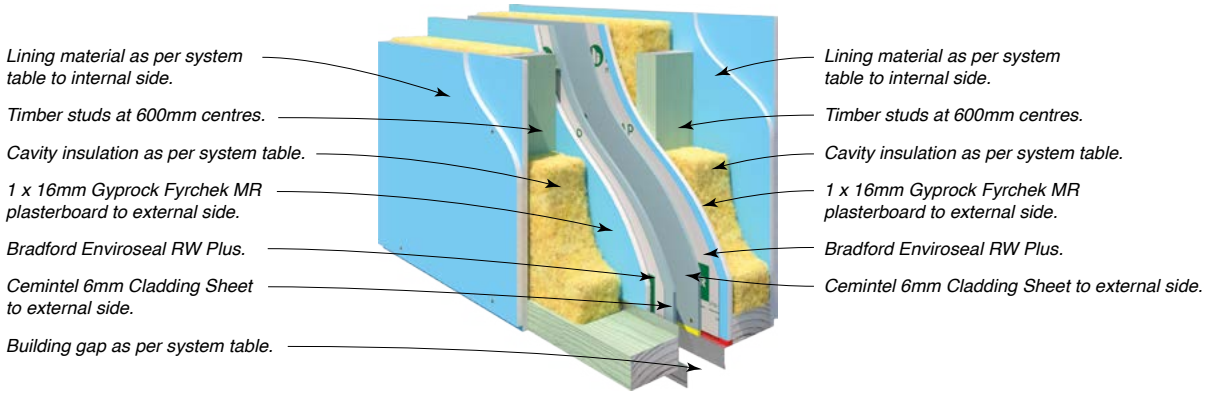
Gyprock Boundary Wall System – Timber Frame – Single Wall

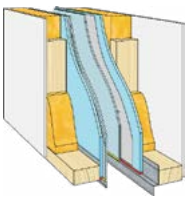
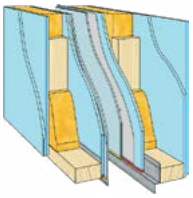
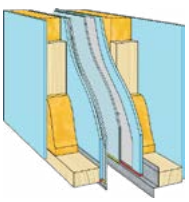
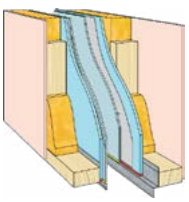
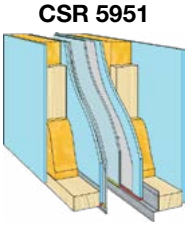


NOTE: The system thermal R-values provided have been calculated based on a thermal transmission path through the wall cavity and does not allow for the effects of thermal bridging.

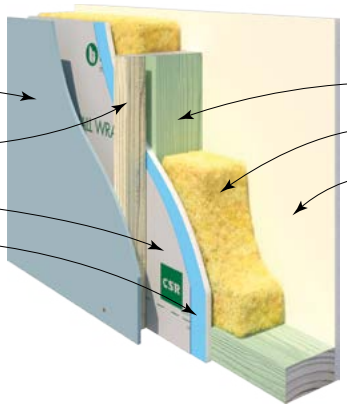
SYSTEM SPECIFICATION			ACOUSTIC REPORT: PKA-100CSR		
			STUD DEPTH mm	**90**	
FRL Report	**SYSTEM Nº**	**WALL LININGS**	**CAVITY INFILL** (Refer to TABLE B6)	**R_w / R_w+C_{tr}**	**$R_{t(sum)}$ / $R_{t(win)}$**
60/60/60 (from outside) FC 12969	**CSR 10160** 	EXTERNAL WALL SIDE • 1 x 16mm Gyprock Fyrchek MR Plasterboard (against studs) • 1 x 6mm Cemintel Cladding Sheet. INTERNAL WALL SIDE • 1 x 10mm Gyprock HD Plasterboard.	(a) 90 Gold Batts 2.0	49/41	2.2
			(b) 90 Gold Batts 2.5	50/43	2.7
			Wall Thickness mm	122	
60/60/60 (from outside) FC 12969	**CSR 5915** 	EXTERNAL WALL SIDE • 1 x 16mm Gyprock Fyrchek MR Plasterboard (against studs) • 1 x 6mm Cemintel Cladding Sheet. INTERNAL WALL SIDE • 2 x 10mm Gyprock Aquachek Plasterboard.	(a) 90 Gold Batts 2.0	53/45	2.3
			(b) 90 Gold Batts 2.5	54/47	2.7
			Wall Thickness mm	132	
60/60/60 (from outside) FC 12969	**CSR 5920** 	EXTERNAL WALL SIDE • 1 x 16mm Gyprock Fyrchek MR Plasterboard (against studs) • 1 x 6mm Cemintel Cladding Sheet. INTERNAL WALL SIDE • 1 x 13mm Gyprock Aquachek Plasterboard.	(a) 90 Gold Batts 2.0	50/42	2.2
			(b) 90 Gold Batts 2.5	51/44	2.7
			Wall Thickness mm	125	
60/60/60 (from outside) FC 12969	**CSR 5925** 	EXTERNAL WALL SIDE • 1 x 16mm Gyprock Fyrchek MR Plasterboard (against studs) • 1 x 6mm Cemintel Cladding Sheet. INTERNAL WALL SIDE • 1 x 13mm Gyprock Fyrchek Plasterboard.	(a) 90 Gold Batts 2.0	50/43	2.2
			(b) 90 Gold Batts 2.5	51/45	2.7
			Wall Thickness mm	125	
60/60/60 (from outside) FC 12969	**CSR 5930** 	EXTERNAL WALL SIDE • 1 x 16mm Gyprock Fyrchek MR Plasterboard (against studs) • 1 x 6mm Cemintel Cladding Sheet. INTERNAL WALL SIDE • 1 x 13mm Gyprock Fyrchek MR Plasterboard.	(a) 90 Gold Batts 2.0	50/43	2.2
			(b) 90 Gold Batts 2.5	51/45	2.7
			Wall Thickness mm	125	

Gyprock Boundary Wall System – Timber Frame - Double Wall

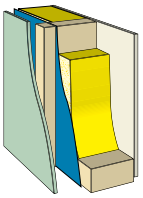
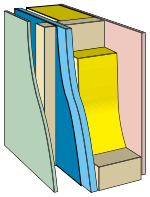
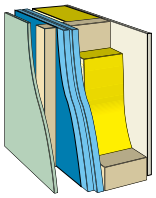
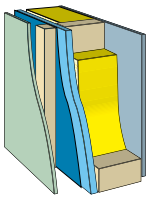
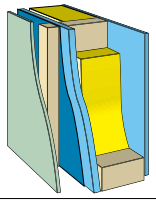
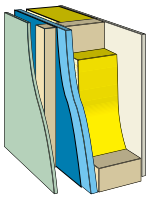


SYSTEM SPECIFICATION			ACOUSTIC REPORT: PKA-100CSR Discontinuous Construction				
			STUD DEPTH mm	90			
FRL Report	SYSTEM Nº	WALL LININGS	BUILDING GAP mm	20	40	60	80
			CAVITY INFILL (Refer to TABLE B6)	R_w / R_w+C_{tr}		R_w / R_w+C_{tr}	
60/60/60 (from centre inwards) FAR 4840	**CSR 10161** 	EXTERNAL WALL SIDE • 1 x 16mm Gyprock Fyrchek MR Plasterboard (against studs) • 1 x 6mm Cemintel Cladding Sheet. INTERNAL WALL SIDE • 1 x 10mm Gyprock HD Plasterboard.	(a) 90 Gold Batts 2.0	63/40	65/43	66/44	67/45
			(b) 90 Gold Batts 2.5	67/45	69/48	70/49	71/**50**
			Wall Thickness mm	264	284	304	324
60/60/60 (from centre inwards) FAR 4840	**CSR 5940** 	EXTERNAL WALL SIDE • 1 x 16mm Gyprock Fyrchek MR Plasterboard (against studs) • 1 x 6mm Cemintel Cladding Sheet. INTERNAL WALL SIDE • 2 x 10mm Gyprock Aquachek Plasterboard.	(a) 90 Gold Batts 2.0	69/**52**	69/**53**	69/**53**	69/**53**
			(b) 90 Gold Batts 2.5	72/**57**	73/**58**	73/**58**	73/**58**
			Wall Thickness mm	284	304	324	344
60/60/60 (from centre inwards) FAR 4840	**CSR 5945** 	EXTERNAL WALL SIDE • 1 x 16mm Gyprock Fyrchek MR Plasterboard (against studs) • 1 x 6mm Cemintel Cladding Sheet. INTERNAL WALL SIDE • 1 x 13mm Gyprock Aquachek Plasterboard.	(a) 90 Gold Batts 2.0	64/43	65/44	67/48	68/49
			(b) 90 Gold Batts 2.5	68/48	69/49	71/**53**	71/**54**
			Wall Thickness mm	270	290	310	330
60/60/60 (from centre inwards) FAR 4840	**CSR 5950** 	EXTERNAL WALL SIDE • 1 x 16mm Gyprock Fyrchek MR Plasterboard (against studs) • 1 x 6mm Cemintel Cladding Sheet. INTERNAL WALL SIDE • 1 x 13mm Gyprock Fyrchek Plasterboard.	(a) 90 Gold Batts 2.0	66/49	67/**51**	68/**52**	69/**53**
			(b) 90 Gold Batts 2.5	70/**54**	71/**56**	72/**57**	73/**58**
			Wall Thickness mm	270	290	310	330
60/60/60 (from centre inwards) FAR 4840	**CSR 5951** 	EXTERNAL WALL SIDE • 1 x 16mm Gyprock Fyrchek MR Plasterboard (against studs) • 1 x 6mm Cemintel Cladding Sheet. INTERNAL WALL SIDE • 1 x 13mm Gyprock Fyrchek MR Plasterboard.	(a) 90 Gold Batts 2.0	66/49	67/**51**	68/**52**	69/**53**
			(b) 90 Gold Batts 2.5	70/**54**	71/**56**	72/**57**	73/**58**
			Wall Thickness mm	270	290	310	330

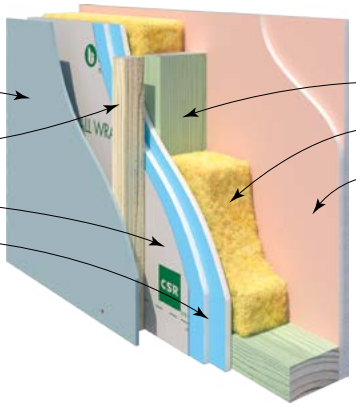
Cemintel Sheet or Weatherboard – With Cavity – Timber Frame



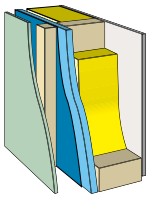
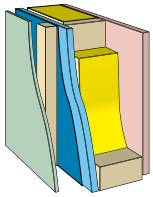
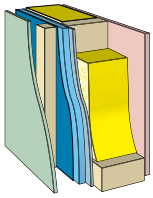
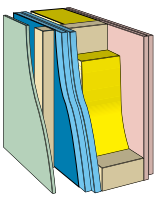
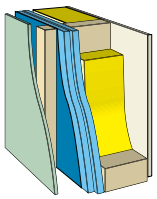
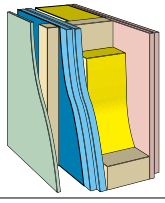
NOTE: Acoustic performance valid for 35mm wide studs at 600mm centres.
The system thermal R-values provided have been calculated based on a thermal transmission path through the wall cavity and does not allow for the effects of thermal bridging.
**ACR = Axial Capacity Reduction.*

SYSTEM SPECIFICATION			ACOUSTIC REPORT: PKA-A119				
			STUD DEPTH mm	70		90	
FRL Report	**SYSTEM Nº**	**WALL LININGS**	**CAVITY INFILL** (Refer to TABLE B6)	**R_w / R_w+C_{tr}**	**$R_{t(sum)}$ / $R_{t(win)}$**	**R_w / R_w+C_{tr}**	**$R_{t(sum)}$ / $R_{t(win)}$**
– / – / – FC 12969	**CSR 10280** 	EXTERNAL WALL SIDE • Nill. INTERNAL WALL SIDE • 1 x 10mm Gyprock HD Plasterboard.	(b) 90 Gold Batts R2.0	–	–	39/31	2.2/2.4
			(c) 90 Gold Batts R2.5	–	–	40/32	2.6/2.9
			(d) 75 Gold Batts R2.0	38/30	2.1/2.3	39/31	2.3/2.5
			Min. Wall Thickness Excluding Cladding mm	102		122	
30/30/30 (from both sides) FC 12969	**CSR 5703** 	EXTERNAL WALL SIDE • 1 x 13mm Gyprock Fyrchek MR Plasterboard. INTERNAL WALL SIDE • 1 x 13mm Gyprock Fyrchek Plasterboard.	(b) 90 Gold Batts R2.0	–	–	42/32	2.2/2.4
			(c) 90 Gold Batts R2.5	–	–	43/33	2.6/2.9
			(d) 75 Gold Batts R2.0	41/31	2.1/2.3	42/32	2.3/2.5
			Min. Wall Thickness Excluding Cladding mm	115		135	
90/90/90 (from outside only) FC 12969	**CSR 5706** 	EXTERNAL WALL SIDE • 2 x 13mm Gyprock Fyrchek MR Plasterboard. INTERNAL WALL SIDE • 1 x 10mm Gyprock Plus Plasterboard.	(b) 90 Gold Batts R2.0	–	–	42/31	2.2/2.4
			(c) 90 Gold Batts R2.5	–	–	43/32	2.6/2.9
			(d) 75 Gold Batts R2.0	41/30	2.2/2.3	42/31	2.4/2.6
			Min. Wall Thickness Excluding Cladding mm	125		145	
30/30/30 (from outside only) FC 12969	**CSR 5709** 	EXTERNAL WALL SIDE • 1 x 16mm Gyprock Fyrchek MR Plasterboard. INTERNAL WALL SIDE • 1 x 6mm CeminSeal Wallboard.	(b) 90 Gold Batts R2.0	–	–	42/32	2.2/2.4
			(c) 90 Gold Batts R2.5	–	–	43/33	2.6/2.9
			(d) 75 Gold Batts R2.0	41/31	2.1/2.2	42/32	2.3/2.5
			Min. Wall Thickness Excluding Cladding mm	111		131	
60/60/60* (from outside only) *ACR Group 2 FC 12969	**CSR 5710** 	EXTERNAL WALL SIDE • 1 x 16mm Gyprock Fyrchek MR Plasterboard. INTERNAL WALL SIDE • 1 x 10mm Gyprock Aquachek Plasterboard.	(b) 90 Gold Batts R2.0	–	–	41/30	2.2/2.4
			(c) 90 Gold Batts R2.5	–	–	42/31	2.6/2.9
			(d) 75 Gold Batts R2.0	40/29	2.1/2.3	41/30	2.3/2.5
			Min. Wall Thickness Excluding Cladding mm	115		135	
60/60/60* (from outside only) *ACR Group 2 FC 12969	**CSR 5711** 	EXTERNAL WALL SIDE • 1 x 16mm Gyprock Fyrchek MR Plasterboard. INTERNAL WALL SIDE • 1 x 10mm Gyprock Plus Plasterboard.	(b) 90 Gold Batts R2.0	–	–	40/29	2.2/2.4
			(c) 90 Gold Batts R2.5	–	–	41/30	2.6/2.9
			(d) 75 Gold Batts R2.0	39/28	2.1/2.3	40/29	2.3/2.5
			Min. Wall Thickness Excluding Cladding mm	115		135	

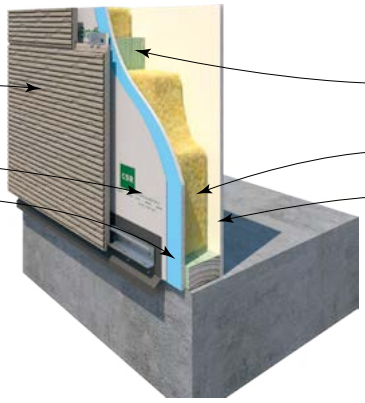
Cemintel Sheet or Weatherboard – With Cavity – Timber Frame



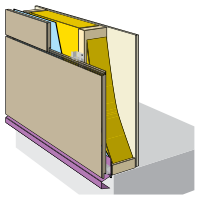
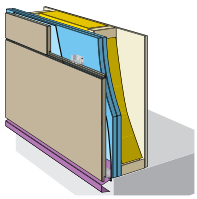
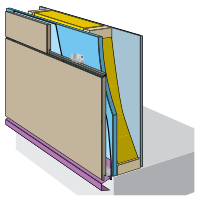
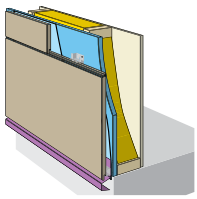
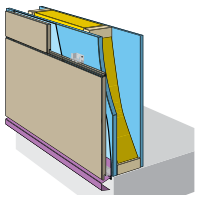
NOTE: Acoustic performance valid for 35mm wide studs at 600mm centres.
The system thermal R-values provided have been calculated based on a thermal transmission path through the wall cavity and does not allow for the effects of thermal bridging.
**ACR = Axial Capacity Reduction.*

SYSTEM SPECIFICATION			ACOUSTIC REPORT: PKA-A119				
			STUD DEPTH mm	70		90	
FRL Report	**SYSTEM Nº**	**WALL LININGS**	**CAVITY INFILL** (Refer to TABLE B6)	**R_w / R_w+C_{tr}**	**$R_{t(sum)}$ / $R_{t(win)}$**	**R_w / R_w+C_{tr}**	**$R_{t(sum)}$ / $R_{t(win)}$**
60/60/60* (from outside only) *ACR Group 2 FC 12969	**CSR 10162** 	EXTERNAL WALL SIDE • 1 x 16mm Gyprock Fyrchek MR Plasterboard. INTERNAL WALL SIDE • 1 x 10mm Gyprock HD Plasterboard.	(a) 90 Gold Batts R2.0	–	–	41/31	2.2/2.4
			(b) 90 Gold Batts R2.5	–	–	42/32	2.6/2.9
			(c) 75 Gold Batts R2.0	40/30	2.1/2.3	41/31	2.3/2.5
			Min. Wall Thickness Excluding Cladding mm	115		135	
60/60/60 (from both sides) FC 12969	**CSR 5716** 	EXTERNAL WALL SIDE • 1 x 16mm Gyprock Fyrchek MR Plasterboard. INTERNAL WALL SIDE • 1 x 16mm Gyprock Fyrchek Plasterboard.	(b) 90 Gold Batts R2.0	–	–	43/33	2.2/2.4
			(c) 90 Gold Batts R2.5	–	–	44/34	2.6/2.9
			(d) 75 Gold Batts R2.0	42/32	2.2/2.3	43/33	2.4/2.6
			Min. Wall Thickness Excluding Cladding mm	121		141	
60/60/60 (from both sides) **90/90/90*** (from outside only) *ACR Group 3 FC 12969	**CSR 5718** 	EXTERNAL WALL SIDE • 1 x 6mm CeminSeal Wallboard, (against studs). • 1 x 16mm Gyprock Fyrchek MR Plasterboard. INTERNAL WALL SIDE • 1 x 16mm Gyprock Fyrchek Plasterboard.	(b) 90 Gold Batts R2.0	–	–	45/35	2.2/2.4
			(c) 90 Gold Batts R2.5	–	–	46/36	2.6/2.9
			(d) 75 Gold Batts R2.0	44/34	2.2/2.3	45/35	2.4/2.6
			Min. Wall Thickness Excluding Cladding mm	127		147	
90/90/90 (from both sides) FC 12969	**CSR 5721** 	EXTERNAL WALL SIDE • 2 x 13mm Gyprock Fyrchek MR Plasterboard. INTERNAL WALL SIDE • 2 x 13mm Gyprock Fyrchek Plasterboard.	(b) 90 Gold Batts R2.0	–	–	47/38	2.2/2.4
			(c) 90 Gold Batts R2.5	–	–	48/39	2.6/2.9
			(d) 75 Gold Batts R2.0	46/37	2.3/2.4	47/38	2.5/2.7
			Min. Wall Thickness Excluding Cladding mm	141		161	
120/120/120 (from outside only) FC 12969	**CSR 5722** 	EXTERNAL WALL SIDE • 2 x 16mm Gyprock Fyrchek MR Plasterboard. INTERNAL WALL SIDE • 1 x 10mm Gyprock Plus Plasterboard.	(b) 90 Gold Batts R2.0	–	–	43/32	2.2/2.4
			(c) 90 Gold Batts R2.5	–	–	44/33	2.6/2.9
			(d) 75 Gold Batts R2.0	42/31	2.2/2.4	43/32	2.4/2.6
			Min. Wall Thickness Excluding Cladding mm	131		151	
120/120/120 (from both sides) FC 12969	**CSR 5724** 	EXTERNAL WALL SIDE • 2 x 16mm Gyprock Fyrchek MR Plasterboard. INTERNAL WALL SIDE • 2 x 16mm Gyprock Fyrchek Plasterboard.	(b) 90 Gold Batts R2.0	–	–	48/39	2.2/2.4
			(c) 90 Gold Batts R2.5	–	–	49/40	2.6/2.9
			(d) 75 Gold Batts R2.0	47/38	2.3/2.5	48/39	2.6/27
			Min. Wall Thickness Excluding Cladding mm	153		173	

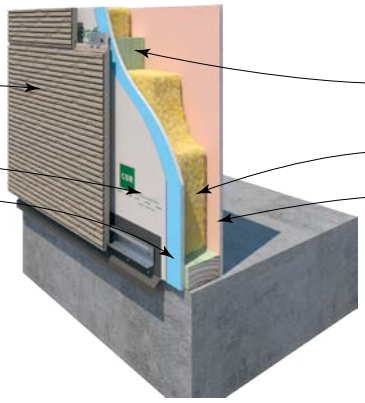
Cemintel Territory – With Cavity – Timber Frame



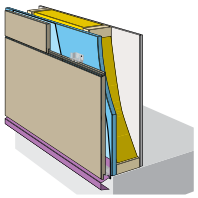
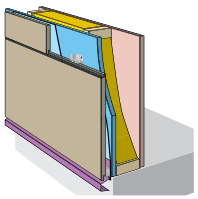
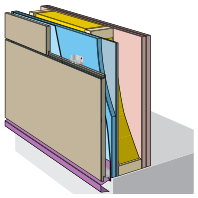
NOTE: Acoustic performance valid for 35mm wide studs at 600mm centres.
The system thermal R-values provided have been calculated based on a thermal transmission path through the wall cavity and does not allow for the effects of thermal bridging.
**ACR = Axial Capacity Reduction.*

SYSTEM SPECIFICATION			ACOUSTIC REPORT: PKA-A119				
			STUD DEPTH mm	70		90	
FRL Report	**SYSTEM Nº**	**WALL LININGS**	**CAVITY INFILL** (Refer to TABLE B6)	**R_w / R_w+C_{tr}**	**$R_{t(sum)}$ / $R_{t(win)}$**	**R_w / R_w+C_{tr}**	**$R_{t(sum)}$ / $R_{t(win)}$**
– /– / –	**CSR 5828** 	EXTERNAL WALL SIDE • Nil INTERNAL WALL SIDE • 1 x 10mm Gyprock Plus Plasterboard.	(b) 90 Gold Batts R2.0	–	–	43/34	2.1/2.3
			(c) 90 Gold Batts R2.5	–	–	44/35	2.6/2.8
			(d) 75 Gold Batts R2.0	42/33	2.0/2.2	43/34	2.2/2.4
			Wall Thickness mm	111		131	
90/90/90 (from outside only) FC 12969	**CSR 5832** 	EXTERNAL WALL SIDE • 2 x 13mm Gyprock Fyrchek MR Plasterboard. INTERNAL WALL SIDE • 1 x 10mm Gyprock Plus Plasterboard.	(b) 90 Gold Batts R2.0	–	–	45/35	2.2/2.4
			(c) 90 Gold Batts R2.5	–	–	46/36	2.6/2.9
			(d) 75 Gold Batts R2.0	44/34	2.2/2.3	45/35	2.4/2.6
			Wall Thickness mm	137		157	
30/30/30 (from outside only) FC 12969	**CSR 5835** 	EXTERNAL WALL SIDE • 1 x 16mm Gyprock Fyrchek MR Plasterboard. INTERNAL WALL SIDE • 1 x 6mm CeminSeal Wallboard.	(b) 90 Gold Batts R2.0	–	–	46/35	2.2/2.4
			(c) 90 Gold Batts R2.5	–	–	47/36	2.6/2.9
			(d) 75 Gold Batts R2.0	45/34	2.1/2.2	46/35	2.3/2.5
			Wall Thickness mm	123		143	
30/30/30 60/60/60* (from outside only) *ACR Group 2 FC 12969	**CSR 5837** 	EXTERNAL WALL SIDE • 1 x 16mm Gyprock Fyrchek MR Plasterboard. INTERNAL WALL SIDE • 1 x 10mm Gyprock Plus Plasterboard.	(b) 90 Gold Batts R2.0	–	–	44/33	2.2/2.4
			(c) 90 Gold Batts R2.5	–	–	45/34	2.6/2.9
			(d) 75 Gold Batts R2.0	43/32	2.1/2.3	44/33	2.3/2.5
			Wall Thickness mm	127		147	
30/30/30 60/60/60* (from outside only) *ACR Group 2 FC 12969	**CSR 5839** 	EXTERNAL WALL SIDE • 1 x 16mm Gyprock Fyrchek MR Plasterboard. INTERNAL WALL SIDE • 1 x 10mm Gyprock Aquachek Plasterboard.	(b) 90 Gold Batts R2.0	–	–	45/34	2.2/2.4
			(c) 90 Gold Batts R2.5	–	–	46/35	2.6/2.9
			(d) 75 Gold Batts R2.0	44/33	2.1/2.3	45/34	2.3/2.5
			Wall Thickness mm	127		147	

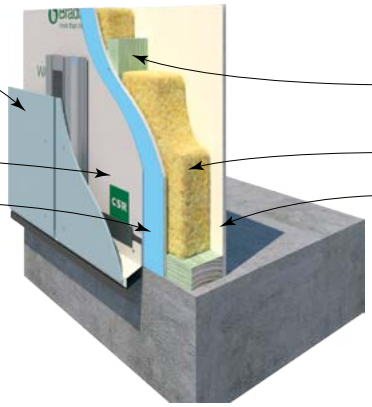
Cemintel Territory – With Cavity – Timber Frame



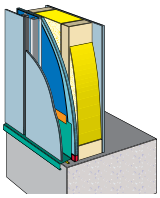
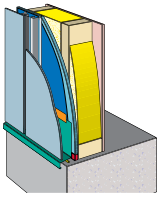
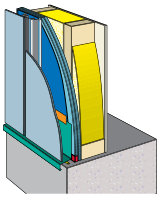
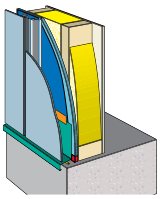
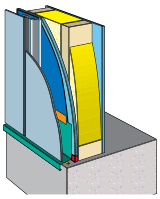
NOTE: Acoustic performance valid for 35mm wide studs at 600mm centres.
The system thermal R-values provided have been calculated based on a thermal transmission path through the wall cavity and does not allow for the effects of thermal bridging.
**ACR = Axial Capacity Reduction.*

SYSTEM SPECIFICATION			ACOUSTIC REPORT: PKA-A119				
			STUD DEPTH mm	**70**		**90**	
FRL Report	**SYSTEM Nº**	**WALL LININGS**	**CAVITY INFILL** (Refer to TABLE B6)	**R_w / R_w+C_{tr}**	**$R_{t(sum)}$ / $R_{t(win)}$**	**R_w / R_w+C_{tr}**	**$R_{t(sum)}$ / $R_{t(win)}$**
30/30/30 60/60/60* (from outside only) *ACR Group 2 FC 12969	**CSR 10163** 	EXTERNAL WALL SIDE • 1 x 16mm Gyprock Fyrchek MR Plasterboard. INTERNAL WALL SIDE • 1 x 10mm Gyprock HD Plasterboard.	(a) 90 Gold Batts R2.0	–	–	45/35	2.2/2.4
			(b) 90 Gold Batts R2.5	–	–	46/36	2.6/2.9
			(c) 75 Gold Batts R2.0	44/34	2.1/2.3	45/35	2.3/2.5
			Wall Thickness mm	127		147	
60/60/60 (from both sides) FC 12969	**CSR 5844** 	EXTERNAL WALL SIDE • 1 x 16mm Gyprock Fyrchek MR Plasterboard. INTERNAL WALL SIDE • 1 x 16mm Gyprock Fyrchek Plasterboard.	(b) 90 Gold Batts R2.0	–	–	47/37	2.2/2.4
			(c) 90 Gold Batts R2.5	–	–	48/38	2.6/2.9
			(d) 75 Gold Batts R2.0	46/36	2.2/2.3	47/37	2.4/2.6
			Wall Thickness mm	133		153	
60/60/60 90/90/90* (from both sides) *ACR Group 3 FC 12969	**CSR 5848** 	EXTERNAL WALL SIDE • 1 x 16mm Gyprock Fyrchek MR Plasterboard. • 1 x 6mm CeminSeal Wallboard. (against frame) INTERNAL WALL SIDE • 2 x 13mm Gyprock Fyrchek Plasterboard.	(b) 90 Gold Batts R2.0	–	–	51/42	2.2/2.4
			(c) 90 Gold Batts R2.5	–	–	52/43	2.6/2.9
			(d) 75 Gold Batts R2.0	50/41	2.2/2.4	51/42	2.4/2.6
			Wall Thickness mm	149		169	

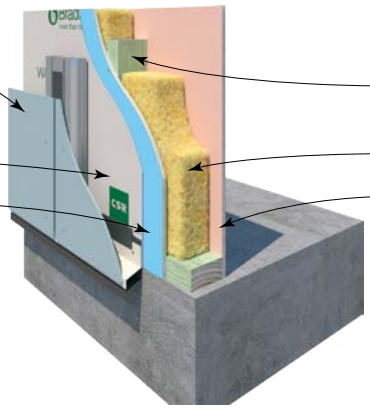
Cemintel ExpressWall – With Cavity – Timber Frame



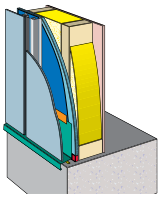
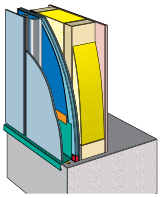
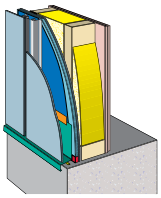
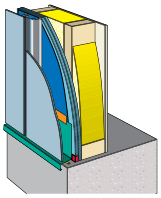
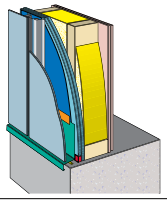
NOTE: Acoustic performance valid for 35mm wide studs at 600mm centres.
The system thermal R-values provided have been calculated based on a thermal transmission path through the wall cavity and does not allow for the effects of thermal bridging.
**ACR = Axial Capacity Reduction.*

SYSTEM SPECIFICATION			ACOUSTIC REPORT: PKA-A119				
			STUD DEPTH mm	70		90	
FRL Report	**SYSTEM Nº**	**WALL LININGS**	**CAVITY INFILL** (Refer to TABLE B6)	**Rw / Rw+Ctr**	**Rt(sum) / Rt(win)**	**Rw / Rw+Ctr**	**Rt(sum) / Rt(win)**
30/30/30 (from outside only) FC 12969	**CSR 5851** 	EXTERNAL WALL SIDE • 1 x 16mm Gyprock Fyrchek MR Plasterboard. INTERNAL WALL SIDE • 1 x 6mm CeminSeal Wallboard.	(b) 90 Gold Batts R2.0	–	–	46/36	2.2/2.4
			(c) 90 Gold Batts R2.5	–	–	47/37	2.6/2.9
			(d) 75 Gold Batts R2.0	45/35	2.1/2.2	46/36	2.3/2.5
			Wall Thickness Excluding Cladding mm	127		147	
30/30/30 (from both sides) FC 12969	**CSR 5854** 	EXTERNAL WALL SIDE • 1 x 13mm Gyprock Fyrchek MR Plasterboard. INTERNAL WALL SIDE • 1 x 13mm Gyprock Fyrchek Plasterboard.	(b) 90 Gold Batts R2.0	–	–	45/34	2.2/2.4
			(c) 90 Gold Batts R2.5	–	–	46/35	2.6/2.9
			(d) 75 Gold Batts R2.0	44/33	2.1/2.3	45/34	2.3/2.5
			Wall Thickness Excluding Cladding mm	131		151	
90/90/90 (from outside only) FC 12969	**CSR 5857** 	EXTERNAL WALL SIDE • 2 x 13mm Gyprock Fyrchek MR Plasterboard. INTERNAL WALL SIDE • 1 x 10mm Gyprock Plus Plasterboard.	(b) 90 Gold Batts R2.0	–	–	46/35	2.2/2.4
			(c) 90 Gold Batts R2.5	–	–	47/36	2.6/2.9
			(d) 75 Gold Batts R2.0	45/34	2.2/2.3	46/35	2.4/2.6
			Wall Thickness Excluding Cladding mm	141		161	
60/60/60* (from outside only) *ACR Group 2 FC 12969	**CSR 5860** 	EXTERNAL WALL SIDE • 1 x 16mm Gyprock Fyrchek MR Plasterboard. INTERNAL WALL SIDE • 1 x 10mm Gyprock Plus Plasterboard.	(b) 90 Gold Batts R2.0	–	–	43/32	2.2/2.4
			(c) 90 Gold Batts R2.5	–	–	44/33	2.6/2.9
			(d) 75 Gold Batts R2.0	42/31	2.1/2.3	43/32	2.3/2.5
			Wall Thickness Excluding Cladding mm	131		151	
60/60/60* (from outside only) *ACR Group 2 FC 12969	**CSR 5862** 	EXTERNAL WALL SIDE • 1 x 16mm Gyprock Fyrchek MR Plasterboard. INTERNAL WALL SIDE • 1 x 10mm Gyprock Aquachek Plasterboard.	(b) 90 Gold Batts R2.0	–	–	44/33	2.2/2.4
			(c) 90 Gold Batts R2.5	–	–	45/34	2.6/2.9
			(d) 75 Gold Batts R2.0	43/32	2.1/2.3	44/33	2.3/2.5
			Wall Thickness Excluding Cladding mm	131		151	

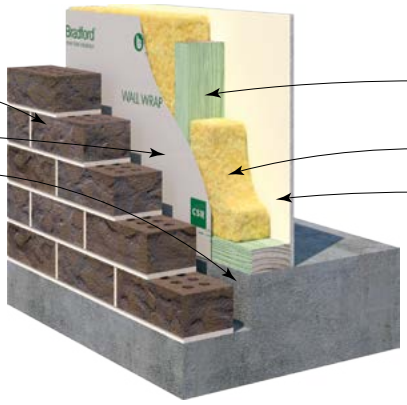
Cemintel ExpressWall – With Cavity – Timber Frame



NOTE: Acoustic performance valid for 35mm wide studs at 600mm centres.
The system thermal R-values provided have been calculated based on a thermal transmission path through the wall cavity and does not allow for the effects of thermal bridging.
**ACR = Axial Capacity Reduction.*

SYSTEM SPECIFICATION			ACOUSTIC REPORT: PKA-A119				
			STUD DEPTH mm	70		90	
FRL Report	**SYSTEM N°**	**WALL LININGS**	**CAVITY INFILL** (Refer to TABLE B6)	**R_w / R_w+C_{tr}**	**$R_{t(sum)}$ / $R_{t(win)}$**	**R_w / R_w+C_{tr}**	**$R_{t(sum)}$ / $R_{t(win)}$**
60/60/60 (from both sides) FC 12969	**CSR 5865** 	EXTERNAL WALL SIDE • 1 x 16mm Gyprock Fyrchek MR Plasterboard. INTERNAL WALL SIDE • 1 x 16mm Gyprock Fyrchek Plasterboard.	(b) 90 Gold Batts R2.0	–	–	47/37	2.2/2.4
			(c) 90 Gold Batts R2.5	–	–	48/38	2.6/2.9
			(d) 75 Gold Batts R2.0	46/36	2.2/2.3	47/37	2.4/2.6
			Wall Thickness Excluding Cladding mm	137		157	
60/60/60 (from both sides) **90/90/90*** (from outside only) *ACR Group 2 FC 12969	**CSR 5868** 	EXTERNAL WALL SIDE • 1 x 16mm Gyprock Fyrchek MR Plasterboard. • 1 x 6mm CeminSeal Wallboard. (against frame) INTERNAL WALL SIDE • 1 x 16mm Gyprock Fyrchek Plasterboard.	(b) 90 Gold Batts R2.0	–	–	49/39	2.2/2.4
			(c) 90 Gold Batts R2.5	–	–	50/40	2.6/2.9
			(d) 75 Gold Batts R2.0	48/38	2.2/2.3	49/39	2.4/2.6
			Wall Thickness Excluding Cladding mm	143		163	
90/90/90* (from both sides) *ACR Group 3 FC 12969	**CSR 5870** 	EXTERNAL WALL SIDE • 1 x 16mm Gyprock Fyrchek MR Plasterboard. • 1 x 6mm CeminSeal Wallboard. (against frame) INTERNAL WALL SIDE • 2 x 13mm Gyprock Fyrchek Plasterboard.	(b) 90 Gold Batts R2.0	–	–	51/42	2.2/2.4
			(c) 90 Gold Batts R2.5	–	–	52/43	2.6/2.9
			(d) 75 Gold Batts R2.0	50/41	2.2/2.4	51/42	2.4/2.6
			Wall Thickness Excluding Cladding mm	153		173	
120/120/120 (from outside only) FC 12969	**CSR 5872** 	EXTERNAL WALL SIDE • 2 x 16mm Gyprock Fyrchek MR Plasterboard. INTERNAL WALL SIDE • 1 x 10mm Gyprock Plus Plasterboard.	(b) 90 Gold Batts R2.0	–	–	47/36	2.2/2.4
			(c) 90 Gold Batts R2.5	–	–	48/37	2.6/2.9
			(d) 75 Gold Batts R2.0	46/35	2.2/2.4	47/36	2.4/2.6
			Wall Thickness Excluding Cladding mm	147		167	
120/120/120 (from both sides) FC 12969	**CSR 5874** 	EXTERNAL WALL SIDE • 2 x 16mm Gyprock Fyrchek MR Plasterboard. INTERNAL WALL SIDE • 2 x 16mm Gyprock Fyrchek Plasterboard.	(b) 90 Gold Batts R2.0	–	–	52/43	2.2/2.4
			(c) 90 Gold Batts R2.5	–	–	53/44	2.6/2.9
			(d) 75 Gold Batts R2.0	51/42	2.3/2.5	52/43	2.6/2.7
			Wall Thickness Excluding Cladding mm	169		189	

Masonry Veneer – With Cavity – Timber Frame



Fire rated masonry veneer wall.

Wall wrap.

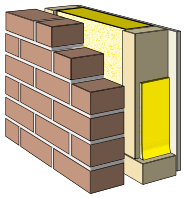
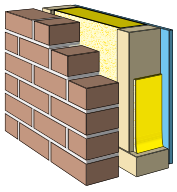
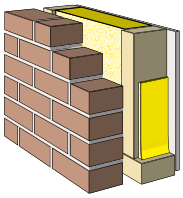
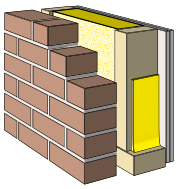
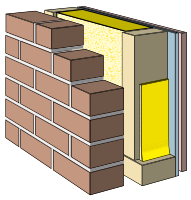
40mm minimum gap to timber framing.

Timber studs at 600mm maximum centres.

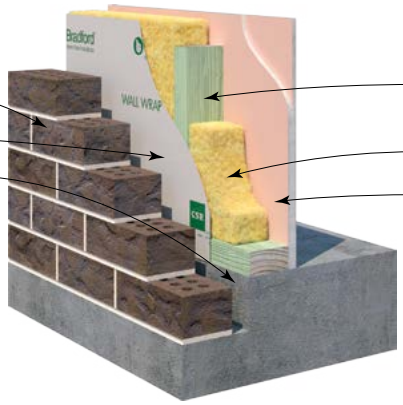
Cavity insulation as per system table.

Lining material as per system table to internal side.

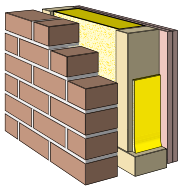
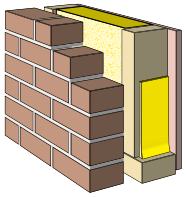
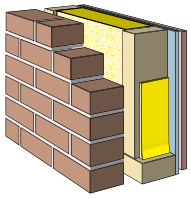
NOTE: To achieve stated acoustic performance masonry must be a minimum of 90mm thick and 170kg/m². The system thermal R-values provided have been calculated based on a thermal transmission path through the wall cavity and does not allow for the effects of thermal bridging.
**ACR = Axial Capacity Reduction.*

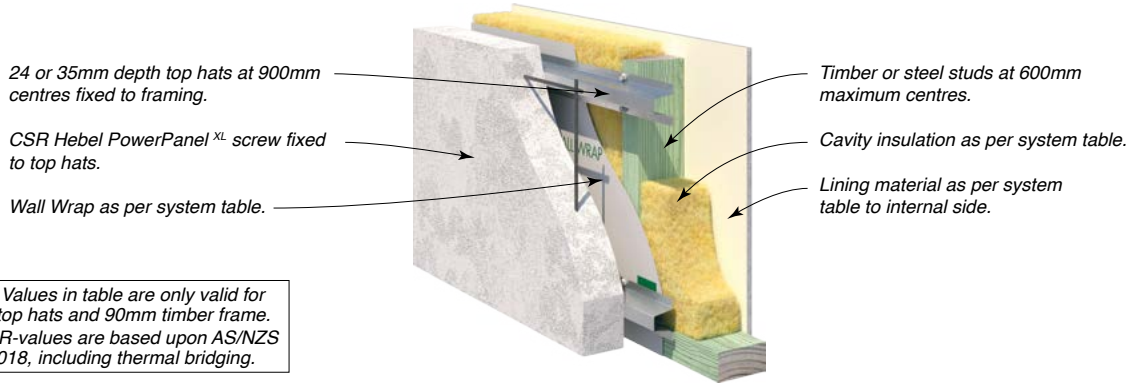
SYSTEM SPECIFICATION			ACOUSTIC REPORT: PKA-A120				
			STUD DEPTH mm	**70**		**90**	
FRL Report	**SYSTEM Nº**	**WALL LININGS**	**CAVITY INFILL** (Refer to TABLE B6)	**Rw / Rw+Ctr**	**Rt(sum) / Rt(win)**	**Rw / Rw+Ctr**	**Rt(sum) / Rt(win)**
60/60/60 (from outside only) refer to Masonry Manufacturer	**CSR 5877** 	EXTERNAL WALL SIDE • Masonry veneer wall with FRL 60/60/60. INTERNAL WALL SIDE • 1 x 10mm Gyprock Plus Plasterboard.	(b) 90 Gold Batts R2.0	–	–	59/**51**	2.3/2.6
			(c) 90 Gold Batts R2.5	–	–	59/**51**	2.8/3.1
			(d) 75 Gold Batts R2.0	57/48	2.3/2.5	58/**50**	2.5/2.7
			Wall Thickness Excluding Masonry & Cavity mm	80		100	
60/60/60 (from outside only) refer to Masonry Manufacturer	**CSR 5879** 	EXTERNAL WALL SIDE • Masonry veneer wall with FRL 60/60/60. INTERNAL WALL SIDE • 1 x 10mm Gyprock Aquachek Plasterboard.	(b) 90 Gold Batts R2.0	–	–	60/**52**	2.3/2.6
			(c) 90 Gold Batts R2.5	–	–	60/**52**	2.8/3.1
			(d) 75 Gold Batts R2.0	58/49	2.3/2.5	59/**51**	2.5/2.7
			Wall Thickness Excluding Masonry & Cavity mm	80		100	
60/60/60 (from outside only) refer to Masonry Manufacturer	**CSR 10164** 	EXTERNAL WALL SIDE • Masonry veneer wall with FRL 60/60/60. INTERNAL WALL SIDE • 1 x 10mm Gyprock HD Plasterboard.	(a) 90 Gold Batts R2.0	–	–	60/**52**	2.3/2.6
			(b) 90 Gold Batts R2.5	–	–	60/**52**	2.8/3.1
			(c) 75 Gold Batts R2.0	58/49	2.3/2.5	59/**51**	2.5/2.7
			Wall Thickness Excluding Masonry & Cavity mm	80		100	
60/60/60 (from outside only) refer to Masonry Manufacturer	**CSR 10165** 	EXTERNAL WALL SIDE • Masonry veneer wall with FRL 60/60/60. INTERNAL WALL SIDE • 2 x 10mm Gyprock HD Plasterboard.	(a) 90 Gold Batts R2.0	–	–	62/**55**	2.3/2.6
			(b) 90 Gold Batts R2.5	–	–	62/**55**	2.8/3.1
			(c) 75 Gold Batts R2.0	60/**52**	2.4/2.6	61/**54**	2.6/2.8
			Wall Thickness Excluding Masonry & Cavity mm	90		110	
60/60/60* (from both sides) *ACR Group 1 FC 12969 and refer to Masonry Manufacturer	**CSR 5885** 	EXTERNAL WALL SIDE • Masonry veneer wall with FRL 60/60/60. INTERNAL WALL SIDE • 1 x 13mm Gyprock Fyrchek Plasterboard. •1 x 6mm CeminSeal Wallboard. (against frame)	(b) 90 Gold Batts R2.0	–	–	63/**56**	2.3/2.6
			(c) 90 Gold Batts R2.5	–	–	63/**56**	2.8/3.1
			(d) 75 Gold Batts R2.0	61/**53**	2.4/2.5	62/**55**	2.6/2.8
			Wall Thickness Excluding Masonry & Cavity mm	89		109	

Masonry Veneer – With Cavity – Timber Frame

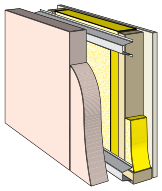


NOTE: To achieve stated acoustic performance masonry must be a minimum of 90mm thick and 170kg/m². The system thermal R-values provided have been calculated based on a thermal transmission path through the wall cavity and does not allow for the effects of thermal bridging.
**ACR = Axial Capacity Reduction.*

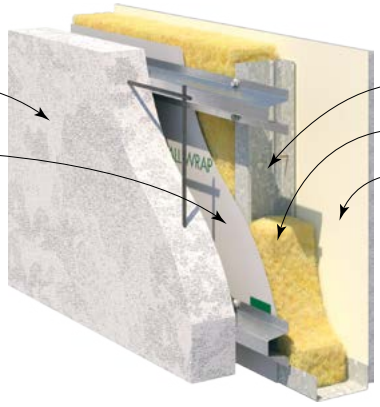
SYSTEM SPECIFICATION			ACOUSTIC REPORT: PKA-A120				
			STUD DEPTH mm	**70**		**90**	
FRL Report	**SYSTEM N°**	**WALL LININGS**	**CAVITY INFILL** (Refer to TABLE B6)	**R_w / R_w+C_{tr}**	**$R_{t(sum)}$ / $R_{t(win)}$**	**R_w / R_w+C_{tr}**	**$R_{t(sum)}$ / $R_{t(win)}$**
90/90/90 (from both sides) FC 12969 and refer to Masonry Manufacturer	**CSR 5888** 	EXTERNAL WALL SIDE • Masonry veneer wall with FRL 90/90/90. INTERNAL WALL SIDE • 2 x 13mm Gyprock Fyrchek Plasterboard.	(b) 90 Gold Batts R2.0	–	–	63/**56**	2.3/2.6
			(c) 90 Gold Batts R2.5	–	–	63/**56**	2.8/3.1
			(d) 75 Gold Batts R2.0	60/**52**	2.4/2.6	61/**54**	2.6/2.8
			Wall Thickness Excluding Masonry & Cavity mm	96		116	
60/60/60 (from both sides) FC 12969 and refer to Masonry Manufacturer	**CSR 5891** 	EXTERNAL WALL SIDE • Masonry veneer wall with FRL 60/60/60. INTERNAL WALL SIDE • 1 x 16mm Gyprock Fyrchek Plasterboard.	(b) 90 Gold Batts R2.0	–	–	62/**55**	2.3/2.6
			(c) 90 Gold Batts R2.5	–	–	62/**55**	2.8/3.1
			(d) 75 Gold Batts R2.0	61/**53**	2.4/2.5	62/**55**	2.6/2.8
			Wall Thickness Excluding Masonry & Cavity mm	86		106	
90/90/90* (from both sides) *ACR Group 3 FC 12969 and refer to Masonry Manufacturer	**CSR 5893** 	EXTERNAL WALL SIDE • Masonry veneer wall with FRL 90/90/90. INTERNAL WALL SIDE • 1 x 16mm Gyprock Fyrchek Plasterboard. •1 x 6mm CeminSeal Wallboard. (against frame)	(b) 90 Gold Batts R2.0	–	–	64/**57**	2.3/2.6
			(c) 90 Gold Batts R2.5	–	–	64/**57**	2.8/3.1
			(d) 75 Gold Batts R2.0	62/**54**	2.4/2.6	63/**56**	2.6/2.8
			Wall Thickness Excluding Masonry & Cavity mm	89		109	



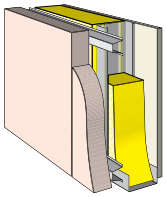
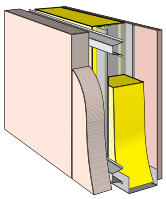
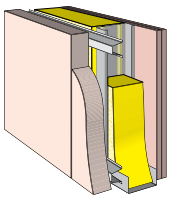
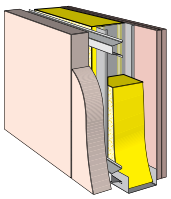
NOTE: Values in table are only valid for 24mm top hats and 90mm timber frame. Stated R-values are based upon AS/NZS 4859:2018, including thermal bridging.

SYSTEM SPECIFICATION				ACOUSTIC LOGIC REPORT: 20140366.34/1909A/R3/GW			
				STUD DEPTH mm	90		
FRL Report	**SYSTEM ICON**	**WALL LININGS**	**SYSTEM Nº**	**CAVITY INFILL** (Refer to TABLE B6)	**R_w / R_w+C_{tr}**	**Standard Wall Warp (Enviroseal RW Plus)**	**Reflective Wall Warp (Thermoseal Wall Wrap XP)**
						$R_{t(sum)}$ / $R_{t(win)}$	**$R_{t(sum)}$ / $R_{t(win)}$**
180/180/180 (from outside only) FCO 3003		INTERNAL WALL SIDE • 1 x 10mm Gyprock Plus Plasterboard.	**CSR 21727**	90 Gold Batts 2.0	41/26	–	2.99/3.15
			CSR 21728	90 Gold Batts 2.5	41/26	3.0/3.15	–
			CSR 21730	90 Gold Batts 2.7	41/26	3.15/3.29	–
			Minimum Wall Thickness mm		199		

Hebel PowerPanel Wall – Steel Frame



NOTE: Stated R-values are based upon AS/NZS 4859:2018, including thermal bridging.

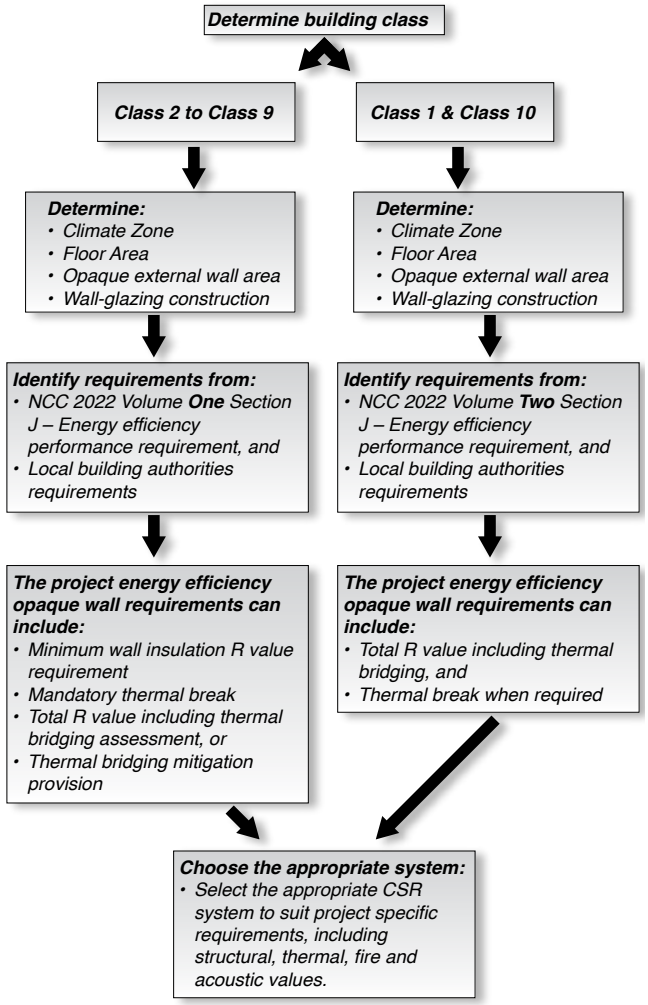
SYSTEM SPECIFICATION			ACOUSTIC LOGIC REPORT: 20171728.19/1603A/R1/GW			
			STUD DEPTH mm	**92**		
FRL Report	**SYSTEM Nº**	**WALL LININGS**	**CAVITY INFILL** (Refer to TABLE B6)	**R_w / R_w+C_{tr}**	**Enviroseal RW Plus**	
					$R_{t(sum)}$	**$R_{t(win)}$**
– /120/120 (from outside only) FCO 2532	**CSR 21347** 	INTERNAL WALL SIDE • 1 x 13mm Gyprock Standard Plasterboard.	90 Acoustigard 14kg	50/41	2.62	2.78
			Wall Thickness mm	230		
– /60/60 (from inside only) **– /180/180** (from outside only) FCO 2532	**CSR 21536** 	INTERNAL WALL SIDE • 1 x 16mm Gyprock Fyrchek Plasterboard. • Studs at 450mm maximum centres.	90 Acoustigard 14kg	50/42	2.55	2.69
			Wall Thickness mm	233		
– /90/90 (from inside only) **– /180/180** (from outside only) FCO 2532	**CSR 21537** 	INTERNAL WALL SIDE • 2 x 13mm Gyprock Fyrchek Plasterboard. • Studs at 450mm maximum centres.	90 Acoustigard 14kg	53/45	2.62	2.77
			Wall Thickness mm	243		
– /120/120 (from outside only) **– /180/180** (from outside only) FCO 2532	**CSR 21538** 	INTERNAL WALL SIDE • 2 x 16mm Gyprock Fyrchek Plasterboard. • Studs at 450mm maximum centres.	90 Acoustigard 14kg	54/47	2.67	2.82
			Wall Thickness mm	249		

THERMALLY ENHANCED SYSTEMS INCLUDING THERMAL BRIDGING CONSIDERATIONS

INTRODUCTION

Energy efficiency requirements for buildings are set out in the NCC as performance requirements and acceptable construction practices, and are dependent on geographical climate zones. To meet the requirements, it is recommended that insulation be installed in the wall framing and provision of appropriate sealing of the building envelope. Check with local building authorities for minimum insulation requirements. The level of insulation provided by a wall is described by its Total R-Value. The determination of the total R-Value requirement should be considered on a situation-by-situation basis, but generally will follow the order as shown in FIG F1. In this section, thermally enhanced systems are introduced: double stud system, continuous internal insulation system & continuous external insulation system.

FIG F1: GENERAL STEPS FOR DETERMINATION OF ENERGY EFFICIENCY REQUIREMENTS



R-VALUE

The R-Value is a measure of the resistance to heat flow, also known as thermal resistance. The greater the R-Value (m^2 k/W), the greater the resistance to heat transfer, and the greater the insulating effect and subsequent energy savings.

Product/Material R-Value

The product/material R-Values represents the thermal resistance performance of a specific product/building element. Refer to TABLE B6 for the R-Values of the insulations recommended in the CSR Redbook. Note that the insulation also improves the acoustic performance of the wall against noise transmission.

Total R-Value

The Total R-Value is the sum of the R-Values of the individual component layers in a composite element including any building material, insulating material, airspace, thermal bridging and associated surface resistances. NCC 2022 volume 1 defines the total R-Value as a metric of compliance, refer to FIG F1 for the general steps for determination of energy efficiency requirements. The total R-Value (including thermal bridging of the wall systems detailed in this section) will not be detrimentally affected by:

- Increasing the wall thickness
- Increasing the frame spacings
- Decreasing the number of noggings
- Decreasing the BMT of the steel framing

System R-Value Solution

The system R-Value represents the thermal resistance performance of a system. For systems on page F38 to page F54, systems R-Values including thermal bridging are modeled in accordance with AS/NZS4859.2:2018 which includes thermal bridging in accordance with NZS4214 and NCC requirements. The system R-Values are based on product/material R-Values in service conditions, including the alteration of insulation product/material R-Value for temperature, and air space for temperature and infrared emittance.

While the total R-Value in The Red Book is based on specific modelling with the following general modelling assumptions, it is recommended to consult with qualified engineers for specific thermal design.

The influence on the R-vlaue of the insulation has been considered such that higher temperature results in lower R-Value and lower temperature results in higher R-Value. The R-Value for the thermally enhanced external wall systems include thermal ratings expressed as $R_{t(WIN)}$ and $R_{t(SUM)}$ to represent Total R-Values for the winter and summer design conditions as required by AS/NZS 4859.1, which is called upon in the NCC.

Broadly the calculation involves determining the unique pathways through the wall with different arrangements of components and then using a weighted area approach to calculate an equivalent Total R-Value of the bridged layers and then combined with the uniform layers to calculate the Total R-Value.

GENERAL MODELING ASSUMPTIONS

The modelings of the thermally enhanced systems include the assumptions listed below:

1. Calculation methodology: Calculated in accordance with ASNZS4859.2:2018 which includes thermal bridging in accordance with NZS4214 and the National Construction Code versions NCC2019 Amendment 1 and NCC2022. Note the calculation and model may not be representative of actual in-situ performance and construction.
2. Changes to the system components and configuration described may result in changes to Total R-Value thermal performance.
3. Thermal resistance: Where specified, CSR insulation products are tested in accordance with ASNZS4859:1 in a NATA certified laboratory. Where available, NATA tested supporting data for thermal resistance is used for other products or when test data is unavailable, AIRAH, ASHRAE or NCC reference data for generic materials is used.
4. In accordance with AS4859:2018, the System Total R-Value includes mean temperature condition adjustments of material R-Value to Australia-Only conditions. For wall insulation, an iterative approach determined the insulation temperature from the temperature profile (based on Australian seasonal temperature differences) and adjusted the R-Value of insulation.

   - WINTER: air temperature difference of 12°C to 18°C;

   - SUMMER: air temperature difference of 24°C to 36°C.
5. Material properties: Unless stated otherwise, all materials are assumed to be a constant thickness.
6. Packers: Thermal bridging due to the incorporation of packers has been included in this calculation.
7. Façade cavity: The cavity is assumed to be well-ventilated and the thermal resistance of a well-ventilated air space and no thermal resistance for the CSR cladding and external air film have been adopted.
8. Wall cavities: Still air space thermal resistance was not considered.
9. Wall Insulation: Although the specified wall insulation must be installed within the steel sections (i.e., studs, tracks, noggings) and provides 100% coverage of the wall area, it is assumed no insulation in the steel sections for the thermal calculations.
10. Compression of insulation: Insulation is assumed to recover to its nominal thickness unless the cavity dimension is less than the nominal thickness of the selected insulation. The influence of compression on the thermal resistance was considered.
11. Solar absorptance, air leakage, emissivity have not been considered in the calculation.
12. When wall wrap is specified as an air barrier, the use of Cemintel Rigid Air Barrier will not detrimentally affect the thermal performance stated.

THERMAL BRIDGING

Thermal bridging is a path of least resistance for heat to travel, which can significantly reduce the effectiveness of insulation. An example is where a steel stud with high thermal conductivity interrupts the insulation layer. This can result in internal heat loss on a cold day and internal heat gain on a hot day. At thermal bridging locations, condensation may occur where warm, moist air contacts a colder surface. The detrimental impact of a thermal bridge can be diminished with the installation of a thermal break, which increases the resistance for heat to travel at the thermal bridging locations. Typically, the thermal break has low thermal conductivity.

NCC REQUIREMENTS

NCC 2019 for Volume 1 and NCC 2022 for Volume 2 includes changes to energy efficiency requirements. These requirements will express the R-Value of the building fabric system as the Total R-Value inclusive of thermal bridging. The Total R-Value will consider the project specific external wall configuration and materials used, so that the detrimental impact of the thermal bridging on the added insulation is captured. Additional to the effects of thermal bridging through the framing paths of the structure, the designer will need to allow for the following:

- Gaps in the bulk insulation layer in the wall system due to structural framing (i.e., studs, noggings, perimeter of wall openings) and services obstructing or limiting wall insulation coverage;
- Slab edge insulation;
- Wall cavity ventilation; and
- The effects of air leakage due to unsealed architraves, unsealed door jambs, unsealed gaps between windows and the masonry wall or services penetrating the inner leaf.

These effects are to be compensated for as outlined in Section J of the NCC.

For projects conforming to NCC versions prior to the NCC 2022, thermal bridging consideration is not required in the Total R-Value calculation for all building classes, such as:

- Class 2 to Class 9 buildings for NCC 2016 Amdt. 1 Volume One and NCC 2016 Amdt. 1 Volume Two (and earlier).
- Class 1 and Class 10 only for NCC 2019 (incl. Amdt. 1) Volume Two.

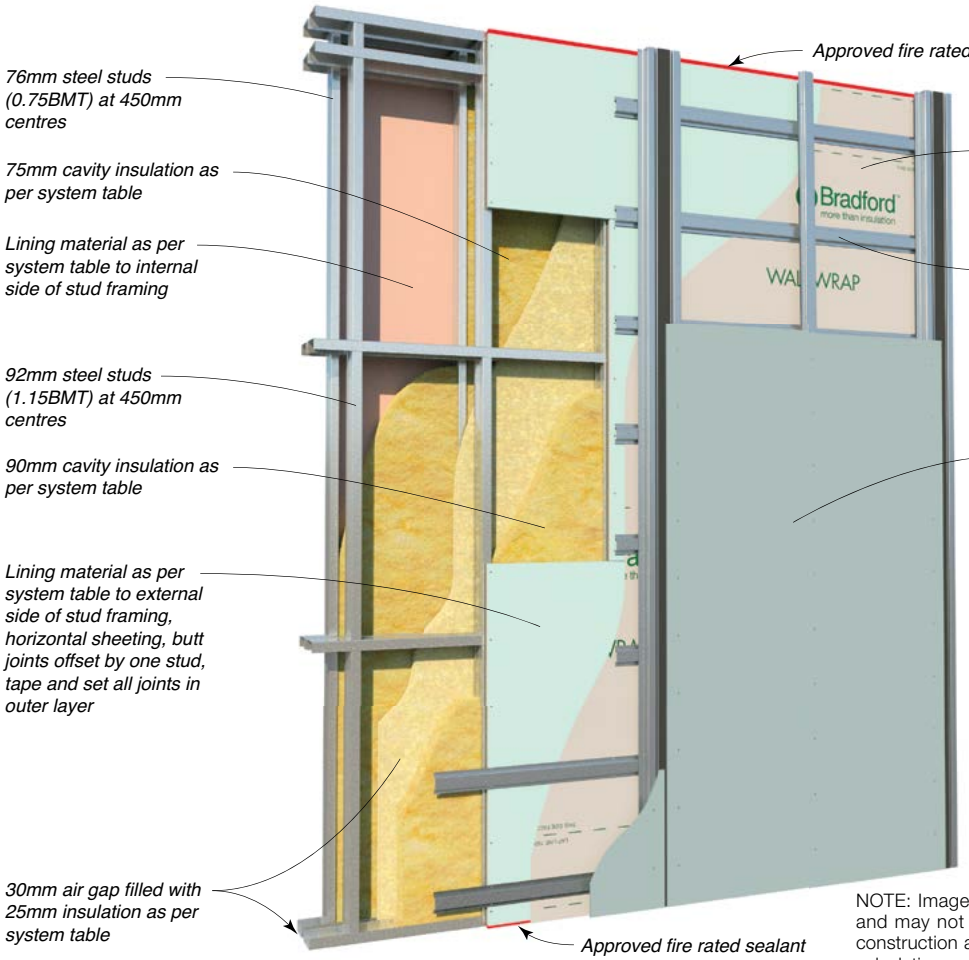
ADDITIONAL DESIGN CONSIDERATIONS FOR THERMALLY BRIDGED SYSTEMS

The calculations provided in this section only assess and provide a system's thermal performance. Other factors which are not considered and should be independently assessed, include but are not limited to:

- Structural adequacy
- Weatherproofing
- Fire resistance
- Condensation management
- The suitability of the wall system and products for a project should be independently verified by the specifier or purchaser prior to use.

Thermally Bridged Systems and Thermal Pathways – Double Stud

FIG F2: THERMALLY ENHANCED WALL SYSTEM – DOUBLE STUD



NOTE: Images are for representation purposes only and may not accurately represent actual products, construction and/or installation methods. For general calculation assumptions, refer to page F35

The wall model used in the calculation has four (4) unique thermal resistance pathways from exterior to interior. The following specific assumptions were used for this calculation:

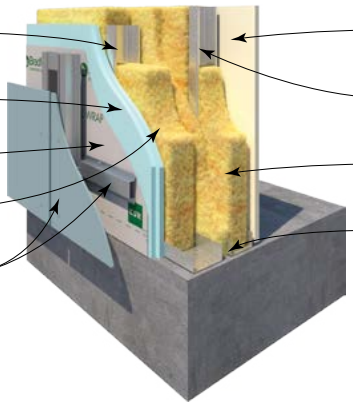
- External side stud framing: 92mm x 1.15mm BMT steel sections (i.e., studs, tracks and noggings).
- Internal side stud framing: 76mm x 0.75mm BMT steel sections (i.e., studs, tracks and noggings).
- 100% alignment between the external side and internal side steel stud sections.
- No alignment between the horizontal top hats and noggings of the external side stud framing.

TABLE F2: THERMAL PATHWAYS THROUGH DOUBLE STUD SYSTEM

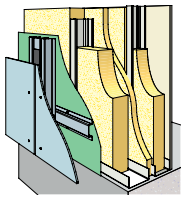
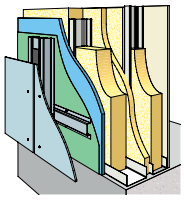
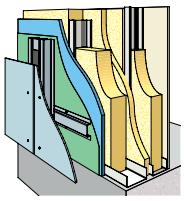
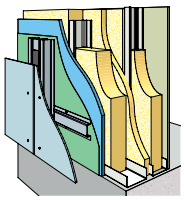
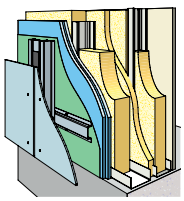
Pathway	Thermal Pathway Through Wall	Weighted Area (%)
1	Lining materials + cavity insulation materials NOT ALIGNED with stud framing or horizontal top hats.	77.70
2	Stud framing + aligned materials but EXCLUDING areas intersecting with horizontal top hats.	15.63
3	Horizontal top hats + aligned materials but EXCLUDING areas intersecting with stud framing.	5.55
4	Wall materials SIMULTANEOUSLY ALIGNED with stud framing and horizontal top hats.	1.12

NOTES: 'Stud framing' includes studs, tracks and noggings.

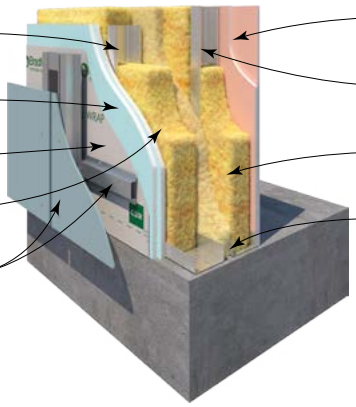
SYSTEM SPECIFICATIONS — Cemintel Panel Cladding – Thermally Enhanced – Double Stud



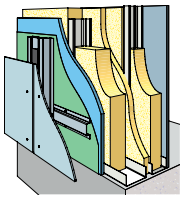
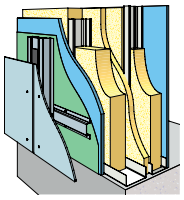
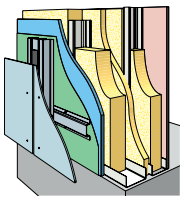
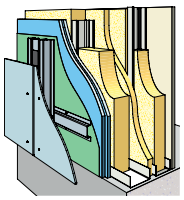
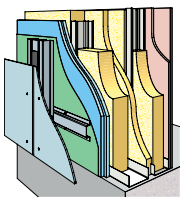
NOTE: Acoustic performance valid for studs noted. The system thermal R-Values provided have been calculated based on the specified wall configuration only, and allow for the effects of thermal bridging.

SYSTEM SPECIFICATION			ACOUSTIC REPORT: PKA-A119 THERMAL REPORT: CSRRB3-01.01		
FRL Report	**SYSTEM Nº**	**WALL LININGS**	**CAVITY INFILL EXTERNAL/AIR GAP/INTERNAL** (Refer to TABLE B6)	**R_w / R_w+C_{tr}**	**$R_{t(sum)}$ / $R_{t(win)}$**
– / – / –	**CSR 10108** 	EXTERNAL WALL SIDE • Nil. INTERNAL WALL SIDE • 1 x 13mm Gyprock Standard Plasterboard.	(a) 90 Acoustigard 24kg 25 Acoustigard 24kg 75 Acoustigard 24kg	53/44	2.84/3.03
			(b) 90 Acoustigard 32kg 25 Acoustigard 32kg 75 Acoustigard 32kg	53/44	3.01/3.21
			Wall Thickness Excluding Cladding mm	261	
30/30/30 (from outside only) FC 12946	**CSR 10109** 	EXTERNAL WALL SIDE • 1 x 13mm Gyprock Fyrchek MR Plasterboard. INTERNAL WALL SIDE • 1 x 10mm Gyprock Plus Plasterboard.	(a) 90 Acoustigard 24kg 25 Acoustigard 24kg 75 Acoustigard 24kg	54/43	2.84/3.03
			(b) 90 Acoustigard 32kg 25 Acoustigard 32kg 75 Acoustigard 32kg	54/43	3.01/3.21
			Wall Thickness Excluding Cladding mm	271	
30/30/30 (from outside only) FC 12946	**CSR 10110** 	EXTERNAL WALL SIDE • 1 x 13mm Gyprock Fyrchek MR Plasterboard. INTERNAL WALL SIDE • 1 x 10mm Gyprock HD Plasterboard.	(a) 90 Acoustigard 24kg 25 Acoustigard 24kg 75 Acoustigard 24kg	57/46	2.84/3.03
			(b) 90 Acoustigard 32kg 25 Acoustigard 32kg 75 Acoustigard 32kg	57/46	3.01/3.21
			Wall Thickness Excluding Cladding mm	271	
30/30/30 –/60/60 (from both sides) FC 12946	**CSR 10111** 	EXTERNAL WALL SIDE • 1 x 13mm Gyprock Fyrchek MR Plasterboard. INTERNAL WALL SIDE • 1 x 13mm Gyprock EC08 Extreme Plasterboard.	(a) 90 Acoustigard 24kg 25 Acoustigard 24kg 75 Acoustigard 24kg	59/49	2.84/3.03
			(b) 90 Acoustigard 32kg 25 Acoustigard 32kg 75 Acoustigard 32kg	59/49	3.01/3.21
			Wall Thickness Excluding Cladding mm	274	
90/90/90 (from outside only) FC 12946	**CSR 10112** 	EXTERNAL WALL SIDE • 2 x 13mm Gyprock Fyrchek MR Plasterboard. INTERNAL WALL SIDE • 1 x 10mm Gyprock Plus Plasterboard.	(a) 90 Acoustigard 24kg 25 Acoustigard 24kg 75 Acoustigard 24kg	57/47	2.84/3.03
			(b) 90 Acoustigard 32kg 25 Acoustigard 32kg 75 Acoustigard 32kg	57/47	3.01/3.21
			Wall Thickness Excluding Cladding mm	284	

SYSTEM SPECIFICATIONS — Cemintel Panel Cladding – Thermally Enhanced – Double Stud

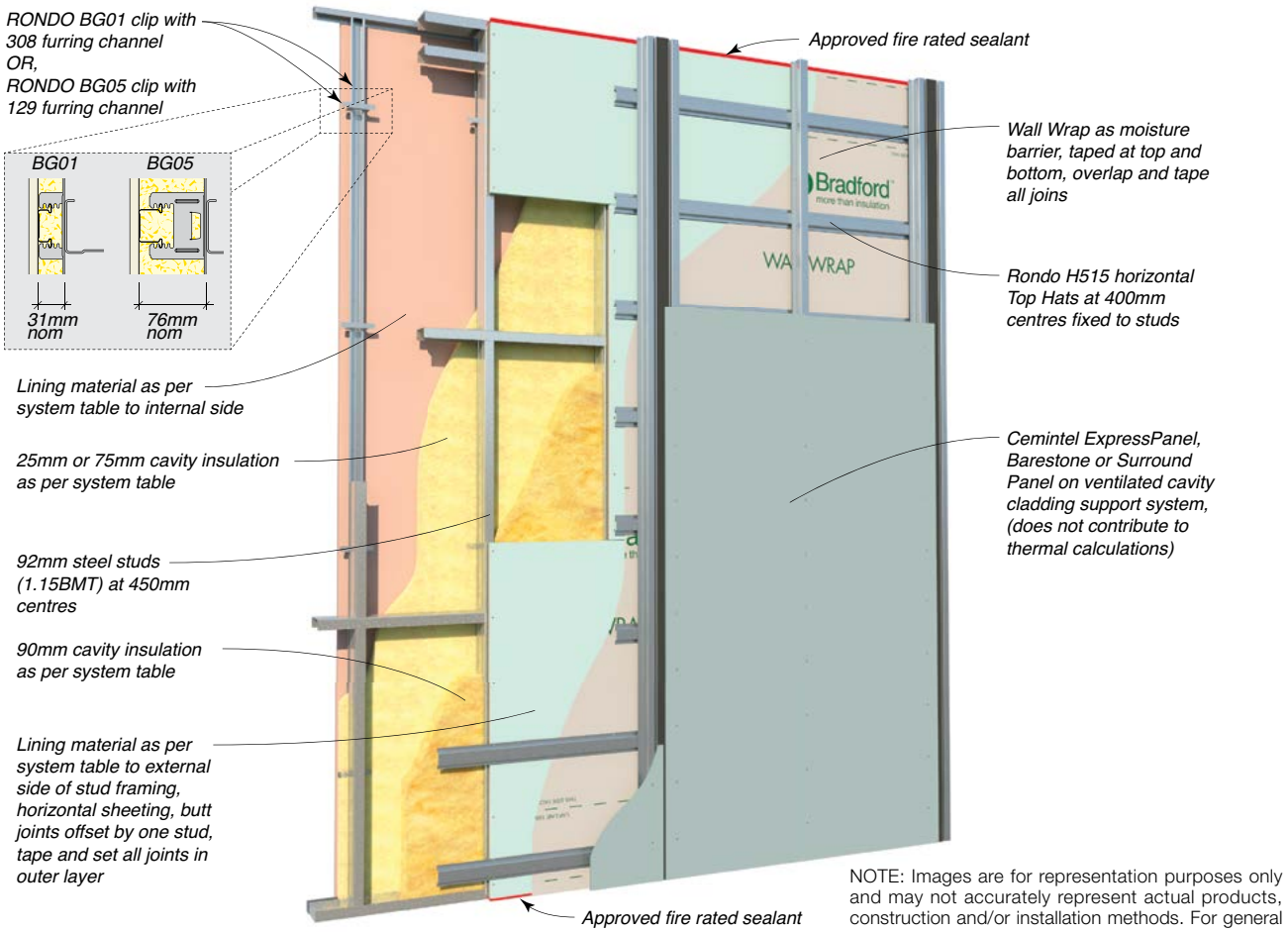


NOTE: Acoustic performance valid for studs noted. The system thermal R-Values provided have been calculated based the specified wall configuration only, and allow for the effects of thermal bridging.
‡ Unique height restrictions apply. Refer to The Red Book 3, height selection tables.

SYSTEM SPECIFICATION			ACOUSTIC REPORT: PKA-A119 THERMAL REPORT: CSRRB3-01.01		
FRL Report	**SYSTEM Nº**	**WALL LININGS**	**CAVITY INFILL** **EXTERNAL/AIR GAP/INTERNAL** (Refer to TABLE B6)	**R_w / R_w+C_{tr}**	**$R_{t(sum)}$ / $R_{t(win)}$**
30/30/30 (from outside only) FC 12946	**CSR 10113** 	EXTERNAL WALL SIDE • 1 x 16mm Gyprock Fyrchek MR Plasterboard. INTERNAL WALL SIDE • 1 x 6mm Cemintel Wallboard.	(a) 90 Acoustigard 24kg 25 Acoustigard 24kg 75 Acoustigard 24kg	58/47	2.84/3.03
			(b) 90 Acoustigard 32kg 25 Acoustigard 32kg 75 Acoustigard 32kg	58/47	3.01/3.21
			Wall Thickness Excluding Cladding mm	270	
60/60/60 (from outside only) FC 12946	**CSR 10114** 	EXTERNAL WALL SIDE • 1 x 16mm Gyprock Fyrchek MR Plasterboard. INTERNAL WALL SIDE • 1 x 10mm Gyprock Aquachek Plasterboard .	(a) 90 Acoustigard 24kg 25 Acoustigard 24kg 75 Acoustigard 24kg	57/46	2.84/3.03
			(b) 90 Acoustigard 32kg 25 Acoustigard 32kg 75 Acoustigard 32kg	57/46	3.01/3.21
			Wall Thickness Excluding Cladding mm	274	
60/60/60 –/90/90 (from both sides) FC 12946	**CSR 10115** 	EXTERNAL WALL SIDE • 1 x 16mm Gyprock Fyrchek MR Plasterboard. INTERNAL WALL SIDE • 1 x 16mm Gyprock Fyrchek Plasterboard.	(a) 90 Acoustigard 24kg 25 Acoustigard 24kg 75 Acoustigard 24kg	59/49	2.84/3.03
			(b) 90 Acoustigard 32kg 25 Acoustigard 32kg 75 Acoustigard 32kg	59/49	3.01/3.21
			Wall Thickness Excluding Cladding mm	280	
120/120/120 (from outside only) FC 12946	**CSR 10116** 	EXTERNAL WALL SIDE • 2 x 16mm Gyprock Fyrchek MR Plasterboard. INTERNAL WALL SIDE • 1 x 10mm Gyprock Plus Plasterboard.	(a) 90 Acoustigard 24kg 25 Acoustigard 24kg 75 Acoustigard 24kg	58/48	2.84/3.03
			(b) 90 Acoustigard 32kg 25 Acoustigard 32kg 75 Acoustigard 32kg	58/48	3.01/3.21
			Wall Thickness Excluding Cladding mm	290	
120/120/120 –/180/180‡ (from both sides) FC 12946	**CSR 10117** 	EXTERNAL WALL SIDE • 2 x 16mm Gyprock Fyrchek MR Plasterboard. INTERNAL WALL SIDE • 2 x 16mm Gyprock Fyrchek Plasterboard.	(a) 90 Acoustigard 24kg 25 Acoustigard 24kg 75 Acoustigard 24kg	63/**54**	2.84/3.03
			(b) 90 Acoustigard 32kg 25 Acoustigard 32kg 75 Acoustigard 32kg	63/**54**	3.01/3.21
			Wall Thickness Excluding Cladding mm	312	

Thermally Bridged Systems and Thermal Pathways – Internal Furring + Insulation

FIG F3: THERMALLY ENHANCED WALL SYSTEM – INTERNAL FURRING + INSULATION SYSTEM



NOTE: Images are for representation purposes only and may not accurately represent actual products, construction and/or installation methods. For general calculation assumptions, refer to page F35

The wall model used in the calculation has four (4) unique thermal resistance pathways from exterior to interior. The following specific assumptions were used for this calculation:

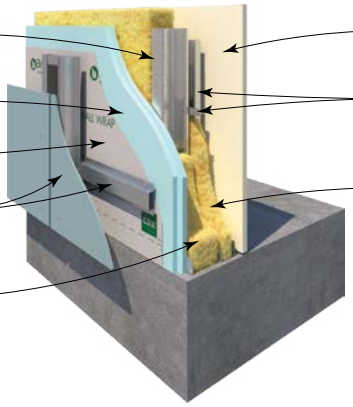
- External side stud framing: 92mm x 1.15mm BMT steel sections (i.e., studs, tracks, noggings).
- Internal side framing: Rondo BG01 clip (31mm cavity) with No.308 furring channel, or Rondo BG05 clip (76mm cavity) with No.129 furring channel.
- 100% alignment between the studs and internal furring channels.
- No alignment between the horizontal top hats and noggings of the stud framing.

TABLE F3: THERMAL PATHWAYS THROUGH INTERNAL FURRING AND INSULATION SYSTEM

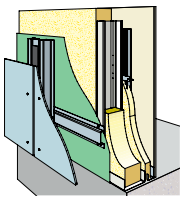
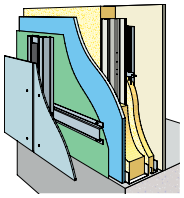
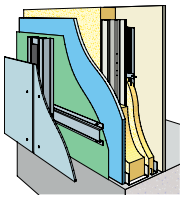
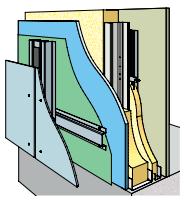
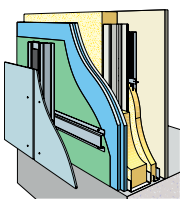
Pathway	Thermal Pathway Through Wall	Weighted Area (%)
1	Lining materials + cavity insulation materials NOT ALIGNED with stud framing or horizontal top hats or furring or clips.	79.03
2	Stud framing + aligned materials but EXCLUDING areas intersecting with horizontal top hats or furring or clips.	15.88
3	Horizontal top hats + aligned materials but EXCLUDING areas intersecting with stud framing or furring or clips.	4.22
4	Wall materials SIMULTANEOUSLY ALIGNED with stud framing and horizontal top hats	0.87

NOTES: 'Stud framing' includes studs, tracks and noggings.

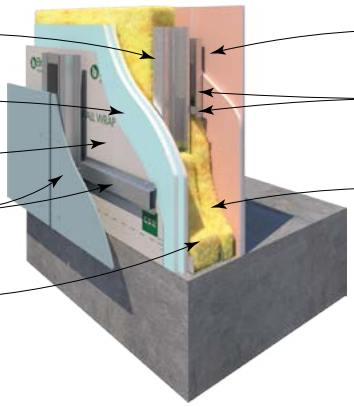
Cemintel Panel Cladding – Thermally Enhanced – Internal Furring + Insulation



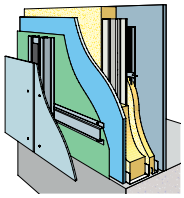
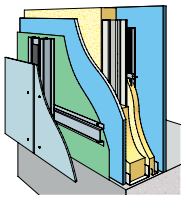
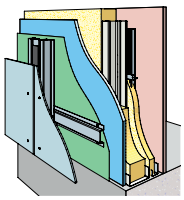
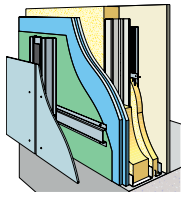
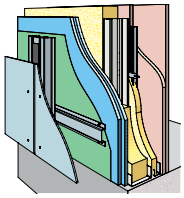
NOTE: Acoustic performance valid for studs noted. The system thermal R-Values provided have been calculated based the specified wall configuration only, and allow for the effects of thermal bridging.

SYSTEM SPECIFICATION			FRAMING	ACOUSTIC REPORT: PKA-A119 THERMAL REPORT: CSRRB3-02.01			
FRL Report	**SYSTEM Nº**	**WALL LININGS**		**STUD CAVITY INFILL** (Refer to TABLE B6)	**CLIP + FURRING WITH INFILL** (Refer to TABLE B6)	**Rw / Rw+Ctr**	**Rt(sum) / Rt(win)**
– / – / –	**CSR 10118** 	EXTERNAL WALL SIDE • Nil. INTERNAL WALL SIDE • 1 x 13mm Gyprock Standard Plasterboard.	BG01 + RONDO 308	(a) 90 Acoustigard 24kg	25 Acoustigard 24kg	48/38	2.03/2.17
				(b) 90 Acoustigard 32kg	25 Acoustigard 32kg	48/38	2.16/2.30
				Wall Thickness Excluding Cladding mm		186	
			BG05 + RONDO 129	(c) 90 Acoustigard 24kg	75 Acoustigard 24kg	50/40	3.71/4.02
				(d) 90 Acoustigard 32kg	75 Acoustigard 32kg	50/40	3.92/4.24
				Wall Thickness Excluding Cladding mm		231	
30/30/30 (from outside only) FC 12946	**CSR 10119** 	EXTERNAL WALL SIDE • 1 x 13mm Gyprock Fyrchek MR Plasterboard. INTERNAL WALL SIDE • 1 x 10mm Gyprock Plus Plasterboard.	BG01 + RONDO 308	(a) 90 Acoustigard 24kg	25 Acoustigard 24kg	49/38	2.03/2.17
				(b) 90 Acoustigard 32kg	25 Acoustigard 32kg	49/38	2.16/2.30
				Wall Thickness Excluding Cladding mm		196	
			BG05 + RONDO 129	(c) 90 Acoustigard 24kg	75 Acoustigard 24kg	51/40	3.71/4.02
				(d) 90 Acoustigard 32kg	75 Acoustigard 32kg	51/40	3.92/4.24
				Wall Thickness Excluding Cladding mm		241	
30/30/30 (from outside only) FC 12946	**CSR 10120** 	EXTERNAL WALL SIDE • 1 x 13mm Gyprock Fyrchek MR Plasterboard. INTERNAL WALL SIDE • 1 x 10mm Gyprock HD Plasterboard.	BG01 + RONDO 308	(a) 90 Acoustigard 24kg	25 Acoustigard 24kg	51/40	2.03/2.17
				(b) 90 Acoustigard 32kg	25 Acoustigard 32kg	51/40	2.16/2.30
				Wall Thickness Excluding Cladding mm		196	
			BG05 + RONDO 129	(c) 90 Acoustigard 24kg	75 Acoustigard 24kg	52/41	3.71/4.02
				(d) 90 Acoustigard 32kg	75 Acoustigard 32kg	52/41	3.92/4.24
				Wall Thickness Excluding Cladding mm		241	
30/30/30 –/60/60 (from both sides) FC 12946	**CSR 10121** 	EXTERNAL WALL SIDE • 1 x 13mm Gyprock Fyrchek MR Plasterboard. INTERNAL WALL SIDE • 1 x 13mm Gyprock EC08 Extreme Plasterboard.	BG01 + RONDO 308	(a) 90 Acoustigard 24kg	25 Acoustigard 24kg	53/43	2.03/2.17
				(b) 90 Acoustigard 32kg	25 Acoustigard 32kg	53/43	2.16/2.30
				Wall Thickness Excluding Cladding mm		199	
			BG05 + RONDO 129	(c) 90 Acoustigard 24kg	75 Acoustigard 24kg	54/44	3.71/4.02
				(d) 90 Acoustigard 32kg	75 Acoustigard 32kg	54/44	3.92/4.24
				Wall Thickness Excluding Cladding mm		244	
90/90/90 (from outside only) FC 12946	**CSR 10122** 	EXTERNAL WALL SIDE • 2 x 13mm Gyprock Fyrchek MR Plasterboard. INTERNAL WALL SIDE • 1 x 10mm Gyprock Plus Plasterboard.	BG01 + RONDO 308	(a) 90 Acoustigard 24kg	25 Acoustigard 24kg	51/41	2.03/2.17
				(b) 90 Acoustigard 32kg	25 Acoustigard 32kg	51/41	2.16/2.30
				Wall Thickness Excluding Cladding mm		209	
			BG05 + RONDO 129	(c) 90 Acoustigard 24kg	75 Acoustigard 24kg	52/42	3.71/4.02
				(d) 90 Acoustigard 32kg	75 Acoustigard 32kg	52/42	3.92/4.24
				Wall Thickness Excluding Cladding mm		254	

SYSTEM SPECIFICATIONS — Cemintel Panel Cladding – Thermally Enhanced – Internal Furring + Insulation

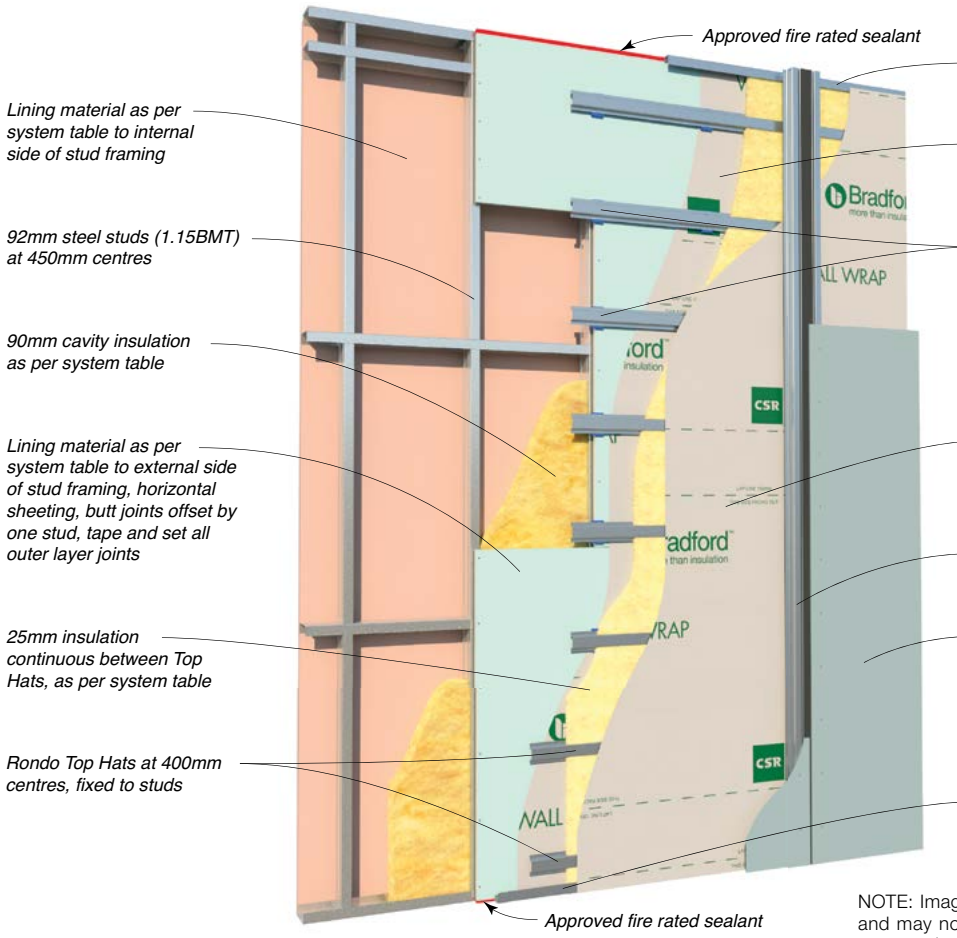


NOTE: Acoustic performance valid for studs noted. The system thermal R-Values provided have been calculated based the specified wall configuration only, and allow for the effects of thermal bridging.
‡ Unique height restrictions apply. Refer to The Red Book 3, height selection tables.

SYSTEM SPECIFICATION			FRAMING	ACOUSTIC REPORT: PKA-A119 THERMAL REPORT: CSRRB3-02.01			
FRL Report	SYSTEM Nº	WALL LININGS		STUD CAVITY INFILL (Refer to TABLE B6)	CLIP + FURRING WITH INFILL (Refer to TABLE B6)	R_w / R_w+C_{tr}	$R_{t(sum)}$ / $R_{t(win)}$
30/30/30 (from outside only) FC 12946	**CSR 10123** 	EXTERNAL WALL SIDE • 1 x 16mm Gyprock Fyrchek MR Plasterboard. INTERNAL WALL SIDE • 1 x 6mm Cemintel Wallboard.	BG01 + RONDO 308	(a) 90 Acoustigard 24kg	25 Acoustigard 24kg	52/41	2.03/2.17
				(b) 90 Acoustigard 32kg	25 Acoustigard 32kg	52/41	2.16/2.30
				Wall Thickness Excluding Cladding mm		195	
			BG05 + RONDO 129	(c) 90 Acoustigard 24kg	75 Acoustigard 24kg	53/42	3.71/4.02
				(d) 90 Acoustigard 32kg	75 Acoustigard 32kg	53/42	3.92/4.24
				Wall Thickness Excluding Cladding mm		240	
60/60/60 (from outside only) FC 12946	**CSR 10124** 	EXTERNAL WALL SIDE • 1 x 16mm Gyprock Fyrchek MR Plasterboard. INTERNAL WALL SIDE • 1 x 10mm Gyprock Aquachek Plasterboard .	BG01 + RONDO 308	(a) 90 Acoustigard 24kg	25 Acoustigard 24kg	50/39	2.03/2.17
				(b) 90 Acoustigard 32kg	25 Acoustigard 32kg	50/39	2.16/2.30
				Wall Thickness Excluding Cladding mm		199	
			BG05 + RONDO 129	(c) 90 Acoustigard 24kg	75 Acoustigard 24kg	52/41	3.71/4.02
				(d) 90 Acoustigard 32kg	75 Acoustigard 32kg	52/41	3.92/4.24
				Wall Thickness Excluding Cladding mm		244	
60/60/60 –/90/90 (from both sides) FC 12946	**CSR 10125** 	EXTERNAL WALL SIDE • 1 x 16mm Gyprock Fyrchek MR Plasterboard. INTERNAL WALL SIDE • 1 x 16mm Gyprock Fyrchek Plasterboard.	BG01 + RONDO 308	(a) 90 Acoustigard 24kg	25 Acoustigard 24kg	53/43	2.03/2.17
				(b) 90 Acoustigard 32kg	25 Acoustigard 32kg	53/43	2.16/2.30
				Wall Thickness Excluding Cladding mm		205	
			BG05 + RONDO 129	(c) 90 Acoustigard 24kg	75 Acoustigard 24kg	54/44	3.71/4.02
				(d) 90 Acoustigard 32kg	75 Acoustigard 32kg	54/44	3.92/4.24
				Wall Thickness Excluding Cladding mm		250	
120/120/120 (from outside only) FC 12946	**CSR 10126** 	EXTERNAL WALL SIDE • 2 x 16mm Gyprock Fyrchek MR Plasterboard. INTERNAL WALL SIDE • 1 x 10mm Gyprock Plus Plasterboard.	BG01 + RONDO 308	(a) 90 Acoustigard 24kg	25 Acoustigard 24kg	52/42	2.03/2.17
				(b) 90 Acoustigard 32kg	25 Acoustigard 32kg	52/42	2.16/2.30
				Wall Thickness Excluding Cladding mm		215	
			BG05 + RONDO 129	(c) 90 Acoustigard 24kg	75 Acoustigard 24kg	53/43	3.71/4.02
				(d) 90 Acoustigard 32kg	75 Acoustigard 32kg	53/43	3.92/4.24
				Wall Thickness Excluding Cladding mm		260	
120/120/120 –/180/180‡ (from both sides) FC 12946	**CSR 10127** 	EXTERNAL WALL SIDE • 2 x 16mm Gyprock Fyrchek MR Plasterboard. INTERNAL WALL SIDE • 2 x 16mm Gyprock Fyrchek Plasterboard.	BG01 + RONDO 308	(a) 90 Acoustigard 24kg	25 Acoustigard 24kg	57/48	2.03/2.17
				(b) 90 Acoustigard 32kg	25 Acoustigard 32kg	57/48	2.16/2.30
				Wall Thickness Excluding Cladding mm		237	
			BG05 + RONDO 129	(c) 90 Acoustigard 24kg	75 Acoustigard 24kg	58/49	3.71/4.02
				(d) 90 Acoustigard 32kg	75 Acoustigard 32kg	58/49	3.92/4.24
				Wall Thickness Excluding Cladding mm		282	

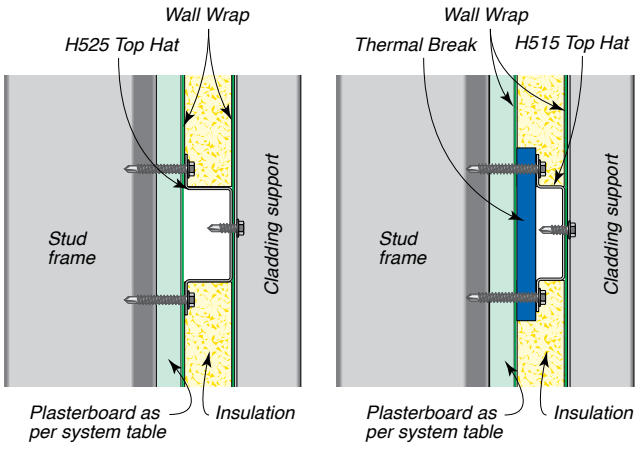
Thermally Bridged Systems and Thermal Pathways – External Batten + Insulation

FIG F4: THERMALLY ENHANCED WALL SYSTEM – EXTERNAL BATTEN + INSULATION



NOTE: Images are for representation purposes only and may not accurately represent actual products, construction and/or installation methods. For general calculation assumptions, refer to page F35.

FIG F5: TOP HAT OPTIONS



The wall model used in the calculation has four (4) unique thermal resistance pathways from exterior to interior. The following specific assumptions were used for this calculation:

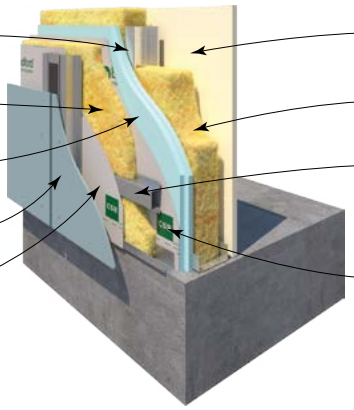
- Horizontal top hats: Rondo H525 or Rondo H515 on non-compressible and non-combustible, 10mm thick, min. R0.2 fixed to studs thermal break pads.
- Internal side stud framing: 92mm x 1.15mm BMT steel sections (i.e., studs, tracks, nogging).
- No alignment between the horizontal top hats and noggings of the internal stud framing.

TABLE F4: THERMAL PATHWAYS THROUGH DOUBLE STUD SYSTEM

Pathway	Thermal Pathway Through Wall	Weighted Area (%)
1	Lining materials + cavity insulation materials NOT ALIGNED with stud framing or horizontal top hats.	73.54
2	Stud framing + aligned materials but EXCLUDING areas intersecting with horizontal top hats.	14.80
3	Horizontal top hats + aligned materials but EXCLUDING areas intersecting with stud framing.	9.71
4	Wall materials SIMULTANEOUSLY ALIGNED with stud framing and horizontal top hats.	1.95

NOTES: 'Stud framing' includes studs, tracks and noggings.

SYSTEM SPECIFICATIONS — Cemintel Panel Cladding – Thermally Enhanced – External Batten + Insulation



92mm steel studs (1.15BMT) at 450mm centres.

25mm cavity insulation as per system table.

Lining material as per system table to external side.

Cemintel ExpressPanel, Barestone or Surround panel on ventilated cavity cladding support system.

Wall Wrap.

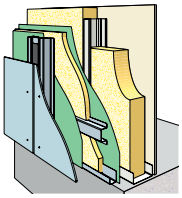
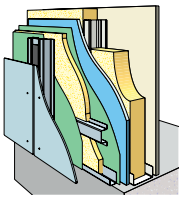
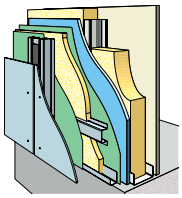
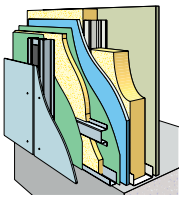
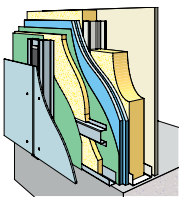
Lining material as per system table to internal side.

90mm cavity insulation as per system table.

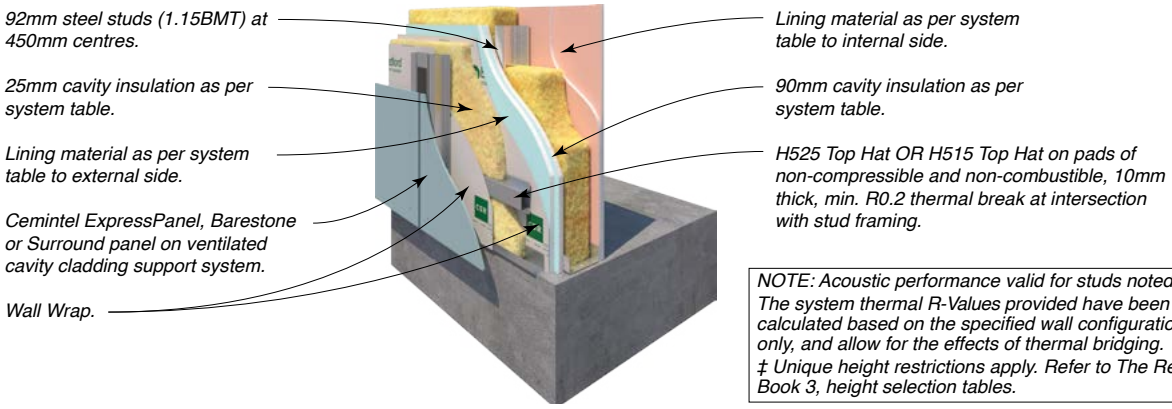
H525 Top Hat OR H515 Top Hat on pads of non-compressible and non-combustible, 10mm thick, min. R0.2 thermal break at intersection with stud framing.

Wall Wrap.

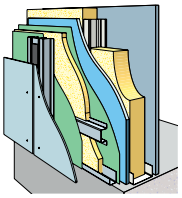
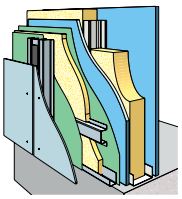
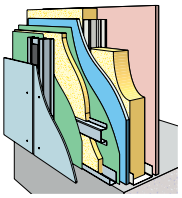
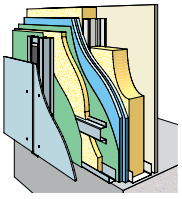
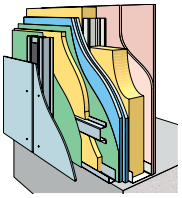
NOTE: Acoustic performance valid for studs noted. The system thermal R-Values provided have been calculated based the specified wall configuration only, and allow for the effects of thermal bridging.

SYSTEM SPECIFICATION			FRAMING	ACOUSTIC REPORT: PKA-A119 THERMAL REPORT: CSRRB3-03.01			
FRL Report	**SYSTEM Nº**	**WALL LININGS**		**STUD CAVITY INFILL** (Refer to TABLE B6)	**EXTERNAL BATTEN WITH INFILL**	**R_w / R_w+C_{tr}**	**$R_{t(sum)}$ / $R_{t(win)}$**
– / – / –	**CSR 10128** 	EXTERNAL WALL SIDE • Nil. INTERNAL WALL SIDE • 1 x 13mm Gyprock Standard Plasterboard.	Rondo H525	(a) 90 Acoustigard 24kg	25 Acoustigard 24kg	47/37	1.76/1.85
				(b) 90 Acoustigard 32kg	25 Acoustigard 32kg	48/38	1.85/1.94
				Wall Thickness Excluding Cladding mm		165	
			Rondo H515 + Thermal Break	(c) 90 Acoustigard 24kg	25 Acoustigard 24kg	48/38	2.06/2.18
				(d) 90 Acoustigard 32kg	25 Acoustigard 32kg	49/39	2.18/2.30
				Wall Thickness Excluding Cladding mm		165	
30/30/30 (from outside only) FC 12946	**CSR 10129** 	EXTERNAL WALL SIDE • 1 x 13mm Gyprock Fyrchek MR Plasterboard. INTERNAL WALL SIDE • 1 x 10mm Gyprock Plus Plasterboard.	Rondo H525	(a) 90 Acoustigard 24kg	25 Acoustigard 24kg	47/36	1.76/1.85
				(b) 90 Acoustigard 32kg	25 Acoustigard 32kg	48/37	1.85/1.94
				Wall Thickness Excluding Cladding mm		175	
			Rondo H515 + Thermal Break	(c) 90 Acoustigard 24kg	25 Acoustigard 24kg	48/37	2.06/2.18
				(d) 90 Acoustigard 32kg	25 Acoustigard 32kg	49/38	2.18/2.30
				Wall Thickness Excluding Cladding mm		175	
30/30/30 (from outside only) FC 12946	**CSR 10130** 	EXTERNAL WALL SIDE • 1 x 13mm Gyprock Fyrchek MR Plasterboard. INTERNAL WALL SIDE • 1 x 10mm Gyprock HD Plasterboard.	Rondo H525	(a) 90 Acoustigard 24kg	25 Acoustigard 24kg	48/37	1.76/1.85
				(b) 90 Acoustigard 32kg	25 Acoustigard 32kg	49/38	1.85/1.94
				Wall Thickness Excluding Cladding mm		175	
			Rondo H515 + Thermal Break	(c) 90 Acoustigard 24kg	25 Acoustigard 24kg	48/37	2.06/2.18
				(d) 90 Acoustigard 32kg	25 Acoustigard 32kg	49/38	2.18/2.30
				Wall Thickness Excluding Cladding mm		175	
60/60/60 **–/90/90** (from both sides) FC 12946	**CSR 10131** 	EXTERNAL WALL SIDE • 1 x 13mm Gyprock Fyrchek MR Plasterboard. INTERNAL WALL SIDE • 1 x 13mm Gyprock EC08 Extreme Plasterboard.	Rondo H525	(a) 90 Acoustigard 24kg	25 Acoustigard 24kg	50/40	1.76/1.85
				(b) 90 Acoustigard 32kg	25 Acoustigard 32kg	51/41	1.85/1.94
				Wall Thickness Excluding Cladding mm		178	
			Rondo H515 + Thermal Break	(c) 90 Acoustigard 24kg	25 Acoustigard 24kg	50/40	2.06/2.18
				(d) 90 Acoustigard 32kg	25 Acoustigard 32kg	51/41	2.18/2.30
				Wall Thickness Excluding Cladding mm		178	
90/90/90 (from outside only) FC 12946	**CSR 10132** 	EXTERNAL WALL SIDE • 2 x 13mm Gyprock Fyrchek MR Plasterboard. INTERNAL WALL SIDE • 1 x 10mm Gyprock Plus Plasterboard.	Rondo H525	(a) 90 Acoustigard 24kg	25 Acoustigard 24kg	49/39	1.76/1.85
				(b) 90 Acoustigard 32kg	25 Acoustigard 32kg	50/40	1.85/1.94
				Wall Thickness Excluding Cladding mm		188	
			Rondo H515 + Thermal Break	(c) 90 Acoustigard 24kg	25 Acoustigard 24kg	49/39	2.06/2.18
				(d) 90 Acoustigard 32kg	25 Acoustigard 32kg	50/40	2.18/2.30
				Wall Thickness Excluding Cladding mm		188	

Cemintel Panel Cladding – Thermally Enhanced – External Batten + Insulation



NOTE: Acoustic performance valid for studs noted. The system thermal R-Values provided have been calculated based on the specified wall configuration only, and allow for the effects of thermal bridging.
‡ Unique height restrictions apply. Refer to The Red Book 3, height selection tables.

SYSTEM SPECIFICATION			FRAMING	ACOUSTIC REPORT: PKA-A119 THERMAL REPORT: CSRRB3-03.01			
FRL Report	**SYSTEM Nº**	**WALL LININGS**		**STUD CAVITY INFILL** (Refer to TABLE B6)	**EXTERNAL BATTEN WITH INFILL**	**R_w / R_w+C_{tr}**	**$R_{t(sum)}$ / $R_{t(win)}$**
30/30/30 (from outside only) FC 12946	**CSR 10133** 	EXTERNAL WALL SIDE • 1 x 16mm Gyprock Fyrchek MR Plasterboard. INTERNAL WALL SIDE • 1 x 6mm Cemintel Wallboard.	Rondo H525	(a) 90 Acoustigard 24kg	25 Acoustigard 24kg	49/38	1.76/1.85
				(b) 90 Acoustigard 32kg	25 Acoustigard 32kg	50/39	1.85/1.94
				Wall Thickness Excluding Cladding mm		174	
			Rondo H515 + Thermal Break	(c) 90 Acoustigard 24kg	25 Acoustigard 24kg	49/38	2.06/2.18
				(d) 90 Acoustigard 32kg	25 Acoustigard 32kg	50/39	2.18/2.30
				Wall Thickness Excluding Cladding mm		174	
60/60/60 (from outside only) FC 12946	**CSR 10134** 	EXTERNAL WALL SIDE • 1 x 16mm Gyprock Fyrchek MR Plasterboard. INTERNAL WALL SIDE • 1 x 10mm Gyprock Aquachek Plasterboard .	Rondo H525	(a) 90 Acoustigard 24kg	25 Acoustigard 24kg	48/37	1.76/1.85
				(b) 90 Acoustigard 32kg	25 Acoustigard 32kg	49/38	1.85/1.94
				Wall Thickness Excluding Cladding mm		178	
			Rondo H515 + Thermal Break	(c) 90 Acoustigard 24kg	25 Acoustigard 24kg	49/38	2.06/2.18
				(d) 90 Acoustigard 32kg	25 Acoustigard 32kg	49/38	2.18/2.30
				Wall Thickness Excluding Cladding mm		178	
60/60/60 –/90/90 (from both sides) FC 12946	**CSR 10135** 	EXTERNAL WALL SIDE • 1 x 16mm Gyprock Fyrchek MR Plasterboard. INTERNAL WALL SIDE • 1 x 16mm Gyprock Fyrchek Plasterboard.	Rondo H525	(a) 90 Acoustigard 24kg	25 Acoustigard 24kg	50/40	1.76/1.85
				(b) 90 Acoustigard 32kg	25 Acoustigard 32kg	51/41	1.85/1.94
				Wall Thickness Excluding Cladding mm		184	
			Rondo H515 + Thermal Break	(c) 90 Acoustigard 24kg	25 Acoustigard 24kg	50/40	2.06/2.18
				(d) 90 Acoustigard 32kg	25 Acoustigard 32kg	51/41	2.18/2.30
				Wall Thickness Excluding Cladding mm		184	
120/120/120 (from outside only) FC 12946	**CSR 10136** 	EXTERNAL WALL SIDE • 2 x 16mm Gyprock Fyrchek MR Plasterboard. INTERNAL WALL SIDE • 1 x 10mm Gyprock Plus Plasterboard.	Rondo H525	(a) 90 Acoustigard 24kg	25 Acoustigard 24kg	50/40	1.76/1.85
				(b) 90 Acoustigard 32kg	25 Acoustigard 32kg	51/41	1.85/1.94
				Wall Thickness Excluding Cladding mm		194	
			Rondo H515 + Thermal Break	(c) 90 Acoustigard 24kg	25 Acoustigard 24kg	50/40	2.06/2.18
				(d) 90 Acoustigard 32kg	25 Acoustigard 32kg	51/41	2.18/2.30
				Wall Thickness Excluding Cladding mm		194	
120/120/120 –/180/180‡ (from both sides) FC 12946	**CSR 10137** 	EXTERNAL WALL SIDE • 2 x 16mm Gyprock Fyrchek MR Plasterboard. INTERNAL WALL SIDE • 2 x 16mm Gyprock Fyrchek Plasterboard.	Rondo H525	(a) 90 Acoustigard 24kg	25 Acoustigard 24kg	54/45	1.76/1.85
				(b) 90 Acoustigard 32kg	25 Acoustigard 32kg	55/46	1.85/1.94
				Wall Thickness Excluding Cladding mm		216	
			Rondo H515 + Thermal Break	(c) 90 Acoustigard 24kg	25 Acoustigard 24kg	54/45	2.06/2.18
				(d) 90 Acoustigard 32kg	25 Acoustigard 32kg	55/46	2.18/2.30
				Wall Thickness Excluding Cladding mm		216	

THERMALLY BRIDGED SYSTEMS AND THERMAL PATHWAYS – OTHER SYSTEMS

The wall model used in the calculation have considered the thermal resistance pathways from exterior to interior for the following systems. A non-compressible and non-combustible,10mm thick, R0.2 thermal break was included in the calculation when required as per the system table. For general calculation assumptions, refer to page F35.

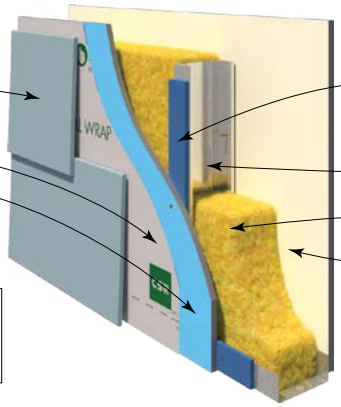
TABLE F5: THERMAL PATHWAYS FOR SYSTEMS ON page F47 & page F48		
Pathway	**Thermal Pathway Through Wall**	**Weighted Area (%)**
1	Lining materials + cavity insulation materials NOT ALIGNED with stud framing.	85.89
2	Wall materials ALIGNED with stud framing.	14.05

NOTES: 'Stud framing' includes studs, tracks and noggings.

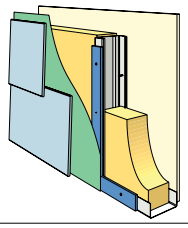
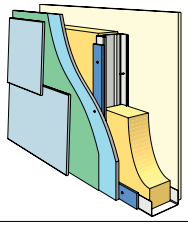
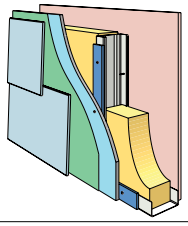
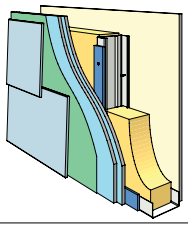
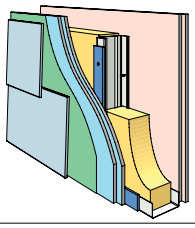
TABLE F6: THERMAL PATHWAYS FOR SYSTEMS ON page F49 to page F54		
Pathway	**Thermal Pathway Through Wall**	**Weighted Area (%)**
1	Lining materials + cavity insulation materials NOT ALIGNED with stud framing.	76.40
2	Stud framing + aligned materials but EXCLUDING external framing and cladding.	12.49
3	Battens + aligned materials but EXCLUDING areas intersecting with stud framing.	9.55
4	Wall materials SIMULTANEOUSLY ALIGNED with stud framing and external framing.	1.56

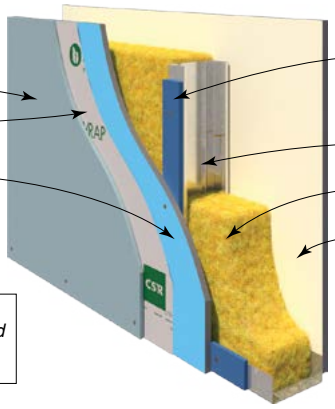
NOTES:
'Stud framing' includes studs, tracks and noggings.
'External framing' includes battens, Territory clips and horizontal top hats.

Cemintel Weatherboards – Direct Fixed – Steel Frame – Thermal Bridged

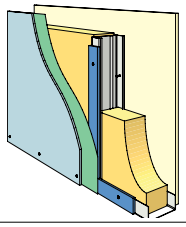
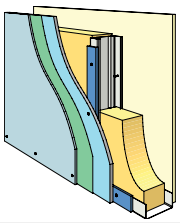
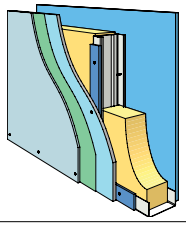
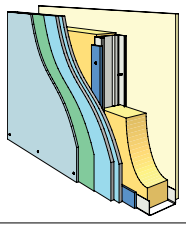
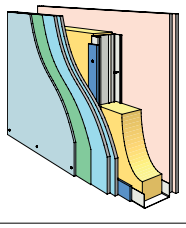


NOTE: Acoustic performance valid for studs with 0.75 BMT. The system thermal R-Values provided have been calculated based on the specified wall configuration only, and allow for the effects of thermal bridging.

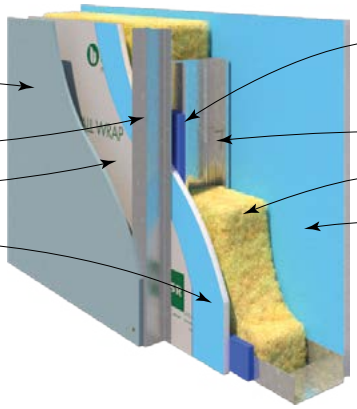
SYSTEM SPECIFICATION			Thermal Break	ACOUSTIC REPORT: PKA-A119 THERMAL REPORT: CSRRB2-01.03 / CSRRB2-02.04				
				STUD DEPTH mm	70		90	
FRL Report	SYSTEM Nº	WALL LININGS		CAVITY INFILL (Refer to TABLE B6)	R_w / R_w+C_{tr}	$R_{t(sum)}$/ $R_{t(win)}$	R_w/ R_w+C_{tr}	$R_{t(sum)}$/ $R_{t(win)}$
– /– / –	**CSR 10211** 	EXTERNAL WALL SIDE • Nil INTERNAL WALL SIDE • 1 x 10mm Gyprock Plus Plasterboard.	With Break	(a) 90 Gold Batts R2.0	–	–	41/32	1.30/1.35
				(b) 90 Gold Batts R2.5	–	–	42/33	1.41/1.45
				(c) 75 Gold Batts R2.0	40/31	1.28/1.32	41/32	1.34/1.38
				Thickness Excluding Cladding mm	90		110	
			Without Break	(d) 90 Gold Batts R2.0	–	–	41/32	0.69/0.70
				(e) 90 Gold Batts R2.5	–	–	42/33	0.71/0.72
				(f) 75 Gold Batts R2.0	40/31	0.70/0.71	41/32	0.71/0.72
				Thickness Excluding Cladding mm	80		100	
60/60/60 (from outside only) FC 12946	**CSR 10212** 	EXTERNAL WALL SIDE • 1 x 16mm Gyprock Fyrchek MR Plasterboard INTERNAL WALL SIDE • 1 x 10mm Gyprock Plus Plasterboard.	With Break	(a) 90 Gold Batts R2.0	–	–	44/35	1.45/1.51
				(b) 90 Gold Batts R2.5	–	–	45/36	1.59/1.63
				(c) 75 Gold Batts R2.0	43/34	1.42/1.46	44/35	1.50/1.55
				Thickness Excluding Cladding mm	106		126	
			Without Break	(d) 90 Gold Batts R2.0	–	–	44/35	0.97/0.99
				(e) 90 Gold Batts R2.5	–	–	45/36	1.02/1.04
				(f) 75 Gold Batts R2.0	43/34	0.98/0.99	44/35	0.99/1.01
				Thickness Excluding Cladding mm	96		116	
60/60/60 – /90/90 (from both sides) FC 12946	**CSR 10213** 	EXTERNAL WALL SIDE • 1 x 16mm Gyprock Fyrchek MR Plasterboard. INTERNAL WALL SIDE • 1 x 16mm Gyprock Fyrchek Plasterboard.	With Break	(a) 90 Gold Batts R2.0	–	–	48/40	1.45/1.51
				(b) 90 Gold Batts R2.5	–	–	49/41	1.59/1.63
				(c) 75 Gold Batts R2.0	47/39	1.42/1.46	48/40	1.50/1.55
				Thickness Excluding Cladding mm	112		132	
			Without Break	(d) 90 Gold Batts R2.0	–	–	48/40	0.97/0.99
				(e) 90 Gold Batts R2.5	–	–	49/41	1.02/1.04
				(f) 75 Gold Batts R2.0	47/39	0.98/0.99	48/40	0.99/1.01
				Thickness Excluding Cladding mm	102		122	
90/90/90 (from outside only) FC 12946	**CSR 10214** 	EXTERNAL WALL SIDE • 2 x 13mm Gyprock Fyrchek MR Plasterboard. INTERNAL WALL SIDE • 1 x 10mm Gyprock Plus Plasterboard.	With Break	(a) 90 Gold Batts R2.0	–	–	47/38	1.45/1.51
				(b) 90 Gold Batts R2.5	–	–	48/39	1.59/1.63
				(c) 75 Gold Batts R2.0	46/37	1.42/1.46	47/38	1.50/1.55
				Thickness Excluding Cladding mm	116		136	
			Without Break	(d) 90 Gold Batts R2.0	–	–	47/38	0.97/0.99
				(e) 90 Gold Batts R2.5	–	–	48/39	1.02/1.04
				(f) 75 Gold Batts R2.0	46/37	0.98/0.99	47/38	0.99/1.01
				Thickness Excluding Cladding mm	106		126	
90/90/90 – /120/120 (from both sides) FC 12946	**CSR 10215** 	EXTERNAL WALL SIDE • 2 x 13mm Gyprock Fyrchek MR Plasterboard. INTERNAL WALL SIDE • 2 x 13mm Gyprock Fyrchek Plasterboard.	With Break	(a) 90 Gold Batts R2.0	–	–	51/43	1.62/1.68
				(b) 90 Gold Batts R2.5	–	–	52/44	1.77/1.82
				(c) 75 Gold Batts R2.0	50/42	1.58/1.63	51/43	1.67/1.72
				Thickness Excluding Cladding mm	132		152	
			Without Break	(d) 90 Gold Batts R2.0	–	–	51/43	1.20/1.23
				(e) 90 Gold Batts R2.5	–	–	52/44	1.27/1.29
				(f) 75 Gold Batts R2.0	50/42	1.19/1.22	51/43	1.22/1.25
				Thickness Excluding Cladding mm	122		142	



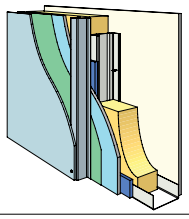
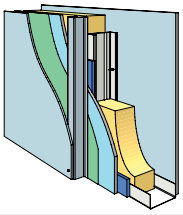
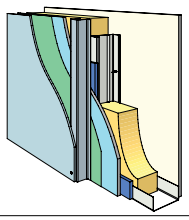
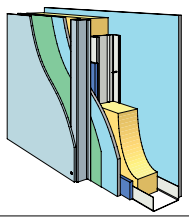
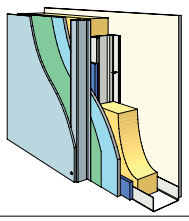
NOTE: Acoustic performance valid for studs with 0.75 BMT. The system thermal R-Values provided have been calculated based on the specified wall configuration only, and allow for the effects of thermal bridging.

SYSTEM SPECIFICATION			Thermal Break	ACOUSTIC REPORT: PKA-A119 THERMAL REPORT: CSRRB2-01.03 / CSRRB2-02.04				
				STUD DEPTH mm	70		90	
FRL Report	SYSTEM Nº	WALL LININGS		CAVITY INFILL (Refer to TABLE B6)	Rw / Rw+Ctr	Rt(sum)/ Rt(win)	Rw/ Rw+Ctr	Rt(sum)/ Rt(win)
– /– / –	CSR 10216 	EXTERNAL WALL SIDE • Nil INTERNAL WALL SIDE • 1 x 10mm Gyprock Plus Plasterboard.	With Break	(a) 90 Gold Batts R2.0	–	–	41/32	1.30/1.35
				(b) 90 Gold Batts R2.5	–	–	42/33	1.41/1.45
				(c) 75 Gold Batts R2.0	41/32	1.28/1.32	41/32	1.34/1.38
				Thickness Excluding Cladding mm	100		120	
			Without Break	(d) 90 Gold Batts R2.0	–	–	41/32	0.69/0.70
				(e) 90 Gold Batts R2.5	–	–	42/33	0.71/0.72
				(f) 75 Gold Batts R2.0	41/32	0.70/0.71	41/32	0.71/0.72
				Thickness Excluding Cladding mm	90		110	
30/30/30 (from outside only) FC 12946	CSR 10217 	EXTERNAL WALL SIDE • 1 x 13mm Gyprock Fyrchek MR Plasterboard INTERNAL WALL SIDE • 1 x 10mm Gyprock Plus Plasterboard.	With Break	(a) 90 Gold Batts R2.0	–	–	45/36	1.45/1.51
				(b) 90 Gold Batts R2.5	–	–	46/37	1.59/1.63
				(c) 75 Gold Batts R2.0	45/36	1.42/1.46	45/36	1.50/1.55
				Thickness Excluding Cladding mm	103		123	
			Without Break	(d) 90 Gold Batts R2.0	–	–	45/36	0.97/0.99
				(e) 90 Gold Batts R2.5	–	–	46/37	1.02/1.04
				(f) 75 Gold Batts R2.0	45/36	0.98/0.99	45/36	0.99/1.01
				Thickness Excluding Cladding mm	93		113	
60/60/60 – /90/90 (from both sides) FC 12946	CSR 10218 	EXTERNAL WALL SIDE • 1 x 16mm Gyprock Fyrchek MR Plasterboard. INTERNAL WALL SIDE • 1 x 16mm Gyprock Fyrchek Plasterboard.	With Break	(a) 90 Gold Batts R2.0	–	–	50/42	1.45/1.51
				(b) 90 Gold Batts R2.5	–	–	51/43	1.59/1.63
				(c) 75 Gold Batts R2.0	50/42	1.42/1.46	50/42	1.50/1.55
				Thickness Excluding Cladding mm	112		132	
			Without Break	(d) 90 Gold Batts R2.0	–	–	50/42	0.97/0.99
				(e) 90 Gold Batts R2.5	–	–	51/43	1.02/1.04
				(f) 75 Gold Batts R2.0	50/42	0.98/0.99	50/42	0.99/1.01
				Thickness Excluding Cladding mm	102		122	
90/90/90 (from outside only) FC 12946	CSR 10219 	EXTERNAL WALL SIDE • 2 x 13mm Gyprock Fyrchek MR Plasterboard. INTERNAL WALL SIDE • 1 x 10mm Gyprock Plus Plasterboard.	With Break	(a) 90 Gold Batts R2.0	–	–	49/40	–
				(b) 90 Gold Batts R2.5	–	–	50/41	–
				(c) 75 Gold Batts R2.0	49/40	1.42/1.46	49/40	0.98/0.99
				Thickness Excluding Cladding mm	116		136	
			Without Break	(d) 90 Gold Batts R2.0	–	–	49/40	1.45/1.51
				(e) 90 Gold Batts R2.5	–	–	50/41	1.59/1.63
				(f) 75 Gold Batts R2.0	49/40	0.98/0.99	49/40	1.50/1.55
				Thickness Excluding Cladding mm	106		126	
90/90/90 – /120/120 (from both sides) FC 12946	CSR 10220 	EXTERNAL WALL SIDE • 2 x 13mm Gyprock Fyrchek MR Plasterboard. INTERNAL WALL SIDE • 2 x 13mm Gyprock Fyrchek Plasterboard.	With Break	(a) 90 Gold Batts R2.0	–	–	53/45	1.62/1.68
				(b) 90 Gold Batts R2.5	–	–	54/46	1.77/1.82
				(c) 75 Gold Batts R2.0	53/45	1.58/1.63	53/45	1.67/1.72
				Thickness Excluding Cladding mm	132		152	
			Without Break	(d) 90 Gold Batts R2.0	–	–	53/45	1.20/1.23
				(e) 90 Gold Batts R2.5	–	–	54/46	1.27/1.29
				(f) 75 Gold Batts R2.0	53/45	1.19/1.22	53/45	1.22/1.25
				Thickness Excluding Cladding mm	122		142	

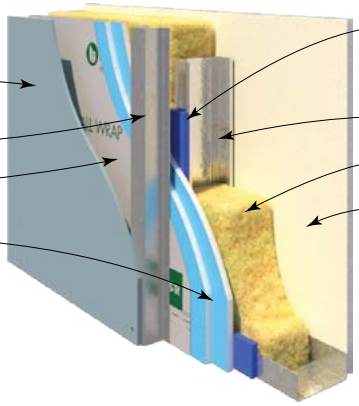
Cemintel Sheet or Weatherboards – Steel Frame With Cavity – Thermal Bridged



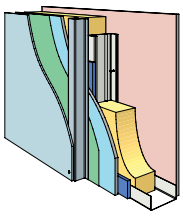
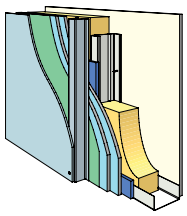
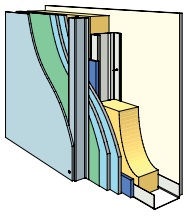
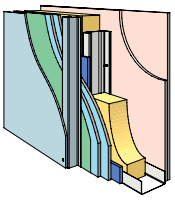
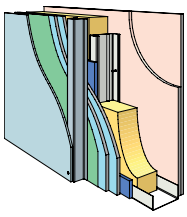
NOTE: Acoustic performance valid for studs with 0.75 BMT. The system thermal R-Values provided have been calculated based on the specified wall configuration only, and allow for the effects of thermal bridging.

SYSTEM SPECIFICATION			Thermal Break	ACOUSTIC REPORT: PKA-A119 THERMAL REPORT: CSRRB2-05.03				
				STUD DEPTH mm	70		90	
FRL Report	SYSTEM Nº	WALL LININGS		CAVITY INFILL (Refer to TABLE B6)	R_w / R_w+C_{tr}	$R_{t(sum)}$/ $R_{t(win)}$	R_w/ R_w+C_{tr}	$R_{t(sum)}$/ $R_{t(win)}$
30/30/30 (from outside only) FC 12946	**CSR 10221** 	EXTERNAL WALL SIDE • 1 x 13mm Gyprock Fyrchek MR Plasterboard. INTERNAL WALL SIDE • 1 x 10mm Gyprock Plus Plasterboard.	With Break	(a) 90 Gold Batts R2.0	–	–	41/30	1.41/1.47
				(b) 90 Gold Batts R2.5	–	–	42/31	1.56/1.60
				(c) 75 Gold Batts R2.0	40/29	1.38/1.43	41/30	1.46/1.51
				Thickness Excluding Cladding mm	122		142	
			Without Break	(d) 90 Gold Batts R2.0	–	–	41/30	0.97/0.99
				(e) 90 Gold Batts R2.5	–	–	42/31	1.03/1.04
				(f) 75 Gold Batts R2.0	40/29	0.97/0.99	41/30	0.99/1.01
				Thickness Excluding Cladding mm	112		132	
30/30/30 (from outside only) FC 12946	**CSR 10222** 	EXTERNAL WALL SIDE • 1 x 16mm Gyprock Fyrchek MR Plasterboard. INTERNAL WALL SIDE • 1 x 6mm CeminSeal Wallboard.	With Break	(a) 90 Gold Batts R2.0	–	–	45/35	1.41/1.47
				(b) 90 Gold Batts R2.5	–	–	46/36	1.56/1.60
				(c) 75 Gold Batts R2.0	44/34	1.38/1.43	45/35	1.46/1.51
				Thickness Excluding Cladding mm	121		141	
			Without Break	(d) 90 Gold Batts R2.0	–	–	45/35	0.97/0.99
				(e) 90 Gold Batts R2.5	–	–	46/36	1.03/1.04
				(f) 75 Gold Batts R2.0	44/34	0.97/0.99	45/35	0.99/1.01
				Thickness Excluding Cladding mm	111		131	
60/60/60 (from outside only) FC 12946	**CSR 10223** 	EXTERNAL WALL SIDE • 1 x 16mm Gyprock Fyrchek MR Plasterboard. INTERNAL WALL SIDE • 1 x 10mm Gyprock Plus Plasterboard.	With Break	(a) 90 Gold Batts R2.0	–	–	42/31	1.41/1.47
				(b) 90 Gold Batts R2.5	–	–	43/32	1.56/1.60
				(c) 75 Gold Batts R2.0	41/30	1.38/1.43	42/31	1.46/1.51
				Thickness Excluding Cladding mm	125		145	
			Without Break	(d) 90 Gold Batts R2.0	–	–	42/31	0.97/0.99
				(e) 90 Gold Batts R2.5	–	–	43/32	1.03/1.04
				(f) 75 Gold Batts R2.0	41/30	0.97/0.99	42/31	0.99/1.01
				Thickness Excluding Cladding mm	115		135	
60/60/60 (from outside only) FC 12946	**CSR 10224** 	EXTERNAL WALL SIDE • 1 x 16mm Gyprock Fyrchek MR Plasterboard. INTERNAL WALL SIDE • 1 x 10mm Gyprock Aquachek Plasterboard.	With Break	(a) 90 Gold Batts R2.0	–	–	44/33	1.41/1.47
				(b) 90 Gold Batts R2.5	–	–	45/34	1.56/1.60
				(c) 75 Gold Batts R2.0	43/32	1.38/1.43	44/33	1.46/1.51
				Thickness Excluding Cladding mm	125		145	
			Without Break	(d) 90 Gold Batts R2.0	–	–	44/33	0.97/0.99
				(e) 90 Gold Batts R2.5	–	–	45/34	1.03/1.04
				(f) 75 Gold Batts R2.0	43/32	0.97/0.99	44/33	0.99/1.01
				Thickness Excluding Cladding mm	115		135	
60/60/60 (from outside only) FC 12946	**CSR 10225** 	EXTERNAL WALL SIDE • 1 x 16mm Gyprock Fyrchek MR Plasterboard. INTERNAL WALL SIDE • 1 x 10mm Gyprock HD Plasterboard.	With Break	(a) 90 Gold Batts R2.0	–	–	45/35	1.41/1.47
				(b) 90 Gold Batts R2.5	–	–	46/36	1.56/1.60
				(c) 75 Gold Batts R2.0	44/33	1.38/1.43	45/35	1.46/1.51
				Thickness Excluding Cladding mm	125		145	
			Without Break	(d) 90 Gold Batts R2.0	–	–	45/35	0.97/0.99
				(e) 90 Gold Batts R2.5	–	–	46/36	1.03/1.04
				(f) 75 Gold Batts R2.0	44/33	0.97/0.99	45/35	0.99/1.01
				Thickness Excluding Cladding mm	115		135	

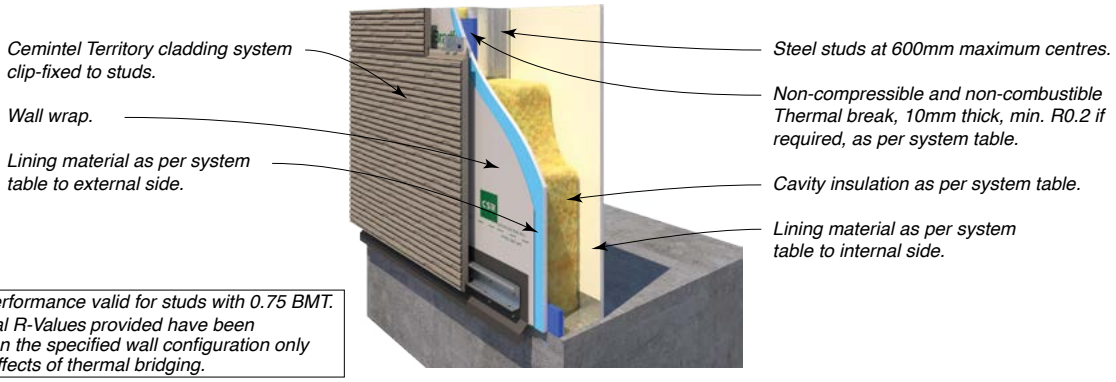
Cemintel Sheet or Weatherboards – Steel Frame With Cavity – Thermal Bridged



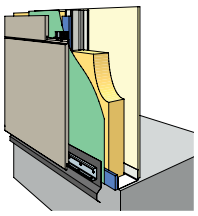
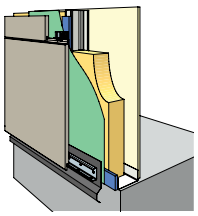
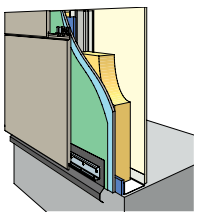
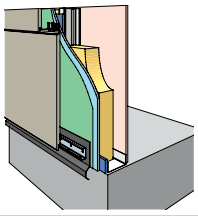
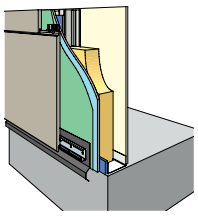
NOTE: Acoustic performance valid for studs with 0.75 BMT. The system thermal R-Values provided have been calculated based on the specified wall configuration only and allow for the effects of thermal bridging.
‡ Unique height restrictions apply. Refer to The Red Book 3, height selection tables.

SYSTEM SPECIFICATION			Thermal Break	ACOUSTIC REPORT: PKA-A119 THERMAL REPORT: CSRRB2-06.03				
				STUD DEPTH mm	70		90	
FRL Report	SYSTEM Nº	WALL LININGS		CAVITY INFILL (Refer to TABLE B6)	R_w / R_w+C_{tr}	$R_{t(sum)}$/ $R_{t(win)}$	R_w/ R_w+C_{tr}	$R_{t(sum)}$/ $R_{t(win)}$
60/60/60 – /90/90 (from both sides) FC 12946	**CSR 10226** 	EXTERNAL WALL SIDE • 1 x 16mm Gyprock Fyrchek MR Plasterboard. INTERNAL WALL SIDE • 1 x 16mm Gyprock Fyrchek Plasterboard.	With Break	(a) 90 Gold Batts R2.0	–	–	47/37	1.47/1.53
				(b) 90 Gold Batts R2.5	–	–	48/38	1.62/1.66
				(c) 75 Gold Batts R2.0	46/36	1.43/1.48	46/37	1.51/1.57
				Thickness Excluding Cladding mm	131		151	
			Without Break	(d) 90 Gold Batts R2.0	–	–	47/37	1.04/1.07
				(e) 90 Gold Batts R2.5	–	–	48/38	1.10/1.12
				(f) 75 Gold Batts R2.0	46/36	1.03/1.06	46/37	1.06/1.08
				Thickness Excluding Cladding mm	121		141	
90/90/90 (from outside only) FC 12946	**CSR 10227** 	EXTERNAL WALL SIDE • 2 x 13mm Gyprock Fyrchek MR Plasterboard. INTERNAL WALL SIDE • 1 x 10mm Gyprock Plus Plasterboard.	With Break	(a) 90 Gold Batts R2.0	–	–	45/34	1.47/1.53
				(b) 90 Gold Batts R2.5	–	–	46/35	1.62/1.66
				(c) 75 Gold Batts R2.0	44/33	1.43/1.48	45/34	1.51/1.57
				Thickness Excluding Cladding mm	135		155	
			Without Break	(d) 90 Gold Batts R2.0	–	–	45/34	1.04/1.07
				(e) 90 Gold Batts R2.5	–	–	46/35	1.10/1.12
				(f) 75 Gold Batts R2.0	44/33	1.03/1.06	45/34	1.06/1.08
				Thickness Excluding Cladding mm	125		145	
120/120/120 (from outside only) FC 12946	**CSR 10228** 	EXTERNAL WALL SIDE • 2 x 16mm Gyprock Fyrchek MR Plasterboard. INTERNAL WALL SIDE • 1 x 10mm Gyprock Plus Plasterboard.	With Break	(a) 90 Gold Batts R2.0	–	–	46/35	1.47/1.53
				(b) 90 Gold Batts R2.5	–	–	47/36	1.62/1.66
				(c) 75 Gold Batts R2.0	45/34	1.43/1.48	46/35	1.51/1.57
				Thickness Excluding Cladding mm	141		161	
			Without Break	(d) 90 Gold Batts R2.0	–	–	46/35	1.04/1.07
				(e) 90 Gold Batts R2.5	–	–	47/36	1.10/1.12
				(f) 75 Gold Batts R2.0	45/34	1.03/1.06	46/35	1.06/1.08
				Thickness Excluding Cladding mm	131		151	
90/90/90 – /120/120 (from both sides) FC 12946	**CSR 10229** 	EXTERNAL WALL SIDE • 2 x 13mm Gyprock Fyrchek MR Plasterboard. INTERNAL WALL SIDE • 2 x 13mm Gyprock Fyrchek Plasterboard.	With Break	(a) 90 Gold Batts R2.0	–	–	50/41	1.47/1.53
				(b) 90 Gold Batts R2.5	–	–	51/41	1.62/1.66
				(c) 75 Gold Batts R2.0	49/40	1.43/1.48	50/41	1.51/1.57
				Thickness Excluding Cladding mm	151		171	
			Without Break	(d) 90 Gold Batts R2.0	–	–	50/41	1.04/1.07
				(e) 90 Gold Batts R2.5	–	–	51/41	1.10/1.12
				(f) 75 Gold Batts R2.0	49/40	1.03/1.06	50/41	1.06/1.08
				Thickness Excluding Cladding mm	141		161	
120/120/120 – /180/180‡ (from both sides) FC 12946	**CSR 10230** 	EXTERNAL WALL SIDE • 2 x 16mm Gyprock Fyrchek MR Plasterboard. INTERNAL WALL SIDE • 2 x 16mm Gyprock Fyrchek Plasterboard.	With Break	(a) 90 Gold Batts R2.0	–	–	52/43	1.47/1.53
				(b) 90 Gold Batts R2.5	–	–	53/44	1.62/1.66
				(c) 75 Gold Batts R2.0	51/42	1.43/1.48	52/43	1.51/1.57
				Thickness Excluding Cladding mm	163		183	
			Without Break	(d) 90 Gold Batts R2.0	–	–	52/43	1.04/1.07
				(e) 90 Gold Batts R2.5	–	–	53/44	1.10/1.12
				(f) 75 Gold Batts R2.0	51/42	1.03/1.06	52/43	1.06/1.08
				Thickness Excluding Cladding mm	153		173	

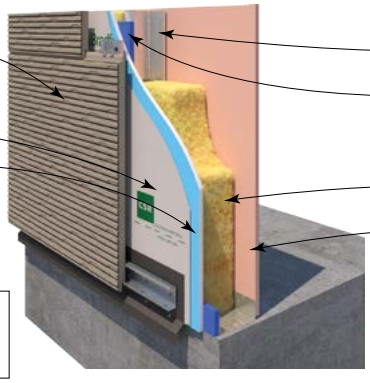
Cemintel Territory – Steel Frame With Cavity – Thermal Bridged



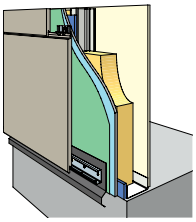
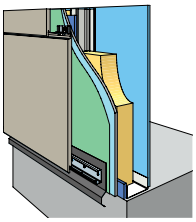
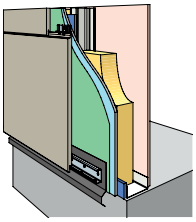
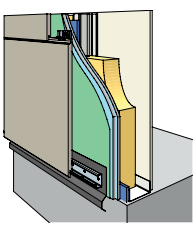
NOTE: Acoustic performance valid for studs with 0.75 BMT. The system thermal R-Values provided have been calculated based on the specified wall configuration only and allow for the effects of thermal bridging.

SYSTEM SPECIFICATION			Thermal Break	ACOUSTIC REPORT: PKA-A119 THERMAL REPORT: CSRRB2-08.03 / CSRRB2-09.03				
				STUD DEPTH mm	70		90	
FRL Report	SYSTEM N°	WALL LININGS		CAVITY INFILL (Refer to TABLE B6)	R_w / R_w+C_{tr}	$R_{t(sum)}$/ $R_{t(win)}$	R_w/ R_w+C_{tr}	$R_{t(sum)}$/ $R_{t(win)}$
– /– / –	CSR 10231 	EXTERNAL WALL SIDE • Nil INTERNAL WALL SIDE • 1 x 10mm Gyprock Plus Plasterboard.	With Break	(a) 90 Gold Batts R2.0	–	–	46/37	1.30/1.35
				(b) 90 Gold Batts R2.5	–	–	47/38	1.42/1.46
				(c) 75 Gold Batts R2.0	44/35	1.27/1.31	46/37	1.34/1.39
				Wall Thickness mm	121		141	
			Without Break	(d) 90 Gold Batts R2.0	–	–	46/37	0.76/0.78
				(e) 90 Gold Batts R2.5	–	–	47/38	0.80/0.81
				(f) 75 Gold Batts R2.0	44/35	0.77/0.79	46/37	0.78/0.79
				Wall Thickness mm	111		131	
– /– / –	CSR 10232 	EXTERNAL WALL SIDE • Nil INTERNAL WALL SIDE • 1 x 13mm Standard Plasterboard.	With Break	(a) 90 Gold Batts R2.0	–	–	46/37	1.30/1.35
				(b) 90 Gold Batts R2.5	–	–	47/38	1.42/1.46
				(c) 75 Gold Batts R2.0	47/38	1.27/1.31	48/39	1.34/1.39
				Wall Thickness mm	124		144	
			Without Break	(d) 90 Gold Batts R2.0	–	–	46/37	0.76/0.78
				(e) 90 Gold Batts R2.5	–	–	47/38	0.80/0.81
				(f) 75 Gold Batts R2.0	47/38	0.77/0.79	48/39	0.78/0.79
				Wall Thickness mm	114		134	
30/30/30 (from outside only) FC 12946	CSR 10233 	EXTERNAL WALL SIDE • 1 x 13mm Gyprock Fyrchek MR Plasterboard. INTERNAL WALL SIDE • 1 x 10mm Gyprock Plus Plasterboard.	With Break	(a) 90 Gold Batts R2.0	–	–	44/33	1.41/1.47
				(b) 90 Gold Batts R2.5	–	–	45/34	1.56/1.60
				(c) 75 Gold Batts R2.0	43/32	1.38/1.43	44/33	1.46/1.51
				Wall Thickness mm	134		154	
			Without Break	(d) 90 Gold Batts R2.0	–	–	44/33	0.97/0.99
				(e) 90 Gold Batts R2.5	–	–	45/34	1.03/1.04
				(f) 75 Gold Batts R2.0	43/32	0.97/0.99	44/33	0.99/1.01
				Wall Thickness mm	124		144	
30/30/30 – /60/60 (from both sides) FC 12946	CSR 10234 	EXTERNAL WALL SIDE • 1 x 13mm Gyprock Fyrchek MR Plasterboard. INTERNAL WALL SIDE • 1 x 13mm Gyprock Fyrchek Plasterboard.	With Break	(a) 90 Gold Batts R2.0	–	–	47/36	1.41/1.47
				(b) 90 Gold Batts R2.5	–	–	48/37	1.56/1.60
				(c) 75 Gold Batts R2.0	46/35	1.38/1.43	47/36	1.46/1.51
				Wall Thickness mm	137		157	
			Without Break	(d) 90 Gold Batts R2.0	–	–	47/36	0.97/0.99
				(e) 90 Gold Batts R2.5	–	–	48/37	1.03/1.04
				(f) 75 Gold Batts R2.0	46/35	0.97/0.99	47/36	0.99/1.01
				Wall Thickness mm	127		147	
60/60/60 (from outside only) FC 12946	CSR 10235 	EXTERNAL WALL SIDE • 1 x 16mm Gyprock Fyrchek MR Plasterboard. INTERNAL WALL SIDE • 1 x 10mm Gyprock Plus Plasterboard.	With Break	(a) 90 Gold Batts R2.0	–	–	45/34	1.41/1.47
				(b) 90 Gold Batts R2.5	–	–	46/35	1.56/1.60
				(c) 75 Gold Batts R2.0	44/33	1.38/1.43	45/34	1.46/1.51
				Wall Thickness mm	137		157	
			Without Break	(d) 90 Gold Batts R2.0	–	–	45/34	0.97/0.99
				(e) 90 Gold Batts R2.5	–	–	46/35	1.03/1.04
				(f) 75 Gold Batts R2.0	44/33	0.97/0.99	45/34	0.99/1.01
				Wall Thickness mm	127		147	

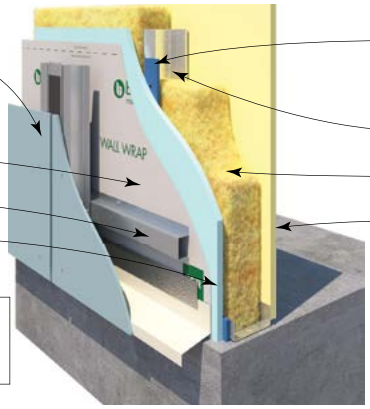
Cemintel Territory – Steel Frame With Cavity – Thermal Bridged



NOTE: Acoustic performance valid for studs with 0.75 BMT. The system thermal R-Values provided have been calculated based on the specified wall configuration only and allow for the effects of thermal bridging.

SYSTEM SPECIFICATION			Thermal Break	ACOUSTIC REPORT: PKA-A119 THERMAL REPORT: CSRRB2-10.03 / CSRRB2-11.03				
				STUD DEPTH mm	70		90	
FRL Report	**SYSTEM Nº**	**WALL LININGS**		**CAVITY INFILL** (Refer to TABLE B6)	**R_w / R_w+C_{tr}**	**$R_{t(sum)}$/ $R_{t(win)}$**	**R_w/ R_w+C_{tr}**	**$R_{t(sum)}$/ $R_{t(win)}$**
60/60/60 (from outside only) FC 12946	**CSR 10236** 	EXTERNAL WALL SIDE • 1 x 16mm Gyprock Fyrchek MR Plasterboard. INTERNAL WALL SIDE • 1 x 10mm Gyprock HD Plasterboard.	With Break	(a) 90 Gold Batts R2.0	–	–	48/38	1.42/1.48
				(b) 90 Gold Batts R2.5	–	–	49/39	1.57/1.61
				(c) 75 Gold Batts R2.0	47/37	1.38/1.43	48/38	1.47/1.52
				Wall Thickness mm	137		157	
			Without Break	(d) 90 Gold Batts R2.0	–	–	48/38	0.99/1.02
				(e) 90 Gold Batts R2.5	–	–	49/39	1.05/1.07
				(f) 75 Gold Batts R2.0	47/37	1.19/1.22	48/38	1.01/1.04
				Wall Thickness mm	127		147	
60/60/60 (from outside only) FC 12946	**CSR 10237** 	EXTERNAL WALL SIDE • 1 x 16mm Gyprock Fyrchek MR Plasterboard. INTERNAL WALL SIDE • 1 x 10mm Gyprock Aquachek Plasterboard.	With Break	(a) 90 Gold Batts R2.0	–	–	47/36	1.42/1.48
				(b) 90 Gold Batts R2.5	–	–	48/37	1.57/1.61
				(c) 75 Gold Batts R2.0	46/35	1.38/1.43	47/36	1.47/1.52
				Wall Thickness mm	137		157	
			Without Break	(d) 90 Gold Batts R2.0	–	–	47/36	0.99/1.02
				(e) 90 Gold Batts R2.5	–	–	48/37	1.05/1.07
				(f) 75 Gold Batts R2.0	46/35	1.19/1.22	47/36	1.01/1.04
				Wall Thickness mm	127		147	
60/60/60 – /90/90 (from both sides) FC 12946	**CSR 10238** 	EXTERNAL WALL SIDE • 1 x 16mm Gyprock Fyrchek MR Plasterboard. INTERNAL WALL SIDE • 1 x 16mm Gyprock Fyrchek Plasterboard.	With Break	(a) 90 Gold Batts R2.0	–	–	50/40	1.47/1.53
				(b) 90 Gold Batts R2.5	–	–	51/41	1.62/1.66
				(c) 75 Gold Batts R2.0	49/39	1.43/1.49	50/40	1.52/1.58
				Wall Thickness mm	143		163	
			Without Break	(d) 90 Gold Batts R2.0	–	–	50/40	1.04/1.07
				(e) 90 Gold Batts R2.5	–	–	51/41	1.10/1.12
				(f) 75 Gold Batts R2.0	49/39	1.03/1.06	50/40	1.06/1.09
				Wall Thickness mm	133		153	
90/90/90 (from outside only) FC 12946	**CSR 10239** 	EXTERNAL WALL SIDE • 2 x 13mm Gyprock Fyrchek MR Plasterboard. INTERNAL WALL SIDE • 1 x 10mm Gyprock Plus Plasterboard.	With Break	(a) 90 Gold Batts R2.0	–	–	47/37	1.47/1.53
				(b) 90 Gold Batts R2.5	–	–	48/38	1.62/1.66
				(c) 75 Gold Batts R2.0	46/36	1.43/1.49	47/37	1.52/1.58
				Wall Thickness mm	147		167	
			Without Break	(d) 90 Gold Batts R2.0	–	–	47/37	1.04/1.07
				(e) 90 Gold Batts R2.5	–	–	48/38	1.10/1.12
				(f) 75 Gold Batts R2.0	46/36	1.03/1.06	47/37	1.06/1.09
				Wall Thickness mm	137		157	

Cemintel ExpressWall – Steel Frame With Cavity – Thermal Bridged



Cemintel ExpressPanel, Barestone or Surround panel on ventilated cavity cladding support system.

Wall wrap.

15mm top hat.

Lining material as per system table to external side.

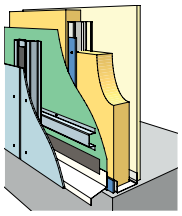
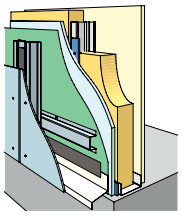
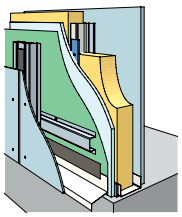
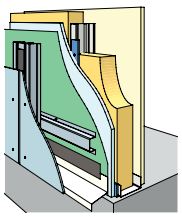
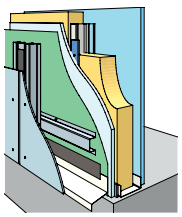
Non-compressible and non-combustible Thermal break, 10mm thick, min. R0.2 if required, as per system table.

Steel studs at 600mm maximum centres.

Cavity insulation as per system table.

Lining material as per system table to internal side.

NOTE: Acoustic performance valid for studs with 0.75 BMT. The system thermal R-Values provided have been calculated based on the specified wall configuration only and allow for the effects of thermal bridging.

SYSTEM SPECIFICATION			Thermal Break	ACOUSTIC REPORT: PKA-A119 THERMAL REPORT: CSRRB2-12.03 / CSRRB2-13.03				
				STUD DEPTH mm	70		90	
FRL Report	SYSTEM Nº	WALL LININGS		CAVITY INFILL (Refer to TABLE B6)	R_w / R_w+C_{tr}	$R_{t(sum)}$/ $R_{t(win)}$	R_w/ R_w+C_{tr}	$R_{t(sum)}$/ $R_{t(win)}$
– /– / –	CSR 10240 	EXTERNAL WALL SIDE • Nil INTERNAL WALL SIDE • 1 x 13mm Gyprock Standard Plasterboard.	With Break	(a) 90 Gold Batts R2.0	–	–	49/40	1.30/1.35
				(b) 90 Gold Batts R2.5	–	–	50/41	1.43/1.47
				(c) 75 Gold Batts R2.0	48/39	1.27/1.32	49/40	1.34/1.39
				Thickness Excluding Cladding mm	143		163	
			Without Break	(d) 90 Gold Batts R2.0	–	–	49/40	0.76/0.78
				(e) 90 Gold Batts R2.5	–	–	50/41	0.80/0.81
				(f) 75 Gold Batts R2.0	48/39	0.77/0.79	49/40	0.77/0.79
				Thickness Excluding Cladding mm	133		153	
30/30/30 (from outside only) FC 12946	CSR 10241 	EXTERNAL WALL SIDE • 1 x 13mm Gyprock Fyrchek MR Plasterboard. INTERNAL WALL SIDE • 1 x 10mm Gyprock Plus Plasterboard.	With Break	(a) 90 Gold Batts R2.0	–	–	43/32	1.41/1.47
				(b) 90 Gold Batts R2.5	–	–	44/33	1.56/1.60
				(c) 75 Gold Batts R2.0	42/31	1.37/1.42	43/32	1.46/1.51
				Thickness Excluding Cladding mm	153		173	
			Without Break	(d) 90 Gold Batts R2.0	–	–	43/32	0.96/0.99
				(e) 90 Gold Batts R2.5	–	–	44/33	1.02/1.04
				(f) 75 Gold Batts R2.0	42/31	0.96/0.98	43/32	0.98/1.01
				Thickness Excluding Cladding mm	143		163	
30/30/30 (from outside only) FC 12946	CSR 10242 	EXTERNAL WALL SIDE • 1 x 16mm Gyprock Fyrchek MR Plasterboard. INTERNAL WALL SIDE • 1 x 6mm CeminSeal Wallboard.	With Break	(a) 90 Gold Batts R2.0	–	–	48/38	1.41/1.47
				(b) 90 Gold Batts R2.5	–	–	49/39	1.56/1.60
				(c) 75 Gold Batts R2.0	47/37	1.37/1.42	48/38	1.46/1.51
				Thickness Excluding Cladding mm	152		172	
			Without Break	(d) 90 Gold Batts R2.0	–	–	48/38	0.96/0.99
				(e) 90 Gold Batts R2.5	–	–	49/39	1.02/1.04
				(f) 75 Gold Batts R2.0	47/37	0.96/0.98	48/38	0.98/1.01
				Thickness Excluding Cladding mm	142		162	
60/60/60 (from outside only) FC 12946	CSR 10243 	EXTERNAL WALL SIDE • 1 x 16mm Gyprock Fyrchek MR Plasterboard. INTERNAL WALL SIDE • 1 x 10mm Gyprock Plus Plasterboard.	With Break	(a) 90 Gold Batts R2.0	–	–	44/33	1.41/1.47
				(b) 90 Gold Batts R2.5	–	–	45/34	1.56/1.60
				(c) 75 Gold Batts R2.0	43/32	1.37/1.42	44/33	1.46/1.51
				Thickness Excluding Cladding mm	156		176	
			Without Break	(d) 90 Gold Batts R2.0	–	–	44/33	0.96/0.99
				(e) 90 Gold Batts R2.5	–	–	45/34	1.02/1.04
				(f) 75 Gold Batts R2.0	43/32	0.96/0.98	44/33	0.98/1.01
				Thickness Excluding Cladding mm	146		166	
60/60/60 (from outside only) FC 12946	CSR 10244 	EXTERNAL WALL SIDE • 1 x 16mm Gyprock Fyrchek MR Plasterboard. INTERNAL WALL SIDE • 1 x 10mm Gyprock Aquachek Plasterboard.	With Break	(a) 90 Gold Batts R2.0	–	–	47/36	1.41/1.47
				(b) 90 Gold Batts R2.5	–	–	48/37	1.56/1.60
				(c) 75 Gold Batts R2.0	46/35	1.37/1.42	47/36	1.46/1.51
				Thickness Excluding Cladding mm	156		176	
			Without Break	(d) 90 Gold Batts R2.0	–	–	47/36	0.96/0.99
				(e) 90 Gold Batts R2.5	–	–	48/37	1.02/1.04
				(f) 75 Gold Batts R2.0	46/35	0.96/0.98	47/36	0.98/1.01
				Thickness Excluding Cladding mm	146		166	

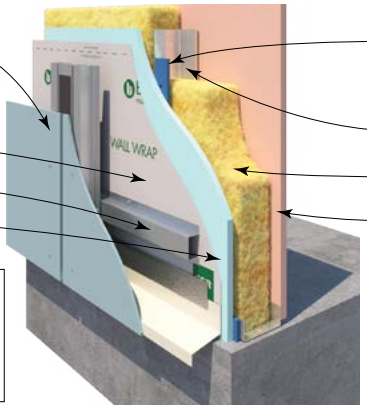
Cemintel ExpressWall – Steel Frame With Cavity – Thermal Bridged

Cemintel ExpressPanel, Barestone or Surround panel on ventilated cavity cladding support system.

Wall wrap.

15mm top hat.

Lining material as per system table to external side.



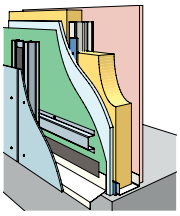
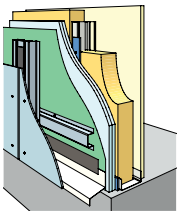
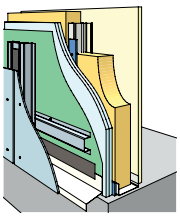
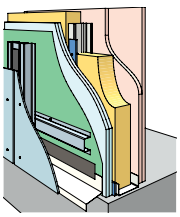
Non-compressible and non-combustible Thermal break, 10mm thick, min. R0.2 if required, as per system table.

Steel studs at 600mm maximum centres.

Cavity insulation as per system table.

Lining material as per system table to internal side.

NOTE: Acoustic performance valid for studs with 0.75 BMT. The system thermal R-Values provided have been calculated based on the specified wall configuration only and allow for the effects of thermal bridging.
‡ Unique height restrictions apply. Refer to The Red Book 3, height selection tables.

SYSTEM SPECIFICATION			Thermal Break	ACOUSTIC REPORT: PKA-A119 THERMAL REPORT: CSRRB2-14.03				
				STUD DEPTH mm	70		90	
FRL Report	SYSTEM Nº	WALL LININGS		CAVITY INFILL (Refer to TABLE B6)	R_w / R_w+C_{tr}	$R_{t(sum)}$/ $R_{t(win)}$	R_w/ R_w+C_{tr}	$R_{t(sum)}$/ $R_{t(win)}$
60/60/60 – /90/90 (from both sides) FC 12946	**CSR 10245** 	EXTERNAL WALL SIDE • 1 x 16mm Gyprock Fyrchek MR Plasterboard. INTERNAL WALL SIDE • 1 x 16mm Gyprock Fyrchek Plasterboard.	With Break	(a) 90 Gold Batts R2.0	–	–	50/40	1.47/1.53
				(b) 90 Gold Batts R2.5	–	–	51/41	1.62/1.66
				(c) 75 Gold Batts R2.0	49/39	1.43/1.49	50/40	1.52/1.58
				Thickness Excluding Cladding mm	162		182	
			Without Break	(d) 90 Gold Batts R2.0	–	–	50/40	1.04/1.07
				(e) 90 Gold Batts R2.5	–	–	51/41	1.10/1.12
				(f) 75 Gold Batts R2.0	49/39	1.03/1.06	50/40	1.06/1.09
				Thickness Excluding Cladding mm	152		172	
90/90/90 (from outside only) FC 12946	**CSR 10246** 	EXTERNAL WALL SIDE • 2 x 13mm Gyprock Fyrchek MR Plasterboard. INTERNAL WALL SIDE • 1 x 10mm Gyprock Plus Plasterboard.	With Break	(a) 90 Gold Batts R2.0	–	–	48/37	1.47/1.53
				(b) 90 Gold Batts R2.5	–	–	49/38	1.62/1.66
				(c) 75 Gold Batts R2.0	47/36	1.43/1.49	48/37	1.52/1.58
				Thickness Excluding Cladding mm	166		186	
			Without Break	(d) 90 Gold Batts R2.0	–	–	48/37	1.04/1.07
				(e) 90 Gold Batts R2.5	–	–	49/38	1.10/1.12
				(f) 75 Gold Batts R2.0	47/36	1.03/1.06	48/37	1.06/1.09
				Thickness Excluding Cladding mm	156		176	
120/120/120 (from outside only) FC 12946	**CSR 10247** 	EXTERNAL WALL SIDE • 2 x 16mm Gyprock Fyrchek MR Plasterboard. INTERNAL WALL SIDE • 1 x 10mm Gyprock Plus Plasterboard.	With Break	(a) 90 Gold Batts R2.0	–	–	49/38	1.47/1.53
				(b) 90 Gold Batts R2.5	–	–	50/39	1.62/1.66
				(c) 75 Gold Batts R2.0	48/37	1.43/1.49	49/38	1.52/1.58
				Thickness Excluding Cladding mm	172		192	
			Without Break	(d) 90 Gold Batts R2.0	–	–	49/38	1.04/1.07
				(e) 90 Gold Batts R2.5	–	–	50/39	1.10/1.12
				(f) 75 Gold Batts R2.0	48/37	1.03/1.06	49/38	1.06/1.09
				Thickness Excluding Cladding mm	162		182	
120/120/120 – /180/180‡ (from both sides) FC 12946	**CSR 10248** 	EXTERNAL WALL SIDE • 2 x 16mm Gyprock Fyrchek MR Plasterboard. INTERNAL WALL SIDE • 2 x 16mm Gyprock Fyrchek Plasterboard.	With Break	(a) 90 Gold Batts R2.0	–	–	55/46	1.47/1.53
				(b) 90 Gold Batts R2.5	–	–	56/47	1.62/1.66
				(c) 75 Gold Batts R2.0	54/45	1.43/1.49	55/46	1.52/1.58
				Thickness Excluding Cladding mm	194		214	
			Without Break	(d) 90 Gold Batts R2.0	–	–	55/46	1.04/1.07
				(e) 90 Gold Batts R2.5	–	–	56/47	1.10/1.12
				(f) 75 Gold Batts R2.0	54/45	1.03/1.06	55/46	1.06/1.09
				Thickness Excluding Cladding mm	184		204	

GLASROC X SYSTEMS

INTRODUCTION

Glasroc® X Sheathing Board (Glasroc® X) is a high performance, Class 4 vapour-permeable rigid air barrier, designed for use behind façade cladding systems, to provide up to 6 months weather protection of the building interior prior to cladding.

The 12.5mm thick board, reinforced with glass mat and UV resistant coating delivers strength, durability and weather resistance.

Glasroc X can be used as part of a fire-rated wall system, achieving an FRL of up to 60/60/60 on timber and steel frames and an FRL of up to -90/90 on steel framing. Glasroc X is also suitable for use in bushfire zone BAL-FZ.

Engineered for high-wind environments, Glasroc X can withstand wind pressures up to ±6kPa (ULS).

Glasroc X is recommended for use in climate zones 2-8. It's class 4 vapour permeability allows moisture to easily escape from the building structure, providing outstanding performance in cold environments (climate zones 6, 7 & 8) where the condensation risk is increased.

FIG F6: CLIMATE ZONES

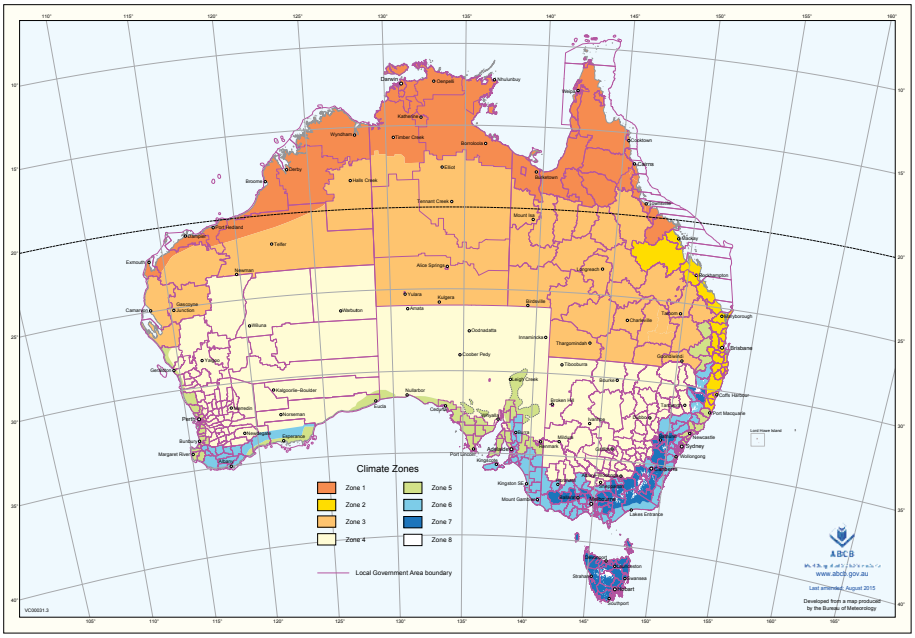
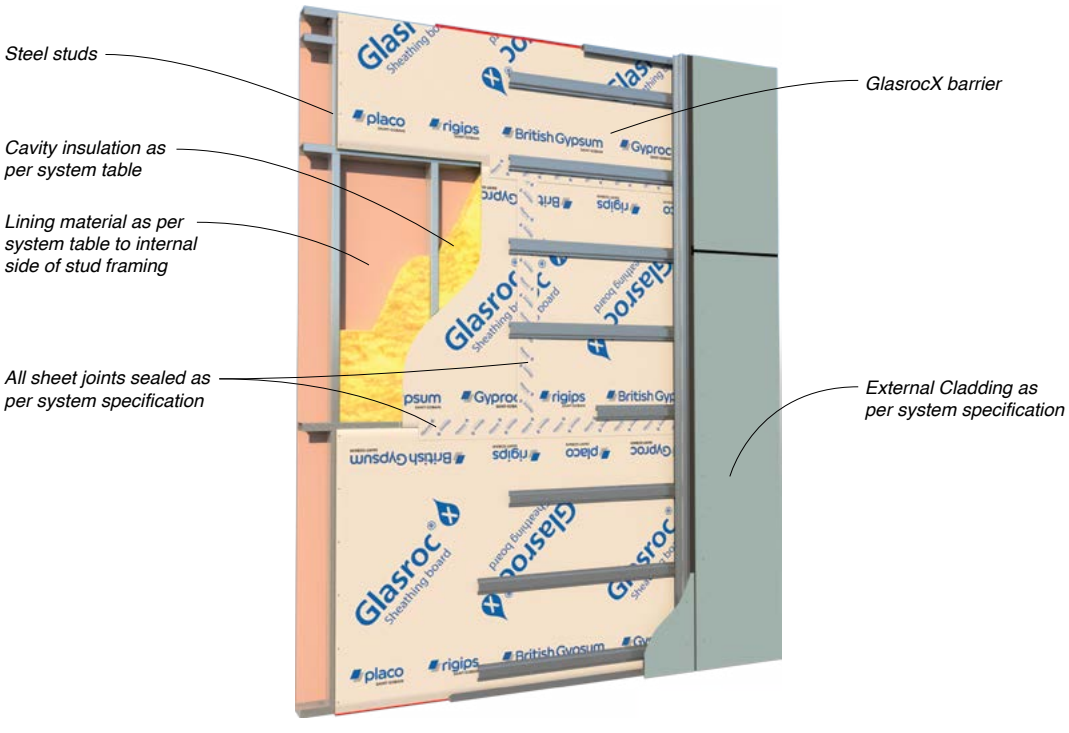
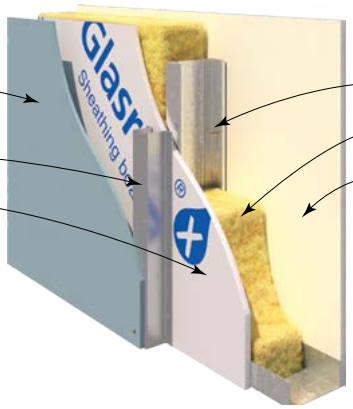


FIG F7: TYPICAL GLASROC X SYSTEM ARRANGEMENT



SYSTEM SPECIFICATIONS — Cemintel Sheet or Weatherboards – With Cavity – Steel Frame



Cemintel sheet or weatherboard cladding.

19 to 35mm depth battens.

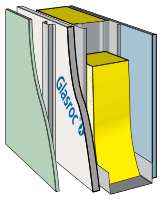
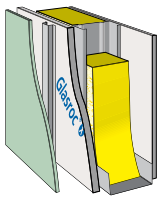
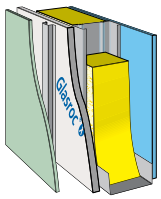
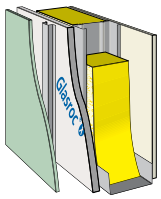
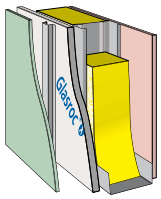
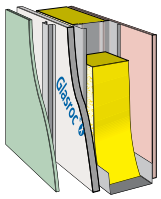
12.5mm Gyprock Glasroc X.

Steel studs at 600mm maximum centres.

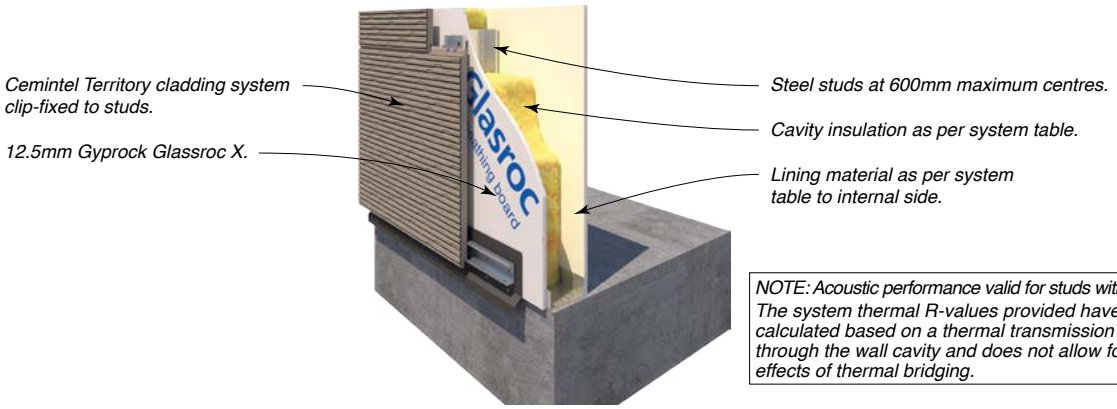
Cavity insulation as per system table.

Lining material as per system table to internal side.

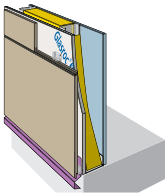
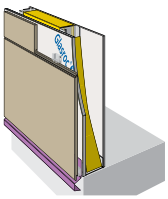
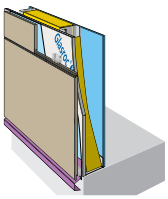
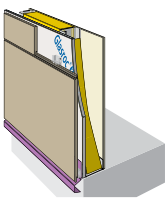
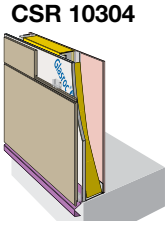
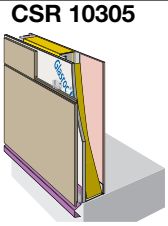
NOTE: Acoustic performance valid for studs with 0.75 BMT. The system thermal R-values provided have been calculated based on a thermal transmission path through the wall cavity and does not allow for the effects of thermal bridging.
‡ Unique height restrictions apply. Refer to The Red Book 3, height selection tables.

SYSTEM SPECIFICATION			ACOUSTIC REPORT: PKA-A119				
			STUD DEPTH mm	**70**		**90**	
FRL Report	**SYSTEM Nº**	**WALL LININGS**	**CAVITY INFILL** (Refer to TABLE B6)	**Rw / Rw+Ctr**	**Rt(sum) / Rt(win)**	**Rw / Rw+Ctr**	**Rt(sum) / Rt(win)**
– / – / –	**CSR 10290** 	EXTERNAL WALL SIDE • 1 x 12.5mm Gyprock Glasroc X Plasterboard. INTERNAL WALL SIDE • 1 x 6mm CeminSeal Wallboard.	(a) 90 Gold Batts R2.0	–	–	44/34	2.2/2.4
			(b) 90 Gold Batts R2.5	–	–	45/35	2.6/2.9
			(c) 75 Gold Batts R2.0	43/33	2.1/2.2	44/34	2.3/2.5
			Wall Thickness Excluding Cladding mm	107.5		127.5	
– / – / –	**CSR 10291** 	EXTERNAL WALL SIDE • 1 x 12.5mm Gyprock Glasroc X Plasterboard. INTERNAL WALL SIDE • 1 x 10mm Gyprock HD Plasterboard.	(a) 90 Gold Batts R2.0	–	–	43/33	2.2/2.4
			(b) 90 Gold Batts R2.5	–	–	44/34	2.6/2.9
			(c) 75 Gold Batts R2.0	42/31	2.1/2.3	43/33	2.3/2.5
			Wall Thickness Excluding Cladding mm	111.5		131.5	
– / – / –	**CSR 10292** 	EXTERNAL WALL SIDE • 1 x 12.5mm Gyprock Glasroc X Plasterboard. INTERNAL WALL SIDE • 1 x 10mm Gyprock Aquachek Plasterboard.	(a) 90 Gold Batts R2.0	–	–	42/31	2.2/2.4
			(b) 90 Gold Batts R2.5	–	–	43/32	2.6/2.9
			(c) 75 Gold Batts R2.0	41/30	2.1/2.3	42/31	2.3/2.5
			Wall Thickness Excluding Cladding mm	111.5		131.5	
– / – / –	**CSR 10293** 	EXTERNAL WALL SIDE • 1 x 12.5mm Gyprock Glasroc X Plasterboard. INTERNAL WALL SIDE • 1 x 13mm Gyprock Standard Plasterboard.	(a) 90 Gold Batts R2.0	–	–	43/33	2.2/2.4
			(b) 90 Gold Batts R2.5	–	–	44/34	2.6/2.9
			(c) 75 Gold Batts R2.0	42/31	2.1/2.3	43/33	2.3/2.5
			Wall Thickness Excluding Cladding mm	114.5		134.5	
– /60/60 30/30/30 (from both sides) FC 12946	**CSR 10294** 	EXTERNAL WALL SIDE • 1 x 12.5mm Gyprock Glasroc X Plasterboard. INTERNAL WALL SIDE • 1 x 13mm Gyprock Fyrchek Plasterboard.	(a) 90 Gold Batts R2.0	–	–	45/35	2.2/2.4
			(b) 90 Gold Batts R2.5	–	–	46/36	2.6/2.9
			(c) 75 Gold Batts R2.0	44/34	2.1/2.3	45/35	2.3/2.5
			Wall Thickness Excluding Cladding mm	114.5		134.5	
– /90/90 60/60/60 (from both sides) FC 12946	**CSR 10295** 	EXTERNAL WALL SIDE • 1 x 12.5mm Gyprock Glasroc X Plasterboard. INTERNAL WALL SIDE • 1 x 16mm Gyprock Fyrchek Plasterboard.	(a) 90 Gold Batts R2.0	–	–	46/36	2.2/2.4
			(b) 90 Gold Batts R2.5	–	–	47/37	2.6/2.9
			(c) 75 Gold Batts R2.0	45/35	2.1/2.3	46/36	2.3/2.5
			Wall Thickness Excluding Cladding mm	117.5		137.5	

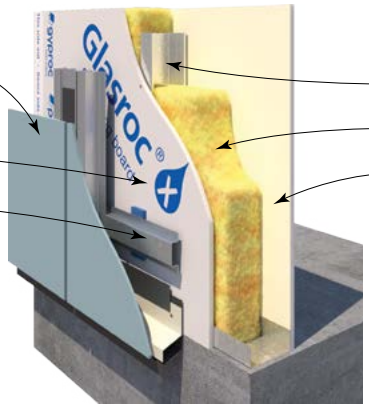
Cemintel Territory – With Cavity – Steel Frame



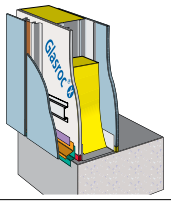
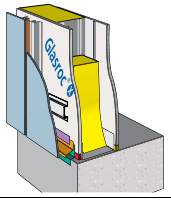
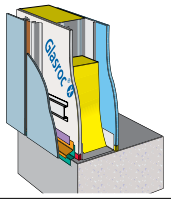
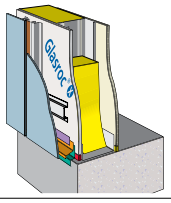
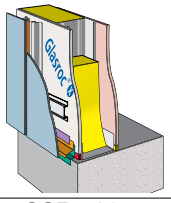
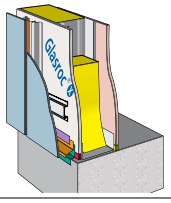
NOTE: Acoustic performance valid for studs with 0.75 BMT. The system thermal R-values provided have been calculated based on a thermal transmission path through the wall cavity and does not allow for the effects of thermal bridging.

SYSTEM SPECIFICATION			ACOUSTIC REPORT: PKA-A119				
			STUD DEPTH mm	70		90	
FRL Report	SYSTEM Nº	WALL LININGS	CAVITY INFILL (Refer to TABLE B6)	R_w / R_w+C_{tr}	$R_{t(sum)}$ / $R_{t(win)}$	R_w / R_w+C_{tr}	$R_{t(sum)}$ / $R_{t(win)}$
– / – / –	CSR 10300 	EXTERNAL WALL SIDE • 1 x 12.5mm Gyprock Glasroc X Plasterboard. INTERNAL WALL SIDE • 1 x 6mm CeminSeal Wallboard.	(a) 90 Gold Batts R2.0	–	–	47/37	2.1/2.3
			(b) 90 Gold Batts R2.5	–	–	48/38	2.6/2.8
			(c) 75 Gold Batts R2.0	46/36	2.1/2.2	47/37	2.3/2.4
			Wall Thickness mm	119.5		139.5	
– / – / –	CSR 10301 	EXTERNAL WALL SIDE • 1 x 12.5mm Gyprock Glasroc X Plasterboard. INTERNAL WALL SIDE • 1 x 10mm Gyprock HD Plasterboard.	(a) 90 Gold Batts R2.0	–	–	46/36	2.1/2.3
			(b) 90 Gold Batts R2.5	–	–	47/37	2.6/2.8
			(c) 75 Gold Batts R2.0	45/35	2.1/2.3	46/36	2.3/2.5
			Wall Thickness mm	123.5		143.5	
– / – / –	CSR 10302 	EXTERNAL WALL SIDE • 1 x 12.5mm Gyprock Glasroc X Plasterboard. INTERNAL WALL SIDE • 1 x 10mm Gyprock Aquachek Plasterboard.	(a) 90 Gold Batts R2.0	–	–	45/34	2.1/2.3
			(b) 90 Gold Batts R2.5	–	–	46/35	2.6/2.8
			(c) 75 Gold Batts R2.0	44/33	2.1/2.3	45/34	2.3/2.5
			Wall Thickness mm	123.5		143.5	
– / – / –	CSR 10303 	EXTERNAL WALL SIDE • 1 x 12.5mm Gyprock Glasroc X Plasterboard. INTERNAL WALL SIDE • 1 x 13mm Gyprock Standard Plasterboard.	(a) 90 Gold Batts R2.0	–	–	46/36	2.1/2.3
			(b) 90 Gold Batts R2.5	–	–	47/37	2.6/2.8
			(c) 75 Gold Batts R2.0	45/35	2.1/2.3	46/36	2.3/2.5
			Wall Thickness mm	126.5		146.5	
– /60/60 30/30/30 (from both sides) FC 12946	CSR 10304 	EXTERNAL WALL SIDE • 1 x 12.5mm Gyprock Glasroc X Plasterboard. INTERNAL WALL SIDE • 1 x 13mm Gyprock Frychek Plasterboard.	(a) 90 Gold Batts R2.0	–	–	48/38	2.1/2.3
			(b) 90 Gold Batts R2.5	–	–	49/39	2.6/2.8
			(c) 75 Gold Batts R2.0	47/37	2.1/2.3	48/38	2.3/2.5
			Wall Thickness mm	126.5		146.5	
– /90/90 60/60/60 (from both sides) FC 12946	CSR 10305 	EXTERNAL WALL SIDE • 1 x 12.5mm Gyprock Glasroc X Plasterboard. INTERNAL WALL SIDE • 1 x 16mm Gyprock Frychek Plasterboard.	(a) 90 Gold Batts R2.0	–	–	49/39	2.1/2.3
			(b) 90 Gold Batts R2.5	–	–	50/40	2.6/2.8
			(c) 75 Gold Batts R2.0	48/38	2.1/2.3	49/39	2.3/2.5
			Wall Thickness mm	129.5		149.5	

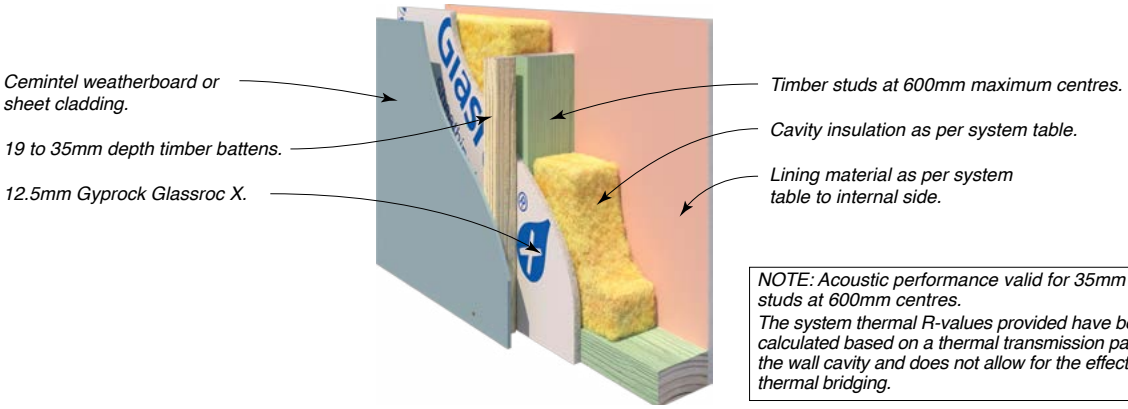
Cemintel ExpressWall – With Cavity – Steel Frame



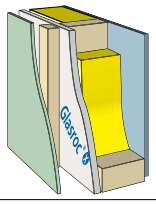
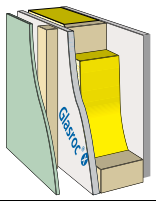
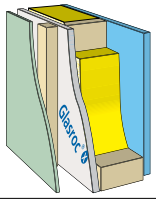
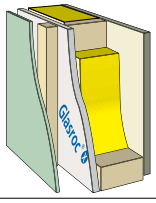
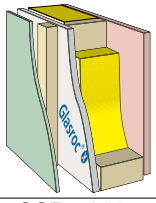
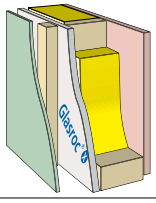
NOTE: Acoustic performance valid for studs with 0.75 BMT. The system thermal R-values provided have been calculated based on a thermal transmission path through the wall cavity and does not allow for the effects of thermal bridging.

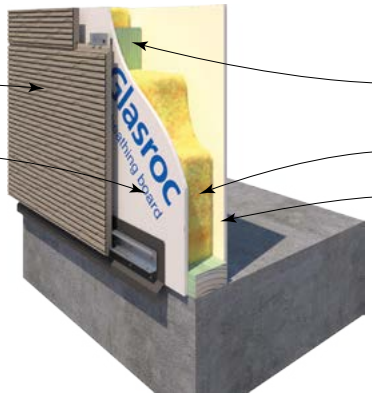
SYSTEM SPECIFICATION			ACOUSTIC REPORT: PKA-A119				
			STUD DEPTH mm	**70**		**90**	
FRL Report	**SYSTEM Nº**	**WALL LININGS**	**CAVITY INFILL** (Refer to TABLE B6)	**R_w / R_w+C_{tr}**	**$R_{t(sum)}$ / $R_{t(win)}$**	**R_w / R_w+C_{tr}**	**$R_{t(sum)}$ / $R_{t(win)}$**
– /– / –	**CSR 10310** 	EXTERNAL WALL SIDE • 1 x 12.5mm Gyprock Glasroc X Plasterboard. INTERNAL WALL SIDE • 1 x 6mm CeminSeal Wallboard.	(a) 90 Gold Batts R2.0	–	–	47/37	2.2/2.4
			(b) 90 Gold Batts R2.5	–	–	48/38	2.6/2.9
			(c) 75 Gold Batts R2.0	46/36	2.1/2.2	47/37	2.3/2.5
			Wall Thickness Excluding Cladding mm	138.5		158.5	
– /– / –	**CSR 10311** 	EXTERNAL WALL SIDE • 1 x 12.5mm Gyprock Glasroc X Plasterboard. INTERNAL WALL SIDE • 1 x 10mm Gyprock HD Plasterboard.	(a) 90 Gold Batts R2.0	–	–	46/35	2.2/2.4
			(b) 90 Gold Batts R2.5	–	–	47/36	2.6/2.9
			(c) 75 Gold Batts R2.0	45/34	2.1/2.2	46/35	2.3/2.5
			Wall Thickness Excluding Cladding mm	142.5		162.5	
– /– / –	**CSR 10312** 	EXTERNAL WALL SIDE • 1 x 12.5mm Gyprock Glasroc X Plasterboard. INTERNAL WALL SIDE • 1 x 10mm Gyprock Aquachek Plasterboard.	(a) 90 Gold Batts R2.0	–	–	44/33	2.2/2.4
			(b) 90 Gold Batts R2.5	–	–	45/34	2.6/2.9
			(c) 75 Gold Batts R2.0	43/32	2.1/2.2	44/33	2.3/2.5
			Wall Thickness Excluding Cladding mm	142.5		162.5	
– /– / –	**CSR 10313** 	EXTERNAL WALL SIDE • 1 x 12.5mm Gyprock Glasroc X Plasterboard. INTERNAL WALL SIDE • 1 x 13mm Gyprock Standard Plasterboard.	(a) 90 Gold Batts R2.0	–	–	46/35	2.2/2.4
			(b) 90 Gold Batts R2.5	–	–	47/36	2.6/2.9
			(c) 75 Gold Batts R2.0	45/34	2.1/2.2	46/35	2.3/2.5
			Wall Thickness Excluding Cladding mm	145.5		165.5	
– /60/60 30/30/30 (from both sides) FC 12946	**CSR 10314** 	EXTERNAL WALL SIDE • 1 x 12.5mm Gyprock Glasroc X Plasterboard. INTERNAL WALL SIDE • 1 x 13mm Gyprock Fyrchek Plasterboard.	(a) 90 Gold Batts R2.0	–	–	48/38	2.2/2.4
			(b) 90 Gold Batts R2.5	–	–	49/39	2.8/2.9
			(c) 75 Gold Batts R2.0	47/37	2.1/2.2	48/38	2.3/2.5
			Wall Thickness Excluding Cladding mm	145.5		165.5	
– /90/90 60/60/60 (from both sides) FC 12946	**CSR 10315** 	EXTERNAL WALL SIDE • 1 x 12.5mm Gyprock Glasroc X Plasterboard. INTERNAL WALL SIDE • 1 x 16mm Gyprock Fyrchek Plasterboard.	(a) 90 Gold Batts R2.0	–	–	49/39	2.2/2.4
			(b) 90 Gold Batts R2.5	–	–	50/40	2.8/2.9
			(c) 75 Gold Batts R2.0	48/38	2.1/2.2	49/39	2.3/2.5
			Wall Thickness Excluding Cladding mm	148.5		168.5	

SYSTEM SPECIFICATIONS — Cemintel Sheet or Weatherboard – With Cavity – Timber Frame



NOTE: Acoustic performance valid for 35mm wide studs at 600mm centres.
The system thermal R-values provided have been calculated based on a thermal transmission path through the wall cavity and does not allow for the effects of thermal bridging.

SYSTEM SPECIFICATION			ACOUSTIC REPORT: PKA-A119				
			STUD DEPTH mm	**70**		**90**	
FRL Report	**SYSTEM Nº**	**WALL LININGS**	**CAVITY INFILL** (Refer to TABLE B6)	**Rw / Rw+Ctr**	**Rt(sum) / Rt(win)**	**Rw / Rw+Ctr**	**Rt(sum) / Rt(win)**
– /– / –	**CSR 10320** 	EXTERNAL WALL SIDE • 1 x 12.5mm Gyprock Glasroc X Plasterboard. INTERNAL WALL SIDE • 1 x 6mm CeminSeal Wallboard.	(a) 90 Gold Batts R2.0	–	–	42/32	2.2/2.4
			(b) 90 Gold Batts R2.5	–	–	43/33	2.6/2.9
			(c) 75 Gold Batts R2.0	41/31	2.1/2.3	42/32	2.3/2.5
			Min. Wall Thickness Excluding Cladding mm	107.5		127.5	
– /– / –	**CSR 10321** 	EXTERNAL WALL SIDE • 1 x 12.5mm Gyprock Glasroc X Plasterboard. INTERNAL WALL SIDE • 1 x 10mm Gyprock HD Plasterboard.	(a) 90 Gold Batts R2.0	–	–	41/31	2.2/2.4
			(b) 90 Gold Batts R2.5	–	–	42./32	2.6/2.9
			(c) 75 Gold Batts R2.0	40/30	2.1/2.3	41/31	2.3/2.5
			Min. Wall Thickness Excluding Cladding mm	111.5		131.5	
– /– / –	**CSR 10322** 	EXTERNAL WALL SIDE • 1 x 12.5mm Gyprock Glasroc X Plasterboard. INTERNAL WALL SIDE • 1 x 10mm Gyprock Aquachek Plasterboard.	(a) 90 Gold Batts R2.0	–	–	40/29	2.2/2.4
			(b) 90 Gold Batts R2.5	–	–	41/30	2.6/2.9
			(c) 75 Gold Batts R2.0	39/28	2.1/2.3	40/29	2.3/2.5
			Min. Wall Thickness Excluding Cladding mm	111.5		131.5	
– /– / –	**CSR 10323** 	EXTERNAL WALL SIDE • 1 x 12.5mm Gyprock Glasroc X Plasterboard. INTERNAL WALL SIDE • 1 x 13mm Gyprock Standard Plasterboard.	(a) 90 Gold Batts R2.0	–	–	41/31	2.2/2.4
			(b) 90 Gold Batts R2.5	–	–	42/32	2.6/2.9
			(c) 75 Gold Batts R2.0	40/30	2.1/2.3	41/31	2.3/2.5
			Min. Wall Thickness Excluding Cladding mm	114.5		134.5	
30/30/30 (from both sides) FC 12969	**CSR 10324** 	EXTERNAL WALL SIDE • 1 x 12.5mm Gyprock Glasroc X Plasterboard. INTERNAL WALL SIDE • 1 x 13mm Gyprock Fyrchek Plasterboard.	(a) 90 Gold Batts R2.0	–	–	42/32	2.2/2.4
			(b) 90 Gold Batts R2.5	–	–	43/33	2.6/2.9
			(c) 75 Gold Batts R2.0	41/31	2.1/2.3	42/32	2.3/2.5
			Min. Wall Thickness Excluding Cladding mm	114.5		134.5	
60/60/60 (from both sides) FC 12969	**CSR 10325** 	EXTERNAL WALL SIDE • 1 x 12.5mm Gyprock Glasroc X Plasterboard. INTERNAL WALL SIDE • 1 x 16mm Gyprock Fyrchek Plasterboard.	(a) 90 Gold Batts R2.0	–	–	42/32	2.2/2.4
			(b) 90 Gold Batts R2.5	–	–	43/33	2.6/2.9
			(c) 75 Gold Batts R2.0	41/31	2.1/2.3	42/32	2.3/2.5
			Min. Wall Thickness Excluding Cladding mm	117.5		137.5	



Cemintel Territory cladding system clip-fixed to studs.

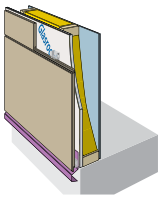
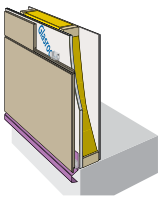
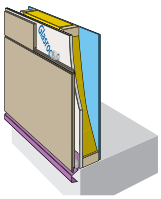
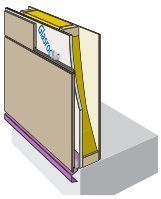
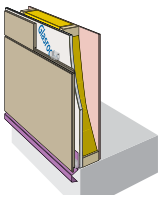
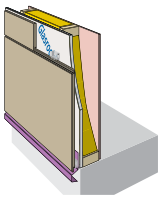
12.5mm Gyprock Glasroc X

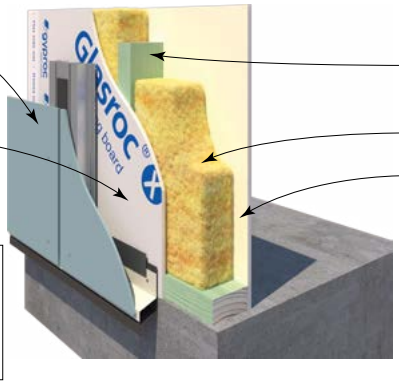
Timber studs at 600mm maximum centres.

Cavity insulation as per system table.

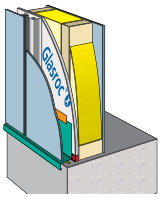
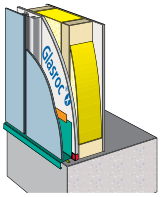
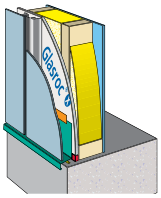
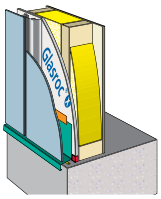
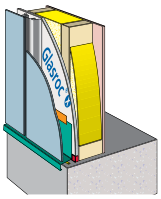
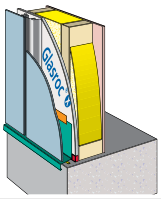
Lining material as per system table to internal side.

NOTE: Acoustic performance valid for 35mm wide studs at 600mm centres.
The system thermal R-values provided have been calculated based on a thermal transmission path through the wall cavity and does not allow for the effects of thermal bridging.

SYSTEM SPECIFICATION			ACOUSTIC REPORT: PKA-A119				
			STUD DEPTH mm	70		90	
FRL Report	**SYSTEM Nº**	**WALL LININGS**	**CAVITY INFILL** (Refer to TABLE B6)	**R_w / R_w+C_{tr}**	**$R_{t(sum)}$ / $R_{t(win)}$**	**R_w / R_w+C_{tr}**	**$R_{t(sum)}$ / $R_{t(win)}$**
– /– / –	**CSR 10330** 	EXTERNAL WALL SIDE • 1 x 12.5mm Gyprock Glasroc X Plasterboard. INTERNAL WALL SIDE • 1 x 6mm CeminSeal Wallboard.	(a) 90 Gold Batts R2.0	–	–	46/35	2.1/2.3
			(b) 90 Gold Batts R2.5	–	–	47/36	2.6/2.8
			(c) 75 Gold Batts R2.0	45/34	2.0/2.2	46/35	2.2/2.4
			Wall Thickness mm	119.5		139.5	
– /– / –	**CSR 10331** 	EXTERNAL WALL SIDE • 1 x 12.5mm Gyprock Glasroc X Plasterboard. INTERNAL WALL SIDE • 1 x 10mm Gyprock HD Plasterboard.	(a) 90 Gold Batts R2.0	–	–	45/35	2.1/2.3
			(b) 90 Gold Batts R2.5	–	–	46/36	2.6/2.8
			(c) 75 Gold Batts R2.0	44/34	2.0/2.2	45/35	2.2/2.4
			Wall Thickness mm	123.5		143.5	
– /– / –	**CSR 10332** 	EXTERNAL WALL SIDE • 1 x 12.5mm Gyprock Glasroc X Plasterboard. INTERNAL WALL SIDE • 1 x 10mm Gyprock Aquachek Plasterboard.	(a) 90 Gold Batts R2.0	–	–	44/33	2.1/2.3
			(b) 90 Gold Batts R2.5	–	–	46/36	2.6/2.8
			(c) 75 Gold Batts R2.0	43/32	2.0/2.2	45/35	2.2/2.4
			Wall Thickness mm	123.5		143.5	
– /– / –	**CSR 10333** 	EXTERNAL WALL SIDE • 1 x 12.5mm Gyprock Glasroc X Plasterboard. INTERNAL WALL SIDE • 1 x 13mm Gyprock Standard Plasterboard.	(a) 90 Gold Batts R2.0	–	–	45/35	2.1/2.3
			(b) 90 Gold Batts R2.5	–	–	46/36	2.6/2.8
			(c) 75 Gold Batts R2.0	44/34	2.0/2.2	45/35	2.2/2.4
			Wall Thickness mm	126.5		146.5	
30/30/30 (from both sides) FC 12969	**CSR 10334** 	EXTERNAL WALL SIDE • 1 x 12.5mm Gyprock Glasroc X Plasterboard. INTERNAL WALL SIDE • 1 x 13mm Gyprock Fyrchek Plasterboard.	(a) 90 Gold Batts R2.0	–	–	46/36	2.1/2.3
			(b) 90 Gold Batts R2.5	–	–	47/37	2.6/2.8
			(c) 75 Gold Batts R2.0	45/35	2.0/2.2	46/36	2.2/2.4
			Wall Thickness mm	126.5		146.5	
60/60/60 (from both sides) FC 12969	**CSR 10335** 	EXTERNAL WALL SIDE • 1 x 12.5mm Gyprock Glasroc X Plasterboard. INTERNAL WALL SIDE • 1 x 16mm Gyprock Fyrchek Plasterboard.	(a) 90 Gold Batts R2.0	–	–	46/36	2.1/2.3
			(b) 90 Gold Batts R2.5	–	–	47/37	2.6/2.8
			(c) 75 Gold Batts R2.0	45/35	2.0/2.2	46/36	2.2/2.4
			Wall Thickness mm	129.5		146.5	



NOTE: Acoustic performance valid for 35mm wide studs at 600mm centres.
The system thermal R-values provided have been calculated based on a thermal transmission path through the wall cavity and does not allow for the effects of thermal bridging.

SYSTEM SPECIFICATION			ACOUSTIC REPORT: PKA-A119				
			STUD DEPTH mm	70		90	
FRL Report	**SYSTEM N°**	**WALL LININGS**	**CAVITY INFILL** (Refer to TABLE B6)	**R_w / R_w+C_{tr}**	**$R_{t(sum)}$ / $R_{t(win)}$**	**R_w / R_w+C_{tr}**	**$R_{t(sum)}$ / $R_{t(win)}$**
– /– / –	**CSR 10340** 	EXTERNAL WALL SIDE • 1 x 12.5mm Gyprock Glasroc X Plasterboard. INTERNAL WALL SIDE • 1 x 6mm CeminSeal Wallboard.	(a) 90 Gold Batts R2.0	–	–	45/35	2.2/2.4
			(b) 90 Gold Batts R2.5	–	–	46/36	2.6/2.9
			(c) 75 Gold Batts R2.0	44/34	2.1/2.2	45/35	2.3/2.5
			Wall Thickness Excluding Cladding mm	123.5		143.5	
– /– / –	**CSR 10341** 	EXTERNAL WALL SIDE • 1 x 12.5mm Gyprock Glasroc X Plasterboard. INTERNAL WALL SIDE • 1 x 10mm Gyprock HD Plasterboard.	(a) 90 Gold Batts R2.0	–	–	42/31	2.2/2.4
			(b) 90 Gold Batts R2.5	–	–	43/32	2.6/2.9
			(c) 75 Gold Batts R2.0	41/30	2.1/2.2	42/31	2.3/2.5
			Wall Thickness Excluding Cladding mm	127.5		147.5	
– /– / –	**CSR 10342** 	EXTERNAL WALL SIDE • 1 x 12.5mm Gyprock Glasroc X Plasterboard. INTERNAL WALL SIDE • 1 x 10mm Gyprock Aquachek Plasterboard.	(a) 90 Gold Batts R2.0	–	–	44/33	2.2/2.4
			(b) 90 Gold Batts R2.5	–	–	45/34	2.6/2.9
			(c) 75 Gold Batts R2.0	43/32	2.1/2.2	44/33	2.3/2.5
			Wall Thickness Excluding Cladding mm	127.5		147.5	
– /– / –	**CSR 10343** 	EXTERNAL WALL SIDE • 1 x 12.5mm Gyprock Glasroc X Plasterboard. INTERNAL WALL SIDE • 1 x 13mm Gyprock Standard Plasterboard.	(a) 90 Gold Batts R2.0	–	–	45/34	2.2/2.4
			(b) 90 Gold Batts R2.5	–	–	46/35	2.6/2.9
			(c) 75 Gold Batts R2.0	44/33	2.1/2.2	45/34	2.3/2.5
			Wall Thickness Excluding Cladding mm	130.5		150.5	
30/30/30 (from both sides) FC 12969	**CSR 10344** 	EXTERNAL WALL SIDE • 1 x 12.5mm Gyprock Glasroc X Plasterboard. INTERNAL WALL SIDE • 1 x 13mm Gyprock Fyrchek Plasterboard.	(a) 90 Gold Batts R2.0	–	–	46/36	2.2/2.4
			(b) 90 Gold Batts R2.5	–	–	47/37	2.6/2.9
			(c) 75 Gold Batts R2.0	45/35	2.1/2.2	46/36	2.3/2.5
			Wall Thickness Excluding Cladding mm	130.5		150.5	
60/60/60 (from both sides) FC 12969	**CSR 10345** 	EXTERNAL WALL SIDE • 1 x 12.5mm Gyprock Glasroc X Plasterboard. INTERNAL WALL SIDE • 1 x 16mm Gyprock Fyrchek Plasterboard.	(a) 90 Gold Batts R2.0	–	–	46/36	2.2/2.4
			(b) 90 Gold Batts R2.5	–	–	47/37	2.6/2.9
			(c) 75 Gold Batts R2.0	45/35	2.1/2.2	46/36	2.3/2.5
			Wall Thickness Excluding Cladding mm	133.5		153.5	

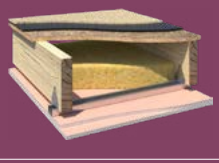
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CEILING SYSTEMS

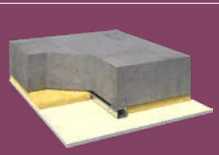
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SECTION CONTENTS

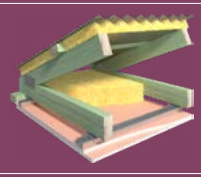
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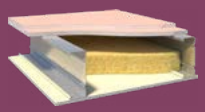
Floor/Ceiling Under Joists **G6**



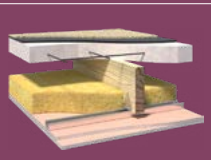
Floor/Ceiling Under Concrete Structure **G15**



Ceilings Under Pitched Metal/Tiled Roofs **G25**



Ceilings Fire Rated from Above &/or Below **G44**



Hebel PowerFloor **G47**



Decorative and Sound Absorptive Ceilings **G49**

INTRODUCTION

CSR Gyprock has developed an extensive range of flush jointed roof/ceiling and floor/ceiling systems to meet specific fire and acoustic requirements. CSR also offers a large selection of lay-in tile ceiling systems for non-fire rated decorative and acoustic applications.

Systems in this section include ratings for sound transmission, sound impact and sound absorption, thermal resistance, fire resistance up to FRL 120/120/120, and for up to 60 minutes Resistance to Incipient Spread of Fire (RISF).

Gyprock flush jointed ceiling systems utilise Gyprock plasterboard sheet which is fixed to appropriately prepared framing. Plasterboard joints are taped and set to form a smooth flush jointed continuous ceiling suitable for painting.

Gyprock tile ceiling systems offer lightweight, decorative and/or acoustic solutions for commercial applications. The precoated face of the supporting grid or edge profile of the tiles combine with various surface textures or perforations to form a decorative and functional ceiling. Room-to-room acoustic performance details for tile ceilings are given in Section J in this guide.

DESIGN CONSIDERATIONS

Framing requirements detailed in this guide apply to both non-fire rated and fire rated installations, and for interior applications only.

Information and guidance for the selection of Rondo suspension and grid components is given in Book 3 Commercial & Multi-Residential Installation Guide – Buildings Class 2 to 9. For other elements and additional information, refer to the appropriate design standards or handbooks, or contact the manufacturer for design information.

DESIGNER RESPONSIBILITY

It remains the responsibility of the customer (in conjunction with their designer or engineer, when applicable) to ensure that CSR's products/systems are suitable for their chosen application for any given project. CSR recommends that a comprehensive assessment of the performance requirements be undertaken prior to selection, including in respect of project-specific matters such as, but not limited structural adequacy, seismic, acoustic, fire resistance/combustibility, thermal, condensation and weatherproofing requirements.

CSR offers online digital tools for the most updated information, including but not limited to update of products/components, inclusion of new and modified systems, to meet the requirements of the National Construction Code of Australia (NCC) and any relevant Australian Standards.

For the most up-to-date product & system performance information, visit:

CSR System Selector: https://apps.csr.com.au/systemselector/search-option

CSR Thermal Calculator: https://apps.csr.com.au/thermalcalculator

STRUCTURAL DESIGN

All floor, roof and ceiling framing must be designed for the applied loads. It is recommended that the supporting structure be designed for maximum deflection of SPAN/240 under serviceability criteria.

Seismic Loads

Seismic actions must be considered for building elements in accordance with the NCC. The loads and effects of earthquakes may be determined in accordance with AS 1170.4 'Earthquake Actions in Australia'. The Standard has design procedures for houses (Class 1), and to buildings (Classes 2 to 9) with importance levels 2, 3 or 4 as defined in the NCC.

Wind Loads

All linings and framing are to be designed for the appropriate wind loads. CSR Gyprock recommends a minimum design pressure of 0.25kPa (downward) for the ceiling framing.

Tall residential buildings often have exterior operable doors and windows, resulting in internal areas being subject to wind pressure. In these cases, ceilings must be designed for the appropriate loads.

FRAMING

Steel framing for direct fixing of linings shall have a maximum base metal thickness (BMT) 1.6mm and a minimum face fixing width of 32mm. Framing may be trusses, top hats, C sections, furring channels, or similar members. In all cases they should be designed in accordance with AS/NZS 4600.

For steel components in corrosive environments, additional coatings may be required. Refer to AS/NZS 2785 for guidance.

Timber framing shall be solid timber or engineered floor joist such as LVL Glulam, ply web joists, or trusses made

from solid timber framing, and must be designed in accordance with AS 1720.1, or AS 1684 series.

Direct-Fix Framing Systems

Ceiling linings may be fixed directly to primary timber or steel framing, or to secondary steel framing members such as furring channels and battens.

Timber members to which plasterboard will be fixed must comply with AS 1684 series, Residential Timber – Framed Construction, or be designed in accordance with AS 1720.1 Timber Structures – Design Methods.

Steel framing to which plasterboard will be fixed must comply with AS/NZS 4600 Cold Formed Steel Structures.

Suspended Ceiling Systems

Ceiling suspension systems must be designed to AS/NZS 2785 Suspended Ceilings – Design and Installation. Ceilings in this manual are non-trafficable.

Strengthen suspension systems to support light fittings and access panels as detailed in the appropriate illustrations in this guide and/or other relevant Gyprock or Rondo technical literature.

Any additional loads are not to be placed upon, or carried by the suspension system.

Ceilings Rated from Above

Ceiling systems with plasterboard linings on top of joists are non-trafficable and should not be used for storage. The joists should be designed for all imposed loads including construction loads where fixing of sheets is required from above. Appropriate barriers and signage should be installed to prevent access.

CONTROL JOINTS

Control joints are used to reduce the possibility of cracks forming from structural movement, thermal and moisture movement and the like. Locations for joints should be chosen by the designer with regard to building shape, structural breaks, changes of substrate, and joint appearance.

The continuity of lining sheets and support framework should be broken at control joints.

Control joints may be positioned to intersect light fixtures, heating vents and air diffusers.

Control joints are to be installed in both fire rated and non-fire rated ceilings:

- To coincide with control joints in the supporting frame.
- At changes of framing type or framing direction.
- In continuous interior ceiling areas lined with plasterboard, spaced at no more than 12m centres in both directions.
- For external ceilings, at 6m maximum centres.

Ceilings lined with CeminSeal Wallboard should have joints at 3.6m in most cases. For additional information, refer to Cemintel Ceiling Systems.

FIRE RATED SYSTEMS

Generally, the fire resistance of floor/ceiling and roof/ceiling systems is assessed from below, in accordance with the standard fire test of AS 1530.4:2014. This is a requirements of the NCC where lightweight construction is used for compartmentation and separation.

Gyprock fire rated floor/ceiling and roof/ceiling systems in this guide have been designed with fire performance that protects framing and provides an FRL rated performance. The framed system must be designed by a professional structural engineer and consider the impact of the exposed heat of the fire. For systems exposed to fire from below, where the horizontal elements are exposed to heat from the underside only, to satisfy the following requirements:

- For steel framed floor/ceiling and roof/ceiling systems, the steel elements (joists, purlins, beams) must be designed to ensure that the maximum imposed flexural strength demand at the fire limit state does not exceed 25% of the design ultimate limit state strength at ambient temperature.
- For timber framed floor/ceiling and roof/ceiling systems, the timber elements (joists, purlins, beams) must be designed to ensure that the maximum imposed flexural strength demand at the fire limit state does not exceed 50% of the design ultimate limit state strength at ambient temperature.
- In all cases, the suspension systems must be designed by a professional structural engineer to support the imposed dead and live loads.

Some systems, such as fire-isolated passageways, have horizontal elements exposed to heat from outside and are required to have a FRL rating when tested from outside.

ACCEPTABLE VARIATIONS TO FIRE SYSTEMS

The Fire Resistance Level (FRL) of the systems detailed in this section will not be detrimentally affected by:

- The use of Fyrchek MR, Impactchek or EC08 Range plasterboard in lieu of Fyrchek plasterboard of the same thickness.
- Additional layers of plasterboard or Cemintel fibre cement.
- Decreasing the framing spacings.
- Decreasing the fixing centers of ceiling sheet materials.
- Additional of M10 steel rods or 14g screws penetrating the exposed side plasterboard layers and into the ceiling cavity to facilitate the attachment of light weight fixtures through to the main structural framing.

Perimeters & Penetrations

All perimeters, control joints and penetrations must be treated appropriately to maintain the fire rating. Treatment may include caulking with mastic sealants, or by the use of fire collars, dampers, etc, to an approved detail.

COMBUSTIBILITY

Non-combustible materials is determined by AS1530.1 - combustibility tests for materials, and in accordance NCC2022 Clause C2D10 [NCC2019: C1.9]. NCC has defined the construction requirement and restrictions of the application of combustible materials.

Please note that polyester insulation may NOT be selected where the system has non-combustible construction requirements.

ACOUSTIC PERFORMANCE

Sound Transmission

Sound flanking, the effectiveness of workmanship and caulking, the presence and treatment of penetrations, and the inclusion of structural elements and bridging items may affect the acoustic performance of ceiling systems. Refer to appropriate information on addressing these issues detailed in Section B and Section J in this guide.

Sound Impact

Sound impact ratings are given as $L_{n,w}$ for various floor finishes. The ratings are given as a range due to the effects of differing substrate stiffnesses and floor types. It is recommended that to comply with the NCC maximum of $L_{n,w}$ 62 (Class 2 or 3 buildings), systems be chosen that have the entire range at $L_{n,w}$ 62 or less. For systems that achieve $L_{n,w}$ 60 – 65 it is recommended that the proposed floor/ceiling be checked by an acoustic consultant.

Bare Floor values are for concrete slabs or sheet flooring that have:

- No finish, or
- Are lined with tiles, timber, vinyl, or similar, without an acoustic underlay, or
- Carpet without an underlay.

Timber/Tile + AQ (acoustic quality) Underlay values are for slabs with:

- Tiles, timber, engineered timber or laminate timber, or similar hard finishes, with an acoustic underlay of at least 4.5mm thickness. Suitable products include 4.5mm Regupol 4515, 5mm Embleton Impactamat or composite products such as Acoustica AngelStep.

Carpet + Underlay values are for concrete slabs or sheet flooring that have:

- Carpet installed over standard chipfoam underlay material.

Systems acoustic performance are not affected by:

- The use of 13mm Aquachek in lieu of 13mm Gyprock Standard
- The use of 10mm Aquachek in lieu of 10mm Gyprock Plus

Perimeters & Penetrations

In non-fire rated systems, to attain the stated sound transmission performance, use Gyprock Wet Area Acrylic Sealant or other tested acoustic sealant. All penetrations should be treated to maintain the acoustic integrity of the system.

THERMAL PERFORMANCE

Energy efficiency requirements for the building envelope are set out in the NCC as performance requirements and acceptable construction practices, and are dependent on geographical climate zones. To meet the requirements, it is recommended that CSR Bradford insulation be installed. Check with local building authorities for minimum insulation requirements.

The level of insulation provided in a wall is described by its R-Value, the higher the R-Value the greater the insulation provided.

The system values provided have been calculated based on a thermal transmission path through the roof cavity and does not allow for any thermal bridging. This method is in accordance with the requirements of NCC Volume 2, Class 1 and 10 buildings and may not be applicable for other building classes. $R_{(SUM)}$ and $R_{(WIN)}$ represent the system total R-Value calculated for heat flow inwards and heat flow outwards respectively.

INSTALLATION

STEEL FRAMING & SUSPENSION COMPONENTS

CSR Gyprock recommends components manufactured by Rondo Building Services Pty Ltd. For detailed information on installation and maintenance of suspension systems, Refer to Book 3, Commercial & Multi-Residential Installation Guide for further information, or contact CSR Himmel on 1300 374 253 or www.himmel.com.au.

PLASTERBOARD & FIBRE CEMENT FIXING

Ceilings may be designed to achieve a particular 'Level of Finish' as defined in AS/NZS 2589.1. The Level of Finish specified can have requirements for frame alignment, jointing and back blocking methods.

Lining sheets must be installed with the long edge at right angles to the direction of the framing to which they are fixed. Fixing information is provided in Book 2 Residential Installation Guide, Book 3 Commercial & Multi-Residential Installation Guide, and Cemintel Ceiling Systems - Soffitline & Ceminseal Wallboard, External & Internal Ceiling Systems Design and Installation Guide.

INSULATION & SARKING

A range of insulation and sarking products have been specified in some roof/ceiling systems to achieve the acoustic and thermal values, refer to the Components &

Accessories in section B for further information.

JOINTING

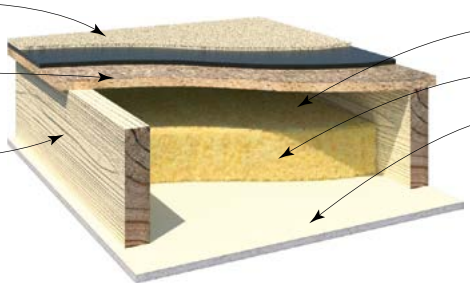
Detailed plasterboard jointing and finishing information is provided in relevant Gyprock installation guides. In multi-layer systems, jointing and finishing is required on the visible outer layer only.

For information on Cemintel fibre cement jointing, refer to Cemintel Ceiling Systems.

Floor finished bare or with carpet and underlay as per system table.

1 x 19mm or 22mm particleboard or timber flooring or fibre cement sheet of at least 15kg/m².

Timber or steel joists at 600mm maximum centres.

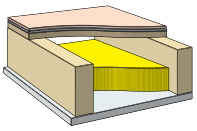
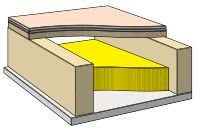
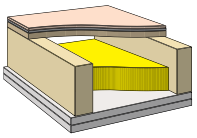
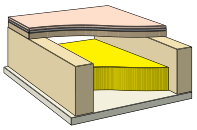
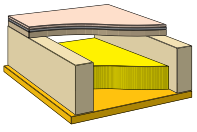


Minimum 190mm cavity depth.

Cavity infill as per system table.

Ceiling lining as per system table, direct fixed to framing.

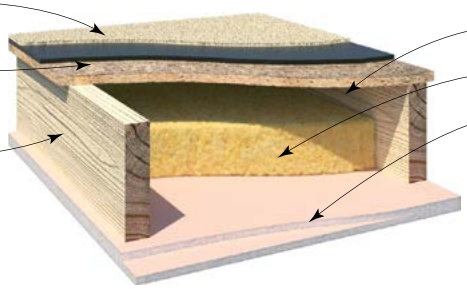
NOTE: RISF = Resistance to Incipient Spread of Fire

SYSTEM SPECIFICATION Refer to Book 2 and 3 for further information			ACOUSTIC REPORT: PKA – A122			
FRL Report	**SYSTEM Nº**	**CEILING LININGS**	**CAVITY INFILL** (Refer to TABLE B6)	**R_w / R_w+C_{tr}**	**Bare Floor $L_{n,w}$**	**Carpet + Underlay $L_{n,w}$**
– / – / –	**CSR 6001** 	• 1 x 10mm Gyprock Supaceil Plasterboard.	(a) Nil	37/30	80 – 85	65 – 70
			(b) 90 Gold Batts 2.0	40/32	75 – 80	60 – 65
			(c) 70 Soundscreen 2.0	40/32	75 – 80	60 – 65
– / – / –	**CSR 10166** 	• 1 x 10mm Gyprock HD Plasterboard.	(a) Nil	38/32	80 – 85	65 – 70
			(b) 90 Gold Batts 2.0	41/34	75 – 80	60 – 65
			(c) 70 Soundscreen 2.0	41/34	75 – 80	60 – 65
– / – / –	**CSR 10167** 	• 2 x 10mm Gyprock HD Plasterboard.	(a) Nil	41/35	80 – 85	60 – 65
			(b) 90 Gold Batts 2.0	44/37	75 – 80	**58 – 62**
			(c) 70 Soundscreen 2.0	44/37	75 – 80	**58 – 62**
– / – / –	**CSR 6015** 	• 1 x 13mm Gyprock Standard Plasterboard.	(a) Nil	39/32	80 – 85	65 – 70
			(b) 90 Gold Batts 2.0	42/34	75 – 80	60 – 65
			(c) 70 Soundscreen 2.0	42/34	75 – 80	60 – 65
– / – / –	**CSR 6018** 	• 1 x 13mm Gyprock Soundchek Plasterboard.	(a) Nil	40/34	80 – 85	65 – 70
			(b) 90 Gold Batts 2.0	43/36	75 – 80	60 – 65
			(c) 70 Soundscreen 2.0	43/36	75 – 80	60 – 65

Floor finished bare or with carpet and underlay as per system table.

1 x 19mm or 22mm particleboard or timber flooring or fibre cement sheet of at least 15kg/m².

Timber or steel joists at 600mm maximum centres.

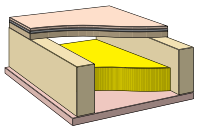
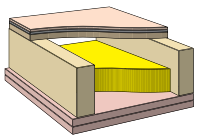
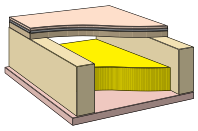
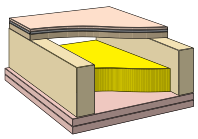
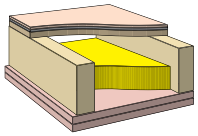
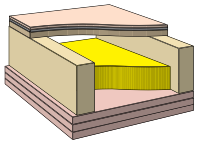


Minimum 190mm cavity depth.

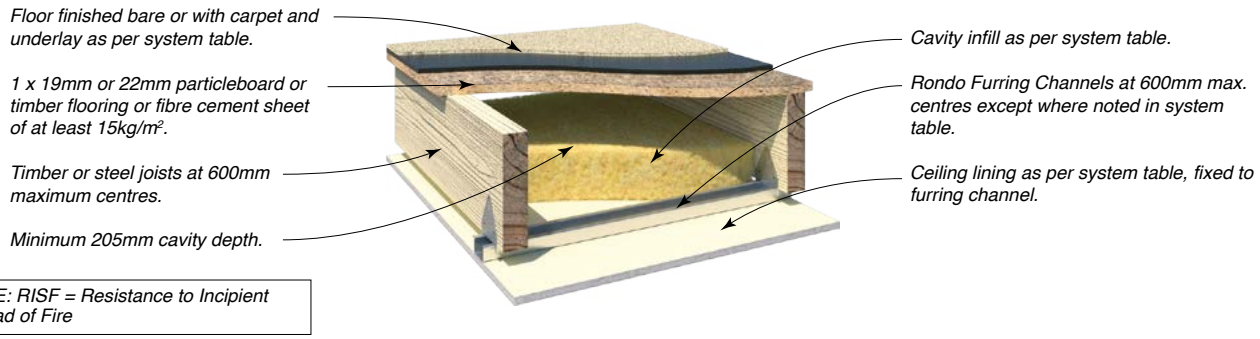
Cavity infill as per system table.

Ceiling lining as per system table, direct fixed to framing.

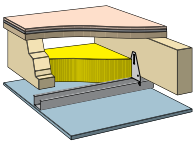
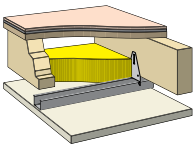
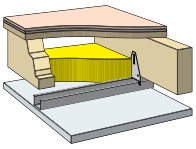
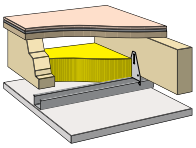
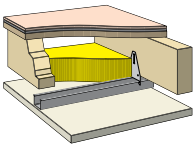
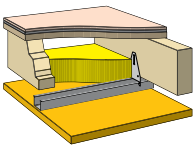
NOTE: RISF = Resistance to Incipient Spread of Fire

SYSTEM SPECIFICATION Refer to Book 2 and 3 for further information			ACOUSTIC REPORT: PKA – A122			
FRL Report	**SYSTEM Nº**	**CEILING LININGS**	**CAVITY INFILL** (Refer to TABLE B6)	**R_w / R_w+C_{tr}**	**Bare Floor $L_{n,w}$**	**Carpet + Underlay $L_{n,w}$**
30/30/30 from below only EWFA 26162	**CSR 6025** 	• 1 x 13mm Gyprock Fyrchek Plasterboard. • Framing at 450mm maximum centres.	(a) Nil (b) 90 Gold Batts 2.0 (c) 70 Soundscreen 2.0	38/32 41/34 41/34	80 – 85 75 – 80 75 – 80	65 – 70 60 – 65 60 – 65
60/60/60 from below only +RISF 30 minutes EWFA 26162	**CSR 6026** 	• 2 x 13mm Gyprock Fyrchek Plasterboard.	(a) Nil (b) 90 Gold Batts 2.0 (c) 70 Soundscreen 2.0	43/37 46/39 46/39	80 – 85 75 – 80 75 – 80	60 – 65 **58 – 62** **58 – 62**
30/30/30 from below only EWFA 26162	**CSR 6031** 	• 1 x 16mm Gyprock Fyrchek Plasterboard. • Framing at 450mm maximum centres.	(a) Nil (b) 90 Gold Batts 2.0 (c) 70 Soundscreen 2.0	38/32 41/34 41/34	80 – 85 75 – 80 75 – 80	65 – 70 60 – 65 60 – 65
60/60/60 from below only +RISF 30 minutes EWFA 26162	**CSR 6132** 	• 1 x 13mm Gyprock Fyrchek Plasterboard. • 1 x 16mm Gyprock Fyrchek Plasterboard (any order).	(a) Nil (b) 90 Gold Batts 2.0 (c) 70 Soundscreen 2.0	43/37 46/39 46/39	80 – 85 75 – 80 75 – 80	60 – 65 **58 – 62** **58 – 62**
90/90/90 from below only +RISF 60 minutes EWFA 26162	**CSR 6134** 	• 2 x 16mm Gyprock Fyrchek Plasterboard.	(a) Nil (b) 90 Gold Batts 2.0 (c) 70 Soundscreen 2.0	42/36 45/38 45/38	80 – 85 75 – 80 75 – 80	60 – 65 **58 – 62** **58 – 62**
120/120/120 from below only +RISF 60 minutes EWFA 26162	**CSR 6140** 	• 3 x 16mm Gyprock Fyrchek Plasterboard.	(a) Nil (b) 90 Gold Batts 2.0 (c) 70 Soundscreen 2.0	45/39 48/41 48/41	80 – 85 75 – 80 75 – 80	60 – 65 **58 – 62** **58 – 62**

Floor/Ceiling – Joists with Clip Fixed Furring



NOTE: RISF = Resistance to Incipient Spread of Fire

SYSTEM SPECIFICATION Refer to Book 2 and 3 for further information			ACOUSTIC REPORT: PKA – A122			
FRL Report	**SYSTEM Nº**	**CEILING LININGS**	**CAVITY INFILL** (Refer to TABLE B6)	**R_w / R_w+C_{tr}**	**Bare Floor $L_{n,w}$**	**Carpet + Underlay $L_{n,w}$**
– / – / –	**CSR 6150** 	• 1 x 6mm CeminSeal Wallboard.	(a) Nil (b) 90 Gold Batts 2.0 (c) 70 Soundscreen 2.0	41/34 46/39 47/40	80 – 85 70 – 75 70 – 75	60 – 65 **55 – 60** **55 – 60**
– / – / –	**CSR 6151** 	• 1 x 10mm Gyprock Plus Plasterboard. • Furring channel at 450mm maximum centres.	(a) Nil (b) 90 Gold Batts 2.0 (c) 70 Soundscreen 2.0	39/32 44/37 45/38	80 – 85 70 – 75 70 – 75	60 – 65 **55 – 60** **55 – 60**
– / – / –	**CSR 6153** 	• 1 x 10mm Gyprock Supaceil Plasterboard.	(a) Nil (b) 90 Gold Batts 2.0 (c) 70 Soundscreen 2.0	39/32 44/37 45/38	80 – 85 70 – 75 70 – 75	60 – 65 **55 – 60** **55 – 60**
– / – / –	**CSR 10168** 	• 1 x 10mm Gyprock HD Plasterboard.	(a) Nil (b) 90 Gold Batts 2.0 (c) 70 Soundscreen 2.0	40/34 45/39 46/40	80 – 85 70 – 75 70 – 75	60 – 65 **55 – 60** **55 – 60**
– / – / –	**CSR 6170** 	• 1 x 13mm Gyprock Standard Plasterboard.	(a) Nil (b) 90 Gold Batts 2.0 (c) 70 Soundscreen 2.0	40/34 45/39 46/40	80 – 85 70 – 75 70 – 75	60 – 65 **55 – 60** **55 – 60**
– / – / –	**CSR 6173** 	• 1 x 13mm Gyprock Soundchek Plasterboard.	(a) Nil (b) 90 Gold Batts 2.0 (c) 70 Soundscreen 2.0	43/37 48/42 49/43	80 – 85 70 – 75 70 – 75	60 – 65 **55 – 60** **55 – 60**

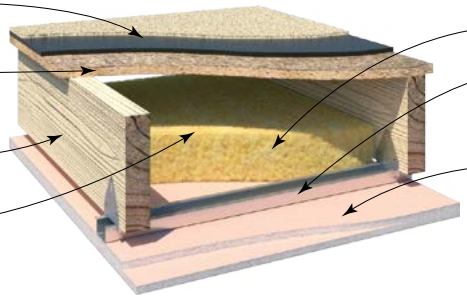
Floor/Ceiling – Joists with Clip Fixed Furring

Floor finished bare or with carpet and underlay as per system table.

1 x 19mm or 22mm particleboard or timber flooring or fibre cement sheet of at least 15kg/m².

Timber or steel joists at 600mm maximum centres.

Minimum 205mm cavity depth.



Cavity infill as per system table.

Rondo Furring Channels at 600mm max. centres except where noted in system table.

Ceiling lining as per system table, fixed to furring channel.

NOTE: RISF = Resistance to Incipient Spread of Fire

SYSTEM SPECIFICATION Refer to Book 2 and 3 for further information			ACOUSTIC REPORT: PKA – A122			
FRL Report	**SYSTEM Nº**	**CEILING LININGS**	**CAVITY INFILL** (Refer to TABLE B6)	**R_w / R_w+C_{tr}**	**Bare Floor $L_{n,w}$**	**Carpet + Underlay $L_{n,w}$**
30/30/30 from below only EWFA 26162	**CSR 6180**	• 1 x 13mm Gyprock Fyrchek Plasterboard. • Furring channels at 450mm maximum centres.	(a) Nil	42/36	80 – 85	60 – 65
			(b) 90 Gold Batts 2.0	47/41	70 – 75	**55 – 60**
			(c) 70 Soundscreen 2.0	48/42	70 – 75	**55 – 60**
60/60/60 from below only +RISF 30 minutes EWFA 26162	**CSR 6183**	• 2 x 13mm Gyprock Fyrchek Plasterboard.	(a) Nil	45/39	75 – 80	**60 – 62**
			(b) 90 Gold Batts 2.0	50/44	65 – 70	**50 – 55**
			(c) 70 Soundscreen 2.0	51/45	65 – 70	**50 – 55**
30/30/30 from below only EWFA 26162	**CSR 6187**	• 1 x 16mm Gyprock Fyrchek Plasterboard. • Furring channels at 450mm maximum centres.	(a) Nil	42/36	80 – 85	60 – 65
			(b) 90 Gold Batts 2.0	47/41	70 – 75	**55 – 60**
			(c) 70 Soundscreen 2.0	48/42	70 – 75	**55 – 60**
60/60/60 from below only +RISF 60 minutes EWFA 26162	**CSR 6190**	• 1 x 13mm Gyprock Fyrchek Plasterboard. • 1 x 16mm Gyprock Fyrchek Plasterboard (any order).	(a) Nil	45/39	75 – 80	**60 – 62**
			(b) 90 Gold Batts 2.0	50/44	65 – 70	**50 – 55**
			(c) 70 Soundscreen 2.0	51/45	65 – 70	**50 – 55**
90/90/90 from below only +RISF 60 minutes EWFA 26162	**CSR 6193**	• 2 x 16mm Gyprock Fyrchek Plasterboard.	(a) Nil	44/38	75 – 80	**60 – 62**
			(b) 90 Gold Batts 2.0	49/43	65 – 70	**50 – 55**
			(c) 70 Soundscreen 2.0	50/44	65 – 70	**50 – 55**
120/120/120 from below only +RISF 60 minutes EWFA 26162	**CSR 6196**	• 3 x 16mm Gyprock Fyrchek Plasterboard.	(a) Nil	47/41	75 – 80	**60 – 62**
			(b) 90 Gold Batts 2.0	52/46	65 – 70	**50 – 55**
			(c) 70 Soundscreen 2.0	53/47	65 – 70	**50 – 55**

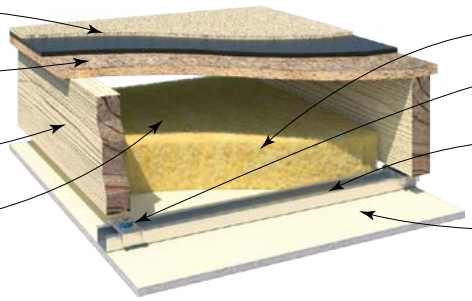
Floor/Ceiling – Joists with Resilient Mounted Furring

Floor finished bare or with carpet and underlay as per system table.

1 x 19mm or 22mm particleboard or timber flooring or fibre cement sheet of at least 15kg/m².

Timber or steel joists at 600mm maximum centres.

Minimum 205mm cavity depth.



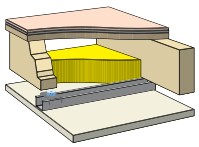
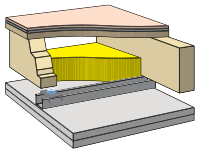
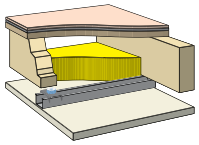
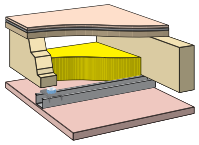
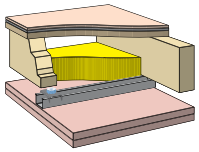
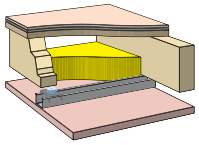
Cavity infill as per system table.

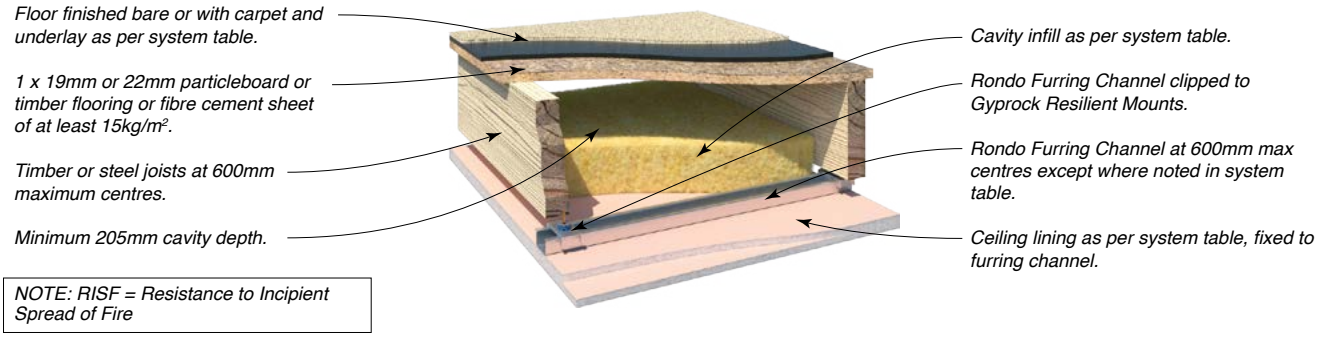
Rondo Furring Channel clipped to Gyprock Resilient Mounts.

Rondo Furring Channel at 600mm max centres except where noted in system table.

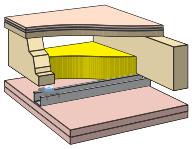
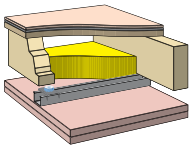
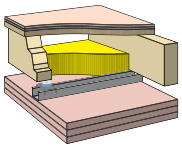
Ceiling lining as per system table, fixed to furring channel.

NOTE: RISF = Resistance to Incipient Spread of Fire

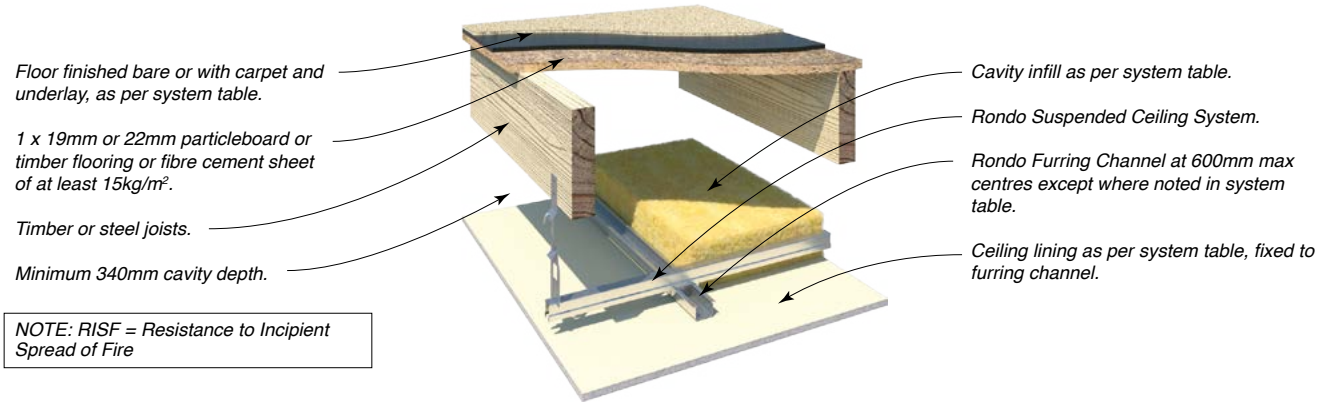
SYSTEM SPECIFICATION Refer to Book 2 and 3 for further information			ACOUSTIC REPORT: PKA – A122			
FRL Report	**SYSTEM Nº**	**CEILING LININGS**	**CAVITY INFILL** (Refer to TABLE B6)	**R_w/R_w+C_{tr}**	**Bare Floor $L_{n,w}$**	**Carpet + Underlay $L_{n,w}$**
–/–/–	**CSR 10169** 	• 1 x 10mm Gyprock HD Plasterboard.	(a) Nil	46/39	75 – 80	**55 – 60**
			(b) 90 Gold Batts 2.0	55/46	65 – 70	**50 – 55**
			(c) 70 Soundscreen 2.0	55/46	65 – 70	**50 – 55**
–/–/–	**CSR 10170** 	• 2 x 10mm Gyprock HD Plasterboard.	(a) Nil	48/42	70 – 75	**55 – 60**
			(b) 90 Gold Batts 2.0	57/49	60 – 65	**45 – 50**
			(c) 70 Soundscreen 2.0	57/49	60 – 65	**45 – 50**
–/–/–	**CSR 6209** 	• 1 x 13mm Gyprock Standard Plasterboard.	(a) Nil	46/39	75 – 80	**55 – 60**
			(b) 90 Gold Batts 2.0	55/46	65 – 70	**50 – 55**
			(c) 70 Soundscreen 2.0	55/46	65 – 70	**50 – 55**
30/30/30 from below only EWFA 26162	**CSR 6215** 	• 1 x 13mm Gyprock Fyrchek Plasterboard. • Furring channels at 450mm maximum centres.	(a) Nil	47/41	75 – 80	**55 – 60**
			(b) 90 Gold Batts 2.0	56/48	65 – 70	**50 – 55**
			(c) 70 Soundscreen 2.0	56/48	65 – 70	**50 – 55**
60/60/60 from below only +RISF 30 minutes EWFA 26162	**CSR 6217** 	• 2 x 13mm Gyprock Fyrchek Plasterboard.	(a) Nil	50/44	70 – 75	**55 – 60**
			(b) 90 Gold Batts 2.0	59/**51**	**60 – 62**	**45 – 50**
			(c) 70 Soundscreen 2.0	59/**51**	**60 – 62**	**45 – 50**
30/30/30 from below only EWFA 26162	**CSR 6219** 	• 1 x 16mm Gyprock Fyrchek Plasterboard. • Furring channels at 450mm maximum centres.	(a) Nil	47/41	75 – 80	**55 – 60**
			(b) 90 Gold Batts 2.0	56/48	65 – 70	**50 – 55**
			(c) 70 Soundscreen 2.0	56/48	65 – 70	**50 – 55**



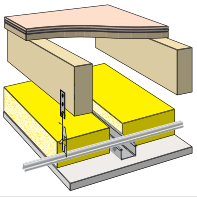
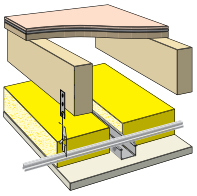
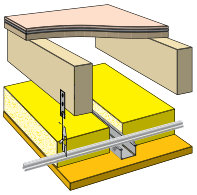
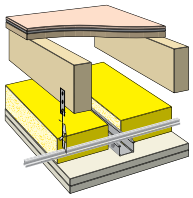
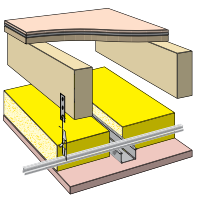
NOTE: RISF = Resistance to Incipient Spread of Fire

SYSTEM SPECIFICATION Refer to Book 2 and 3 for further information			ACOUSTIC REPORT: PKA – A122			
FRL Report	**SYSTEM Nº**	**CEILING LININGS**	**CAVITY INFILL** (Refer to TABLE B6)	**R_w/R_w+C_{tr}**	**Bare Floor $L_{n,w}$**	**Carpet + Underlay $L_{n,w}$**
60/60/60 from below only +RISF 60 minutes EWFA 26162	**CSR 6221** 	• 1 x 13mm Gyprock Fyrchek Plasterboard. • 1 x 16mm Gyprock Fyrchek Plasterboard (any order).	(a) Nil	50/44	70 – 75	**55 – 60**
			(b) 90 Gold Batts 2.0	59/**51**	**60 – 62**	**45 – 50**
			(c) 70 Soundscreen 2.0	59/**51**	**60 – 62**	**45 – 50**
90/90/90 from below only +RISF 60 minutes EWFA 26162	**CSR 6222** 	• 2 x 16mm Gyprock Fyrchek Plasterboard.	(a) Nil	50/44	70 – 75	**55 – 60**
			(b) 90 Gold Batts 2.0	59/**51**	**60 – 62**	**45 – 50**
			(c) 70 Soundscreen 2.0	59/**51**	**60 – 62**	**45 – 50**
120/120/120 from below only +RISF 60 minutes EWFA 26162	**CSR 6223** 	• 3 x 16mm Gyprock Fyrchek Plasterboard.	(a) Nil	52/46	70 – 75	**55 – 60**
			(b) 90 Gold Batts 2.0	60/**52**	**60 – 62**	**45 – 50**
			(c) 70 Soundscreen 2.0	60/**52**	**60 – 62**	**45 – 50**

Floor/Ceiling – Joists with Suspended Grid & Furring



NOTE: RISF = Resistance to Incipient Spread of Fire

SYSTEM SPECIFICATION Refer to Book 2 and 3 for further information			ACOUSTIC REPORT: PKA – A122			
FRL Report	**SYSTEM Nº**	**CEILING LININGS**	**CAVITY INFILL** (Refer to TABLE B6)	**R_w/R_w+C_{tr}**	**Bare Floor $L_{n,w}$**	**Carpet + Underlay $L_{n,w}$**
–/–/–	**CSR 10171** 	• 1 x 10mm Gyprock HD Plasterboard.	(a) Nil	45/38	75 – 80	60 – 65
			(b) 90 Gold Batts 2.0	51/44	70 – 75	**55 – 60**
			(c) 70 Soundscreen 2.0	52/45	70 – 75	**55 – 60**
			(d) 165 Acoustigard 11kg	53/46	70 – 75	**55 – 60**
–/–/–	**CSR 6231** 	• 1 x 13mm Gyprock Standard Plasterboard.	(a) Nil	45/38	75 – 80	60 – 65
			(b) 90 Gold Batts 2.0	51/44	70 – 75	**55 – 60**
			(c) 70 Soundscreen 2.0	52/45	70 – 75	**55 – 60**
			(d) 165 Acoustigard 11kg	53/46	70 – 75	**55 – 60**
–/–/–	**CSR 6232** 	• 1 x 13mm Gyprock Soundchek Plasterboard.	(a) Nil	47/41	75 – 80	60 – 65
			(b) 90 Gold Batts 2.0	53/47	70 – 75	**55 – 60**
			(c) 70 Soundscreen 2.0	54/48	70 – 75	**55 – 60**
			(d) 165 Acoustigard 11kg	55/49	70 – 75	**55 – 60**
–/–/–	**CSR 6233** 	• 2 x 13mm Gyprock Standard Plasterboard.	(a) Nil	48/42	75 – 80	60 – 65
			(b) 90 Gold Batts 2.0	54/48	70 – 75	**55 – 60**
			(c) 70 Soundscreen 2.0	55/49	70 – 75	**55 – 60**
			(d) 165 Acoustigard 11kg	56/**50**	70 – 75	**55 – 60**
30/30/30 from below only EWFA 26162	**CSR 6240** 	• 1 x 13mm Gyprock Fyrchek Plasterboard. • Furring channels at 450mm maximum centres.	(a) Nil	46/40	75 – 80	60 – 65
			(b) 90 Gold Batts 2.0	52/46	70 – 75	**55 – 60**
			(c) 70 Soundscreen 2.0	53/47	70 – 75	**55 – 60**
			(d) 165 Acoustigard 11kg	54/48	70 – 75	**55 – 60**

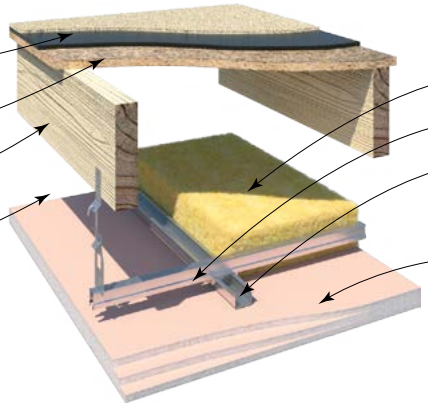
Floor/Ceiling – Joists with Suspended Grid & Furring

Floor finished bare or with carpet and underlay, as per system table.

1 x 19mm or 22mm particleboard or timber flooring or fibre cement sheet of at least 15kg/m².

Timber or steel joists.

Minimum 340mm cavity depth.



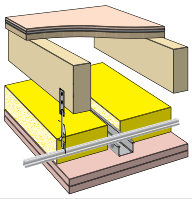
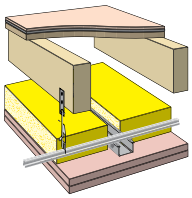
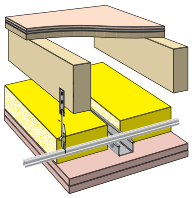
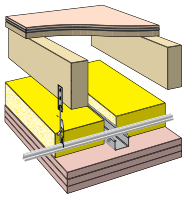
Cavity infill as per system table.

Rondo Suspended Ceiling System.

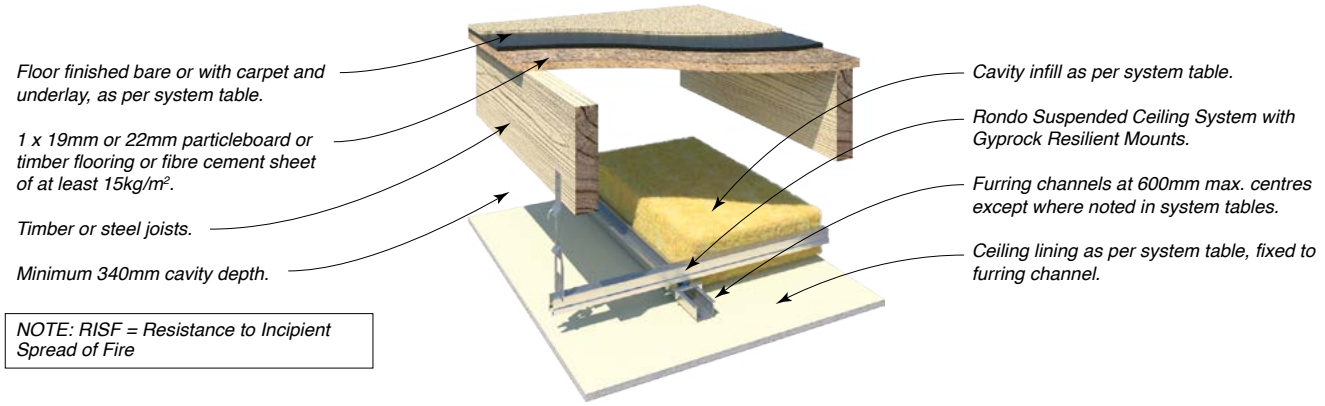
Rondo Furring Channel at 600mm max centres except where noted in system table.

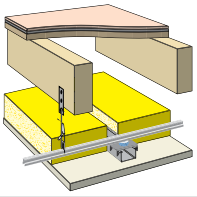
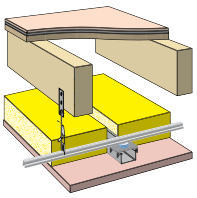
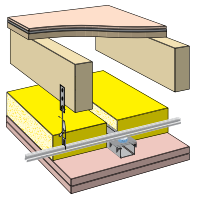
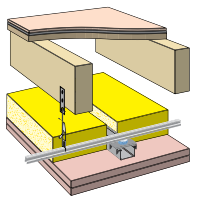
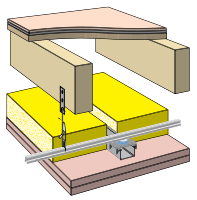
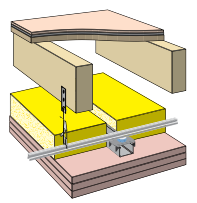
Ceiling lining as per system table, fixed to furring channel.

NOTE: RISF = Resistance to Incipient Spread of Fire

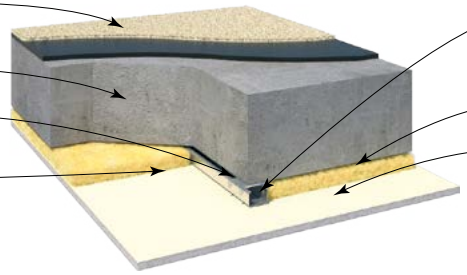
SYSTEM SPECIFICATION Refer to Book 2 and 3 for further information			ACOUSTIC REPORT: PKA – A122			
FRL Report	**SYSTEM Nº**	**CEILING LININGS**	**CAVITY INFILL** (Refer to TABLE B6)	**R_w/R_w+C_{tr}**	**Bare Floor $L_{n,w}$**	**Carpet + Underlay $L_{n,w}$**
60/60/60 from below only +RISF 30 minutes EWFA 26162	**CSR 6242** 	• 2 x 13mm Gyprock Fyrchek Plasterboard.	(a) Nil	49/43	75 – 80	**58 – 62**
			(b) 90 Gold Batts 2.0	55/49	65 – 70	**50 – 55**
			(c) 70 Soundscreen 2.0	56**/50**	65 – 70	**50 – 55**
			(d) 165 Acoustigard 11kg	57**/51**	65 – 70	**50 – 55**
60/60/60 from below only +RISF 60 minutes EWFA 26162	**CSR 6244** 	• 1 x 13mm Gyprock Fyrchek Plasterboard. • 1 x 16mm Gyprock Fyrchek Plasterboard (any order).	(a) Nil	50/44	75 – 80	**58 – 62**
			(b) 90 Gold Batts 2.0	56**/50**	65 – 70	**50 – 55**
			(c) 70 Soundscreen 2.0	57**/51**	65 – 70	**50 – 55**
			(d) 165 Acoustigard 11kg	58**/52**	65 – 70	**50 – 55**
90/90/90 from below only +RISF 60 minutes EWFA 26162	**CSR 6245** 	• 2 x 16mm Gyprock Fyrchek Plasterboard.	(a) Nil	49/43	75 – 80	**58 – 62**
			(b) 90 Gold Batts 2.0	55/49	65 – 70	**50 – 55**
			(c) 70 Soundscreen 2.0	56**/50**	65 – 70	**50 – 55**
			(d) 165 Acoustigard 11kg	57**/51**	65 – 70	**50 – 55**
120/120/120 from below only +RISF 60 minutes EWFA 26162	**CSR 6247** 	• 3 x 16mm Gyprock Fyrchek Plasterboard.	(a) Nil	52/46	75 – 80	**58 – 62**
			(b) 90 Gold Batts 2.0	58**/52**	65 – 70	**50 – 55**
			(c) 70 Soundscreen 2.0	59**/53**	65 – 70	**50 – 55**
			(d) 165 Acoustigard 11kg	60**/54**	65 – 70	**50 – 55**

Floor/Ceiling – Joists with Suspended Grid & Resilient Mounted Furring



SYSTEM SPECIFICATION Refer to Book 2 and 3 for further information			ACOUSTIC REPORT: PKA – A122			
FRL Report	**SYSTEM Nº**	**CEILING LININGS**	**CAVITY INFILL** (Refer to TABLE B6)	**R_w/R_w+C_{tr}**	**Bare Floor $L_{n,w}$**	**Carpet + Underlay $L_{n,w}$**
–/–/–	**CSR 6255** 	• 1 x 13mm Gyprock Standard Plasterboard.	(a) Nil	48/41	75 – 80	**55 – 60**
			(b) 90 Gold Batts 2.0	54/47	65 – 70	**45 – 50**
			(c) 70 Soundscreen 2.0	55/48	65 – 70	**45 – 50**
			(d) 165 Acoustigard 11kg	56/49	65 – 70	**45 – 50**
30/30/30 from below only EWFA 26162	**CSR 6265** 	• 1 x 13mm Gyprock Fyrchek Plasterboard. • Furring channels at 450mm maximum centres.	(a) Nil	48/42	75 – 80	**55 – 60**
			(b) 90 Gold Batts 2.0	54/48	65 – 70	**45 – 50**
			(c) 70 Soundscreen 2.0	55/49	65 – 70	**45 – 50**
			(d) 165 Acoustigard 11kg	56/**50**	65 – 70	**45 – 50**
60/60/60 from below only +RISF 30 minutes EWFA 26162	**CSR 6267** 	• 2 x 13mm Gyprock Fyrchek Plasterboard.	(a) Nil	51/45	70 – 75	**55 – 60**
			(b) 90 Gold Batts 2.0	57/**51**	**60 – 62**	**45 – 50**
			(c) 70 Soundscreen 2.0	58/**52**	**60 – 62**	**45 – 50**
			(d) 165 Acoustigard 11kg	59/**53**	**60 – 62**	**45 – 50**
60/60/60 from below only +RISF 60 minutes EWFA 26162	**CSR 6269** 	• 1 x 13mm Gyprock Fyrchek Plasterboard. • 1 x 16mm Gyprock Fyrchek Plasterboard (any order).	(a) Nil	52/46	70 – 75	**55 – 60**
			(b) 90 Gold Batts 2.0	58/**52**	**60 – 62**	**45 – 50**
			(c) 70 Soundscreen 2.0	59/**53**	**60 – 62**	**45 – 50**
			(d) 165 Acoustigard 11kg	60/**54**	**60 – 62**	**45 – 50**
90/90/90 from below only +RISF 60 minutes EWFA 26162	**CSR 6271** 	• 2 x 16mm Gyprock Fyrchek Plasterboard.	(a) Nil	51/45	70 – 75	**55 – 60**
			(b) 90 Gold Batts 2.0	57/**51**	**60 – 62**	**45 – 50**
			(c) 70 Soundscreen 2.0	58/**52**	**60 – 62**	**45 – 50**
			(d) 165 Acoustigard 11kg	59/**53**	**60 – 62**	**45 – 50**
120/120/120 from below only +RISF 60 minutes EWFA 26162	**CSR 6273** 	• 3 x 16mm Gyprock Fyrchek Plasterboard.	(a) Nil	54/48	70 – 75	**55 – 60**
			(b) 90 Gold Batts 2.0	60/**54**	**60 – 62**	**40 – 45**
			(c) 70 Soundscreen 2.0	61/**55**	**60 – 62**	**40 – 45**
			(d) 165 Acoustigard 11kg	62/**56**	**60 – 62**	**40 – 45**

Floor/Ceiling – Concrete (150mm) with Clip Fixed Furring



Floor finished bare or with materials as per system table.

150mm min. concrete slab.

Clips direct fixed to concrete slab at 1200mm centres.

Minimum 40mm cavity.

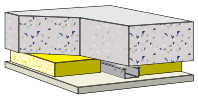
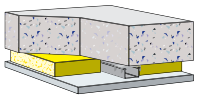
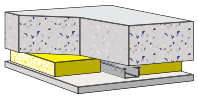
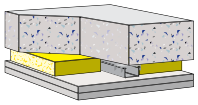
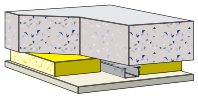
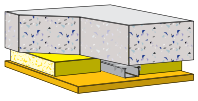
Rondo Furring Channel N°129 at 600mm max. centres, except where noted in system table.

Cavity infill as per system table.

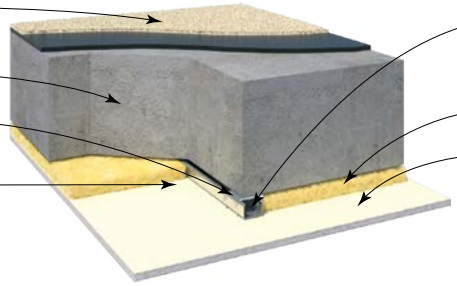
Ceiling lining as per system table, fixed to furring channel.

*NOTE: *AQ Underlay to be min 4.5mm acoustic quality material*

NOTE: Polyester insulation may NOT be used where the system has non-combustible construction requirements.

SYSTEM SPECIFICATION Refer to Book 2 and 3 for further information			ACOUSTIC REPORT: PKA – A123				
FRL Report	**SYSTEM** **N°**	**CEILING LININGS**	**CAVITY INFILL** (Refer to TABLE B6)	**R_w/ R_w+C_{tr}**	**Bare Floor or Tiles + Adhesive $L_{n,w}$**	**Timber/ Tile + *AQ Underlay $L_{n,w}$**	**Carpet + Underlay $L_{n,w}$**
Refer to AS3600	**CSR 6303** 	• 1 x 10mm Gyprock Plus Plasterboard. • Furring channel at 450mm maximum centres.	(a) Nil	54/43	70 – 75	62 – 65	**45 – 50**
			(d) 50 Acoustigard 14kg	59/48	65 – 70	**58 – 62**	**40 – 45**
			(e) 50 MAB Polyester 14kg	56/45	65 – 70	**58 – 62**	**40 – 45**
Refer to AS3600	**CSR 6304** 	• 1 x 10mm Gyprock Supaceil Plasterboard.	(a) Nil	55/44	70 – 75	63 – 68	**45 – 50**
			(d) 50 Acoustigard 14kg	60/49	65 – 70	**55 – 60**	**40 – 45**
			(e) 50 MAB Polyester 14kg	57/46	65 – 70	**58 – 62**	**40 – 45**
Refer to AS3600	**CSR 10172** 	• 1 x 10mm Gyprock HD Plasterboard.	(a) Nil	56/46	70 – 75	60 – 65	**45 – 50**
			(b) 50 MAB Polyester 14kg	58/48	65 – 70	**55 – 60**	**40 – 45**
			(c) 50 Acoustigard 14kg	61/**51**	65 – 70	**55 – 60**	**40 – 45**
Refer to AS3600	**CSR 10173** 	• 2 x 10mm Gyprock HD Plasterboard.	(a) Nil	58/48	65 – 70	**58 – 62**	**45 – 50**
			(b) 50 MAB Polyester 14kg	60/**51**	65 – 70	**53 – 58**	**40 – 45**
			(c) 50 Acoustigard 14kg	63/**54**	65 – 70	**53 – 58**	**40 – 45**
Refer to AS3600	**CSR 6311** 	• 1 x 13mm Gyprock Standard Plasterboard.	(a) Nil	56/46	70 – 75	60 – 65	**45 – 50**
			(d) 50 Acoustigard 14kg	61/**51**	65 – 70	**55 – 60**	**40 – 45**
			(e) 50 MAB Polyester 14kg	58/48	65 – 70	**55 – 60**	**40 – 45**
Refer to AS3600	**CSR 6312** 	• 1 x 13mm Gyprock Soundchek Plasterboard.	(a) Nil	58/48	70 – 75	60 – 65	**45 – 50**
			(d) 50 Acoustigard 14kg	63/**53**	65 – 70	**55 – 60**	**40 – 45**
			(e) 50 MAB Polyester 14kg	60/**50**	65 – 70	**55 – 60**	**40 – 45**

SYSTEM SPECIFICATIONS Floor/Ceiling – Concrete (200mm) with Clip Fixed Furring



Floor finished bare or with materials as per system table.

200mm min. concrete slab.

Clips direct fixed to concrete slab at 1200mm centres.

Minimum 40mm cavity.

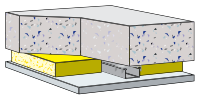
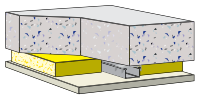
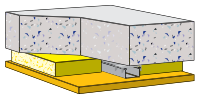
Rondo Furring Channel N°129 at 600mm max. centres, except where noted in system table.

Cavity infill as per system table.

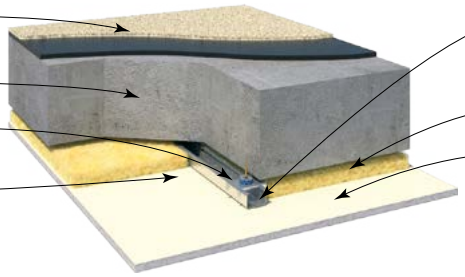
Ceiling lining as per system table, fixed to furring channel.

NOTE: RISF = Resistance to Incipient Spread of Fire.
**AQ Underlay to be min 4.5mm acoustic quality material*

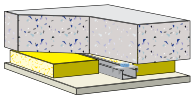
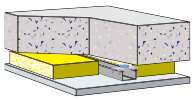
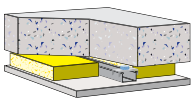
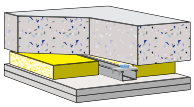
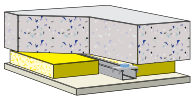
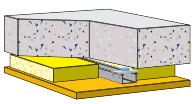
NOTE: Polyester insulation may NOT be used where the system has non-combustible construction requirements.

SYSTEM SPECIFICATION Refer to Book 2 and 3 for further information			ACOUSTIC REPORT: PKA – A123				
FRL Report	**SYSTEM Nº**	**CEILING LININGS**	**CAVITY INFILL** (Refer to TABLE B6)	**R_w/ R_w+C_{tr}**	**Bare Floor or Tiles + Adhesive $L_{n,w}$**	**Timber/ Tile + *AQ Underlay $L_{n,w}$**	**Carpet + Underlay $L_{n,w}$**
Refer to AS3600	**CSR 6905** 	• 1 x 10mm Gyprock Supaceil Plasterboard.	(a) Nil	58/48	70 – 75	63 – 68	**45 – 50**
			(d) 50 Acoustigard 14kg	63/**53**	63 – 68	**53 – 58**	**40 – 45**
			(e) 50 MAB Polyester 11kg	60/**50**	63 – 68	**55 – 60**	**40 – 45**
Refer to AS3600	**CSR 6910** 	• 1 x 13mm Gyprock Standard Plasterboard.	(a) Nil	59/**50**	70 – 75	60 – 65	**45 – 50**
			(d) 50 Acoustigard 14kg	64/**55**	63 – 68	**53 – 58**	**40 – 45**
			(e) 50 MAB Polyester 11kg	61/**52**	63 – 68	**53 – 58**	**40 – 45**
Refer to AS3600	**CSR 6915** 	• 1 x 13mm Gyprock Soundchek Plasterboard.	(a) Nil	61/**52**	70 – 75	60 – 65	**45 – 50**
			(d) 50 Acoustigard 14kg	66/**57**	63 – 68	**53 – 58**	**40 – 45**
			(e) 50 MAB Polyester 11kg	63/**54**	63 – 68	**53 – 58**	**40 – 45**

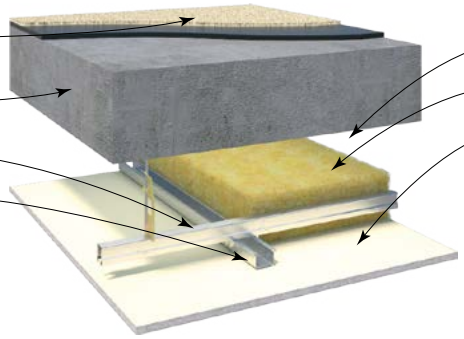
Floor/Ceiling – Concrete with Resilient Mounted Furring



NOTE: Polyester insulation may NOT be used where the system has non-combustible construction requirements.

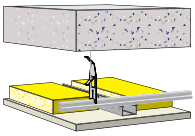
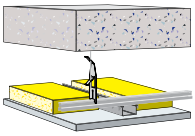
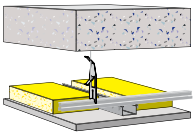
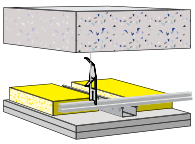
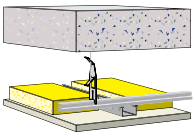
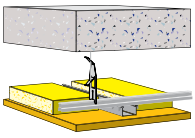
SYSTEM SPECIFICATION Refer to Book 2 and 3 for further information			ACOUSTIC REPORT: PKA – A123			
FRL Report	**SYSTEM** **N°**	**CEILING LININGS**	**CAVITY INFILL** (Refer to TABLE B6)	**R_w/R_w+C_{tr}**	**Bare Floor or Tiles + Adhesive $L_{n,w}$**	**Carpet + Underlay $L_{n,w}$**
Refer to AS3600	**CSR 6327** 	• 1 x 10mm Gyprock Plus Plasterboard. • Furring channel at 450mm maximum centres.	(a) Nil	56/45	65 – 70	**40 – 45**
			(d) 50 Acoustigard 14kg	60/49	62 – 65	**40 – 45**
			(e) 50 MAB Polyester 11kg	58/47	62 – 65	**35 – 40**
Refer to AS3600	**CSR 6328** 	• 1 x 10mm Gyprock Supaceil Plasterboard.	(a) Nil	57/46	65 – 70	**40 – 45**
			(d) 50 Acoustigard 14kg	62/**51**	62 – 65	**40 – 45**
			(e) 50 MAB Polyester 11kg	59/48	62 – 65	**35 – 40**
Refer to AS3600	**CSR 10174** 	• 1 x 10mm Gyprock HD Plasterboard.	(a) Nil	58/48	65 – 70	**40 – 45**
			(b) 50 MAB Polyester 11kg	60/**50**	62 – 65	**35 – 40**
			(c) 50 Acoustigard 14kg	63/**53**	62 – 65	**40 – 45**
Refer to AS3600	**CSR 10175** 	• 2 x 10mm Gyprock HD Plasterboard.	(a) Nil	61/**52**	65 – 70	**40 – 45**
			(b) 50 MAB Polyester 11kg	63/**55**	60 – 65	**35 – 40**
			(c) 50 Acoustigard 14kg	66/**58**	60 – 65	**40 – 45**
Refer to AS3600	**CSR 6338** 	• 1 x 13mm Gyprock Standard Plasterboard.	(a) Nil	58/48	65 – 70	**40 – 45**
			(d) 50 Acoustigard 14kg	63/**53**	62 – 65	**40 – 45**
			(e) 50 MAB Polyester 11kg	60/**50**	62 – 65	**35 – 40**
Refer to AS3600	**CSR 6339** 	• 1 x 13mm Gyprock Soundchek Plasterboard.	(a) Nil	60/**51**	65 – 70	**40 – 45**
			(d) 50 Acoustigard 14kg	65/**56**	62 – 65	**40 – 45**
			(e) 50 MAB Polyester 11kg	62/**53**	62 – 65	**35 – 40**

SYSTEM SPECIFICATIONS Floor/Ceiling – Concrete (150mm) with Suspension Grid



*NOTE: *AQ Underlay to be min 4.5mm acoustic quality material*

NOTE: Polyester insulation may NOT be used where the system has non-combustible construction requirements.

SYSTEM SPECIFICATION Refer to Book 2 and 3 for further information			ACOUSTIC REPORT: PKA – A123				
FRL Report	**SYSTEM N°**	**CEILING LININGS**	**CAVITY INFILL** (Refer to TABLE B6)	**R_w/ R_w+C_{tr}**	**Bare Floor or Tiles + Adhesive $L_{n,w}$**	**Timber/ Tile + *AQ Underlay $L_{n,w}$**	**Carpet + Underlay $L_{n,w}$**
Refer to AS3600	**CSR 6352** 	• 1 x 10mm Gyprock Plus Plasterboard. • Furring channel at 450mm maximum centres.	(a) Nil	57/47	65 – 70	**58 – 62**	**45 – 50**
			(c) 75 Acoustigard 11kg	61/**52**	60 – 65	**53 – 58**	**40 – 45**
			(e) 50 Acoustigard 14kg	60/**51**	60 – 65	**53 – 58**	**40 – 45**
			(f) 75 MAB Polyester 11kg	60/**51**	60 – 65	**53 – 58**	**40 – 45**
Refer to AS3600	**CSR 6353** 	• 1 x 10mm Gyprock Supaceil Plasterboard.	(a) Nil	58/48	65 – 70	**58 – 62**	**45 – 50**
			(c) 75 Acoustigard 11kg	62/**53**	60 – 65	**53 – 58**	**40 – 45**
			(e) 50 Acoustigard 14kg	61/**52**	60 – 65	**53 – 58**	**40 – 45**
			(f) 75 MAB Polyester 11kg	61/**52**	60 – 65	**53 – 58**	**40 – 45**
Refer to AS3600	**CSR 10176** 	• 1 x 10mm Gyprock HD Plasterboard.	(a) Nil	59/**50**	65 – 70	**58 – 62**	**45 – 50**
			(b) 75 Acoustigard 11kg	63/**55**	60 – 65	**50 – 55**	**40 – 45**
			(c) 75 MAB Polyester 11kg	62/**54**	60 – 65	**50 – 55**	**40 – 45**
			(d) 50 Acoustigard 14kg	62/**54**	60 – 65	**50 – 55**	**40 – 45**
Refer to AS3600	**CSR 10177** 	• 2 x 10mm Gyprock HD Plasterboard.	(a) Nil	61/**53**	65 – 70	**55 – 60**	**45 – 50**
			(b) 75 Acoustigard 11kg	65/**58**	60 – 65	**48 – 52**	**40 – 45**
			(c) 75 MAB Polyester 11kg	64/**57**	60 – 65	**48 – 52**	**40 – 45**
			(d) 50 Acoustigard 14kg	64/**57**	60 – 65	**48 – 52**	**40 – 45**
Refer to AS3600	**CSR 6360** 	• 1 x 13mm Gyprock Standard Plasterboard.	(a) Nil	59/**50**	65 – 70	**58 – 62**	**45 – 50**
			(c) 75 Acoustigard 11kg	63/**55**	60 – 65	**50 – 55**	**40 – 45**
			(e) 50 Acoustigard 14kg	62/**54**	60 – 65	**50 – 55**	**40 – 45**
			(f) 75 MAB Polyester 11kg	62/**54**	60 – 65	**50 – 55**	**40 – 45**
Refer to AS3600	**CSR 6361** 	• 1 x 13mm Gyprock Soundchek Plasterboard.	(a) Nil	60/**51**	65 – 70	**58 – 62**	**45 – 50**
			(c) 75 Acoustigard 11kg	64/**56**	60 – 65	**50 – 55**	**40 – 45**
			(e) 50 Acoustigard 14kg	63/**55**	60 – 65	**50 – 55**	**40 – 45**
			(f) 75 MAB Polyester 11kg	63/**55**	60 – 65	**50 – 55**	**40 – 45**

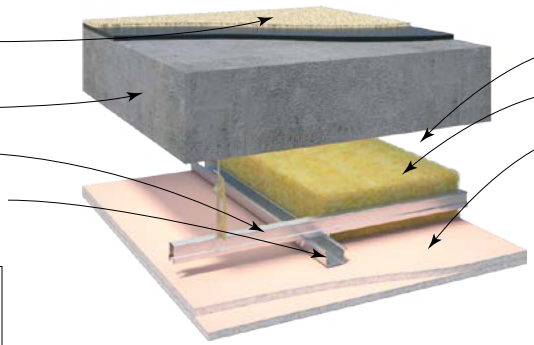
SYSTEM SPECIFICATIONS — Floor/Ceiling – Concrete (150mm) with Suspension Grid

Floor finished bare or with materials as per system table.

150mm min. concrete slab.

Rondo Suspended Ceiling system.

Rondo Furring Channel N°129 at 600mm max. centres, except where noted in system table.



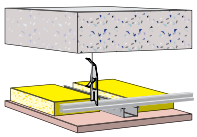
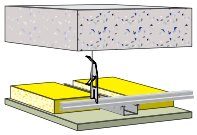
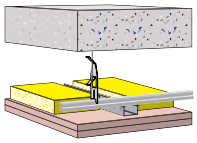
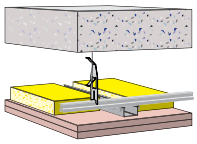
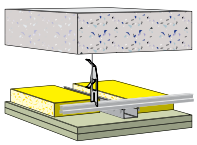
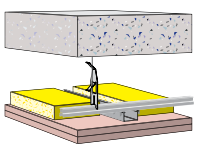
Minimum 182mm cavity.

Cavity infill as per system table.

Ceiling lining as per system table, fixed to furring channel.

NOTE: RISF = Resistance to Incipient Spread of Fire.
**AQ Underlay to be min 4.5mm acoustic quality material*

NOTE: Polyester insulation may NOT be used where the system has non-combustible construction requirements.

SYSTEM SPECIFICATION Refer to Book 2 and 3 for further information			ACOUSTIC REPORT: PKA – A123				
FRL Report	**SYSTEM N°**	**CEILING LININGS**	**CAVITY INFILL** (Refer to TABLE B6)	**R_w/ R_w+Ctr**	**Bare Floor or Tiles + Adhesive $L_{n,w}$**	**Timber/ Tile + *AQ Underlay $L_{n,w}$**	**Carpet + Underlay $L_{n,w}$**
30/30/30 EWFA 26162	**CSR 6365** 	• 1 x 13mm Gyprock Fyrchek Plasterboard. • Furring channels at 450mm maximum centres.	(a) Nil	60/**51**	65 – 70	**58 – 62**	**45 – 50**
			(c) 75 Acoustigard 11kg	64/**56**	60 – 65	**50 – 55**	**40 – 45**
			(e) 50 Acoustigard 14kg	63/**55**	60 – 65	**50 – 55**	**40 – 45**
			(f) 75 MAB Polyester 11kg	63/**55**	60 – 65	**50 – 55**	**40 – 45**
30/30/30 EWFA 26162	**CSR 3714** 	• 1 x 16mm Gyprock EC08 Complete. • Furring channels at 450mm maximum centres.	(a) Nil	60/**51**	65 – 70	**58 – 62**	**45 – 50**
			(b) 75 Acoustigard 11kg	64/**56**	60 – 65	**50 – 55**	**40 – 45**
			(d) 50 Acoustigard 14kg	63/**55**	60 – 65	**50 – 55**	**40 – 45**
			(e) 75 MAB Polyester 11kg	63/**55**	60 – 65	**50 – 55**	**40 – 45**
60/60/60 +RISF 30 minutes EWFA 26162	**CSR 6367** 	• 2 x 13mm Gyprock Fyrchek Plasterboard.	(a) Nil	61/**53**	65 – 70	**55 – 60**	**45 – 50**
			(c) 75 Acoustigard 11kg	65/**58**	60 – 65	**48 – 52**	**40 – 45**
			(e) 50 Acoustigard 14kg	64/**57**	60 – 65	**48 – 52**	**40 – 45**
			(f) 75 MAB Polyester 11kg	64/**57**	60 – 65	**48 – 52**	**40 – 45**
60/60/60 +RISF 60 minutes EWFA 26162	**CSR 6370** 	• 1 x 13mm Gyprock Fyrchek Plasterboard. • 1 x 16mm Gyprock Fyrchek Plasterboard (any order).	(a) Nil	61/**53**	65 – 70	**55 – 60**	**45 – 50**
			(c) 75 Acoustigard 11kg	65/**58**	60 – 65	**48 – 52**	**40 – 45**
			(e) 50 Acoustigard 14kg	64/**57**	60 – 65	**48 – 52**	**40 – 45**
			(f) 75 MAB Polyester 11kg	64/**57**	60 – 65	**48 – 52**	**40 – 45**
60/60/60 +RISF 60 minutes EWFA 26162	**CSR 3731** 	• 1 x 13mm Gyprock EC08 Complete (against framing). • 1 x 16mm Gyprock EC08 Complete.	(a) Nil	61/**53**	65 – 70	**55 – 60**	**45 – 50**
			(c) 75 Acoustigard 11kg	65/**58**	60 – 65	**48 – 52**	**40 – 45**
			(e) 50 Acoustigard 14kg	64/**57**	60 – 65	**48 – 52**	**40 – 45**
			(f) 75 MAB Polyester 11kg	64/**57**	60 – 65	**48 – 52**	**40 – 45**
90/90/90 +RISF 60 minutes EWFA 26162	**CSR 6371** 	• 2 x 16mm Gyprock Fyrchek Plasterboard.	(a) Nil	61/**53**	65 – 70	**55 – 60**	**45 – 50**
			(c) 75 Acoustigard 11kg	65/**58**	60 – 65	**48 – 52**	**40 – 45**
			(e) 50 Acoustigard 14kg	64/**57**	60 – 65	**48 – 52**	**40 – 45**
			(f) 75 MAB Polyester 11kg	64/**57**	60 – 65	**48 – 52**	**40 – 45**

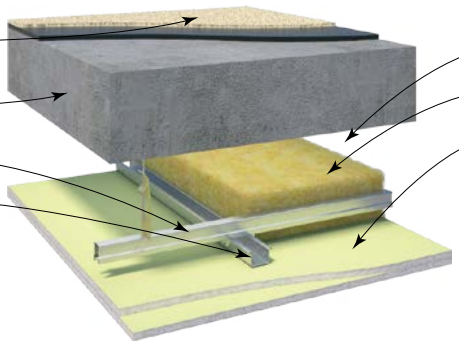
SYSTEM SPECIFICATIONS Floor/Ceiling – Concrete (150mm) with Suspension Grid

Floor finished bare or with materials as per system table.

150mm min. concrete slab.

Rondo Suspended Ceiling system.

Rondo Furring Channel N°129 at 600mm max. centres, except where noted in system table.



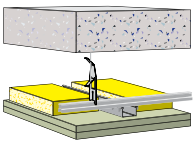
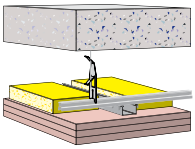
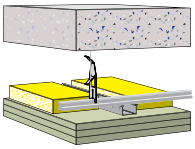
Minimum 182mm cavity.

Cavity infill as per system table.

Ceiling lining as per system table, fixed to furring channel.

NOTE: RISF = Resistance to Incipient Spread of Fire.
**AQ Underlay to be min 4.5mm acoustic quality material*

NOTE: Polyester insulation may NOT be used where the system has non-combustible construction requirements.

SYSTEM SPECIFICATION Refer to Book 2 and 3 for further information			ACOUSTIC REPORT: PKA – A123				
FRL Report	**SYSTEM Nº**	**CEILING LININGS**	**CAVITY INFILL** (Refer to TABLE B6)	**R_w/ R_w+C_{tr}**	**Bare Floor or Tiles + Adhesive $L_{n,w}$**	**Timber/ Tile + *AQ Underlay $L_{n,w}$**	**Carpet + Underlay $L_{n,w}$**
90/90/90 +RISF 60 minutes EWFA 26162	**CSR 3735** 	• 2 x 16mm Gyprock EC08 Complete.	(a) Nil	61/**53**	65 – 70	**55 – 60**	**45 – 50**
			(c) 75 Acoustigard 11kg	65/**58**	60 – 65	**48 – 52**	**40 – 45**
			(e) 50 Acoustigard 14kg	64/**57**	60 – 65	**48 – 52**	**40 – 45**
			(f) 75 MAB Polyester 11kg	64/**57**	60 – 65	**48 – 52**	**40 – 45**
120/120/120 +RISF 60 minutes EWFA 26162	**CSR 6373** 	• 3 x 16mm Gyprock Fyrchek Plasterboard.	(a) Nil	62/**54**	60 – 65	**55 – 60**	**40 – 45**
			(c) 75 Acoustigard 11kg	66/**59**	**58 – 62**	**48 – 52**	**35 – 40**
			(e) 50 Acoustigard 14kg	65/**58**	**58 – 62**	**48 – 52**	**35 – 40**
			(f) 75 MAB Polyester 11kg	65/**58**	**58 – 62**	**48 – 52**	**35 – 40**
120/120/120 +RISF 60 minutes EWFA 26162	**CSR 3745** 	• 3 x 16mm Gyprock EC08 Complete.	(a) Nil	62/**54**	60 – 65	**55 – 60**	**40 – 45**
			(c) 75 Acoustigard 11kg	66/**59**	**58 – 62**	**48 – 52**	**35 – 40**
			(e) 50 Acoustigard 14kg	65/**58**	**58 – 62**	**48 – 52**	**35 – 40**
			(f) 75 MAB Polyester 11kg	65/**58**	**58 – 62**	**48 – 52**	**35 – 40**

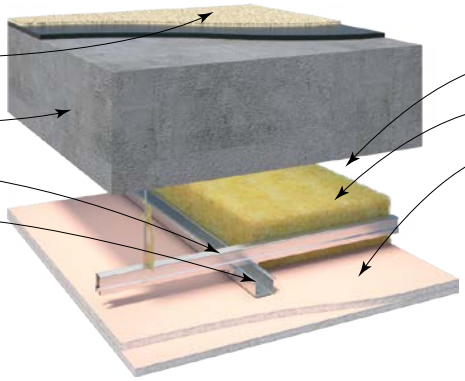
SYSTEM SPECIFICATIONS — Floor/Ceiling – Concrete (200mm) with Suspension Grid

Floor finished bare or with materials as per system table.

200mm min. concrete slab.

Rondo Suspended Ceiling system.

Rondo Furring Channel N°129 at 600mm max. centres, except where noted in system table.



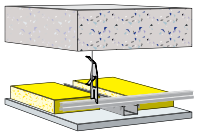
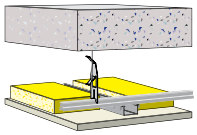
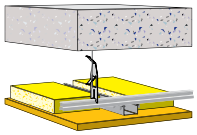
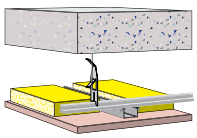
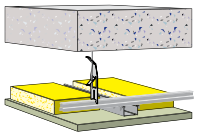
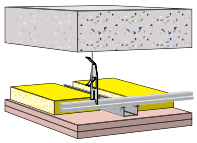
Minimum 182mm cavity.

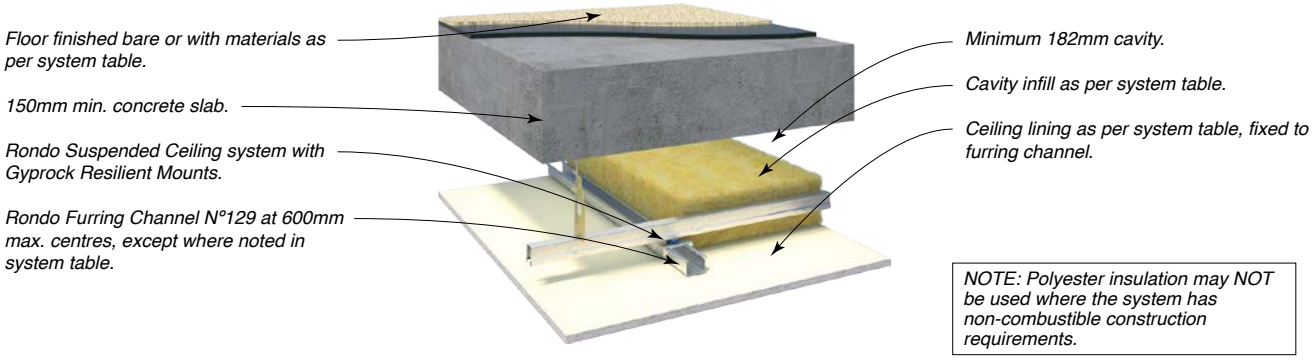
Cavity infill as per system table.

Ceiling lining as per system table, fixed to furring channel.

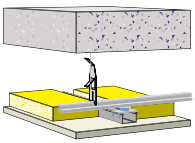
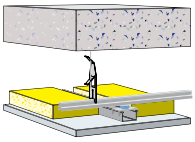
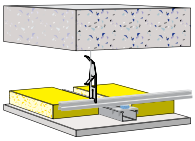
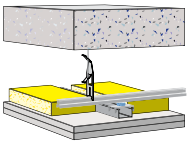
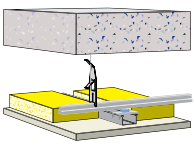
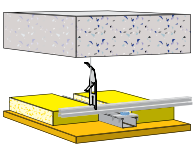
NOTE: RISF = Resistance to Incipient Spread of Fire.
**AQ Underlay to be min 4.5mm acoustic quality material*

NOTE: Polyester insulation may NOT be used where the system has non-combustible construction requirements.

SYSTEM SPECIFICATION Refer to Book 2 and 3 for further information			ACOUSTIC REPORT: PKA – A123				
FRL Report	**SYSTEM N°**	**CEILING LININGS**	**CAVITY INFILL** (Refer to TABLE B6)	**R_w/ R_w+Ctr**	**Bare Floor $L_{n,w}$**	**Timber/ Tile + *AQ Underlay $L_{n,w}$**	**Carpet + Underlay $L_{n,w}$**
Refer to AS3600	**CSR 6935** 	• 1 x 10mm Gyprock Supaceil Plasterboard.	(a) Nil	60/**51**	65 – 70	**58 – 62**	**45 – 50**
			(c) 75 Acoustigard 11kg	64/**56**	60 – 65	**53 – 58**	**40 – 45**
			(e) 50 Acoustigard 14kg	63/**55**	60 – 65	**53 – 58**	**40 – 45**
			(f) 75 MAB Polyester 11kg	63/**55**	60 – 65	**53 – 58**	**40 – 45**
Refer to AS3600	**CSR 6940** 	• 1 x 13mm Gyprock Standard Plasterboard.	(a) Nil	61/**53**	63 – 68	**58 – 62**	**45 – 50**
			(c) 75 Acoustigard 11kg	65/**58**	**58 – 62**	**50 – 55**	**40 – 45**
			(e) 50 Acoustigard 14kg	64/**57**	**58 – 62**	**50 – 55**	**40 – 45**
			(f) 75 MAB Polyester 11kg	64/**57**	**58 – 62**	**50 – 55**	**40 – 45**
Refer to AS3600	**CSR 6945** 	• 1 x 13mm Gyprock Soundchek Plasterboard.	(a) Nil	62/**54**	63 – 68	**58 – 62**	**45 – 50**
			(c) 75 Acoustigard 11kg	66/**59**	**58 – 62**	**50 – 55**	**40 – 45**
			(e) 50 Acoustigard 14kg	65/**58**	**58 – 62**	**50 – 55**	**40 – 45**
			(f) 75 MAB Polyester 11kg	65/**58**	**58 – 62**	**50 – 55**	**40 – 45**
30/30/30 EWFA 26162	**CSR 6951** 	• 1 x 16mm Gyprock Fyrchek Plasterboard. • Furring channel at 450mm maximum centres.	(a) Nil	62/**54**	63 – 68	**58 – 62**	**45 – 50**
			(b) 75 Acoustigard 11kg	66/**59**	**58 – 62**	**50 – 55**	**40 – 45**
			(d) 50 Acoustigard 14kg	65/**58**	**58 – 62**	**50 – 55**	**40 – 45**
			(e) 75 MAB Polyester 11kg	65/**58**	**58 – 62**	**50 – 55**	**40 – 45**
30/30/30 EWFA 26162	**CSR 3718** 	• 1 x 16mm Gyprock EC08 Complete. • Furring channel at 450mm maximum centres.	(a) Nil	63/**55**	63 – 68	**58 – 62**	**45 – 50**
			(b) 75 Acoustigard 11kg	67/**60**	**58 – 62**	**50 – 55**	**40 – 45**
			(d) 50 Acoustigard 14kg	66/**59**	**58 – 62**	**50 – 55**	**40 – 45**
			(e) 75 MAB Polyester 11kg	66/**59**	**58 – 62**	**50 – 55**	**40 – 45**
60/60/60 +RISF 60 minutes EWFA 26162	**CSR 6955** 	• 1 x 13mm Gyprock Fyrchek Plasterboard. • 1 x 16mm Gyprock Fyrchek Plasterboard (any order).	(a) Nil	64/**56**	63 – 68	**55 – 60**	**45 – 50**
			(c) 75 Acoustigard 11kg	68/**61**	**58 – 62**	**48 – 52**	**40 – 45**
			(e) 50 Acoustigard 14kg	67/**60**	**58 – 62**	**48 – 52**	**40 – 45**
			(f) 75 MAB Polyester 11kg	67/**60**	**58 – 62**	**48 – 52**	**40 – 45**



NOTE: Polyester insulation may NOT be used where the system has non-combustible construction requirements.

SYSTEM SPECIFICATION Refer to Book 2 and 3 for further information			ACOUSTIC REPORT: PKA – A123			
FRL Report	**SYSTEM Nº**	**CEILING LININGS**	**CAVITY INFILL** (Refer to TABLE B6)	**R_w/R_w+C_{tr}**	**Bare Floor or Tiles + Adhesive $L_{n,w}$**	**Carpet + Underlay $L_{n,w}$**
Refer to AS3600	**CSR 6377** 	• 1 x 10mm Gyprock Plus Plasterboard. • Furring channel at 450mm maximum centres.	(a) Nil	59/49	60 – 65	**40 – 45**
			(c) 75 Acoustigard 11kg	63/**54**	**58 – 62**	**35 – 40**
			(e) 50 Acoustigard 14kg	62/**53**	**58 – 62**	**35 – 40**
			(f) 75 MAB Polyester 11kg	62/**53**	**58 – 62**	**35 – 40**
Refer to AS3600	**CSR 6378** 	• 1 x 10mm Gyprock Supaceil Plasterboard.	(a) Nil	60/**50**	60 – 65	**40 – 45**
			(c) 75 Acoustigard 11kg	64/**55**	**58 – 62**	**35 – 40**
			(e) 50 Acoustigard 14kg	63/**54**	**58 – 62**	**35 – 40**
			(f) 75 MAB Polyester 11kg	63/**54**	**58 – 62**	**35 – 40**
Refer to AS3600	**CSR 10178** 	• 1 x 10mm Gyprock HD Plasterboard.	(a) Nil	61/**52**	60 – 65	**40 – 45**
			(b) 75 Acoustigard 11kg	65/**57**	**58 – 62**	**35 – 40**
			(c) 75 MAB Polyester 11kg	64/**56**	**58 – 62**	**35 – 40**
			(d) 50 Acoustigard 14kg	64/**56**	**58 – 62**	**35 – 40**
Refer to AS3600	**CSR 10179** 	• 2 x 10mm Gyprock HD Plasterboard.	(a) Nil	63/**55**	60 – 65	**40 – 45**
			(b) 75 Acoustigard 11kg	67/**60**	**58 – 62**	**35 – 40**
			(c) 75 MAB Polyester 11kg	66/**59**	**58 – 62**	**35 – 40**
			(d) 50 Acoustigard 14kg	66/**59**	**58 – 62**	**35 – 40**
Refer to AS3600	**CSR 6388** 	• 1 x 13mm Gyprock Standard Plasterboard.	(a) Nil	61/**52**	60 – 65	**40 – 45**
			(c) 75 Acoustigard 11kg	65/**57**	**58 – 62**	**35 – 40**
			(e) 50 Acoustigard 14kg	64/**56**	**58 – 62**	**35 – 40**
			(f) 75 MAB Polyester 11kg	64/**56**	**58 – 62**	**35 – 40**
Refer to AS3600	**CSR 6389** 	• 1 x 13mm Gyprock Soundchek Plasterboard.	(a) Nil	62/**53**	60 – 65	**40 – 45**
			(c) 75 Acoustigard 11kg	66/**58**	**58 – 62**	**35 – 40**
			(e) 50 Acoustigard 14kg	65/**57**	**58 – 62**	**35 – 40**
			(f) 75 MAB Polyester 11kg	65/**57**	**58 – 62**	**35 – 40**

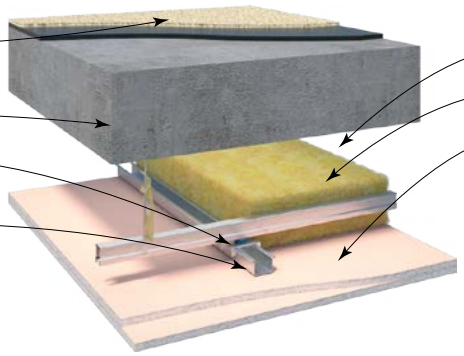
Floor/Ceiling – Concrete with Suspension Grid & Resilient Mounted Furring

Floor finished bare or with materials as per system table.

150mm min. concrete slab.

Rondo Suspended Ceiling system with Gyprock Resilient Mounts.

Rondo Furring Channel N°129 at 600mm max. centres, except where noted in system table.



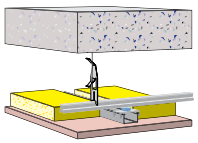
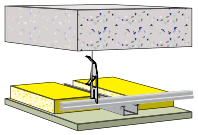
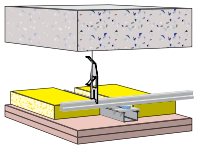
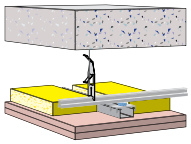
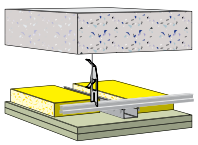
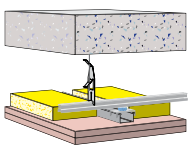
Minimum 182mm cavity.

Cavity infill as per system table.

Ceiling lining as per system table, fixed to furring channel.

NOTE: RISF = Resistance to Incipient Spread of Fire

NOTE: Polyester insulation may NOT be used where the system has non-combustible construction requirements.

SYSTEM SPECIFICATION Refer to Book 2 and 3 for further information			ACOUSTIC REPORT: PKA – A123			
FRL Report	**SYSTEM N°**	**CEILING LININGS**	**CAVITY INFILL** (Refer to TABLE B6)	**R_w/R_w+C_{tr}**	**Bare Floor or Tiles + Adhesive $L_{n,w}$**	**Carpet + Underlay $L_{n,w}$**
30/30/30 EWFA 26162	**CSR 6391** 	• 1 x 13mm Gyprock Fyrchek Plasterboard. • Furring channels at 450mm maximum centres.	(a) Nil	62/**53**	60 – 65	**40 – 45**
			(c) 75 Acoustigard 11kg	66/**58**	**58 – 62**	**35 – 40**
			(e) 50 Acoustigard 14kg	65/**57**	**58 – 62**	**35 – 40**
			(f) 75 MAB Polyester 11kg	65/**57**	**58 – 62**	**35 – 40**
30/30/30 EWFA 26162	**CSR 3766** 	• 1 x 16mm Gyprock EC08 Complete. • Furring channel at 450mm maximum centres.	(a) Nil	62/**53**	60 – 65	**40 – 45**
			(b) 75 Acoustigard 11kg	66/**58**	**58 – 62**	**35 – 40**
			(d) 50 Acoustigard 14kg	65/**57**	**58 – 62**	**35 – 40**
			(e) 75 MAB Polyester 11kg	65/**57**	**58 – 62**	**35 – 40**
60/60/60 +RISF 30 minutes EWFA 26162	**CSR 6393** 	• 2 x 13mm Gyprock Fyrchek Plasterboard.	(a) Nil	63/**55**	60 – 65	**40 – 45**
			(c) 75 Acoustigard 11kg	67/**60**	**58 – 62**	**35 – 40**
			(e) 50 Acoustigard 14kg	66/**59**	**58 – 62**	**35 – 40**
			(f) 75 MAB Polyester 11kg	66/**59**	**58 – 62**	**35 – 40**
60/60/60 +RISF 60 minutes EWFA 26162	**CSR 6395** 	• 1 x 13mm Gyprock Fyrchek Plasterboard. • 1 x 16mm Gyprock Fyrchek Plasterboard (any order).	(a) Nil	63/**55**	60 – 65	**40 – 45**
			(c) 75 Acoustigard 11kg	67/**60**	**58 – 62**	**35 – 40**
			(e) 50 Acoustigard 14kg	66/**59**	**58 – 62**	**35 – 40**
			(f) 75 MAB Polyester 11kg	66/**59**	**58 – 62**	**35 – 40**
60/60/60 +RISF 60 minutes EWFA 26162	**CSR 3781** 	• 1 x 13mm Gyprock EC08 Complete (against framing). • 1 x 16mm Gyprock EC08 Complete.	(a) Nil	63/**55**	60 – 65	**40 – 45**
			(c) 75 Acoustigard 11kg	67/**60**	**58 – 62**	**35 – 40**
			(e) 50 Acoustigard 14kg	66/**59**	**58 – 62**	**35 – 40**
			(f) 75 MAB Polyester 11kg	66/**59**	**58 – 62**	**35 – 40**
90/90/90 +RISF 60 minutes EWFA 26162	**CSR 6396** 	• 2 x 16mm Gyprock Fyrchek Plasterboard.	(a) Nil	63/**55**	60 – 65	**40 – 45**
			(c) 75 Acoustigard 11kg	67/**60**	**58 – 62**	**35 – 40**
			(e) 50 Acoustigard 14kg	66/**59**	**58 – 62**	**35 – 40**
			(f) 75 MAB Polyester 11kg	66/**59**	**58 – 62**	**35 – 40**

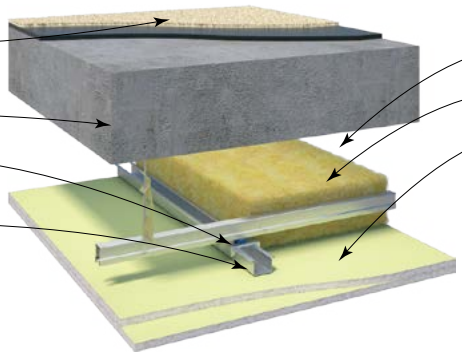
Floor/Ceiling – Concrete with Suspension Grid & Resilient Mounted Furring

Floor finished bare or with materials as per system table.

150mm min. concrete slab.

Rondo Suspended Ceiling system with Gyprock Resilient Mounts.

Rondo Furring Channel N°129 at 600mm max. centres, except where noted in system table.



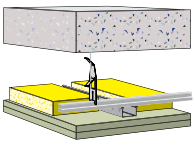
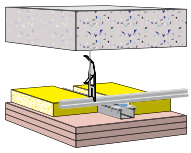
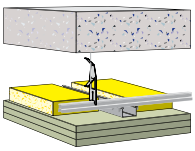
Minimum 182mm cavity.

Cavity infill as per system table.

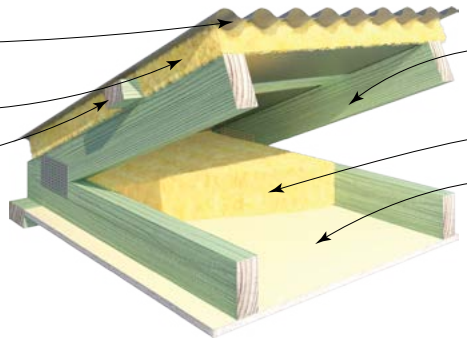
Ceiling lining as per system table, fixed to furring channel.

NOTE: RISF = Resistance to Incipient Spread of Fire

NOTE: Polyester insulation may NOT be used where the system has non-combustible construction requirements.

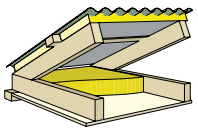
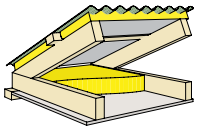
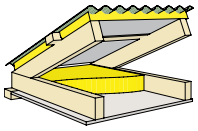
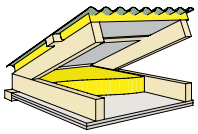
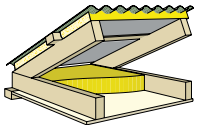
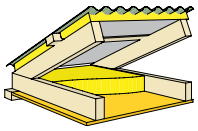
SYSTEM SPECIFICATION Refer to Book 2 and 3 for further information			ACOUSTIC REPORT: PKA – A123			
FRL Report	**SYSTEM N°**	**CEILING LININGS**	**CAVITY INFILL** (Refer to TABLE B6)	**R_w/R_w+C_{tr}**	**Bare Floor or Tiles + Adhesive $L_{n,w}$**	**Carpet + Underlay $L_{n,w}$**
90/90/90 +RISF 60 minutes EWFA 26162	**CSR 3785** 	• 2 x 16mm Gyprock EC08 Complete.	(a) Nil	63/**55**	60 – 65	**40 – 45**
			(c) 75 Acoustigard 11kg	67/**60**	**58 – 62**	**35 – 40**
			(e) 50 Acoustigard 14kg	66/**59**	**58 – 62**	**35 – 40**
			(f) 75 MAB Polyester 11kg	66/**59**	**58 – 62**	**35 – 40**
120/120/120 +RISF 60 minutes EWFA 26162	**CSR 6398** 	• 3 x 16mm Gyprock Fyrchek Plasterboard.	(a) Nil	64/**56**	**58 – 62**	**40 – 45**
			(c) 75 Acoustigard 11kg	68/**61**	**55 – 60**	**35 – 40**
			(e) 50 Acoustigard 14kg	67/**60**	**55 – 60**	**35 – 40**
			(f) 75 MAB Polyester 11kg	67/**60**	**55 – 60**	**35 – 40**
120/120/120 +RISF 60 minutes EWFA 26162	**CSR 3795** 	• 3 x 16mm Gyprock EC08 Complete.	(a) Nil	64/**56**	**58 – 62**	**40 – 45**
			(c) 75 Acoustigard 11kg	68/**61**	**55 – 60**	**35 – 40**
			(e) 50 Acoustigard 14kg	67/**60**	**55 – 60**	**35 – 40**
			(f) 75 MAB Polyester 11kg	67/**60**	**55 – 60**	**35 – 40**

Roof/Ceiling – Pitched Steel Roof with Joist/Truss & Direct Fixed Plasterboard

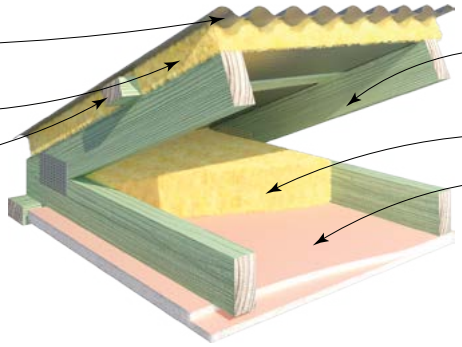


Thermal Assumptions – Steel Sheet Roof/Ceiling Systems
Software Version – 1.6
Roof Pitch – 22.5 degrees nominal
Roof Space Type – non-ventilated
Roof Blanket – Bradford Anticon 60 MD R1.3
RISF = Resistance to Incipient Spread of Fire

System thermal R-values provided have been calculated based on a thermal transmission path through the roof/ceiling cavity and does not allow for the effects of thermal bridging.

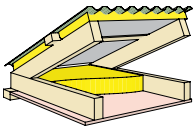
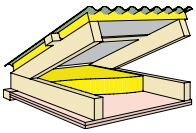
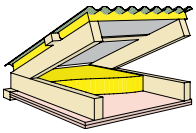
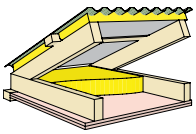
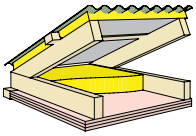
SYSTEM SPECIFICATION Refer to Book 2 Residential Installation Guide for further information			ACOUSTIC REPORT: PKA – A124			
FRL Report	SYSTEM Nº	CEILING LININGS	CAVITY INFILL (Refer to TABLE B6)	Steel Roofing with Anticon		
				R_w / R_w+C_{tr}	$R_{t(SUM)}$	$R_{t(WIN)}$
– / – / –	**CSR 6402** 	• 1 x 10mm Gyprock Plus Plasterboard. • Framing at 450mm maximum centres.	(a) 165 Gold Batts 3.0	41/31	5.5	5.3
			(b) 185 Gold Batts 3.5	41/32	5.9	5.8
			(c) 215 Gold Batts 4.1	42/33	6.5	6.4
			(d) 110 SoundScreen 3.1	41/32	5.6	5.4
– / – / –	**CSR 6403** 	• 1 x 10mm Gyprock Supaceil Plasterboard.	(a) 165 Gold Batts 3.0	42/32	5.4	5.3
			(b) 185 Gold Batts 3.5	43/33	5.9	5.8
			(c) 215 Gold Batts 4.1	43/34	6.5	6.4
			(d) 110 SoundScreen 3.1	43/33	5.5	5.4
– / – / –	**CSR 10180** 	• 1 x 10mm Gyprock HD Plasterboard.	(a) 165 Gold Batts 3.0	43/33	5.4	5.3
			(b) 185 Gold Batts 3.5	43/34	5.9	5.8
			(c) 215 Gold Batts 4.1	44/35	6.5	6.4
			(d) 110 SoundScreen 3.1	43/34	5.5	5.4
– / – / –	**CSR 10181** 	• 2 x 10mm Gyprock HD Plasterboard.	(a) 165 Gold Batts 3.0	48/39	5.5	5.3
			(b) 185 Gold Batts 3.5	48/39	6.0	5.8
			(c) 215 Gold Batts 4.1	49/40	6.5	6.5
			(d) 110 SoundScreen 3.1	48/39	5.6	5.4
– / – / –	**CSR 6420** 	• 1 x 13mm Gyprock Standard Plasterboard.	(a) 165 Gold Batts 3.0	43/33	5.5	5.3
			(b) 185 Gold Batts 3.5	43/34	5.9	5.8
			(c) 215 Gold Batts 4.1	44/35	6.5	6.5
			(d) 110 SoundScreen 3.1	43/34	5.6	5.4
– / – / –	**CSR 6421** 	• 1 x 13mm Gyprock Soundchek Plasterboard.	(a) 165 Gold Batts 3.0	47/38	5.4	5.3
			(b) 185 Gold Batts 3.5	48/39	5.9	5.8
			(c) 215 Gold Batts 4.1	49/40	6.5	6.4
			(d) 110 SoundScreen 3.1	48/39	5.5	5.4

SYSTEM SPECIFICATIONS Roof/Ceiling – Pitched Steel Roof with Joist/Truss & Direct Fixed Plasterboard

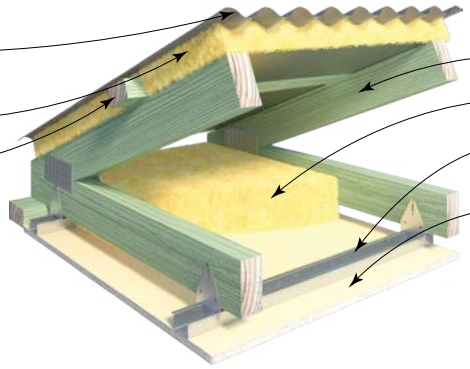


Thermal Assumptions – Steel Sheet Roof/Ceiling Systems
Software Version – 1.6
Roof Pitch – 22.5 degrees nominal
Roof Space Type – non-ventilated
Roof Blanket – Bradford Anticon 60 MD R1.3
RISF = Resistance to Incipient Spread of Fire

System thermal R-values provided have been calculated based on a thermal transmission path through the roof/ceiling cavity and does not allow for the effects of thermal bridging.

SYSTEM SPECIFICATION Refer to Book 2 Residential Installation Guide for further information			ACOUSTIC REPORT: PKA – A124			
FRL Report	**SYSTEM Nº**	**CEILING LININGS**	**CAVITY INFILL** (Refer to TABLE B6)	**Steel Roofing with Anticon**		
				R_w / R_w+C_{tr}	**$R_{t(SUM)}$**	**$R_{t(WIN)}$**
30/30/30 from below only EWFA 26162	**CSR 6425** 	• 1 x 13mm Gyprock Fyrchek Plasterboard. • Framing at 450mm maximum centres.	(a) 165 Gold Batts 3.0	44/35	5.5	5.3
			(b) 185 Gold Batts 3.5	45/36	6.0	5.8
			(c) 215 Gold Batts 4.1	46/38	6.5	6.5
60/60/60 from below only +RISF 30 minutes EWFA 26162	**CSR 6427** 	• 2 x 13mm Gyprock Fyrchek Plasterboard.	(a) 165 Gold Batts 3.0	49/40	5.5	5.4
			(b) 185 Gold Batts 3.5	50/41	6.0	5.9
			(c) 215 Gold Batts 4.1	51/42	6.6	6.5
60/60/60 from below only +RISF 30 minutes EWFA 26162	**CSR 6430** 	• 1 x 13mm Gyprock Fyrchek Plasterboard. • 1 x 16mm Gyprock Fyrchek Plasterboard (any order).	(a) 165 Gold Batts 3.0	49/40	5.6	5.4
			(b) 185 Gold Batts 3.5	50/41	6.0	5.9
			(c) 215 Gold Batts 4.1	51/42	6.6	6.5
90/90/90 from below only +RISF 60 minutes EWFA 26162	**CSR 6440** 	• 2 x 16mm Gyprock Fyrchek Plasterboard.	(a) 165 Gold Batts 3.0	50/41	5.6	5.4
			(b) 185 Gold Batts 3.5	51/42	6.1	5.9
			(c) 215 Gold Batts 4.1	52/43	6.6	6.6
120/120/120 from below only +RISF 60 minutes EWFA 26162	**CSR 6445** 	• 3 x 16mm Gyprock Fyrchek Plasterboard.	(a) 165 Gold Batts 3.0	52/43	5.6	5.4
			(b) 185 Gold Batts 3.5	53/44	6.1	5.9
			(c) 215 Gold Batts 4.1	54/45	6.6	6.6

SYSTEM SPECIFICATIONS — Roof/Ceiling – Pitched Steel Roof with Joist/Truss & Clip Fixed Furring



A pitched steel sheet roof minimum 0.42mm.

Bradford Anticon 60 MD insulation over battens.

40mm battens.

Ceiling Joists or Trusses.

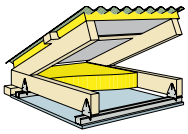
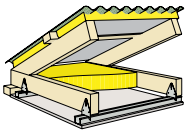
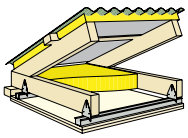
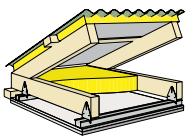
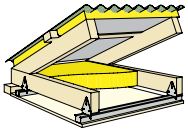
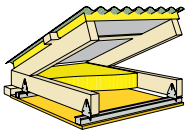
Cavity infill as per system table.

Rondo Furring Channel at 600mm maximum centres except were noted.

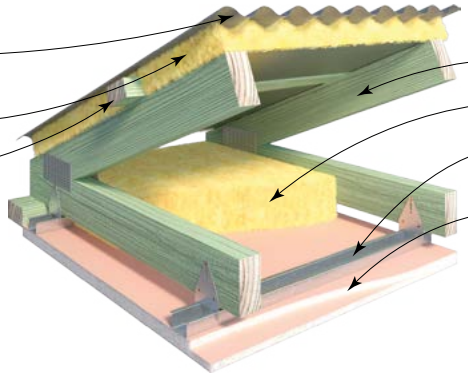
Ceiling lining as per system table, fixed to framing.

Thermal Assumptions – Steel Sheet Roof/Ceiling Systems
Software Version – 1.6
Roof Pitch – 22.5 degrees nominal
Roof Space Type – non-ventilated
Roof Blanket – Bradford Anticon 60 MD R1.3
RISF = Resistance to Incipient Spread of Fire

System thermal R-values provided have been calculated based on a thermal transmission path through the roof/ceiling cavity and does not allow for the effects of thermal bridging.

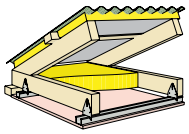
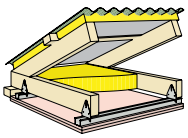
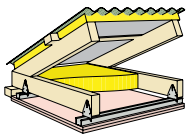
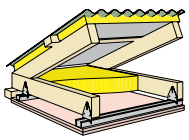
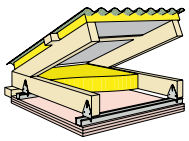
SYSTEM SPECIFICATION Refer to Book 2 Residential Installation Guide for further information			ACOUSTIC REPORT: PKA – A124			
FRL Report	**SYSTEM Nº**	**CEILING LININGS**	**CAVITY INFILL** (Refer to TABLE B6)	**Steel Roofing with Anticon**		
				R_w / R_w+C_{tr}	**$R_{t(SUM)}$**	**$R_{t(WIN)}$**
– / – / –	**CSR 6450** 	• 1 x 6mm CeminSeal Wallboard.	(a) 165 Gold Batts 3.0	45/35	5.4	5.3
			(b) 185 Gold Batts 3.5	45/36	5.9	5.8
			(c) 215 Gold Batts 4.1	46/37	6.5	6.4
			(d) 110 SoundScreen 3.1	45/36	5.5	5.4
– / – / –	**CSR 10182** 	• 1 x 10mm Gyprock HD Plasterboard.	(a) 165 Gold Batts 3.0	45/35	5.4	5.3
			(b) 185 Gold Batts 3.5	45/36	5.9	5.8
			(c) 215 Gold Batts 4.1	46/37	6.5	6.4
			(d) 110 SoundScreen 3.1	45/36	5.5	5.4
– / – / –	**CSR 6456** 	• 2 x 10mm Gyprock Plus Plasterboard. • Furring channel at 450mm maximum centres.	(a) 165 Gold Batts 3.0	47/38	5.5	5.3
			(b) 185 Gold Batts 3.5	48/39	6.0	5.8
			(c) 215 Gold Batts 4.1	49/40	6.5	6.5
			(d) 110 SoundScreen 3.1	48/39	5.6	5.4
– / – / –	**CSR 10183** 	• 2 x 10mm Gyprock HD Plasterboard.	(a) 165 Gold Batts 3.0	49/40	5.5	5.3
			(b) 185 Gold Batts 3.5	50/41	6.0	5.8
			(c) 215 Gold Batts 4.1	51/42	6.5	6.5
			(d) 110 SoundScreen 3.1	50/41	5.6	5.4
– / – / –	**CSR 6462** 	• 1 x 13mm Gyprock Standard Plasterboard.	(a) 165 Gold Batts 3.0	45/35	5.5	5.3
			(b) 185 Gold Batts 3.5	45/36	5.9	5.8
			(c) 215 Gold Batts 4.1	46/37	6.5	6.5
			(d) 110 SoundScreen 3.1	45/36	5.6	5.4
– / – / –	**CSR 6463** 	• 1 x 13mm Gyprock Soundchek Plasterboard.	(a) 165 Gold Batts 3.0	49/40	5.4	5.3
			(b) 185 Gold Batts 3.5	50/41	5.9	5.8
			(c) 215 Gold Batts 4.1	51/42	6.5	6.4
			(d) 110 SoundScreen 3.1	50/41	5.5	5.4

SYSTEM SPECIFICATIONS Roof/Ceiling – Pitched Steel Roof with Joist/Truss & Clip Fixed Furring

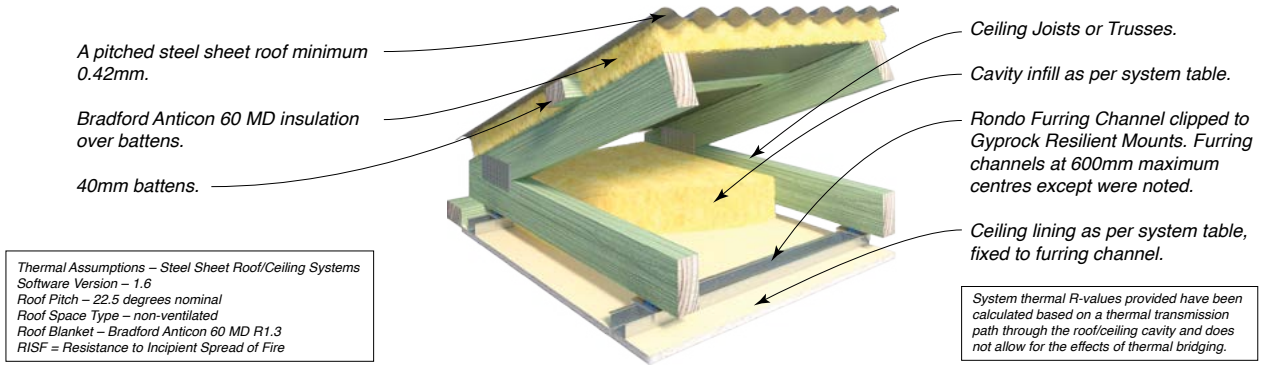


Thermal Assumptions – Steel Sheet Roof/Ceiling Systems
Software Version – 1.6
Roof Pitch – 22.5 degrees nominal
Roof Space Type – non-ventilated
Roof Blanket – Bradford Anticon 60 MD R1.3
RISF = Resistance to Incipient Spread of Fire

System thermal R-values provided have been calculated based on a thermal transmission path through the roof/ceiling cavity and does not allow for the effects of thermal bridging.

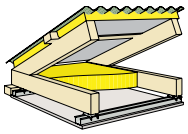
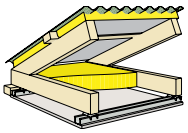
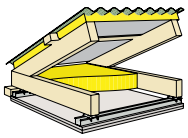
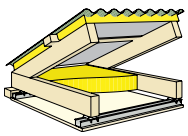
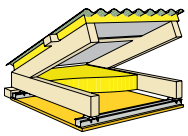
SYSTEM SPECIFICATION Refer to Book 2 Residential Installation Guide for further information			ACOUSTIC REPORT: PKA – A124			
FRL Report	**SYSTEM Nº**	**CEILING LININGS**	**CAVITY INFILL** (Refer to TABLE B6)	**Steel Roofing with Anticon**		
				R_W / R_W+C_{tr}	**$R_{t(SUM)}$**	**$R_{t(WIN)}$**
30/30/30 from below only EWFA 26162	**CSR 6466** 	• 1 x 13mm Gyprock Fyrchek Plasterboard. • Furring channel at 450mm maximum centres.	(a) 165 Gold Batts 3.0	46/37	5.5	5.3
			(b) 185 Gold Batts 3.5	47/38	6.0	5.8
			(c) 215 Gold Batts 4.1	48/39	6.5	6.5
60/60/60 from below only +RISF 30 minutes EWFA 26162	**CSR 6468** 	• 2 x 13mm Gyprock Fyrchek Plasterboard.	(a) 165 Gold Batts 3.0	51/42	5.5	5.4
			(b) 185 Gold Batts 3.5	52/43	6.0	5.9
			(c) 215 Gold Batts 4.1	53/44	6.6	6.5
60/60/60 from below only +RISF 60 minutes EWFA 26162	**CSR 6470** 	• 1 x 13mm Gyprock Fyrchek Plasterboard. • 1 x 16mm Gyprock Fyrchek Plasterboard (any order).	(a) 165 Gold Batts 3.0	51/42	5.6	5.4
			(b) 185 Gold Batts 3.5	52/43	6.0	5.9
			(c) 215 Gold Batts 4.1	53/44	6.6	6.5
90/90/90 from below only +RISF 60 minutes EWFA 26162	**CSR 6471** 	• 2 x 16mm Gyprock Fyrchek Plasterboard.	(a) 165 Gold Batts 3.0	52/43	5.6	5.4
			(b) 185 Gold Batts 3.5	53/44	6.1	5.9
			(c) 215 Gold Batts 4.1	54/45	6.6	6.6
120/120/120 from below only +RISF 60 minutes EWFA 26162	**CSR 6473** 	• 3 x 16mm Gyprock Fyrchek Plasterboard.	(a) 165 Gold Batts 3.0	55/46	5.6	5.4
			(b) 185 Gold Batts 3.5	56/47	6.1	5.9
			(c) 215 Gold Batts 4.1	57/48	6.6	6.6

Roof/Ceiling – Pitched Steel Roof with Joist/Truss & Resilient Mounted Furring

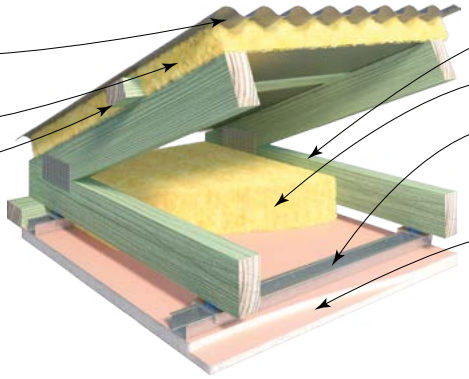


Thermal Assumptions – Steel Sheet Roof/Ceiling Systems
Software Version – 1.6
Roof Pitch – 22.5 degrees nominal
Roof Space Type – non-ventilated
Roof Blanket – Bradford Anticon 60 MD R1.3
RISF = Resistance to Incipient Spread of Fire

System thermal R-values provided have been calculated based on a thermal transmission path through the roof/ceiling cavity and does not allow for the effects of thermal bridging.

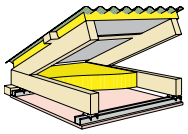
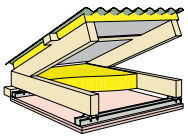
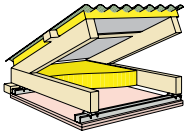
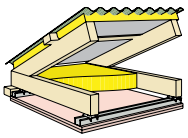
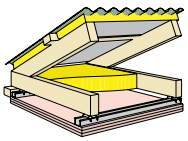
SYSTEM SPECIFICATION Refer to Book 2 Residential Installation Guide for further information			ACOUSTIC REPORT: PKA – A124			
FRL Report	**SYSTEM Nº**	**CEILING LININGS**	**CAVITY INFILL** (Refer to TABLE B6)	**Steel Roofing with Anticon**		
				R_w / R_w+C_{tr}	**$R_{t(SUM)}$**	**$R_{t(WIN)}$**
– / – / –	**CSR 6478** 	• 1 x 10mm Gyprock Supaceil Plasterboard.	(a) 165 Gold Batts 3.0	46/36	5.4	5.3
			(b) 185 Gold Batts 3.5	46/37	5.9	5.8
			(c) 215 Gold Batts 4.1	47/38	6.5	6.4
			(d) 110 SoundScreen 3.1	46/37	5.5	5.4
– / – / –	**CSR 10184** 	• 1 x 10mm Gyprock HD Plasterboard.	(a) 165 Gold Batts 3.0	47/37	5.4	5.3
			(b) 185 Gold Batts 3.5	47/38	5.9	5.8
			(c) 215 Gold Batts 4.1	48/39	6.5	6.4
			(d) 110 SoundScreen 3.1	47/38	5.5	5.4
– / – / –	**CSR 10185** 	• 2 x 10mm Gyprock HD Plasterboard.	(a) 165 Gold Batts 3.0	52/43	5.5	5.3
			(b) 185 Gold Batts 3.5	53/44	6.0	5.8
			(c) 215 Gold Batts 4.1	54/45	6.5	6.5
			(d) 110 SoundScreen 3.1	53/44	5.6	5.4
– / – / –	**CSR 6484** 	• 1 x 13mm Gyprock Standard Plasterboard.	(a) 165 Gold Batts 3.0	47/37	5.5	5.3
			(b) 185 Gold Batts 3.5	47/38	5.9	5.8
			(c) 215 Gold Batts 4.1	48/39	6.5	6.5
			(d) 110 SoundScreen 3.1	47/38	5.6	5.4
– / – / –	**CSR 6485** 	• 1 x 13mm Gyprock Soundchek Plasterboard.	(a) 165 Gold Batts 3.0	51/42	5.4	5.3
			(b) 185 Gold Batts 3.5	52/43	5.9	5.8
			(c) 215 Gold Batts 4.1	53/44	6.5	6.4
			(d) 110 SoundScreen 3.1	52/43	5.5	5.4

SYSTEM SPECIFICATIONS Roof/Ceiling – Pitched Steel Roof with Joist/Truss & Resilient Mounted Furring



Thermal Assumptions – Steel Sheet Roof/Ceiling Systems
Software Version – 1.6
Roof Pitch – 22.5 degrees nominal
Roof Space Type – non-ventilated
Roof Blanket – Bradford Anticon 60 MD R1.3
RISF = Resistance to Incipient Spread of Fire

System thermal R-values provided have been calculated based on a thermal transmission path through the roof/ceiling cavity and does not allow for the effects of thermal bridging.

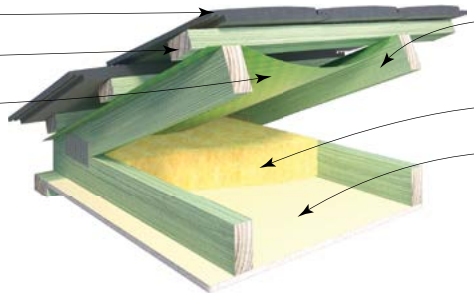
SYSTEM SPECIFICATION Refer to Book 2 Residential Installation Guide for further information			ACOUSTIC REPORT: PKA – A124			
FRL Report	**SYSTEM Nº**	**CEILING LININGS**	**CAVITY INFILL** (Refer to TABLE B6)	**Steel Roofing with Anticon**		
				R_W / R_W+C_{tr}	**$R_{t(SUM)}$**	**$R_{t(WIN)}$**
30/30/30 from below only EWFA 26162	**CSR 6491** 	• 1 x 13mm Gyprock Fyrchek Plasterboard. • Furring channels at 450mm maximum centres.	(a) 165 Gold Batts 3.0	48/39	5.5	5.3
			(b) 185 Gold Batts 3.5	49/40	6.0	5.8
			(c) 215 Gold Batts 4.1	50/41	6.5	6.5
60/60/60 from below only +RISF 30 minutes EWFA 26162	**CSR 6492** 	• 2 x 13mm Gyprock Fyrchek Plasterboard.	(a) 165 Gold Batts 3.0	53/44	5.5	5.4
			(b) 185 Gold Batts 3.5	54/45	6.0	5.9
			(c) 215 Gold Batts 4.1	55/46	6.6	6.5
60/60/60 from below only +RISF 60 minutes EWFA 26162	**CSR 6493** 	• 1 x 13mm Gyprock Fyrchek Plasterboard. • 1 x 16mm Gyprock Fyrchek Plasterboard (any order).	(a) 165 Gold Batts 3.0	53/44	5.6	5.4
			(b) 185 Gold Batts 3.5	54/45	6.0	5.9
			(c) 215 Gold Batts 4.1	55/46	6.6	6.5
90/90/90 from below only +RISF 60 minutes EWFA 26162	**CSR 6495** 	• 2 x 16mm Gyprock Fyrchek Plasterboard.	(a) 165 Gold Batts 3.0	54/45	5.6	5.4
			(b) 185 Gold Batts 3.5	55/46	6.1	5.9
			(c) 215 Gold Batts 4.1	56/47	6.6	6.6
120/120/120 from below only +RISF 60 minutes EWFA 26162	**CSR 6497** 	• 3 x 16mm Gyprock Fyrchek Plasterboard.	(a) 165 Gold Batts 3.0	57/48	5.6	5.4
			(b) 185 Gold Batts 3.5	58/49	6.1	5.9
			(c) 215 Gold Batts 4.1	59/**50**	6.6	6.6

Roof/Ceiling – Pitched Tile Roof with Joist/Truss & Direct Fixed Plasterboard

A pitched tile roof.

40mm battens.

Bradford Thermoseal Roof Tile sarking as per table, installed under battens.



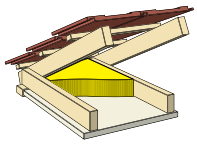
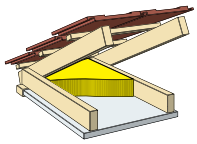
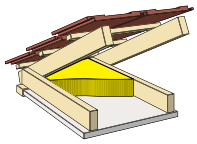
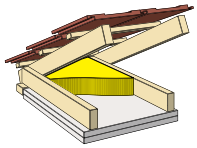
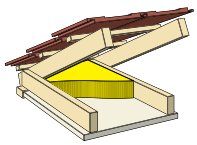
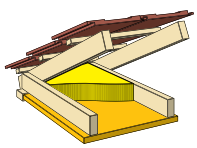
Ceiling Joists or Trusses at 600mm centres except where noted in system table.

Cavity infill as per system table.

Ceiling lining as per system table, fixed to framing.

Thermal Assumptions – Tile Roof/Ceiling Systems (Software version 1.6)
Roof Pitch – 22.5 degrees nominal
Roof space type – non-ventilated
RISF = Resistance to Incipient Spread of Fire

System thermal R-values provided have been calculated based on a thermal transmission path through the roof/ceiling cavity and does not allow for the effects of thermal bridging.

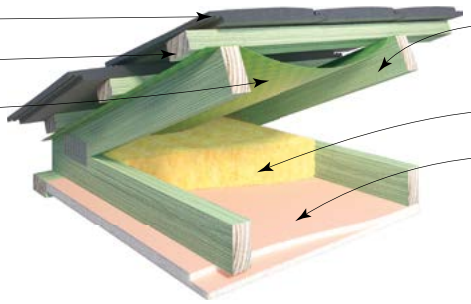
SYSTEM SPECIFICATION Refer to Book 2 Residential Installation Guide for further information			ACOUSTIC REPORT: PKA – A124							
FRL Report	SYSTEM Nº	CEILING LININGS	CAVITY INFILL (Refer to TABLE B6)	Tile Roofing with Sarking			Tile Roofing without Sarking			
				R_w/ R_w+C_{tr}	$Rt_{(SUM)}$	$Rt_{(WIN)}$	R_w/ R_w+C_{tr}	$Rt_{(SUM)}$	$Rt_{(WIN)}$
–/–/–	**CSR 6502** 	• 1 x 10mm Gyprock Plus Plasterboard. • Framing at 450mm maximum centres.	(a) 165 Gold Batts 3.0	41/34	4.4	4.1	39/33	3.6	3.8
			(b) 185 Gold Batts 3.5	41/35	4.9	4.7	39/33	4.1	4.3
			(c) 215 Gold Batts 4.1	42/36	5.5	5.3	40/34	4.6	4.9
			(d) 110 SoundScreen 3.1	41/35	4.5	4.3	39/33	3.7	3.9
–/–/–	**CSR 6503** 	• 1 x 10mm Gyprock Supaceil Plasterboard.	(a) 165 Gold Batts 3.0	42/36	4.4	4.1	40/35	3.6	3.7
			(b) 185 Gold Batts 3.5	42/37	4.9	4.7	40/35	4.1	4.3
			(c) 215 Gold Batts 4.1	43/38	5.5	5.3	41/36	4.6	4.9
			(d) 110 SoundScreen 3.1	42/37	4.5	4.2	40/35	3.7	3.8
–/–/–	**CSR 10186** 	• 1 x 10mm Gyprock HD Plasterboard.	(a) 165 Gold Batts 3.0	43/37	4.4	4.1	41/36	3.6	3.7
			(b) 185 Gold Batts 3.5	43/38	4.9	4.7	41/36	4.1	4.3
			(c) 215 Gold Batts 4.1	44/39	5.5	5.3	42/37	4.6	4.9
			(d) 110 SoundScreen 3.1	43/38	4.5	4.2	41/36	3.7	3.8
–/–/–	**CSR 10187** 	• 2 x 10mm Gyprock HD Plasterboard.	(a) 165 Gold Batts 3.0	48/42	4.4	4.1	46/42	3.6	3.8
			(b) 185 Gold Batts 3.5	48/42	4.9	4.7	46/42	4.1	4.3
			(c) 215 Gold Batts 4.1	49/43	5.5	5.3	47/43	4.6	4.9
			(d) 110 SoundScreen 3.1	48/42	4.5	4.2	46/42	3.7	3.9
–/–/–	**CSR 6513** 	• 1 x 13mm Gyprock Standard Plasterboard.	(a) 165 Gold Batts 3.0	43/37	4.4	4.2	41/36	3.6	3.8
			(b) 185 Gold Batts 3.5	43/38	4.9	4.7	41/36	4.1	4.3
			(c) 215 Gold Batts 4.1	44/39	5.5	5.3	42/37	4.7	4.9
			(d) 110 SoundScreen 3.1	43/38	4.5	4.3	41/36	3.7	3.9
–/–/–	**CSR 6515** 	• 1 x 13mm Gyprock Soundchek Plasterboard.	(a) 165 Gold Batts 3.0	48/42	4.4	4.1	46/41	3.6	3.7
			(b) 185 Gold Batts 3.5	48/43	4.9	4.7	46/42	4.1	4.3
			(c) 215 Gold Batts 4.1	49/44	5.5	5.3	47/43	4.6	4.9
			(d) 110 SoundScreen 3.1	48/43	4.5	4.2	46/42	3.7	3.9

Roof/Ceiling – Pitched Tile Roof with Joist/Truss & Direct Fixed Plasterboard

A pitched tile roof.

40mm battens.

Bradford Thermoseal Roof Tile sarking as per table, installed under battens.



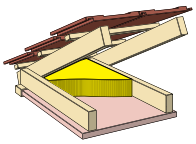
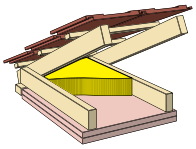
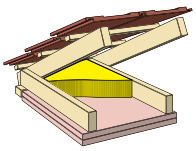
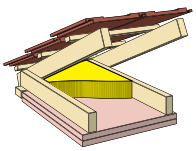
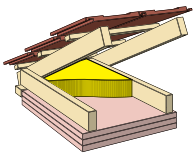
Ceiling Joists or Trusses at 600mm centres except where noted in system table.

Cavity infill as per system table.

Ceiling lining as per system table, fixed to framing.

Thermal Assumptions – Tile Roof/Ceiling Systems
(Software version 1.6)
Roof Pitch – 22.5 degrees nominal
Roof space type – non-ventilated
RISF = Resistance to Incipient Spread of Fire

System thermal R-values provided have been calculated based on a thermal transmission path through the roof/ceiling cavity and does not allow for the effects of thermal bridging.

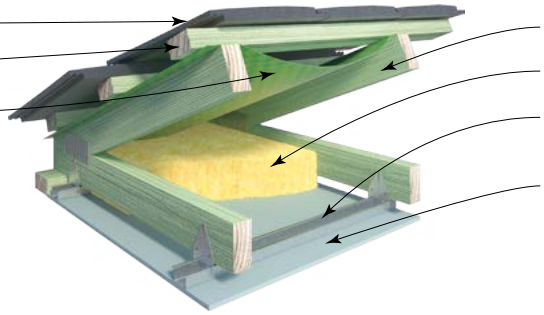
SYSTEM SPECIFICATION Refer to Book 2 Residential Installation Guide for further information			ACOUSTIC REPORT: PKA – A124						
FRL Report	SYSTEM Nº	CEILING LININGS	CAVITY INFILL (Refer to TABLE B6)	Tile Roofing with Sarking			Tile Roofing without Sarking		
				R_w/ R_w+C_{tr}	$Rt_{(SUM)}$	$Rt_{(WIN)}$	R_w/ R_w+C_{tr}	$Rt_{(SUM)}$	$Rt_{(WIN)}$
30/30/30 from below only EWFA 26162	**CSR 6519** 	• 1 x 13mm Gyprock Fyrchek Plasterboard. • Framing at 450mm maximum centres.	(a) 165 Gold Batts 3.0	45/39	4.4	4.2	42/38	3.6	3.8
			(b) 185 Gold Batts 3.5	45/39	4.9	4.7	42/38	4.1	4.3
			(c) 215 Gold Batts 4.1	46/40	5.5	5.3	43/39	4.7	4.9
60/60/60 from below only +RISF 30 minutes EWFA 26162	**CSR 6520** 	• 2 x 13mm Gyprock Fyrchek Plasterboard.	(a) 165 Gold Batts 3.0	50/44	4.4	4.2	47/43	3.6	3.8
			(b) 185 Gold Batts 3.5	50/44	4.9	4.7	47/43	4.1	4.3
			(c) 215 Gold Batts 4.1	51/45	5.5	5.3	48/44	4.7	4.9
60/60/60 from below only +RISF 30 minutes EWFA 26162	**CSR 6521** 	• 1 x 13mm Gyprock Fyrchek Plasterboard. • 1 x 16mm Gyprock Fyrchek Plasterboard (any order).	(a) 165 Gold Batts 3.0	50/44	4.5	4.2	47/43	3.6	3.8
			(b) 185 Gold Batts 3.5	50/44	4.9	4.7	47/43	4.1	4.3
			(c) 215 Gold Batts 4.1	51/45	5.5	5.3	48/44	4.7	4.9
90/90/90 from below only +RISF 60 minutes EWFA 26162	**CSR 6522** 	• 2 x 16mm Gyprock Fyrchek Plasterboard.	(a) 165 Gold Batts 3.0	51/45	4.5	4.2	48/44	3.6	3.8
			(b) 185 Gold Batts 3.5	51/45	4.9	4.7	48/44	4.1	4.3
			(c) 215 Gold Batts 4.1	52/46	5.5	5.3	49/45	4.7	4.9
120/120/120 from below only +RISF 60 minutes EWFA 26162	**CSR 6523** 	• 3 x 16mm Gyprock Fyrchek Plasterboard.	(a) 165 Gold Batts 3.0	53/47	4.5	4.2	50/46	3.7	3.8
			(b) 185 Gold Batts 3.5	53/47	5.0	4.7	50/46	4.1	4.4
			(c) 215 Gold Batts 4.1	54/48	5.6	5.4	51/47	4.7	5.0

Roof/Ceiling – Pitched Tile Roof with Joist/Truss & Clip Fixed Furring

A pitched tile roof.

40mm battens.

Bradford Thermoseal Roof Tile sarking as per table.



Ceiling Joists or Trusses.

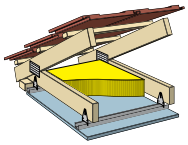
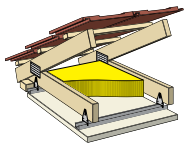
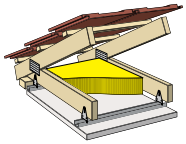
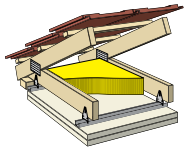
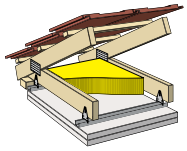
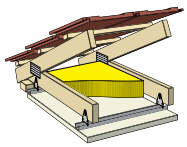
Cavity infill as per system table.

Rondo Furring Channel at 600mm maximum centres except where noted.

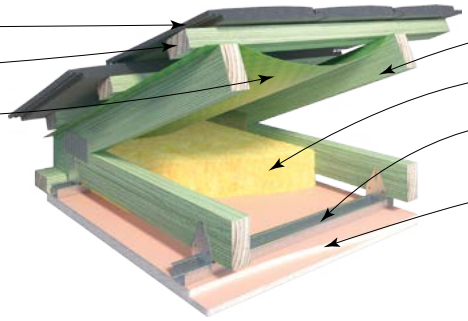
Ceiling lining as per system table fixed to furring channel.

Thermal Assumptions – Tile Roof/Ceiling Systems
(Software version 1.6)
Roof Pitch – 22.5 degrees nominal
Roof space type – non-ventilated
RISF = Resistance to Incipient Spread of Fire

System thermal R-values provided have been calculated based on a thermal transmission path through the roof/ceiling cavity and does not allow for the effects of thermal bridging.

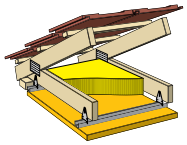
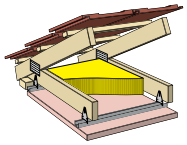
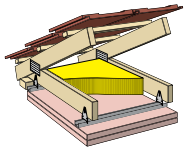
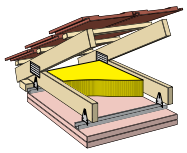
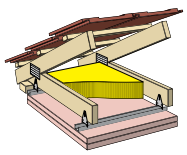
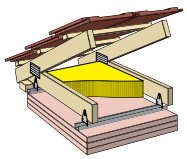
SYSTEM SPECIFICATION Refer to Book 2 Residential Installation Guide for further information			ACOUSTIC REPORT: PKA – A124							
FRL Report	SYSTEM Nº	CEILING LININGS	CAVITY INFILL (Refer to TABLE B6)	Tile Roofing with Sarking			Tile Roofing without Sarking			
				R_w / R_w+C_{tr}	$Rt_{(SUM)}$	$Rt_{(WIN)}$	R_w / R_w+C_{tr}	$Rt_{(SUM)}$	$Rt_{(WIN)}$
– / – / –	**CSR 6525** 	• 1 x 6mm CeminSeal Wallboard.	(a) 165 Gold Batts 3.0	45/39	4.4	4.1	43/38	3.6	3.7
			(b) 185 Gold Batts 3.5	45/40	4.9	4.6	43/38	4.0	4.2
			(c) 215 Gold Batts 4.1	46/41	5.5	5.3	44/39	4.6	4.9
			(d) 110 SoundScreen 3.1	45/40	4.5	4.2	43/38	3.7	3.8
– / – / –	**CSR 6527** 	• 1 x 10mm Gyprock Plus Plasterboard. • Furring channels at 450mm maximum centres.	(a) 165 Gold Batts 3.0	43/36	4.4	4.1	41/36	3.6	3.8
			(b) 185 Gold Batts 3.5	43/36	4.9	4.7	41/36	4.1	4.3
			(c) 215 Gold Batts 4.1	44/37	5.5	5.3	42/37	4.6	4.9
			(d) 110 SoundScreen 3.1	43/36	4.5	4.3	41/36	3.7	3.9
– / – / –	**CSR 10188** 	• 1 x 10mm Gyprock HD Plasterboard.	(a) 165 Gold Batts 3.0	45/39	4.4	4.1	43/38	3.6	3.7
			(b) 185 Gold Batts 3.5	45/40	4.9	4.7	43/38	4.1	4.3
			(c) 215 Gold Batts 4.1	46/41	5.5	5.3	44/39	4.6	4.9
			(d) 110 SoundScreen 3.1	45/40	4.5	4.2	43/38	3.7	3.8
– / – / –	**CSR 6533** 	• 2 x 10mm Gyprock Plus Plasterboard. • Furring channels at 450mm maximum centres.	(a) 165 Gold Batts 3.0	48/42	4.4	4.1	45/41	3.6	3.8
			(b) 185 Gold Batts 3.5	48/42	4.9	4.7	45/41	4.1	4.3
			(c) 215 Gold Batts 4.1	49/43	5.5	5.3	46/42	4.7	4.9
			(d) 110 SoundScreen 3.1	48/42	4.5	4.2	45/41	3.7	3.9
– / – / –	**CSR 10189** 	• 2 x 10mm Gyprock HD Plasterboard.	(a) 165 Gold Batts 3.0	50/44	4.4	4.1	48/43	3.6	3.8
			(b) 185 Gold Batts 3.5	50/45	4.9	4.7	48/44	4.1	4.3
			(c) 215 Gold Batts 4.1	51/46	5.5	5.3	49/45	4.6	4.9
			(d) 110 SoundScreen 3.1	50/45	4.5	4.2	48/44	3.7	3.9
– / – / –	**CSR 6537** 	• 1 x 13mm Gyprock Standard Plasterboard.	(a) 165 Gold Batts 3.0	45/39	4.4	4.2	43/38	3.6	3.8
			(b) 185 Gold Batts 3.5	45/40	4.9	4.7	43/38	4.1	4.3
			(c) 215 Gold Batts 4.1	46/41	5.5	5.3	44/39	4.7	4.9
			(d) 110 SoundScreen 3.1	45/40	4.5	4.3	43/38	3.7	3.9

SYSTEM SPECIFICATIONS Roof/Ceiling – Pitched Tile Roof with Joist/Truss & Clip Fixed Furring

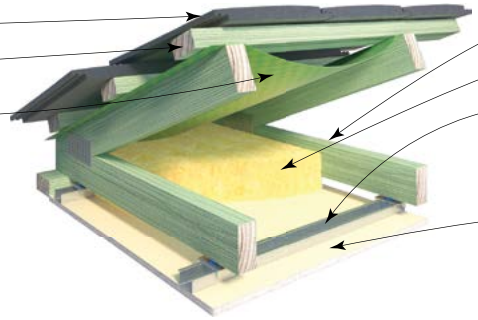


Thermal Assumptions – Tile Roof/Ceiling Systems
(Software version 1.6)
Roof Pitch – 22.5 degrees nominal
Roof space type – non-ventilated
RISF = Resistance to Incipient Spread of Fire

System thermal R-values provided have been calculated based on a thermal transmission path through the roof/ceiling cavity and does not allow for the effects of thermal bridging.

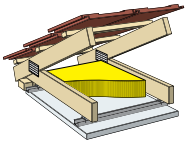
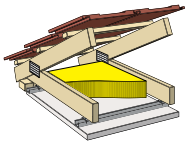
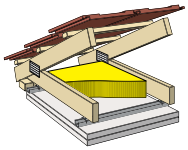
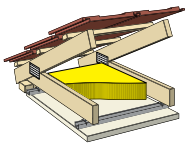
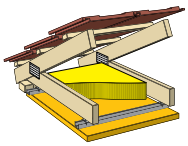
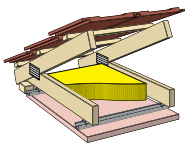
SYSTEM SPECIFICATION Refer to Book 2 Residential Installation Guide for further information			ACOUSTIC REPORT: PKA – A124						
FRL Report	**SYSTEM Nº**	**CEILING LININGS**	**CAVITY INFILL** (Refer to TABLE B6)	**Tile Roofing with Sarking**			**Tile Roofing without Sarking**		
				R_w / R_w+C_{tr}	**$R_{t(SUM)}$**	**$R_{t(WIN)}$**	**R_w / R_w+C_{tr}**	**$R_{t(SUM)}$**	**$R_{t(WIN)}$**
– / – / –	**CSR 6538** 	• 1 x 13mm Gyprock Soundchek Plasterboard.	(a) 165 Gold Batts 3.0	50/44	4.4	4.1	48/43	3.6	3.7
			(b) 185 Gold Batts 3.5	50/45	4.9	4.7	48/44	4.1	4.3
			(c) 215 Gold Batts 4.1	51/46	5.5	5.3	49/45	4.6	4.9
			(d) 110 SoundScreen 3.1	50/45	4.5	4.2	48/44	3.7	3.9
30/30/30 from below only EWFA 26162	**CSR 6542** 	• 1 x 13mm Gyprock Fyrchek Plasterboard. • Furring channels at 450mm maximum centres.	(a) 165 Gold Batts 3.0	47/41	4.4	4.2	44/40	3.6	3.8
			(b) 185 Gold Batts 3.5	47/41	4.9	4.7	44/40	4.1	4.3
			(c) 215 Gold Batts 4.1	48/42	5.5	5.3	45/41	4.7	4.9
60/60/60 from below only +RISF 30 minutes EWFA 26162	**CSR 6543** 	• 2 x 13mm Gyprock Fyrchek Plasterboard.	(a) 165 Gold Batts 3.0	52/46	4.4	4.2	49/45	3.6	3.8
			(b) 185 Gold Batts 3.5	52/46	4.9	4.7	49/45	4.1	4.3
			(c) 215 Gold Batts 4.1	53/47	5.5	5.3	50/46	4.7	4.9
60/60/60 from below only +RISF 60 minutes EWFA 26162	**CSR 6544** 	• 1 x 13mm Gyprock Fyrchek Plasterboard. • 1 x 16mm Gyprock Fyrchek Plasterboard (any order).	(a) 165 Gold Batts 3.0	52/46	4.5	4.2	49/45	3.6	3.8
			(b) 185 Gold Batts 3.5	52/46	4.9	4.7	49/45	4.1	4.3
			(c) 215 Gold Batts 4.1	53/47	5.5	5.3	50/46	4.7	4.9
90/90/90 from below only +RISF 60 minutes EWFA 26162	**CSR 6545** 	• 2 x 16mm Gyprock Fyrchek Plasterboard.	(a) 165 Gold Batts 3.0	53/47	4.5	4.2	50/46	3.6	3.8
			(b) 185 Gold Batts 3.5	54/48	4.9	4.7	50/46	4.1	4.3
			(c) 215 Gold Batts 4.1	55/49	5.5	5.3	51/47	4.7	4.9
120/120/120 from below only +RISF 60 minutes EWFA 26162	**CSR 6548** 	• 3 x 16mm Gyprock Fyrchek Plasterboard.	(a) 165 Gold Batts 3.0	56/**50**	4.5	4.2	53/49	3.7	3.8
			(b) 185 Gold Batts 3.5	57/**50**	5.0	4.7	53/49	4.1	4.4
			(c) 215 Gold Batts 4.1	58/**51**	5.6	5.4	54/**50**	4.7	5.0

Roof/Ceiling – Pitched Tile Roof with Joist/Truss & Resilient Mounted Furring



Thermal Assumptions – Tile Roof/Ceiling Systems (Software version 1.6)
Roof Pitch – 22.5 degrees nominal
Roof space type – non-ventilated
RISF = Resistance to Incipient Spread of Fire

System thermal R-values provided have been calculated based on a thermal transmission path through the roof/ceiling cavity and does not allow for the effects of thermal bridging.

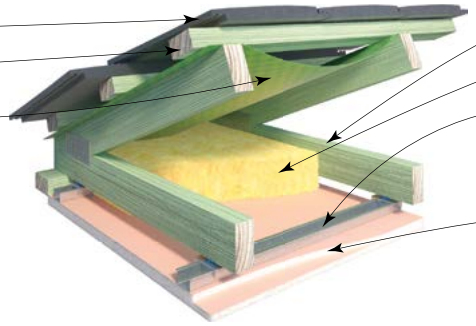
SYSTEM SPECIFICATION Refer to Book 2 Residential Installation Guide for further information			ACOUSTIC REPORT: PKA – A124							
FRL Report	SYSTEM Nº	CEILING LININGS	CAVITY INFILL (Refer to TABLE B6)	Tile Roofing with Sarking			Tile Roofing without Sarking			
				R_w / R_w+C_{tr}	$Rt_{(SUM)}$	$Rt_{(WIN)}$	R_w / R_w+C_{tr}	$Rt_{(SUM)}$	$Rt_{(WIN)}$
– / – / –	**CSR 6553** 	• 1 x 10mm Gyprock Supaceil Plasterboard.	(a) 165 Gold Batts 3.0	46/40	4.4	4.1	44/39	3.6	3.7
			(b) 185 Gold Batts 3.5	46/41	4.9	4.7	44/39	4.1	4.3
			(c) 215 Gold Batts 4.1	47/42	5.5	5.3	45/40	4.6	4.9
			(d) 110 SoundScreen 3.1	46/41	4.5	4.2	44/39	3.7	3.9
– / – / –	**CSR 10190** 	• 1 x 10mm Gyprock HD Plasterboard.	(a) 165 Gold Batts 3.0	47/41	4.4	4.1	44/40	3.6	3.7
			(b) 185 Gold Batts 3.5	47/42	4.9	4.7	45/40	4.1	4.3
			(c) 215 Gold Batts 4.1	48/43	5.5	5.3	46/41	4.6	4.9
			(d) 110 SoundScreen 3.1	47/42	4.5	4.2	45/40	3.7	3.8
– / – / –	**CSR 10191** 	• 2 x 10mm Gyprock HD Plasterboard.	(a) 165 Gold Batts 3.0	53/47	4.4	4.1	50/46	3.6	3.8
			(b) 185 Gold Batts 3.5	53/47	4.9	4.7	50/46	4.1	4.3
			(c) 215 Gold Batts 4.1	54/48	5.5	5.3	51/47	4.6	4.9
			(d) 110 SoundScreen 3.1	53/47	4.5	4.2	50/46	3.7	3.9
– / – / –	**CSR 6560** 	• 1 x 13mm Gyprock Standard Plasterboard.	(a) 165 Gold Batts 3.0	47/41	4.4	4.2	44/40	3.6	3.8
			(b) 185 Gold Batts 3.5	47/42	4.9	4.7	45/40	4.1	4.3
			(c) 215 Gold Batts 4.1	48/43	5.5	5.3	46/41	4.7	4.9
			(d) 110 SoundScreen 3.1	47/42	4.5	4.3	45/40	3.7	3.9
– / – / –	**CSR 6561** 	• 1 x 13mm Gyprock Soundchek Plasterboard.	(a) 165 Gold Batts 3.0	52/46	4.4	4.1	50/45	3.6	3.7
			(b) 185 Gold Batts 3.5	52/47	4.9	4.7	50/46	4.1	4.3
			(c) 215 Gold Batts 4.1	53/48	5.5	5.3	51/47	4.6	4.9
			(d) 110 SoundScreen 3.1	52/47	4.5	4.2	50/46	3.7	3.9
30/30/30 from below only EWFA 26162	**CSR 6568** 	• 1 x 13mm Gyprock Fyrchek Plasterboard. • Furring channels at 450mm maximum centres.	(a) 165 Gold Batts 3.0	49/43	4.4	4.2	46/42	3.6	3.8
			(b) 185 Gold Batts 3.5	49/43	4.9	4.7	46/42	4.1	4.3
			(c) 215 Gold Batts 4.1	50/44	5.5	5.3	47/43	4.7	4.9

Roof/Ceiling – Pitched Tile Roof with Joist/Truss & Resilient Mounted Furring

A pitched tile roof.

40mm battens.

Bradford Thermoseal Roof Tile sarking as per table.



Ceiling Joists or Trusses.

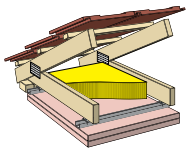
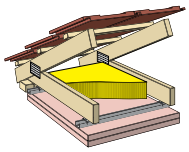
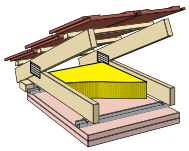
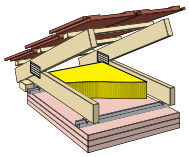
Cavity infill as per system table.

Rondo Furring Channel clipped to Gyprock Resilient Mounts. Furring channels at 600mm maximum centres except where noted.

Ceiling lining as per system table, fixed to furring channel.

Thermal Assumptions – Tile Roof/Ceiling Systems
(Software version 1.6)
Roof Pitch – 22.5 degrees nominal
Roof space type – non-ventilated
RISF = Resistance to Incipient Spread of Fire

System thermal R-values provided have been calculated based on a thermal transmission path through the roof/ceiling cavity and does not allow for the effects of thermal bridging.

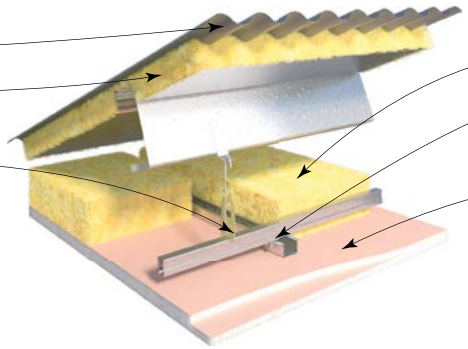
SYSTEM SPECIFICATION Refer to Book 2 Residential Installation Guide for further information			ACOUSTIC REPORT: PKA – A124						
FRL Report	**SYSTEM Nº**	**CEILING LININGS**	**CAVITY INFILL** (Refer to TABLE B6)	**Tile Roofing with Sarking**			**Tile Roofing without Sarking**		
				R_w / R_w+C_{tr}	**$Rt_{(SUM)}$**	**$Rt_{(WIN)}$**	**R_w / R_w+C_{tr}**	**$Rt_{(SUM)}$**	**$Rt_{(WIN)}$**
60/60/60 from below only +RISF 30 minutes EWFA 26162	**CSR 6569** 	• 2 x 13mm Gyprock Fyrchek Plasterboard.	(a) 165 Gold Batts 3.0	54/48	4.4	4.2	51/47	3.6	3.8
			(b) 185 Gold Batts 3.5	54/48	4.9	4.7	51/47	4.1	4.3
			(c) 215 Gold Batts 4.1	55/49	5.5	5.3	52/48	4.7	4.9
60/60/60 from below only +RISF 60 minutes EWFA 26162	**CSR 6570** 	• 1 x 13mm Gyprock Fyrchek Plasterboard. • 1 x 16mm Gyprock Fyrchek Plasterboard (any order).	(a) 165 Gold Batts 3.0	54/48	4.5	4.2	51/47	3.6	3.8
			(b) 185 Gold Batts 3.5	54/48	4.9	4.7	52/47	4.1	4.3
			(c) 215 Gold Batts 4.1	55/49	5.5	5.3	53/48	4.7	4.9
90/90/90 from below only +RISF 60 minutes EWFA 26162	**CSR 6571** 	• 2 x 16mm Gyprock Fyrchek Plasterboard.	(a) 165 Gold Batts 3.0	54/49	4.5	4.2	52/48	3.6	3.8
			(b) 185 Gold Batts 3.5	55/49	4.9	4.7	52/48	4.1	4.3
			(c) 215 Gold Batts 4.1	56/**50**	5.5	5.3	53/49	4.7	4.9
120/120/120 from below only +RISF 60 minutes EWFA 26162	**CSR 6573** 	• 3 x 16mm Gyprock Fyrchek Plasterboard.	(a) 165 Gold Batts 3.0	57/**52**	4.5	4.2	55/51	3.7	3.8
			(b) 185 Gold Batts 3.5	58/**52**	5.0	4.7	55/51	4.1	4.4
			(c) 215 Gold Batts 4.1	59/**53**	5.6	5.4	56/52	4.7	5.0

Roof/Ceiling – Pitched Steel Roof with Suspended Grid & Clip Fixed Furring

Sheet metal roof.

Bradford Anticon 60 MD over timber or steel purlins.

Rondo Suspended Ceiling system.



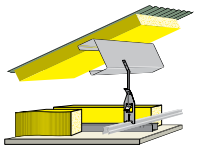
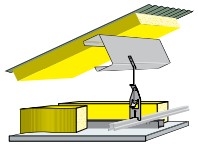
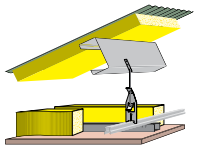
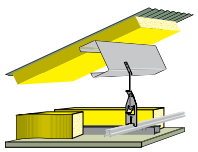
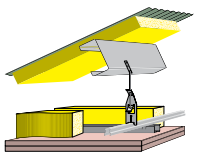
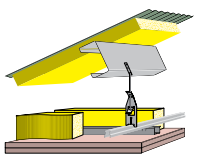
Cavity infill as per system table.

Rondo Furring Channel at 600mm max. centres except where noted in system table.

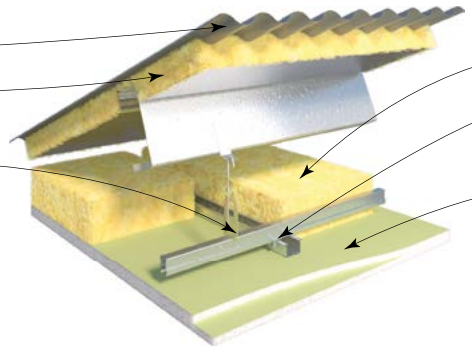
Ceiling lining as per system table, fixed to furring channel.

Thermal Assumptions – Steel Sheet Roof/Ceiling Systems (software version 1.6)
Roof Pitch – 22.5 degrees nominal
Roof Space Type – non-ventilated
Roof blanket – Bradford Anticon 60 MD R1.3
RISF = Resistance to Incipient Spread of Fire

System thermal R-values provided have been calculated based on a thermal transmission path through the roof/ceiling cavity and does not allow for the effects of thermal bridging.

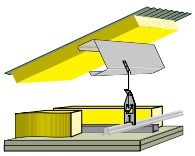
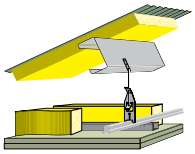
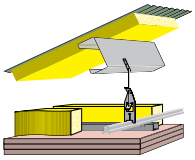
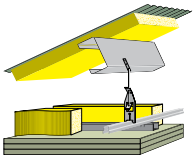
SYSTEM SPECIFICATION Refer to Book 2 and 3 for further information			ACOUSTIC REPORT: PKA – A124		Thermal	
FRL Report	SYSTEM Nº	CEILING LININGS	CAVITY INFILL (Refer to TABLE B6)	R_w / R_w+C_{tr}	Steel Roofing with Anticon	
					$R_{t(SUM)}$	$R_{t(WIN)}$
– / – / –	**CSR 6578** 	• 1 x 10mm Gyprock Plus Plasterboard. • Furring channel at 450mm maximum centres.	(a) 140 Gold Batts 2.5	45/35	5.0	4.8
			(b) 165 Gold Batts 3.0	45/35	5.5	5.3
			(c) 185 Gold Batts 3.5	46/36	5.9	5.8
			(d) 215 Gold Batts 4.1	46/36	6.5	6.4
			(e) 110 SoundScreen 3.1	45/35	5.5	5.4
– / – / –	**CSR 6579** 	• 1 x 10mm Gyprock Supaceil Plasterboard.	(a) 140 Gold Batts 2.5	45/35	5.0	4.8
			(b) 165 Gold Batts 3.0	45/35	5.4	5.3
			(c) 185 Gold Batts 3.5	46/36	5.9	5.8
			(d) 215 Gold Batts 4.1	46/36	6.5	6.4
			(e) 110 SoundScreen 3.1	45/35	5.5	5.4
30/30/30 from below only EWFA 26162	**CSR 6590** 	• 1 x 13mm Gyprock Fyrchek Plasterboard. • Furring channels at 450mm maximum centres.	(a) 140 Gold Batts 2.5	47/38	5.0	4.8
			(b) 165 Gold Batts 3.0	47/38	5.5	5.3
			(c) 185 Gold Batts 3.5	48/39	6.0	5.8
			(d) 215 Gold Batts 4.1	48/39	6.5	6.5
30/30/30 from below only EWFA 26162	**CSR 3816** 	• 1 x 16mm Gyprock EC08 Complete. • Furring channel at 450mm maximum centres.	(a) 140 Gold Batts 2.5	49/40	5.0	4.8
60/60/60 from below only +RISF 30 minutes EWFA 26162	**CSR 6593** 	• 2 x 13mm Gyprock Fyrchek Plasterboard.	(a) 140 Gold Batts 2.5	51/43	5.1	4.9
			(b) 165 Gold Batts 3.0	51/43	5.5	5.4
			(c) 185 Gold Batts 3.5	52/44	6.0	5.9
			(d) 215 Gold Batts 4.1	52/44	6.6	6.5
60/60/60 from below only +RISF 60 minutes EWFA 26162	**CSR 6595** 	• 1 x 13mm Gyprock Fyrchek Plasterboard. • 1 x 16mm Gyprock Fyrchek Plasterboard (any order).	(a) 140 Gold Batts 2.5	51/43	5.1	4.9
			(b) 165 Gold Batts 3.0	51/43	5.6	5.4
			(c) 185 Gold Batts 3.5	52/44	6.0	5.9
			(d) 215 Gold Batts 4.1	52/44	6.6	6.5

SYSTEM SPECIFICATIONS Roof/Ceiling – Pitched Steel Roof with Suspended Grid & Clip Fixed Furring



Thermal Assumptions – Steel Sheet Roof/Ceiling Systems (software version 1.6)
Roof Pitch – 22.5 degrees nominal
Roof Space Type – non-ventilated
Roof blanket – Bradford Anticon 60 MD R1.3
RISF = Resistance to Incipient Spread of Fire

System thermal R-values provided have been calculated based on a thermal transmission path through the roof/ceiling cavity and does not allow for the effects of thermal bridging.

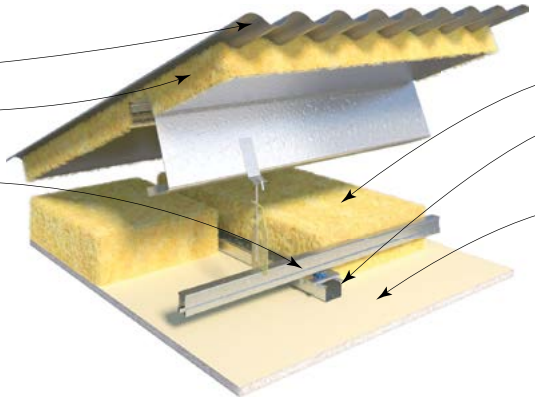
SYSTEM SPECIFICATION Refer to Book 2 and 3 for further information			ACOUSTIC REPORT: PKA – A124		Thermal	
FRL Report	**SYSTEM Nº**	**CEILING LININGS**	**CAVITY INFILL** (Refer to TABLE B6)	**R_w / R_w+C_{tr}**	Steel Roofing with Anticon	
					$R_{t(SUM)}$	**$R_{t(WIN)}$**
60/60/60 from below only +RISF 60 minutes EWFA 26162	**CSR 3831** 	• 1 x 13mm Gyprock EC08 Complete (against framing). • 1 x 16mm Gyprock EC08 Complete.	(a) 140 Gold Batts 2.5	53/45	5.0	4.8
90/90/90 from below only +RISF 60 minutes EWFA 26162	**CSR 3835** 	• 2 x 16mm Gyprock EC08 Complete.	(a) 140 Gold Batts 2.5	53/45	5.0	4.8
120/120/120 from below only +RISF 60 minutes EWFA 26162	**CSR 6598** 	• 3 x 16mm Gyprock Fyrchek Plasterboard.	(a) 140 Gold Batts 2.5 (b) 165 Gold Batts 3.0 (c) 185 Gold Batts 3.5 (d) 215 Gold Batts 4.1	53/45 53/45 54/46 54/46	5.1 5.6 6.1 6.6	4.9 5.4 5.9 6.6
120/120/120 from below only +RISF 60 minutes EWFA 26162	**CSR 3845** 	• 3 x 16mm Gyprock EC08 Complete.	(a) 140 Gold Batts 2.5	54/46	5.1	4.9

Roof/Ceiling – Pitched Steel Roof with Suspended Grid & Resilient Mount

Sheet metal roof.

Bradford Anticon 60 MD over timber or steel purlins.

Rondo Suspended Ceiling system with Gyprock Resilient Mounts.



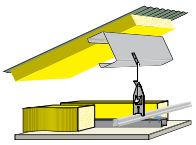
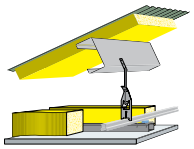
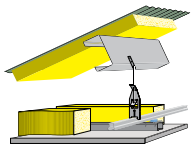
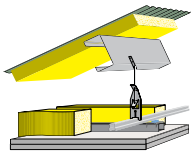
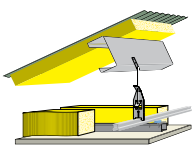
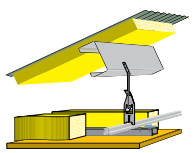
Cavity infill as per system table.

Rondo Furring Channel at 600mm max. centres except where noted in system table.

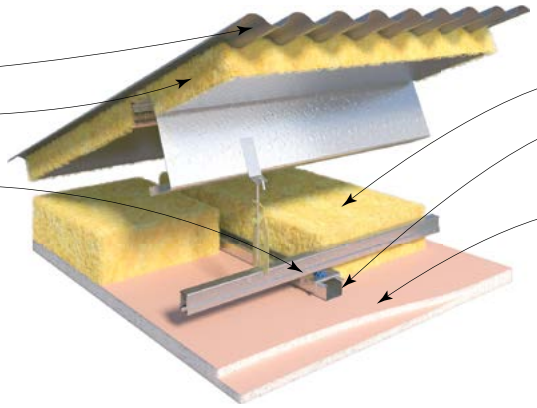
Ceiling lining as per system table, fixed to furring channel.

Thermal Assumptions – Steel Sheet Roof/Ceiling Systems (software version 1.6)
Roof Pitch – 22.5 degrees nominal
Roof Space Type – non-ventilated
Roof blanket – Bradford Anticon 60 MD R1.3
RISF = Resistance to Incipient Spread of Fire

System thermal R-values provided have been calculated based on a thermal transmission path through the roof/ceiling cavity and does not allow for the effects of thermal bridging.

SYSTEM SPECIFICATION Refer to Book 2 and 3 for further information			ACOUSTIC REPORT: PKA – A124		Thermal	
FRL Report	SYSTEM Nº	CEILING LININGS	CAVITY INFILL (Refer to TABLE B6)	R_w / R_w+C_{tr}	Steel Roofing with Anticon	
					$R_{t(SUM)}$	$R_{t(WIN)}$
– / – / –	**CSR 6604** 	• 1 x 10mm Gyprock Plus Plasterboard. • Furring channel at 450mm maximum centres.	(a) 140 Gold Batts 2.5	47/37	5.0	4.8
			(b) 165 Gold Batts 3.0	47/37	5.5	5.3
			(c) 185 Gold Batts 3.5	48/38	5.9	5.8
			(d) 215 Gold Batts 4.1	48/38	6.5	6.5
			(e) 110 SoundScreen 3.1	47/37	5.6	5.4
– / – / –	**CSR 6605** 	• 1 x 10mm Gyprock Supaceil Plasterboard.	(a) 140 Gold Batts 2.5	47/37	5.0	4.8
			(b) 165 Gold Batts 3.0	47/37	5.4	5.3
			(c) 185 Gold Batts 3.5	48/38	5.9	5.8
			(d) 215 Gold Batts 4.1	48/38	6.5	6.4
			(e) 110 SoundScreen 3.1	47/37	5.5	5.4
– / – / –	**CSR 10192** 	• 1 x 10mm Gyprock HD Plasterboard.	(a) 140 Gold Batts 2.5	48/39	5.0	4.7
			(b) 165 Gold Batts 3.0	48/39	5.4	5.3
			(c) 185 Gold Batts 3.5	49/40	5.9	5.8
			(d) 215 Gold Batts 4.1	49/40	6.5	6.4
			(e) 110 SoundScreen 3.1	48/39	5.5	5.4
– / – / –	**CSR 10193** 	• 2 x 10mm Gyprock HD Plasterboard.	(a) 140 Gold Batts 2.5	51/43	5.0	4.8
			(b) 165 Gold Batts 3.0	51/43	5.5	5.3
			(c) 185 Gold Batts 3.5	52/44	6.0	5.8
			(d) 215 Gold Batts 4.1	52/44	6.5	6.5
			(e) 110 SoundScreen 3.1	51/43	5.6	5.4
– / – / –	**CSR 6612** 	• 1 x 13mm Gyprock Standard Plasterboard.	(a) 140 Gold Batts 2.5	48/39	5.0	4.8
			(b) 165 Gold Batts 3.0	48/39	5.5	5.3
			(c) 185 Gold Batts 3.5	49/40	5.9	5.8
			(d) 215 Gold Batts 4.1	49/40	6.5	6.5
			(e) 110 SoundScreen 3.1	48/39	5.6	5.4
– / – / –	**CSR 6615** 	• 1 x 13mm Gyprock Soundchek Plasterboard.	(a) 140 Gold Batts 2.5	50/41	5.0	4.8
			(b) 165 Gold Batts 3.0	50/41	5.4	5.3
			(c) 185 Gold Batts 3.5	51/42	5.9	5.8
			(d) 215 Gold Batts 4.1	51/42	6.5	6.4
			(e) 110 SoundScreen 3.1	50/41	5.5	5.4

SYSTEM SPECIFICATIONS Roof/Ceiling – Pitched Steel Roof with Suspended Grid & Resilient Mount



Sheet metal roof.

Bradford Anticon 60 MD over timber or steel purlins.

Rondo Suspended Ceiling system with Gyprock Resilient Mounts.

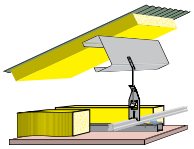
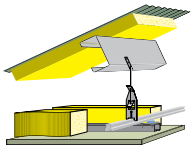
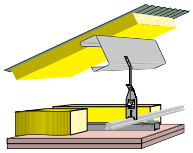
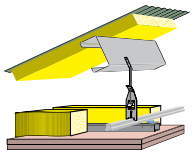
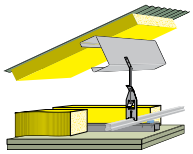
Cavity infill as per system table.

Rondo Furring Channel at 600mm max. centres except where noted in system table.

Ceiling lining as per system table, fixed to furring channel.

Thermal Assumptions – Steel Sheet Roof/Ceiling Systems (software version 1.6)
Roof Pitch – 22.5 degrees nominal
Roof Space Type – non-ventilated
Roof blanket – Bradford Anticon 60 MD R1.3
RISF = Resistance to Incipient Spread of Fire

System thermal R-values provided have been calculated based on a thermal transmission path through the roof/ceiling cavity and does not allow for the effects of thermal bridging.

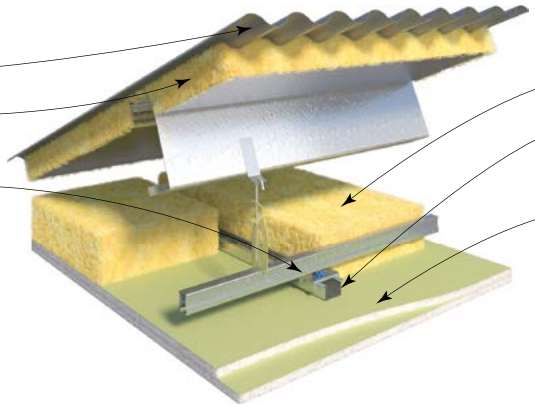
SYSTEM SPECIFICATION Refer to Book 2 and 3 for further information			ACOUSTIC REPORT: PKA – A124		Thermal	
FRL Report	**SYSTEM Nº**	**CEILING LININGS**	**CAVITY INFILL** (Refer to TABLE B6)	**R_w / R_w+C_{tr}**	Steel Roofing with Anticon	
					$R_{t(SUM)}$	**$R_{t(WIN)}$**
30/30/30 from below only EWFA 26162	**CSR 6617** 	• 1 x 13mm Gyprock Fyrchek Plasterboard. • Furring channels at 450mm maximum centres.	(a) 140 Gold Batts 2.5 (b) 165 Gold Batts 3.0 (c) 185 Gold Batts 3.5 (d) 215 Gold Batts 4.1	49/40 49/40 50/41 50/41	5.0 5.5 6.0 6.5	4.8 5.3 5.8 6.5
30/30/30 from below only EWFA 26162	**CSR 3866** 	• 1 x 16mm Gyprock EC08 Complete. • Furring channel at 450mm maximum centres.	(a) 140 Gold Batts 2.5	51/42	5.0	4.8
60/60/60 from below only +RISF 30 minutes EWFA 26162	**CSR 6619** 	• 2 x 13mm Gyprock Fyrchek Plasterboard.	(a) 140 Gold Batts 2.5 (b) 165 Gold Batts 3.0 (c) 185 Gold Batts 3.5 (d) 215 Gold Batts 4.1	53/45 53/45 54/46 54/46	5.1 5.5 6.0 6.6	4.9 5.4 5.9 6.5
60/60/60 from below only +RISF 60 minutes EWFA 26162	**CSR 6620** 	• 1 x 13mm Gyprock Fyrchek Plasterboard. • 1 x 16mm Gyprock Fyrchek Plasterboard (any order).	(a) 140 Gold Batts 2.5 (b) 165 Gold Batts 3.0 (c) 185 Gold Batts 3.5 (d) 215 Gold Batts 4.1	54/46 54/46 55/47 55/47	5.1 5.6 6.0 6.6	4.9 5.4 5.9 6.5
60/60/60 from below only +RISF 60 minutes EWFA 26162	**CSR 3881** 	• 1 x 13mm Gyprock EC08 Complete (against framing). • 1 x 16mm Gyprock EC08 Complete.	(a) 140 Gold Batts 2.5	55/47	5.0	4.8

Roof/Ceiling – Pitched Steel Roof with Suspended Grid & Resilient Mount

Sheet metal roof.

Bradford Anticon 60 MD over timber or steel purlins.

Rondo Suspended Ceiling system with Gyprock Resilient Mounts.



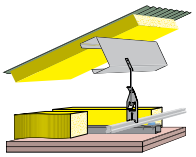
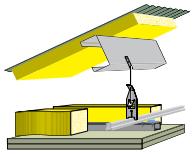
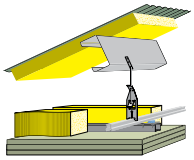
Cavity infill as per system table.

Rondo Furring Channel at 600mm max. centres except where noted in system table.

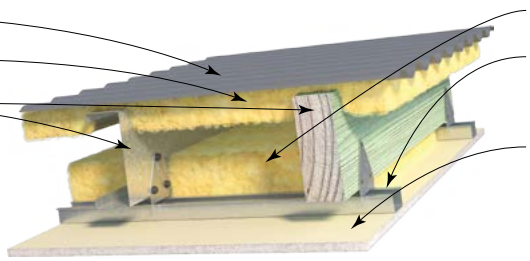
Ceiling lining as per system table, fixed to furring channel.

Thermal Assumptions – Steel Sheet Roof/Ceiling Systems (software version 1.6)
Roof Pitch – 22.5 degrees nominal
Roof Space Type – non-ventilated
Roof blanket – Bradford Anticon 60 MD R1.3
RISF = Resistance to Incipient Spread of Fire

System thermal R-values provided have been calculated based on a thermal transmission path through the roof/ceiling cavity and does not allow for the effects of thermal bridging.

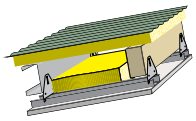
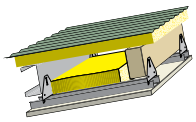
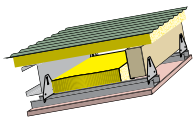
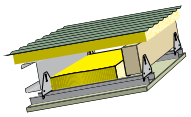
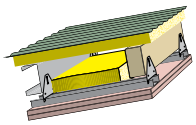
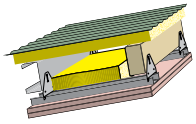
SYSTEM SPECIFICATION Refer to Book 2 and 3 for further information			ACOUSTIC REPORT: PKA – A124		Thermal	
FRL Report	**SYSTEM Nº**	**CEILING LININGS**	**CAVITY INFILL** (Refer to TABLE B6)	**R_w / R_w+C_{tr}**	**Steel Roofing with Anticon**	
					$R_{t(SUM)}$	**$R_{t(WIN)}$**
90/90/90 from below only +RISF 60 minutes EWFA 26162	**CSR 6621** 	• 2 x 16mm Gyprock Fyrchek Plasterboard.	(a) 140 Gold Batts 2.5	54/46	5.1	4.9
			(b) 165 Gold Batts 3.0	54/46	5.6	5.4
			(c) 185 Gold Batts 3.5	55/47	6.1	5.9
			(d) 215 Gold Batts 4.1	55/47	6.6	6.6
90/90/90 from below only +RISF 60 minutes EWFA 26162	**CSR 3885** 	• 2 x 16mm Gyprock EC08 Complete.	(a) 140 Gold Batts 2.5	55/48	5.0	4.8
120/120/120 from below only +RISF 60 minutes EWFA 26162	**CSR 3895** 	• 3 x 16mm Gyprock EC08 Complete.	(a) 140 Gold Batts 2.5	57/**50**	5.1	4.9

Roof/Ceiling – Low Pitched Steel Roof with Purlins & Clip Fixed Furring

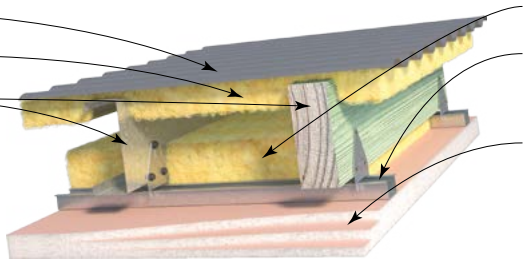


Thermal Assumptions – Roof/Raked Ceiling Systems (software version 1.6)
Roof Pitch – 10 degrees nominal
Framing air space – 180mm non-ventilated
Roof blanket – Bradford Anticon 60 MD R1.3
RISF = Resistance to Incipient Spread of Fire

System thermal R-values provided have been calculated based on a thermal transmission path through the roof/ceiling cavity and does not allow for the effects of thermal bridging.

SYSTEM SPECIFICATION Refer to Book 2 and 3 for further information			ACOUSTIC REPORT: PKA – A124		Thermal	
FRL Report	**SYSTEM Nº**	**CEILING LININGS**	**CAVITY INFILL** (Refer to TABLE B6)	**R_w / R_w+C_{tr}**	Steel Roofing with Anticon	
					$R_{t(SUM)}$	**$R_{t(WIN)}$**
– / – / –	**CSR 10194** 	• 1 x 10mm Gyprock HD Plasterboard.	(a) 140 Gold Batts 2.5	45/36	5.8	4.7
			(b) 165 Gold Batts 3.0	45/36	6.3	5.2
			(c) 185 Gold Batts 3.5	46/37	6.8	5.7
			(d) 215 Gold Batts 4.1	46/37	7.4	6.4
			(e) 110 SoundScreen 3.1	45/36	6.4	5.3
– / – / –	**CSR 6636** 	• 1 x 13mm Gyprock Standard Plasterboard.	(a) 140 Gold Batts 2.5	45/36	5.9	4.7
			(b) 165 Gold Batts 3.0	45/36	6.4	5.2
			(c) 185 Gold Batts 3.5	46/37	6.8	5.8
			(d) 215 Gold Batts 4.1	46/37	7.4	6.4
			(e) 110 SoundScreen 3.1	45/36	6.4	5.3
30/30/30 from below only EWFA 26162	**CSR 6640** 	• 1 x 13mm Gyprock Fyrchek Plasterboard. • Furring channels at 450mm maximum centres.	(a) 140 Gold Batts 2.5	46/37	5.9	4.7
			(b) 165 Gold Batts 3.0	46/37	6.4	5.2
			(c) 185 Gold Batts 3.5	47/38	6.8	5.8
			(d) 215 Gold Batts 4.1	47/38	7.4	6.4
30/30/30 from below only EWFA 26162	**CSR 3916** 	• 1 x 16mm Gyprock EC08 Complete. • Furring channels at 450mm maximum centres.	(a) 140 Gold Batts 2.5	48/39	4.3	4.6
60/60/60 from below only +RISF 30 minutes EWFA 26162	**CSR 6643** 	• 2 x 13mm Gyprock Fyrchek Plasterboard.	(a) 140 Gold Batts 2.5	49/40	5.9	4.8
			(b) 165 Gold Batts 3.0	49/40	6.4	5.3
			(c) 185 Gold Batts 3.5	50/41	6.9	5.8
			(d) 215 Gold Batts 4.1	50/41	7.5	6.5
60/60/60 from below only +RISF 60 minutes EWFA 26162	**CSR 6644** 	• 1 x 13mm Gyprock Fyrchek Plasterboard. • 1 x 16mm Gyprock Fyrchek Plasterboard (any order).	(a) 140 Gold Batts 2.5	50/41	6.0	4.8
			(b) 165 Gold Batts 3.0	50/41	6.4	5.3
			(c) 185 Gold Batts 3.5	51/42	6.9	5.9
			(d) 215 Gold Batts 4.1	51/42	7.5	6.5

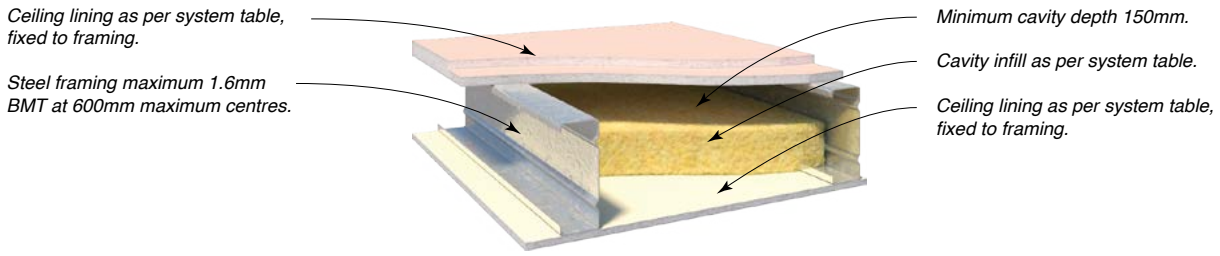
Roof/Ceiling – Low Pitched Steel Roof with Purlins & Clip Fixed Furring

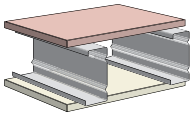
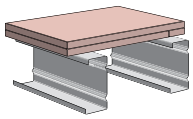
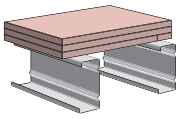
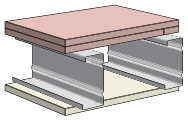
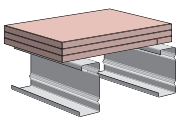


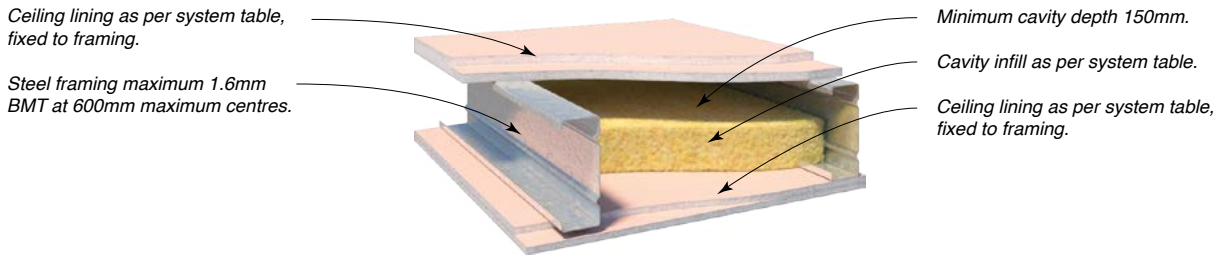
Thermal Assumptions – Roof/Raked Ceiling Systems (software version 1.6)
Roof Pitch – 10 degrees nominal
Framing air space – 180mm non-ventilated
Roof blanket – Bradford Anticon 60 MD R1.3
RISF = Resistance to Incipient Spread of Fire

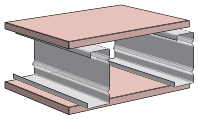
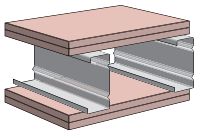
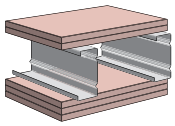
System thermal R-values provided have been calculated based on a thermal transmission path through the roof/ceiling cavity and does not allow for the effects of thermal bridging.

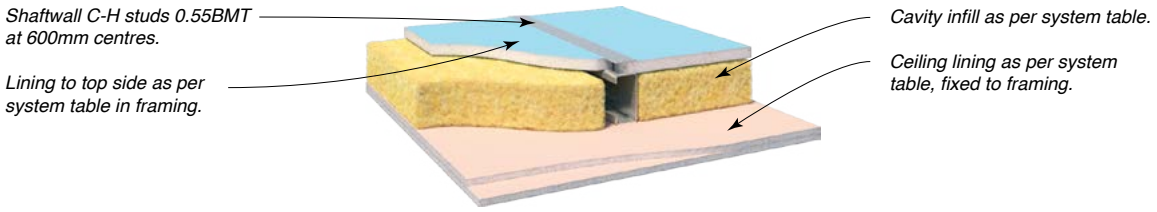
SYSTEM SPECIFICATION Refer to Book 2 and 3 for further information			ACOUSTIC REPORT: PKA – A124		Thermal	
FRL Report	**SYSTEM Nº**	**CEILING LININGS**	**CAVITY INFILL** (Refer to TABLE B6)	**R_w / R_w+C_{tr}**	Steel Roofing with Anticon	
					$R_{t(SUM)}$	**$R_{t(WIN)}$**
60/60/60 from below only +RISF 60 minutes EWFA 26162	**CSR 3931**	• 1 x 13mm Gyprock EC08 Complete (against framing). • 1 x 16mm Gyprock EC08 Complete.	(a) 140 Gold Batts 2.5	52/43	4.3	4.6
90/90/90 from below only +RISF 60 minutes EWFA 26162	**CSR 6645**	• 2 x 16mm Gyprock Fyrchek Plasterboard.	(a) 140 Gold Batts 2.5 (b) 165 Gold Batts 3.0 (c) 185 Gold Batts 3.5 (d) 215 Gold Batts 4.1	50/41 50/41 51/42 51/42	6.0 6.5 6.9 7.5	4.8 5.3 5.9 6.5
90/90/90 from below only +RISF 60 minutes EWFA 26162	**CSR 3935**	• 2 x 16mm Gyprock EC08 Complete.	(a) 140 Gold Batts 2.5	53/45	4.3	4.6
120/120/120 from below only +RISF 60 minutes EWFA 26162	**CSR 6648**	• 3 x 16mm Gyprock Fyrchek Plasterboard.	(a) 140 Gold Batts 2.5 (b) 165 Gold Batts 3.0 (c) 185 Gold Batts 3.5 (d) 215 Gold Batts 4.1	52/44 52/44 53/45 53/45	6.0 6.5 6.9 7.5	4.8 5.3 5.9 6.5
120/120/120 from below only +RISF 60 minutes EWFA 26162	**CSR 3945**	• 3 x 16mm Gyprock EC08 Complete.	(a) 140 Gold Batts 2.5	54/46	4.3	4.7

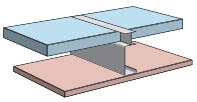
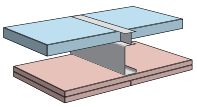
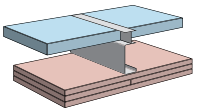


SYSTEM SPECIFICATION Refer to Book 3 Commercial & Multi-Residential Installation Guide			ACOUSTIC REPORT: PKA Predictor V16 & PKA – A121	
FRL Report	**SYSTEM Nº**	**CEILING LININGS**	**CAVITY INFILL** (Refer to TABLE B6)	**R_w / R_w+C_{tr}**
– /60/60 from above only FAR 2358	**CSR 6705** 	ABOVE • 1 x 16mm Gyprock Fyrchek Plasterboard. BELOW • 1 x 10mm Gyprock Plus Plasterboard. • Framing at 450mm maximum centres.	(a) Nil (c) 90 Gold Batts 2.0 (d) 50 Acoustigard 14kg	36/29 46/36 43/34
– /60/60 from above only FAR 2358	**CSR 6707** 	ABOVE • 2 x 16mm Gyprock Fyrchek Plasterboard. BELOW • Nil.	(a) Nil	34/32
– /90/90 from above only FAR 2358	**CSR 6709** 	ABOVE • 3 x 13mm Gyprock Fyrchek Plasterboard. BELOW • Nil.	(a) Nil	37/34
– /120/120 from above only FAR 2358	**CSR 6711** 	ABOVE • 2 x 16mm Gyprock Fyrchek Plasterboard. BELOW • 1 x 10mm Gyprock Plus Plasterboard. • Framing at 450mm maximum centres.	(a) Nil (b) 75 Acoustigard 11kg	41/34 48/39
– /120/120 from above only FAR 2358	**CSR 6713** 	ABOVE • 3 x 16mm Gyprock Fyrchek Plasterboard. BELOW • Nil.	(a) Nil	37/35

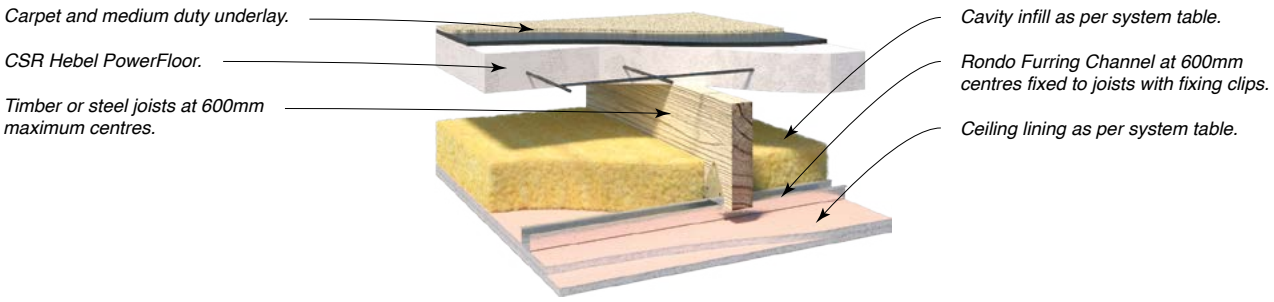


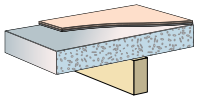
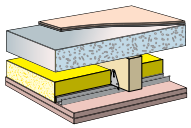
SYSTEM SPECIFICATION Refer to Book 3 Commercial & Multi-Residential Installation Guide			ACOUSTIC REPORT: PKA Predictor V16	
FRL Report	**SYSTEM Nº**	**CEILING LININGS**	**CAVITY INFILL** (Refer to TABLE B6)	**R_w / R_w+C_{tr}**
– /60/60 from above and below FAR 2358	**CSR 6717** 	ABOVE • 1 x 16mm Gyprock Fyrchek Plasterboard. BELOW • 1 x 16mm Gyprock Fyrchek Plasterboard.	(a) Nil (c) 50 Acoustigard 14kg	39/33 47/39
– /120/120 from above – /90/90 from below FAR 2358	**CSR 6720** 	ABOVE • 2 x 16mm Gyprock Fyrchek Plasterboard. BELOW • 2 x 16mm Gyprock Fyrchek Plasterboard.	(a) Nil (c) 50 Acoustigard 14kg	47/41 53/45
– /120/120 from above and below FAR 2358	**CSR 6722** 	ABOVE • 2 x 16mm Gyprock Fyrchek Plasterboard. BELOW • 3 x 16mm Gyprock Fyrchek Plasterboard.	(a) Nil (c) 50 Acoustigard 14kg	49/43 55/47



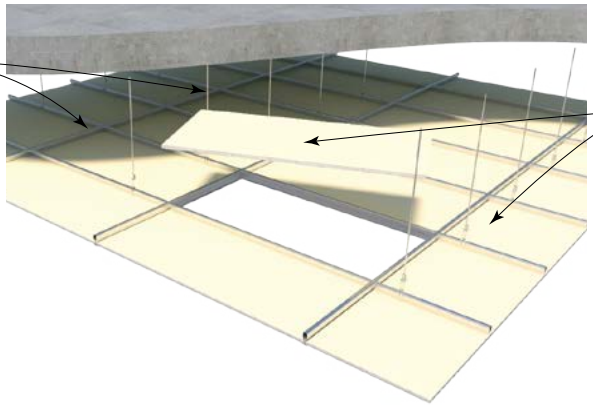
SYSTEM SPECIFICATION Book 3 Commercial & Multi-Residential Installation Guide			ACOUSTIC REPORT: PKA Predictor V16		
FRL Report	**SYSTEM Nº**	**CEILING LININGS**	**JOIST DEPTH mm**	**64**	**102**
			CAVITY INFILL (Refer to TABLE B6)	**R_w / R_w+C_{tr}**	
– /60/60 from above only FAR 2358	**CSR 6727** 	ABOVE • 1 x 25mm Gyprock Shaft Liner MP. BELOW • 1 x 16mm Gyprock Fyrchek Plasterboard.	(a) Nil	36/29	40/33
			(c) 50 Acoustigard 14kg	45/36	49/40
– /90/90 from above and below FAR 2358	**CSR 6730** 	ABOVE • 1 x 25mm Gyprock Shaft Liner MP. BELOW • 2 x 16mm Gyprock Fyrchek Plasterboard.	(a) Nil	40/33	45/39
			(c) 50 Acoustigard 14kg	48/39	53/45
– /120/120 from above and below FAR 2358	**CSR 6735** 	ABOVE • 1 x 25mm Gyprock Shaft Liner MP. BELOW • 3 x 16mm Gyprock Fyrchek Plasterboard.	(a) Nil	43/36	47/41
			(c) 50 Acoustigard 14kg	51/42	55/47

Ceiling – Hebel PowerFloor on Joists – Fire Rated from Above &/or Below



SYSTEM SPECIFICATION Refer to CSR Hebel for more information.			ACOUSTIC REPORT: PKA – A071		
FRL Report	**SYSTEM Nº**	**CEILING LININGS**	**CAVITY INFILL** (Refer to TABLE B6)	**R_w / R_w+C_{tr}**	**$L_{n,w}$**
90/90/90 **from above** SGA 2013/277.64 **– / – / –** **from below**	**CSR 21184** 	• Nil	(a) Nil	37/33	**45**
90/90/90 **from above** SGA 2013/277.64 **90/90/90** +RISF 60 min. EWFA 26162	**CSR 21188** 	• 2 x 16mm Gyprock Fyrchek Plasterboard.	(a) 90 Gold Batts 2.0	59/**53**	**30**

Rondo Duo™ suspended ceiling system.



Appropriate acoustic ceiling tiles, as per system table.

SYSTEM SPECIFICATION Refer to Book 3 Commercial & Multi-Residential Installation Guide		ACOUSTIC REPORT: Refer to Himmel						
SYSTEM Nº	**CEILING TILES**	**THICKNESS (mm) & MATERIAL**	**MASS kg/m²**	**Plenum Height mm**	**CAC¹ dB**	**NRC¹**	**LIGHT REFLECTANCE (%)**	**SUITABLE RELATIVE HUMIDITY (%)**
CSR 6808	• OWA Constellation A	14mm Mineral Fibre	4.5	200	35	0.70	88	99
CSR 6811	• OWA Finetta	15mm Mineral Fibre	4.5	200	33	0.70	88	99
CSR 6815	• OWA New Sandila	15mm Mineral Fibre	4.2	200	33	0.70	87	99
CSR 6816	• OWA Sinfonia Privacy	20mm Mineral Fibre	6.1	200	41	0.70	87	99
CSR 6817	• OWA Brillianto A	15mm Mineral Fibre	3.5	200	32	0.90	78	95
CSR 10041	• OWA Sinfonia Privacy Humancare	20mm Mineral Fibre	6.4	200	41	0.7	87	99
CSR 10042	• OWA Sinfonia Balance	20mm Mineral Fibre	4.4	200	37	0.8	87	99
CSR 10043	• Troldtekt Panel – Ultrafine Natural	25mm Woodwool	11.4	175	N/A	0.7	55.2	98
CSR 10044	• dECO Ceiling Tile	25mm Polyester fibre (PET)	2.75	400	N/A	0.9	91.1	90

NOTES:

[1]Refer to Himmel for insulation.

Concrete or steel support structure.

Rondo clip fixed or suspended ceiling grid system with 65mm minimum cavity height.



Cavity infill as per system table.

Gyptone Perforated Plasterboard as per system table.

13mm Gyprock Standard Plasterboard border (when required).

SYSTEM SPECIFICATION Refer to Book 3 Commercial & Multi-Residential Installation Guide		ACOUSTIC REPORT: PKA – A167			
SYSTEM Nº	**CEILING LININGS**	**CAVITY HEIGHT (mm)**	**CAVITY INFILL** (Refer to TABLE B6)	**α_w**	**NRC**
CSR 6825	• Gyprock Standard 6mm Round	65	(a) Nil	0.15	0.1
			(b) 50Acoustigard 14kg	0.3	0.35
CSR 6826	• Gyprock Standard 6mm Round	200	(a) Nil	0.15	0.15
			(b) 50Acoustigard 14kg	0.25 (LM)	0.4
CSR 6827	• Gyprock Standard 6mm Round	600	(a) Nil	0.15	0.15
			(b) 50Acoustigard 14kg	0.30 (LM)	0.45
CSR 6828	• Gyprock Gyptone 12mm Square	65	(a) Nil	0.55	0.55
			(b) 50Acoustigard 14kg	0.7	0.7
CSR 6829	• Gyprock Gyptone 12mm Square	200	(a) Nil	0.60 (L)	0.65
			(b) 50Acoustigard 14kg	0.7	0.7
CSR 6830	• Gyprock Gyptone 12mm Square	600	(a) Nil	0.65 (L)	0.65
			(b) 50Acoustigard 14kg	0.7	0.7
CSR 6831	• Gyprock Gyptone 12mm Square Minigrid	65	(a) Nil	0.35	0.35
			(b) 50Acoustigard 14kg	0.35 (L)	0.4
CSR 6832	• Gyprock Gyptone 12mm Square Minigrid	200	(a) Nil	0.35 (L)	0.4
			(b) 50Acoustigard 14kg	0.40 (L)	0.4
CSR 6833	• Gyprock Gyptone 12mm Square Minigrid	600	(a) Nil	0.40 (L)	0.4
			(b) 50Acoustigard 14kg	0.45	0.45
CSR 6834	• Gyprock Gyptone Slotted Minigrid	65	(a) Nil	0.45	0.45
			(b) 50Acoustigard 14kg	0.55 (L)	0.6
CSR 6835	• Gyprock Gyptone Slotted Minigrid	200	(a) Nil	0.50 (L)	0.6
			(b) 50Acoustigard 14kg	0.55 (L)	0.6
CSR 6836	• Gyprock Gyptone Slotted Minigrid	600	(a) Nil	0.50 (L)	0.55
			(b) 50Acoustigard 14kg	0.60 (L)	0.6
CSR 10053	• Gyprock Gyptone 12mm Hexagon	65	(a) Nil	0.60	0.55
			(b) 50Acoustigard 14kg	0.65	0.65
CSR 10054	• Gyprock Gyptone 12mm Hexagon	200	(a) Nil	0.60	0.60
			(b) 50Acoustigard 14kg	0.65	0.65
CSR 10055	• Gyprock Gyptone 12mm Hexagon	600	(a) Nil	0.60	0.60
			(b) 50Acoustigard 14kg	0.70	0.70

NOTES:
- (L) denotes excess performance at 250Hz.
- (M) denotes excess performance at 500Hz, 1000Hz.
- (H) denotes excess performance at 2000Hz, 4000Hz.

Ceiling – Gyprock Rigitone Perforated Plasterboard

Concrete or steel support structure.

Rondo suspended ceiling grid system with 150mm minimum cavity height.



Cavity infill as per system table.

Rigitone Perforated Plasterboard as per system table.

13mm Gyprock Standard Plasterboard border (when required).

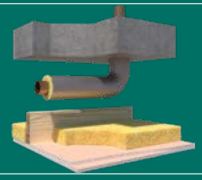
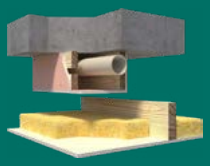
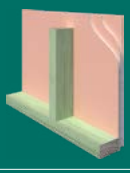
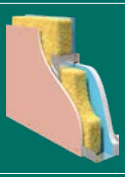
SYSTEM SPECIFICATION Refer to Book 3 Commercial & Multi-Residential Installation Guide		ACOUSTIC REPORT: PKA – A167			
SYSTEM Nº	**CEILING LININGS**	**CAVITY HEIGHT (mm)**	**CAVITY INFILL** (Refer to TABLE B6)	**α_w**	**NRC**
CSR 6851	• Gyprock Rigitone Matrix 8mm Round	200	(a) Nil	0.60 (L)	0.65
			(b) 50Acoustigard 14kg	0.75 (L)	0.75
CSR 6852	• Gyprock Rigitone Matrix 8mm Round	600	(a) Nil	0.65 (L)	0.65
			(b) 50Acoustigard 14kg	0.75	0.75
CSR 6854	• Gyprock Rigitone Matrix 12mm Square	200	(a) Nil	0.65 (L)	0.70
			(b) 50Acoustigard 14kg	0.85 (L)	0.90
CSR 6855	• Gyprock Rigitone Matrix 12mm Square	600	(a) Nil	0.65 (L)	0.70
			(b) 50Acoustigard 14kg	0.90	0.85
CSR 6857	• Gyprock Rigitone Astral	200	(a) Nil	0.55 (LM)	0.65
			(b) 50Acoustigard 14kg	0.80 (L)	0.85
CSR 6858	• Gyprock Rigitone Astral	600	(a) Nil	0.65	0.65
			(b) 50Acoustigard 14kg	0.80	0.80
CSR 6860	• Gyprock Rigitone Galaxy	200	(a) Nil	0.45 (L)	0.55
			(b) 50Acoustigard 14kg	0.55 (L)	0.60
CSR 6861	• Gyprock Rigitone Galaxy	600	(a) Nil	0.60	0.60
			(b) 50Acoustigard 14kg	0.65	0.65
CSR 10056	• Gyprock Rigitone Matrix 12mm Round	200	(a) Nil	0.60 (LM)	0.70
			(b) 50Acoustigard 14kg	0.70 (LM)	0.85
CSR 10057	• Gyprock Rigitone Matrix 12mm Round	600	(a) Nil	0.65 (L)	0.70
			(b) 50Acoustigard 14kg	0.80 (L)	0.90
CSR 10106	• Gyprock Rigitone Matrix 15mm Round	200	(a) Nil	0.50 (LM)	0.65
			(b) 50Acoustigard 14kg	0.70 (LM)	0.90
CSR 10107	• Gyprock Rigitone Matrix 15mm Round	600	(a) Nil	0.55 (L)	0.65
			(b) 50Acoustigard 14kg	0.80 (L)	0.90

Note:
- (L) denotes excess performance at 250Hz.
- (M) denotes excess performance at 500Hz, 1000Hz.
- (H) denotes excess performance at 2000Hz, 4000Hz.

SERVICES SYSTEMS

H

SECTION CONTENTS

Introduction	**H2**
Design Considerations	**H2**
System Selection Tables	
 Services in Ceiling	**H6**
 Services in Ceiling with Secondary Cavity	**H8**
 Services in Riser	**H10**
 Services in Riser with Secondary Cavity	**H12**
 Internal Service Wall Lined One Side	**H14**
 Shaft Wall System	**H20**

INTRODUCTION

Gyprock Services Systems are ducts, risers, bulkheads and ceilings that provide protection from noise generated by building services, and may also be fire rated to provide fire separation or protection. These services include water supply pipes, waste and storm water pipes, electrical services, and mechanical services such as air conditioning ducts.

The NCC has deemed to satisfy performance acoustic requirements for buildings that vary depending on the room use adjacent to the service. The requirements are $R_W + C_{tr} = 25$ to a kitchen or non-habitable room, and $R_W + C_{tr} = 40$ for habitable rooms other than kitchens.

DESIGN CONSIDERATIONS

DESIGNER RESPONSIBILITY

It remains the responsibility of the customer (in conjunction with their designer or engineer, when applicable) to ensure that CSR's products/systems are suitable for their chosen application for any given project. CSR recommends that a comprehensive assessment of the performance requirements be undertaken prior to selection, including in respect of project-specific matters such as, but not limited structural adequacy, seismic, acoustic, fire resistance/combustibility, thermal, condensation and weatherproofing requirements.

CSR offers online digital tools for the most updated information, including but not limited to update of products/components, inclusion of new and modified systems, to meet the requirements of the National Construction Code of Australia (NCC) and any relevant Australian Standards.

For the most up-to-date product & system performance information, visit:

CSR System Selector: https://apps.csr.com.au/systemselector/search-option

CSR Thermal Calculator: https://apps.csr.com.au/thermalcalculator

Structural Design

All walls must be designed for the applied loads. All wall systems in this section are considered as non-loadbearing, and guidance is given for the selection of timber studs and Rondo steel studs. Note that from NCC2022 Specification 6 [NCC2019: Spec C1.8], walls of shafts that are to be fire rated should be designed for a static pressure of 0.35kPa, and that there are additional requirements for lift shafts

Seismic Loads

Seismic actions must be considered for building elements in accordance with the NCC. The loads and effects of earthquakes may be determined in accordance with AS 1170.4 'Earthquake Actions in Australia'. The Standard has design procedures for houses (Class 1), and to buildings (Classes 2 to 9) with importance levels 2, 3 or 4 as defined in the NCC.

FIRE RESISTANCE

Service in Riser and Service in Ceiling systems in this section have no Fire Resistance Level. Shaftwall, Laminated systems, and stud walls lined one side have fire resistances as stated in the System Specification tables. Wall system fire ratings apply in both direction unless noted otherwise.

For additional information on frame design and detailing, including treatment at junctions, sub floor and roof areas, cavity barriers and penetrations, refer to Book 2 Residential Installation Guide, Book 3 Commercial & Multi-Residential Installation Guide, and GYP546 Shaft Systems Design an Installation Guide.

ACCEPTABLE VARIATIONS TO FIRE SYSTEMS

The Fire Resistance Level (FRL) of the systems detailed in this section will not be detrimentally affected by:

- The use of Fyrchek MR, Impactchek or EC08 range plasterboard in lieu of Fyrchek plasterboard of the same thickness.
- Additional layers of plasterboard or Cemintel fibre cement.

COMBUSTIBILITY

Polyester insulation may NOT be selected where the system has non-combustible construction requirements.

In accordance with NCC2022 Clause C2D10 [NCC2019: C1.9], plasterboard and fibre cement sheet may be used wherever a non-combustible material is required by the Code.

ACOUSTIC PERFORMANCE

The acoustic transmission performance of the services systems is dependent on the type of support framing. In some systems, higher ratings can be achieved with timber framing compared to light steel framing. In cavity systems, this does not apply.

Services systems used as bulkheads or ceilings may incorporate downlights. The distribution of downlights in a services system is specified as the maximum number permitted in a 5m^2 area. The lights shall be evenly distributed and no closer than 900mm apart. Where higher concentrations of lights are required, an acoustic engineer should be consulted.

Penetrations for downlights must be neat and tight to the fitting. No additional sealing is required. Ensure insulation material is kept clear of fittings and that transformers are supported separately from the plasterboard lining.

The installation of exhaust grilles and ducting may reduce the performance of the systems. The building designer should contact the exhaust system manufacturer for performance details.

Similarly, access panels might be required. Contact the panel manufacturer for suitable products.

Lagging of pipes or ducts is specified in some services systems. Lagging must provide complete coverage for the full extent of the pipe or duct.

FRAMING & LINING

Framing shown in the system layout is indicative only. The designer should ensure that framing elements are suitable for the application. For systems specified with timber framing, linings must be fixed directly to solid timber joists or studs of minimum dimension 70 x 35mm that are spaced at 600mm maximum centres. For all other framing construction, select services systems that are specified for steel framing.

INSTALLATION

Framing

Framing shown in the system layout is indicative only. The designer should ensure that framing elements are suitable for the application. For systems specified with timber framing, linings must be fixed directly to solid timber joist or studs of minimum dimensions 70 x 35mm that are spaced at 600mm maximum centres. For all other framing construction, select services systems that are specified for steel framing.

Steel components selection

CSR recommends steel components manufactured by Rondo Building Services Pty Ltd. Refer to Section C in this guide and relevant Gyprock installation guides for steel framing product information. Additional information on the steel components can be obtained from the Rondo Building Services Pty Ltd, telephone 1300 367 663.

Others

Downlights may be of any non-gimbal type with glass cover, suitable for a circular cut-out of up to 80mm diameter. Lights weighing more than 250g must be supported separately from the plasterboard lining.

Lagging is to completely cover the service duct or pipe. Remove a 50mm wide strip of glasswool and overlap the vinyl at joins. Tape with a quality aluminium tape.

FIG H1: FLOOR/CEILING OR ROOF/CEILING WITH DOWNLIGHTS

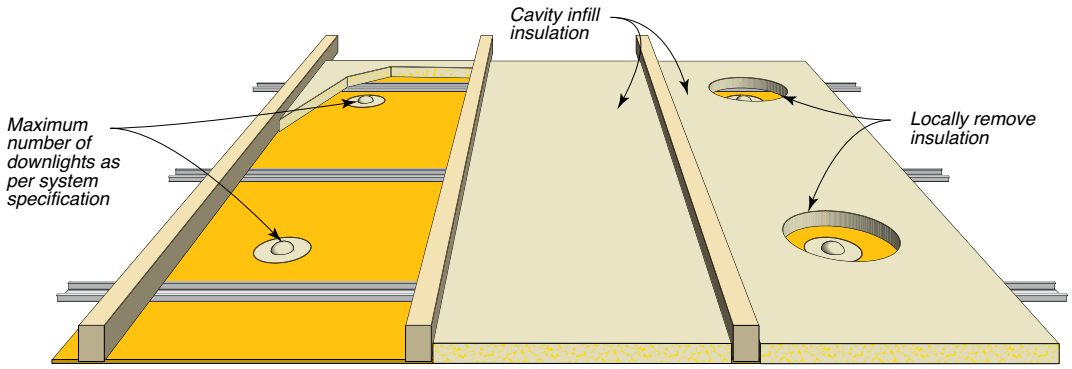


FIG H2: INSULATION CLEARANCE

NOTE: For walls and ceilings, insulation must not be compressed between the lining and any lagging or the service being protected.

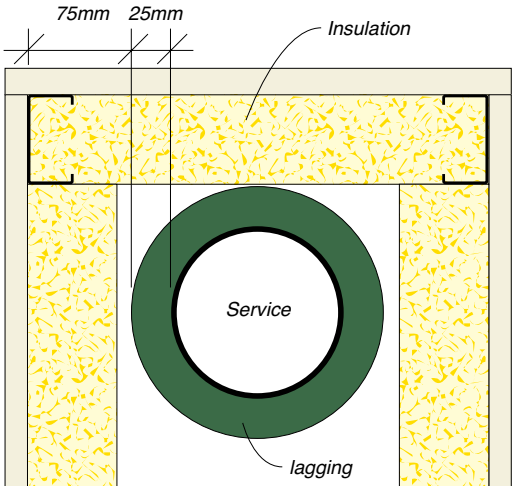


FIG H3: TYPICAL ACOUSTIC RATED DOWNLIGHT



SELECTION OF ACOUSTIC SEPARATION SYSTEMS FOR WASTE PIPE IN CEILING

FIG H4: WALL/CEILING SYSTEMS FOR WASTE PIPE IN CEILING – WITH WALL LINED BOTH SIDES

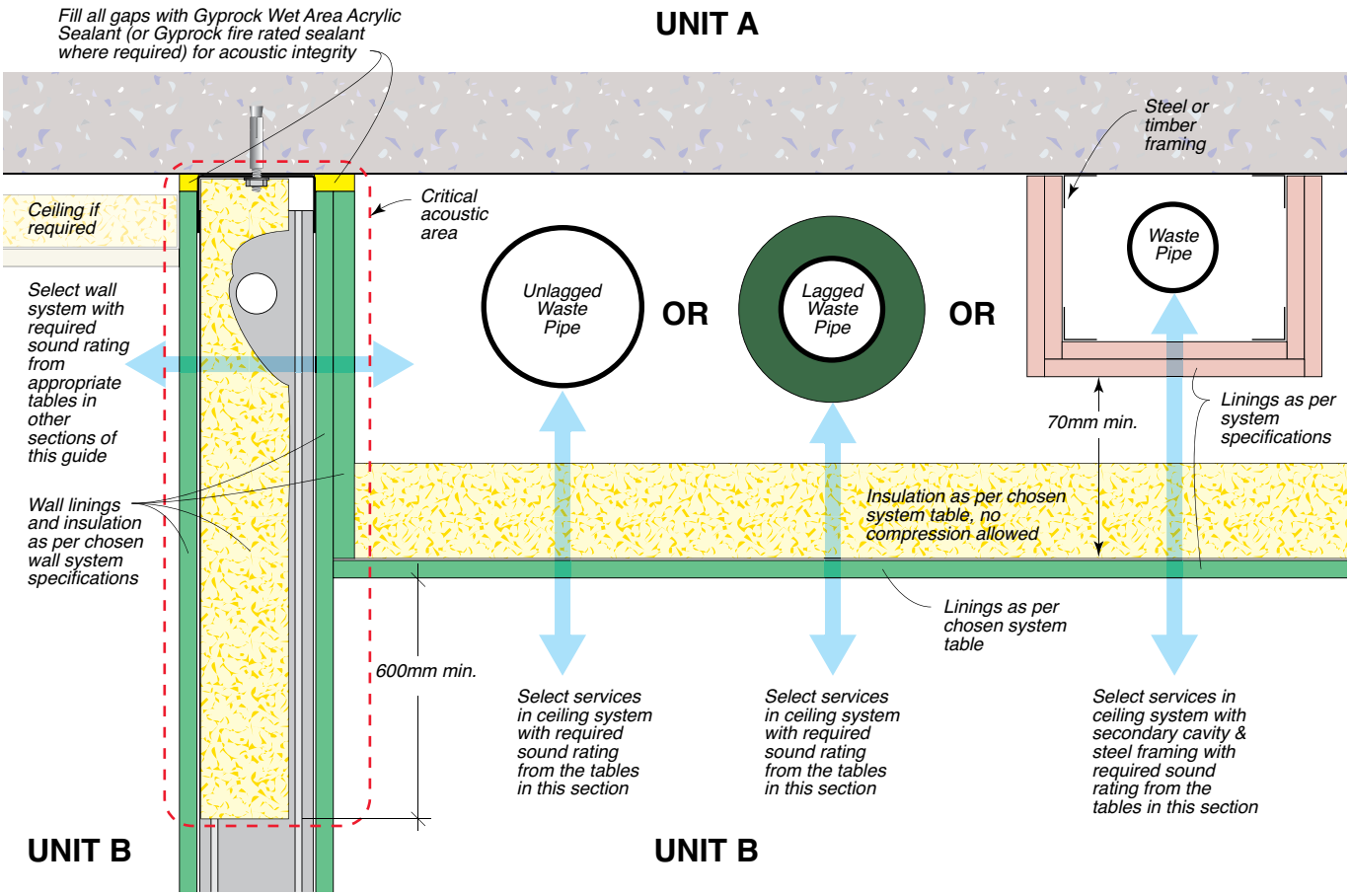
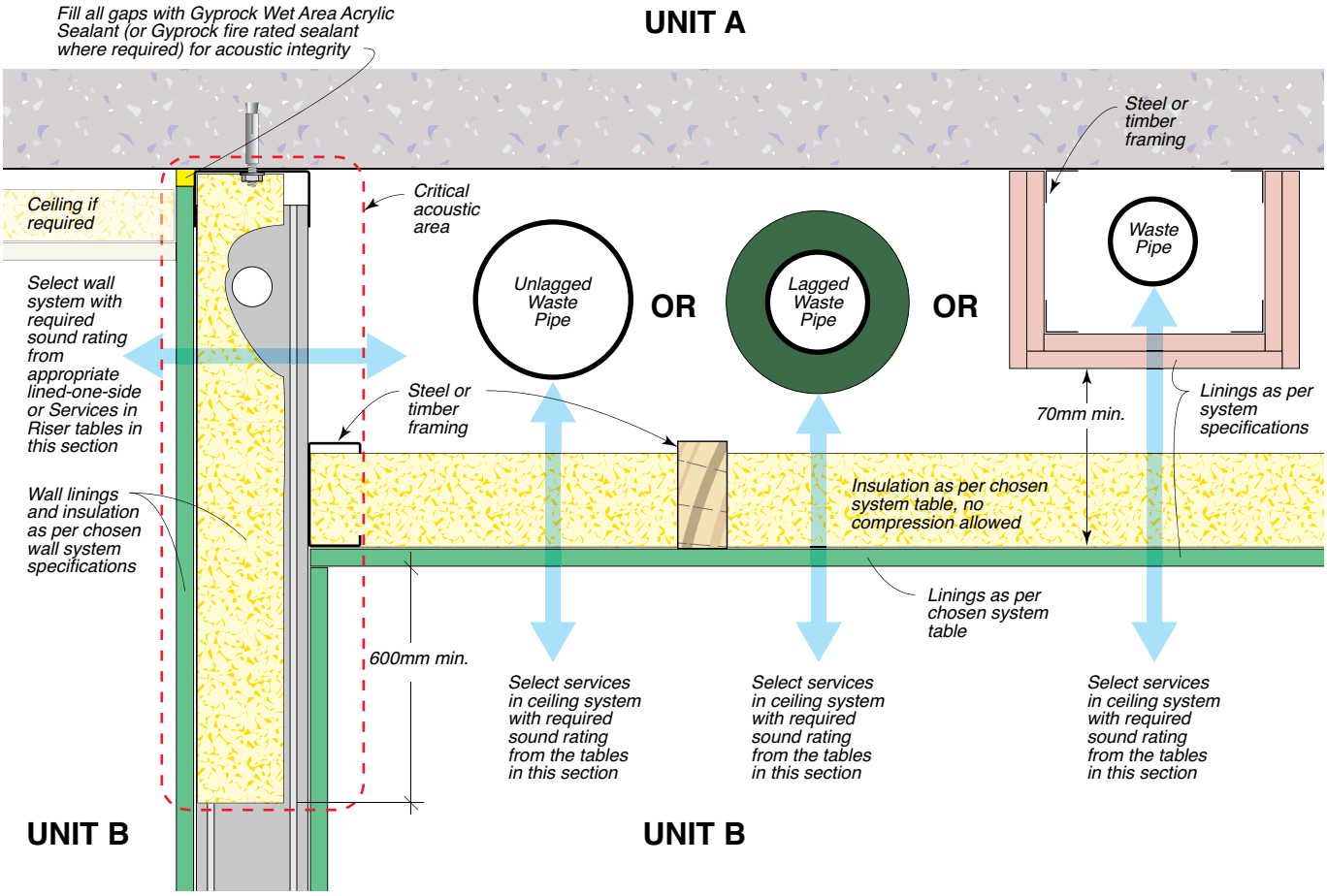
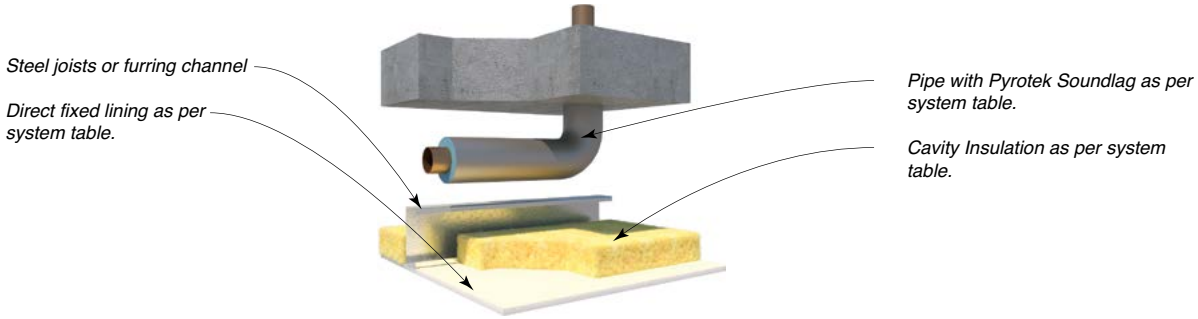
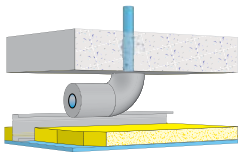
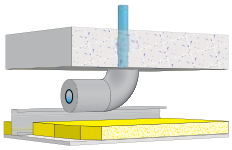
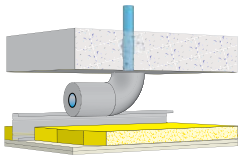
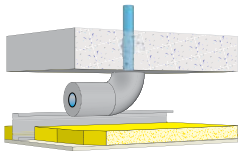
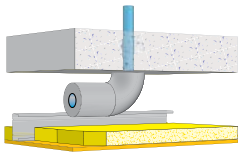
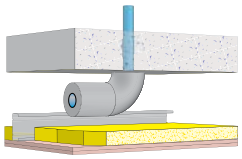


FIG H5: WALL/CEILING SYSTEMS FOR WASTE PIPE IN CEILING – WITH WALL LINED ONE SIDE

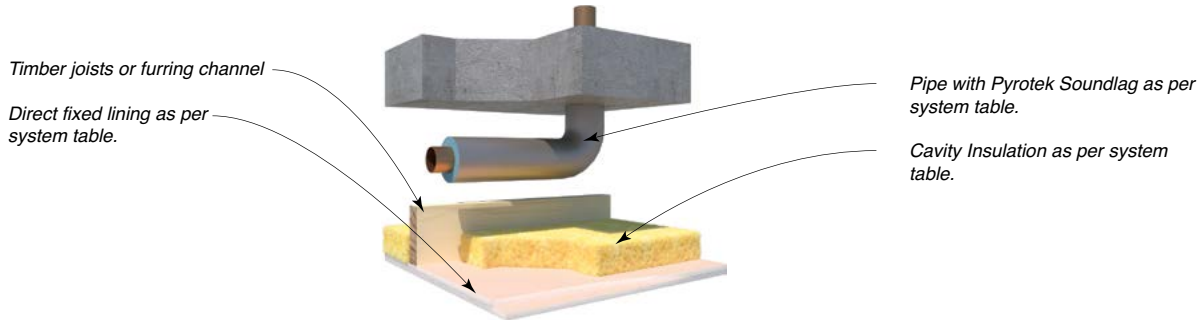


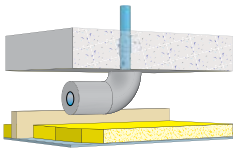
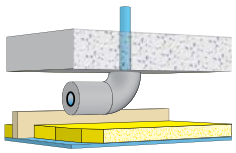
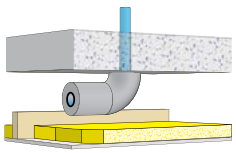
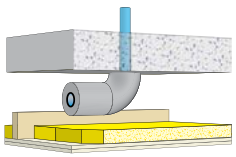
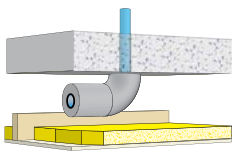
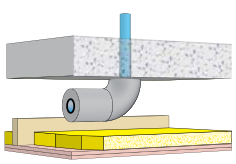
SYSTEM SPECIFICATIONS Services in Ceiling with Steel Framing



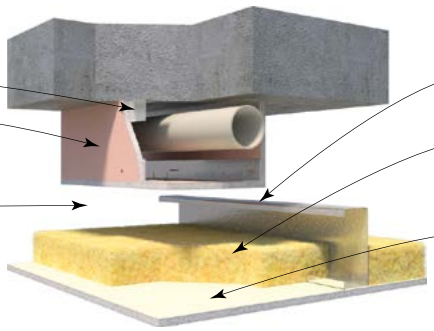
SYSTEM SPECIFICATION Refer to Book 3 Commercial & Multi-Residential Installation Guide			ACOUSTIC REPORT: PKA-A125			
SYSTEM Nº	**SYSTEM IMAGE**	**CEILING LININGS**	**INSULATION** (Refer to TABLE B6)	**PIPE LAGGING**	**DOWNLIGHTS Maximum Nº per 5m²**	**R_w/ R_w+C_{tr}**
CSR 7005		• 1 x 10mm Gyprock Aquachek Plasterboard.	(a) 75 Acoustigard 11kg (d) 75 Acoustigard 11kg (e) Nil	• Nil • Soundlag • Soundlag	0 5 5	29/26 49/39 43/33
CSR 10195		• 1 x 10mm Gyprock HD Plasterboard.	(a) 75 Acoustigard 11kg (b) 75 Acoustigard 11kg	• Nil • Soundlag	5 5	30/27 50/40
CSR 7015		• 2 x 10mm Gyprock Plus Plasterboard.	(a) Nil (c) 75 Acoustigard 11kg	• Nil • Soundlag	0 5	26/23 51/41
CSR 7020		• 1 x 13mm Gyprock Standard Plasterboard.	(a) 75 Acoustigard 11kg (d) Nil (e) 75 Acoustigard 11kg	• Nil • Soundlag • Soundlag	5 5 5	29/26 44/34 50/40
CSR 7025		• 1 x 13mm Gyprock Soundchek Plasterboard.	(a) Nil (d) Nil (e) 75 Acoustigard 11kg	• Nil • Soundlag • Soundlag	0 0 5	30/27 51/41 53/43
CSR 7030		• 2 x 16mm Gyprock Fyrchek Plasterboard.	(a) Nil (c) 75 Acoustigard 11kg	• Nil • Soundlag	0 5	34/31 54/44

Services in Ceiling with Timber Framing



SYSTEM SPECIFICATION Refer to Book 3 Commercial & Multi-Residential Installation Guide			ACOUSTIC REPORT: PKA-A125			
SYSTEM Nº	**SYSTEM IMAGE**	**CEILING LININGS**	**INSULATION** (Refer to TABLE B6)	**PIPE LAGGING**	**DOWNLIGHTS Maximum Nº per 5m²**	**R_w/ R_w+C_{tr}**
CSR 7055		• 1 x 6mm CeminSeal Wallboard.	(a) 75 Acoustigard 11kg (c) 75 Acoustigard 11kg	• Nil • Soundlag	0 5	33/30 52/42
CSR 7060		• 1 x 10mm Gyprock Aquachek Plasterboard.	(a) 75 Acoustigard 11kg (d) 75 Acoustigard 11kg (e) Nil	• Nil • Soundlag • Soundlag	5 5 5	29/26 50/40 44/34
CSR 10196		• 1 x 10mm Gyprock HD Plasterboard.	(a) Nil (b) 75 Acoustigard 11kg (c) Nil	• Nil • Soundlag • Soundlag	0 5 5	28/25 52/42 46/36
CSR 7070		• 2 x 10mm Gyprock Plus Plasterboard.	(a) 75 Acoustigard 11kg (c) 75 Acoustigard 11kg	• Nil • Soundlag	5 5	31/28 52/42
CSR 7075		• 1 x 13mm Gyprock Standard Plasterboard.	(a) 75 Acoustigard 11kg (d) 75 Acoustigard 11kg (e) Nil	• Nil • Soundlag • Soundlag	5 5 5	31/28 52/42 46/36
CSR 7080		• 2 x 16mm Gyprock Fyrchek Plasterboard.	(a) Nil (d) Nil (e) 75 Acoustigard 11kg	• Nil • Soundlag • Soundlag	0 0 5	34/31 55/45 55/45

SYSTEM SPECIFICATIONS Services in Ceiling with Secondary Cavity & Steel Framing



Inner layer steel framing.

Inner layer linings as per system table, direct fixed to framing to encase services.

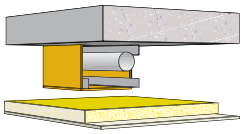
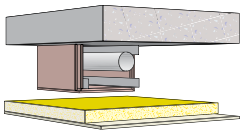
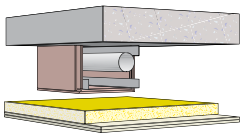
Cavity of 70mm minimum.

NOTE: Polyester insulation may NOT be used where the system has non-combustible construction requirements.

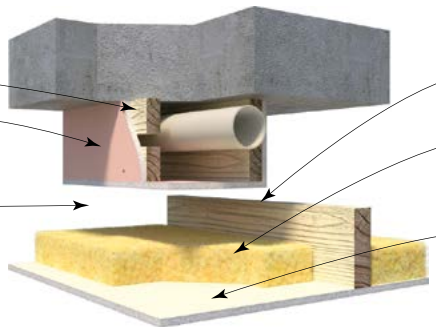
Outer layer steel framing with 12mm minimum gap to inner lining.

Cavity insulation as per system table, 1200mm minimum each side of pipe or duct.

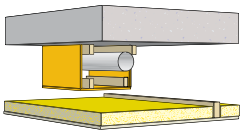
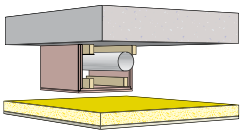
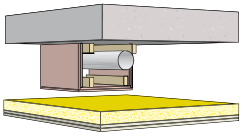
Outer layer lining as per system table, direct fixed to framing.

SYSTEM SPECIFICATION Refer to Book 3 Commercial & Multi-Residential Installation Guide			ACOUSTIC REPORT: PKA-A125		
SYSTEM Nº	**SYSTEM IMAGE**	**CEILING LININGS**	**INSULATION** (Refer to TABLE B6)	**DOWNLIGHTS Maximum Nº per 5m²**	**R_w/ R_w+C_{tr}**
CSR 7110		INNER LAYER • 1 x 13mm Gyprock Soundchek Plasterboard. CEILING • 1 x 10mm Gyprock Plus Plasterboard.	(c) 50 Acoustigard 14kg (d) 75 MAB Polyester 11kg	• Nil • Nil	47/36 43/34
CSR 7120		INNER LAYER • 2 x 13mm Gyprock Fyrchek Plasterboard. CEILING • 1 x 10mm Gyprock Plus Plasterboard.	(c) 50 Acoustigard 14kg (d) 75 MAB Polyester 11kg	• Nil • Nil	51/40 47/38
CSR 7130		INNER LAYER • 2 x 13mm Gyprock Fyrchek Plasterboard. CEILING • 2x 13mm Gyprock Standard Plasterboard.	(c) 50 Acoustigard 14kg (d) 75 MAB Polyester 11kg	• Nil • Nil	55/45 51/43

Services in Ceiling with Secondary Cavity & Timber Framing



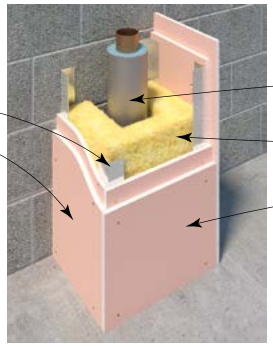
NOTE: Polyester insulation may NOT be used where the system has non-combustible construction requirements.

SYSTEM SPECIFICATION Refer to Book 3 Commercial & Multi-Residential Installation Guide			ACOUSTIC REPORT: PKA-A125		
SYSTEM Nº	**SYSTEM IMAGE**	**CEILING LININGS**	**INSULATION** (Refer to TABLE B6)	**DOWNLIGHTS Maximum Nº per 5m²**	**R_w/ R_w+C_{tr}**
CSR 7160		INNER LAYER • 1 x 13mm Gyprock Soundchek Plasterboard. CEILING • 1 x 10mm Gyprock Plus Plasterboard.	(c) 50 Acoustigard 14kg (d) 75 MAB Polyester 11kg	• Nil • Nil	48/38 44/36
CSR 7170		INNER LAYER • 2 x 13mm Gyprock Fyrchek Plasterboard. CEILING • 1 x 10mm Gyprock Plus Plasterboard.	(c) 50 Acoustigard 14kg (d) 75 MAB Polyester 11kg	• Nil • Nil	51/41 47/39
CSR 7180		INNER LAYER • 2 x 13mm Gyprock Fyrchek Plasterboard. CEILING • 2x 13mm Gyprock Standard Plasterboard.	(c) 50 Acoustigard 14kg (d) 75 MAB Polyester 11kg	• Nil • Nil	56/47 52/45

SYSTEM SPECIFICATIONS Services In Riser with Steel Framing

Steel studs or angle.

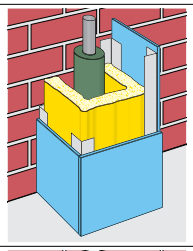
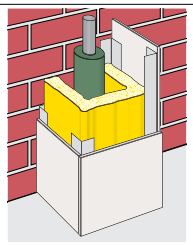
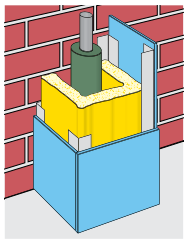
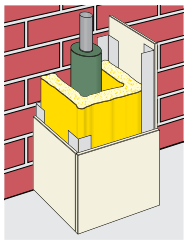
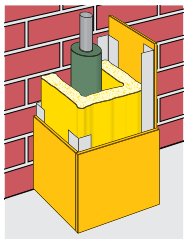
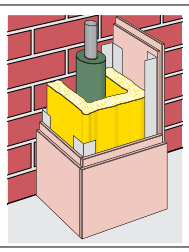
Linings as per system table, direct fixed to framing to encase services.



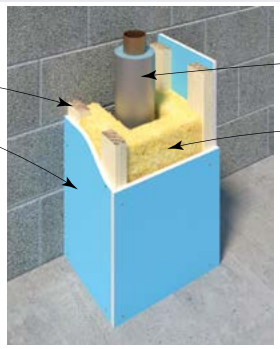
Pipe with Pyrotek Soundlag as per system table.

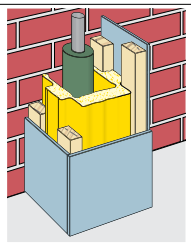
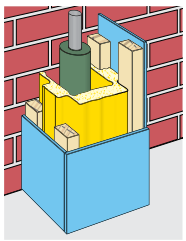
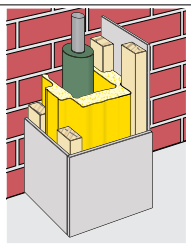
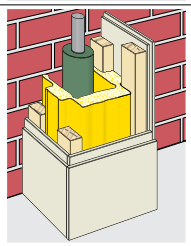
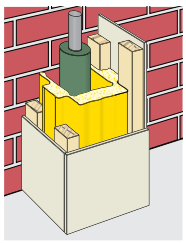
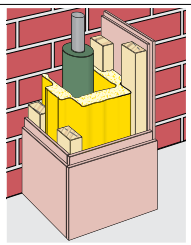
Cavity insulation as per system table.

Lining as per system table, direct fixed to framing.

SYSTEM SPECIFICATION Refer to Book 3 Commercial & Multi-Residential Installation Guide			ACOUSTIC REPORT: PKA-A125		
SYSTEM Nº	**SYSTEM IMAGE**	**WALL LININGS**	**INSULATION** (Refer to TABLE B6)	**Pipe Lagging**	**R_w/ R_w+C_{tr}**
CSR 7205		• 1 x 10mm Gyprock Aquachek Plasterboard.	(a) 75 Acoustigard 11kg (c) 75 Acoustigard 11kg	• Nil • Soundlag	29/26 50/40
CSR 10197		• 1 x 10mm Gyprock HD Plasterboard.	(a) 75 Acoustigard 11kg (b) 75 Acoustigard 11kg	• Nil • Soundlag	31/28 52/42
CSR 7217		• 1 x 13mm Gyprock Aquachek Plasterboard.	(a) 75 Acoustigard 11kg (d) Nil (e) 75 Acoustigard 11kg	• Nil • Soundlag • Soundlag	33/30 48/38 54/44
CSR 7220		• 1 x 13mm Gyprock Standard Plasterboard.	(a) 75 Acoustigard 11kg (d) Nil (e) 75 Acoustigard 11kg	• Nil • Soundlag • Soundlag	31/28 46/36 52/42
CSR 7225		• 1 x 13mm Gyprock Soundchek Plasterboard.	(a) Nil (d) Nil (e) 75 Acoustigard 11kg	• Nil • Soundlag • Soundlag	30/27 51/41 57/47
CSR 7230		• 2 x 16mm Gyprock Fyrchek Plasterboard.	(a) Nil (c) 75 Acoustigard 11kg	• Nil • Soundlag	34/31 61/51

SYSTEM SPECIFICATIONS — Services In Riser with Timber Framing



SYSTEM SPECIFICATION Refer to Book 3 Commercial & Multi-Residential Installation Guide			ACOUSTIC REPORT: PKA-A125		
SYSTEM Nº	**SYSTEM IMAGE**	**WALL LININGS**	**INSULATION** (Refer to TABLE B6)	**Pipe Lagging**	**R_w/ R_w+C_{tr}**
CSR 7255		• 1 x 6mm CeminSeal Wallboard.	(a) 75 Acoustigard 11kg (c) 75 Acoustigard 11kg	• Nil • Soundlag	33/30 54/44
CSR 7260		• 1 x 10mm Gyprock Aquachek Plasterboard.	(a) 75 Acoustigard 11kg (d) 75 Acoustigard 11kg (e) Nil	• Nil • Soundlag • Soundlag	31/28 52/42 44/34
CSR 10198		• 1 x 10mm Gyprock HD Plasterboard.	(a) Nil (b) 75 Acoustigard 11kg	• Nil • Soundlag	28/25 54/44
CSR 7270		• 2 x 10mm Gyprock Plus Plasterboard.	(a) Nil (c) 75 Acoustigard 11kg	• Nil • Soundlag	28/25 55/45
CSR 7275		• 1 x 13mm Gyprock Standard Plasterboard.	(a) 75 Acoustigard 11kg (d) 75 Acoustigard 11kg (e) Nil	• Nil • Soundlag • Soundlag	33/30 54/44 48/38
CSR 7280		• 2 x 16mm Gyprock Fyrchek Plasterboard.	(a) Nil (c) Nil	• Nil • Soundlag	34/31 55/45

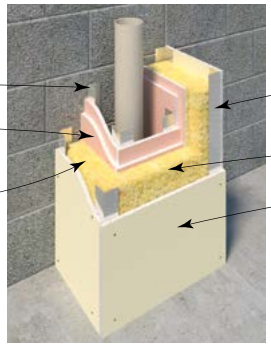
SYSTEM SPECIFICATIONS Services In Riser with Secondary Cavity & Steel Framing

Inner layer steel framing.

Inner layer linings as per system table, direct fixed to framing to encase services.

Cavity of 70mm minimum.

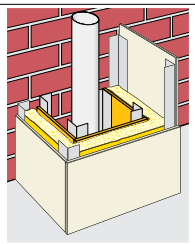
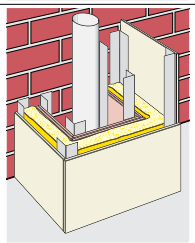
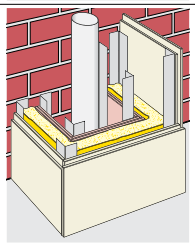
NOTE: Polyester insulation may NOT be used where the system has non-combustible construction requirements.



Outer layer steel framing with 12mm minimum gap to inner lining.

Cavity insulation as per system table.

Outer layer lining as per system table, direct fixed to framing.

SYSTEM SPECIFICATION Refer to Book 3 Commercial & Multi-Residential Installation Guide			ACOUSTIC REPORT: PKA-A125	
SYSTEM Nº	**SYSTEM IMAGE**	**WALL LININGS**	**INSULATION** (Refer to TABLE B6)	**R_w/ R_w+C_{tr}**
CSR 7310		INNER LAYER • 1 x 13mm Gyprock Soundchek Plasterboard. OUTER LAYER • 1 x 10mm Gyprock Plus Plasterboard.	(c) 50 Acoustigard 14kg (d) 75 MAB Polyester 11kg	47/36 43/34
CSR 7320		INNER LAYER • 2 x 13mm Gyprock Fyrchek Plasterboard. OUTER LAYER • 1 x 10mm Gyprock Plus Plasterboard.	(c) 50 Acoustigard 14kg (d) 75 MAB Polyester 11kg	51/40 47/38
CSR 7330		INNER LAYER • 2 x 13mm Gyprock Fyrchek Plasterboard. OUTER LAYER • 2 x 13mm Gyprock Standard Plasterboard.	(c) 50 Acoustigard 14kg (d) 75 MAB Polyester 11kg	55/45 51/43

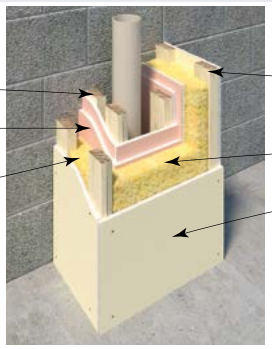
Services In Riser with Secondary Cavity & Timber Framing

Inner layer timber framing.

Inner layer linings as per system table, direct fixed to framing to encase services.

Cavity of 70mm minimum.

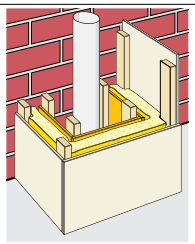
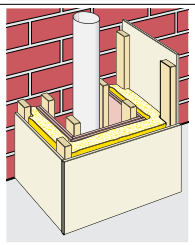
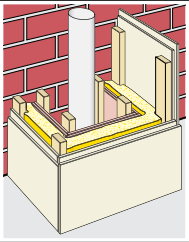
NOTE: Polyester insulation may NOT be used where the system has non-combustible construction requirements.

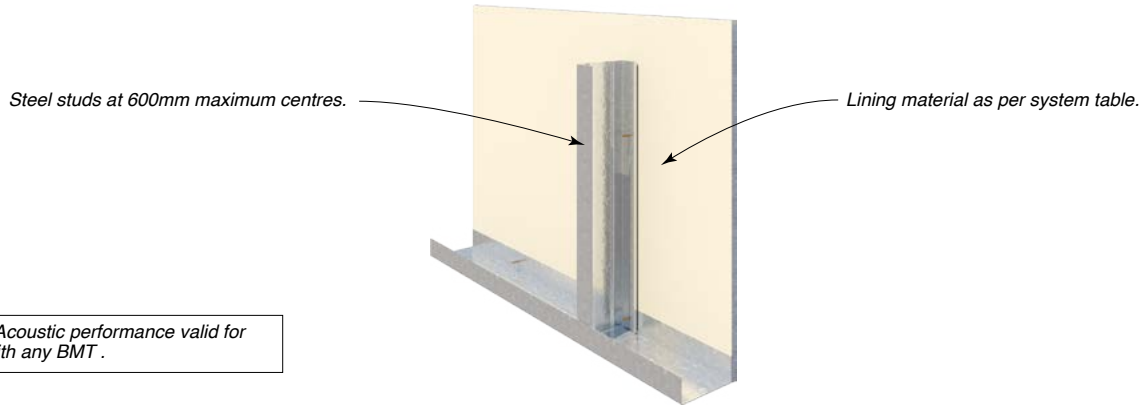


Outer layer timber framing with 12mm minimum gap to inner lining.

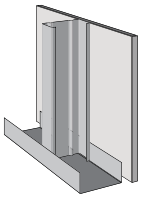
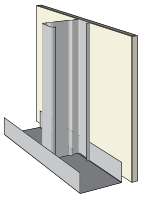
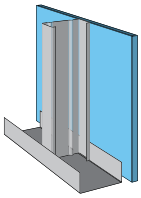
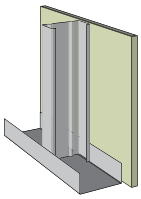
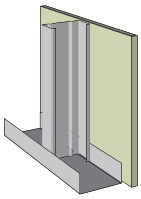
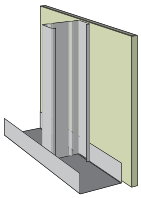
Cavity insulation as per system table.

Outer layer lining as per system table, direct fixed to framing.

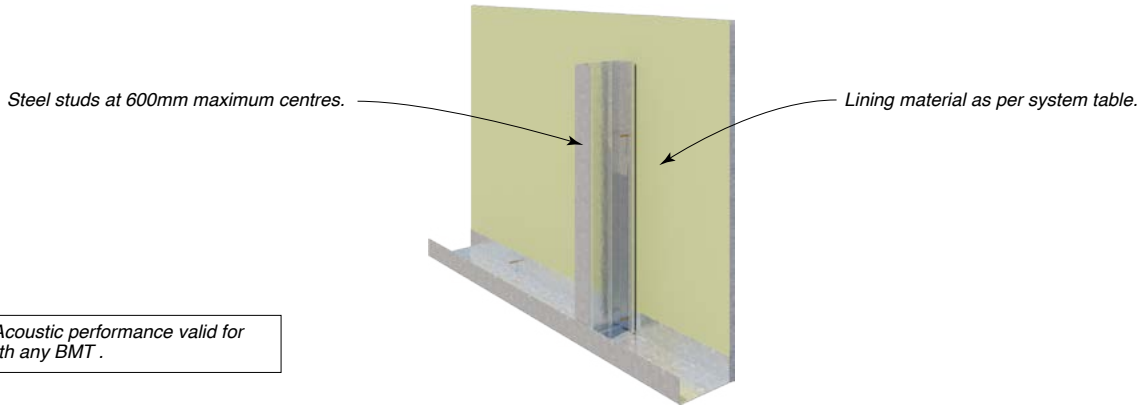
SYSTEM SPECIFICATION Refer to Book 3 Commercial & Multi-Residential Installation Guide			ACOUSTIC REPORT: PKA-A125		
SYSTEM Nº	**SYSTEM IMAGE**	**WALL LININGS**	**INSULATION** (Refer to TABLE B6)	**R_w/ R_w+C_{tr}**	**R_w+C_{tr}**
CSR 7360		INNER LAYER • 1 x 13mm Gyprock Soundchek Plasterboard. OUTER LAYER • 1 x 10mm Gyprock Plus Plasterboard.	(c) 50 Acoustigard 14kg (d) 75 MAB Polyester 11kg	48/38 44/36	38 36
CSR 7370		INNER LAYER • 2 x 13mm Gyprock Fyrchek Plasterboard. OUTER LAYER • 1 x 10mm Gyprock Plus Plasterboard.	(c) 50 Acoustigard 14kg (d) 75 MAB Polyester 11kg	51/41 47/39	41 39
CSR 7380		INNER LAYER • 2 x 13mm Gyprock Fyrchek Plasterboard. OUTER LAYER • 2 x 13mm Gyprock Standard Plasterboard.	(c) 50 Acoustigard 14kg (d) 75 MAB Polyester 11kg	56/47 52/45	47 45



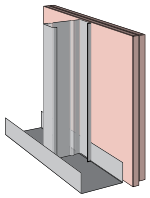
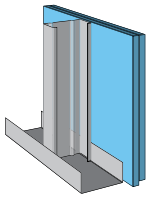
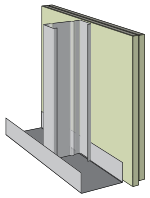
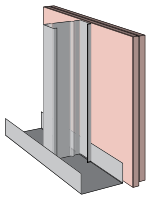
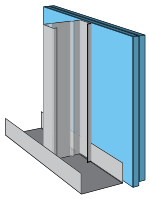
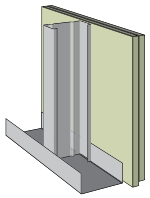
NOTE: Acoustic performance valid for studs with any BMT .

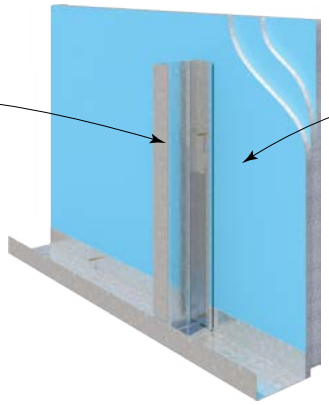
SYSTEM SPECIFICATION Refer to Book 3 Commercial & Multi-Residential Installation Guide			ACOUSTIC REPORT: PKA-A121	
			STUD DEPTH mm	**ALL**
FRL Report	**SYSTEM Nº**	**WALL LININGS**	**STUD BMT mm**	**ALL**
			CAVITY INFILL (Refer to TABLE B6)	**R_w / R_w+C_{tr}**
– / – / –	**CSR 10199** 	ONE SIDE ONLY • 1 x 10mm Gyprock HD Plasterboard.	(a) Nil	25/22
– / – / –	**CSR 7410** 	ONE SIDE ONLY • 1 x 13mm Gyprock Standard Plasterboard.	(a) Nil	25/22
– / – / –	**CSR 7415** 	ONE SIDE ONLY • 1 x 13mm Gyprock Aquachek Plasterboard.	(a) Nil	27/24
– / – / –	**CSR 10077** 	ONE SIDE ONLY • 1 x 13mm Gyprock Extreme Plasterboard.	(a) Nil	30/27
– / – / –	**CSR 3512** 	ONE SIDE • 1 x 13mm Gyprock EC08 Complete.	(a) Nil	30/27
– / – / –	**CSR 3522** 	ONE SIDE • 1 x 16mm Gyprock EC08 Complete.	(a) Nil	31/28

Internal Services Wall – Steel Frame Lined One Side

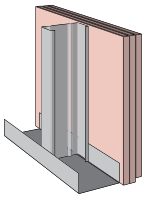
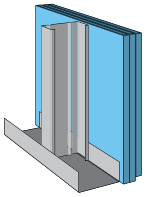
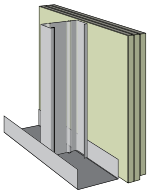
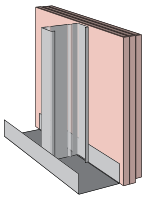
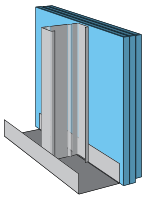
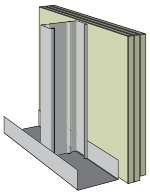


NOTE: Acoustic performance valid for studs with any BMT .

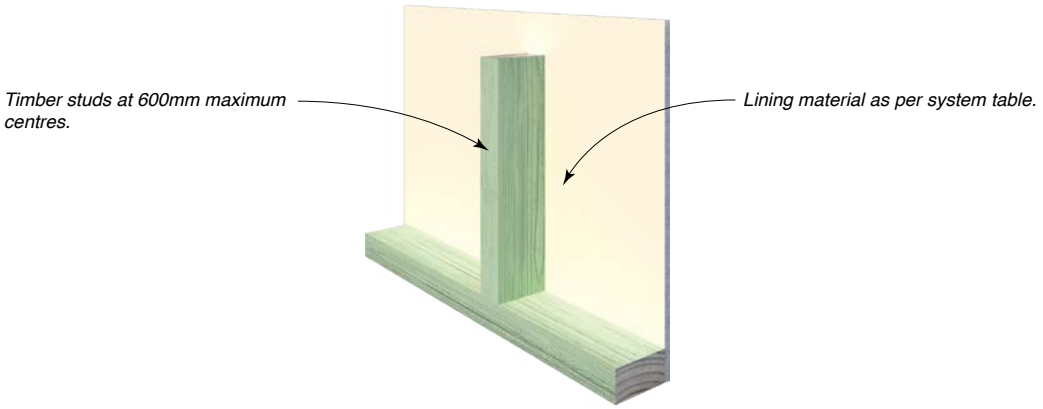
SYSTEM SPECIFICATION Refer to Book 3 Commercial & Multi-Residential Installation Guide			ACOUSTIC REPORT: PKA-A121	
			STUD DEPTH mm	ALL
			STUD BMT mm	ALL
FRL Report	**SYSTEM Nº**	**WALL LININGS**	**CAVITY INFILL** (Refer to TABLE B6)	**R_w / R_w+C_{tr}**
– /30/30 and 30/30/30 (Fire rated from lined side only) FC 12946	**CSR 7440** 	ONE SIDE ONLY • 2 x 13mm Gyprock Fyrchek Plasterboard.	(a) Nil	34/31
– /30/30 and 30/30/30 (Fire rated from lined side only) FC 12946	**CSR 7445** 	ONE SIDE ONLY • 2 x 13mm Gyprock Fyrchek MR Plasterboard.	(a) Nil	34/31
– /30/30 30/30/30 (Fire rated from lined side only) FC 12946 FAS 200002	**CSR 3532** 	ONE SIDE • 2 x 13mm Gyprock EC08 Complete.	(a) Nil	35/32
– /60/60 and 60/60/60 (Fire rated from lined side only) FC 12946	**CSR 7450** 	ONE SIDE ONLY • 2 x 16mm Gyprock Fyrchek Plasterboard.	(a) Nil	34/31
– /60/60 and 60/60/60 (Fire rated from lined side only) FC 12946	**CSR 7455** 	ONE SIDE ONLY • 2 x 16mm Gyprock Fyrchek MR Plasterboard.	(a) Nil	35/33
– /60/60 60/60/60 (Fire rated from lined side only) FC 12946 FAS 200002	**CSR 3542** 	ONE SIDE • 2 x 16mm Gyprock EC08 Complete.	(a) Nil	36/33

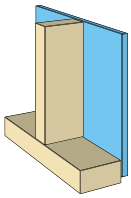
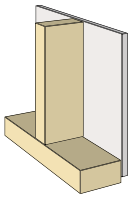
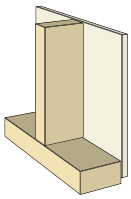
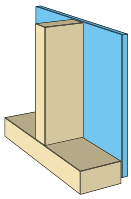
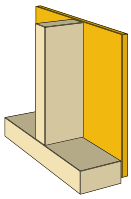


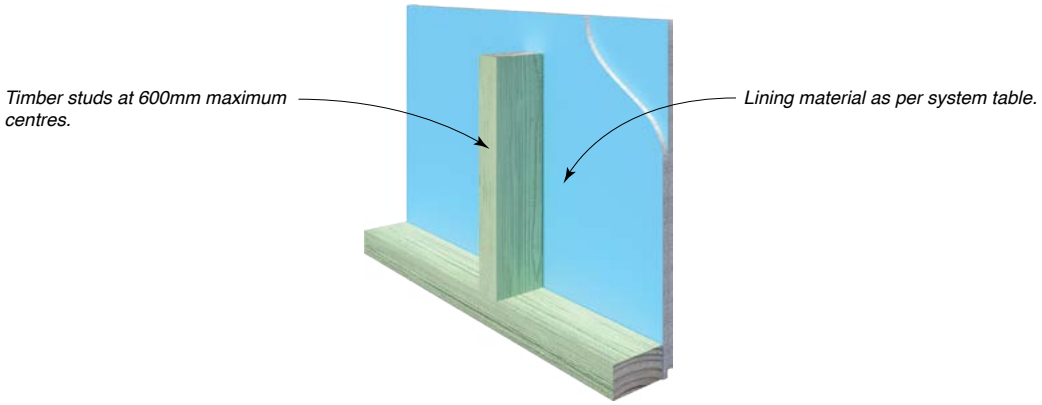
NOTE: Acoustic performance valid for studs with any BMT .

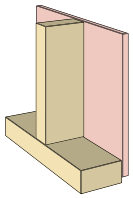
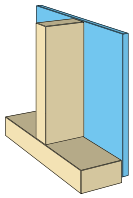
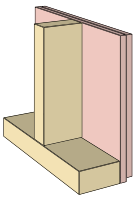
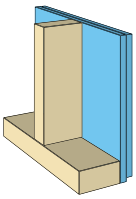
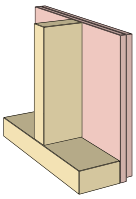
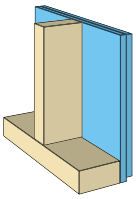
SYSTEM SPECIFICATION Refer to Book 3 Commercial & Multi-Residential Installation Guide			ACOUSTIC REPORT: PKA-A121	
			STUD DEPTH mm	**ALL**
			STUD BMT mm	**ALL**
FRL Report	**SYSTEM Nº**	**WALL LININGS**	**CAVITY INFILL** (Refer to TABLE B6)	**R_w / R_w+C_{tr}**
– /90/90 and 90/90/90 (Fire rated from lined side only) FC 12946	**CSR 7470** 	ONE SIDE ONLY • 3 x 13mm Gyprock Fyrchek Plasterboard.	(a) Nil	37/34
– /90/90 and 90/90/90 (Fire rated from lined side only) FC 12946	**CSR 7475** 	ONE SIDE ONLY • 3 x 13mm Gyprock Fyrchek MR Plasterboard.	(a) Nil	37/34
– /90/90 90/90/90 (Fire rated from lined side only) FC 12946 FAS 200002	**CSR 3552** 	ONE SIDE • 3 x 13mm Gyprock EC08 Complete.	(a) Nil	38/35
– /120/120 and 120/120/120 (Fire rated from lined side only) FC 12946	**CSR 7480** 	ONE SIDE ONLY • 3 x 16mm Gyprock Fyrchek Plasterboard.	(a) Nil	37/35
– /120/120 and 120/120/120 (Fire rated from lined side only) FC 12946	**CSR 7485** 	ONE SIDE ONLY • 3 x 16mm Gyprock Fyrchek MR Plasterboard.	(a) Nil	38/36
– /120/120 120/120/120 (Fire rated from lined side only) FC 12946 FAS 200002	**CSR 3562** 	ONE SIDE • 3 x 16mm Gyprock EC08 Complete.	(a) Nil	40/37

Internal Services Wall – Timber Frame Lined One Side

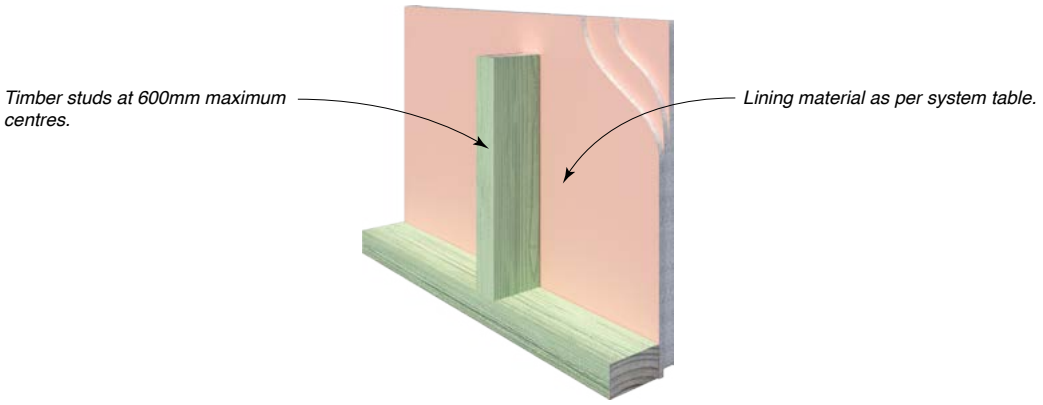


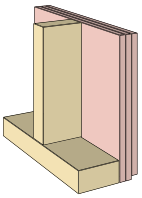
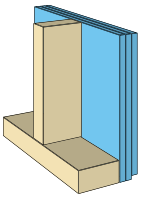
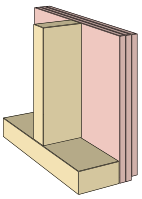
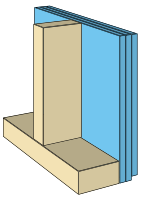
SYSTEM SPECIFICATION Refer to Book 2 Residential Installation Guide			ACOUSTIC REPORT: PKA-A121	
			STUD DEPTH mm	70
FRL Report	SYSTEM Nº	WALL LININGS	CAVITY INFILL (Refer to TABLE B6)	R_w / R_w+C_{tr}
– / – / –	CSR 7505 	ONE SIDE ONLY • 1 x 10mm Gyprock Aquachek Plasterboard.	(a) Nil	25/22
			Wall Thickness mm	80
– / – / –	CSR 10200 	ONE SIDE ONLY • 1 x 10mm Gyprock HD Plasterboard.	(a) Nil	26/23
			Wall Thickness mm	80
– / – / –	CSR 7515 	ONE SIDE ONLY • 1 x 13mm Gyprock Standard Plasterboard.	(a) Nil	26/23
			Wall Thickness mm	83
– / – / –	CSR 7520 	ONE SIDE ONLY • 1 x 13mm Gyprock Aquachek Plasterboard.	(a) Nil	28/25
			Wall Thickness mm	83
– / – / –	CSR 7525 	ONE SIDE ONLY • 1 x 13mm Gyprock Soundchek Plasterboard.	(a) Nil	30/28
			Wall Thickness mm	83

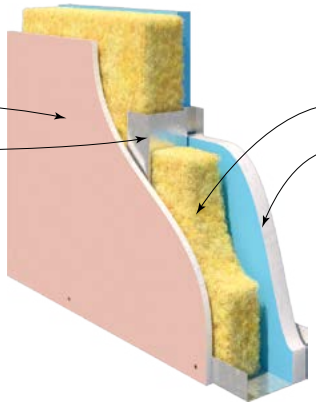


SYSTEM SPECIFICATION Refer to Book 2 Residential Installation Guide			ACOUSTIC REPORT: PKA-A121	
			STUD DEPTH mm	**70**
FRL Report	**SYSTEM Nº**	**WALL LININGS**	**CAVITY INFILL** (Refer to TABLE B6)	**R_w / R_w+C_{tr}**
– / – / –	**CSR 7530** 	ONE SIDE ONLY • 1 x 13mm Gyprock Fyrchek Plasterboard.	(a) Nil	29/26
			Wall Thickness mm	83
– / – / –	**CSR 7535** 	ONE SIDE ONLY • 1 x 13mm Gyprock Fyrchek MR Plasterboard.	(a) Nil	29/26
			Wall Thickness mm	83
– /30/30 **30/30/30** (Fire rated from lined side only) FC12969	**CSR 7545** 	ONE SIDE ONLY • 2 x 13mm Gyprock Fyrchek Plasterboard.	(a) Nil	34/31
			Wall Thickness mm	96
– /30/30 **30/30/30** (Fire rated from lined side only) FC12969	**CSR 7550** 	ONE SIDE ONLY • 2 x 13mm Gyprock Fyrchek MR Plasterboard.	(a) Nil	34/31
			Wall Thickness mm	96
– /60/60 **60/60/60** (Fire rated from lined side only) FC12969	**CSR 7555** 	ONE SIDE ONLY • 2 x 16mm Gyprock Fyrchek Plasterboard.	(a) Nil	34/31
			Wall Thickness mm	102
– /60/60 **60/60/60** (Fire rated from lined side only) FC12969	**CSR 7560** 	ONE SIDE ONLY • 2 x 16mm Gyprock Fyrchek MR Plasterboard.	(a) Nil	35/33
			Wall Thickness mm	102

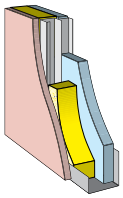
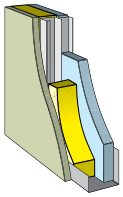
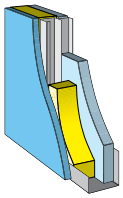
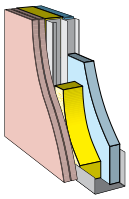
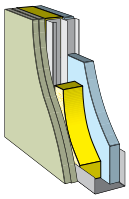
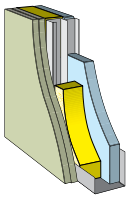
Internal Services Wall – Timber Frame Lined One Side



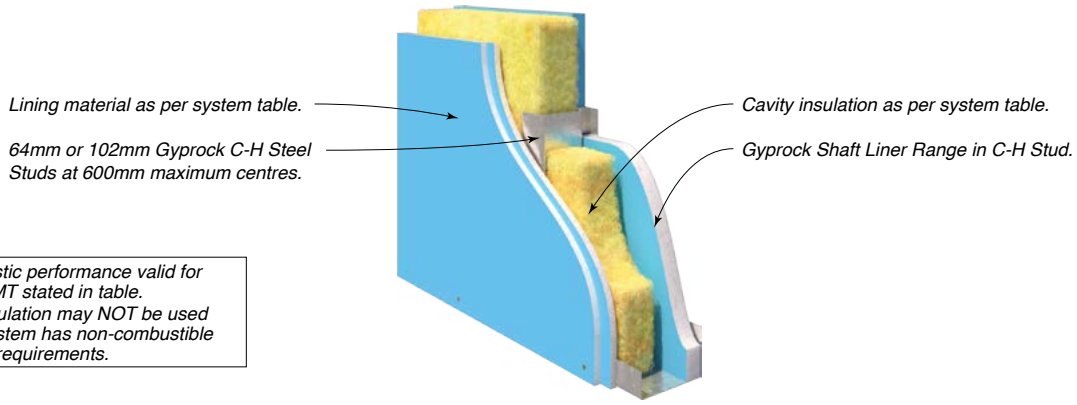
SYSTEM SPECIFICATION Refer to Book 2 Residential Installation Guide			ACOUSTIC REPORT: PKA-A121	
FRL Report	**SYSTEM Nº**	**WALL LININGS**	**STUD DEPTH mm**	**70**
			CAVITY INFILL (Refer to TABLE B6)	**R_w / R_w+C_{tr}**
– /90/90 **90/90/90** (Fire rated from lined side only) FC12969	**CSR 7570** 	ONE SIDE ONLY • 3 x 13mm Gyprock Fyrchek Plasterboard.	(a) Nil	37/34
			Wall Thickness mm	109
– /90/90 **90/90/90** (Fire rated from lined side only) FC12969	**CSR 7575** 	ONE SIDE ONLY • 3 x 13mm Gyprock Fyrchek MR Plasterboard.	(a) Nil	37/34
			Wall Thickness mm	109
– /120/120 **120/120/120** (Fire rated from lined side only) FC12969	**CSR 7580** 	ONE SIDE ONLY • 3 x 16mm Gyprock Fyrchek Plasterboard.	(a) Nil	37/35
			Wall Thickness mm	118
– /120/120 **120/120/120** (Fire rated from lined side only) FC12969	**CSR 7585** 	ONE SIDE ONLY • 3 x 16mm Gyprock Fyrchek MR Plasterboard.	(a) Nil	38/36
			Wall Thickness mm	118



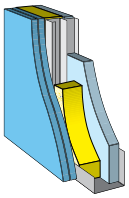
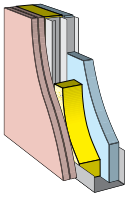
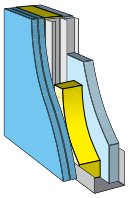
NOTE: Acoustic performance valid for studs with BMT stated in table. Polyester insulation may NOT be used where the system has non-combustible construction requirements.

SYSTEM SPECIFICATION Refer to GYP546, Gyprock Shaft Wall Installation Guide for further information			ACOUSTIC REPORT: PKA Predictor V16		
FRL Report	SYSTEM Nº	WALL LININGS	STUD DEPTH mm	64	102
			STUD BMT mm	0.5	0.5
			CAVITY INFILL (Refer to TABLE B6)	R_w / R_w+C_{tr}	
– /60/60 FCO 3063	CSR 7655 	BETWEEN STUDS • 1 x 25mm Gyprock Shaft Liner MP. SIDE ONE • 1 x 16mm Gyprock Fyrchek Plasterboard.	(a) Nil	36/29	40/33
			(c) 75 Acoustigard 11kg	–	50/41
			(f) 50 Acoustigard 14kg	45/36	49/40
			(g) 70 Soundscreen 2.0	–	50/40
			(h) 50 MAB Polyester 11kg	–	46/38
			Wall Thickness mm	80	118
– /60/60 FCO 3063	CSR 10017 	BETWEEN STUDS • 1 x 25mm Gyprock Shaft Liner MP. SIDE ONE • 1 x 16mm Gyprock EC08 Complete.	(a) Nil	36/29	40/33
			(c) 75 Acoustigard 11kg	–	50/41
			(f) 50 Acoustigard 14kg	45/36	49/40
			(g) 70 Soundscreen 2.0	–	50/40
			(h) 50 MAB Polyester 11kg	–	46/38
			Wall Thickness mm	80	118
– /60/60 FCO 3063	CSR 7660 	BETWEEN STUDS • 1 x 25mm Gyprock Shaft Liner MP. SIDE ONE • 1 x 16mm Gyprock Fyrchek MR Plasterboard.	(a) Nil	37/30	41/34
			(c) 75 Acoustigard 11kg	–	50/41
			(f) 50 Acoustigard 14kg	46/37	50/41
			(g) 70 Soundscreen 2.0	–	51/41
			(h) 50 MAB Polyester 11kg	–	47/39
			Wall Thickness mm	80	118
– /90/90 FCO 3063	CSR 7665 	BETWEEN STUDS • 1 x 25mm Gyprock Shaft Liner MP. SIDE ONE • 2 x 13mm Gyprock Fyrchek Plasterboard.	(a) Nil	40/33	45/39
			(c) 75 Acoustigard 11kg	–	54/46
			(f) 50 Acoustigard 14kg	48/39	53/45
			(g) 70 Soundscreen 2.0	–	54/45
			(h) 50 MAB Polyester 11kg	–	50/43
			Wall Thickness mm	90	128
– /90/90 FCO 3063	CSR 10018 	BETWEEN STUDS • 1 x 25mm Gyprock Shaft Liner MP. SIDE ONE • 2 x 13mm Gyprock EC08 Complete.	(a) Nil	40/33	45/39
			(c) 75 Acoustigard 11kg	–	54/46
			(f) 50 Acoustigard 14kg	48/39	53/45
			(g) 70 Soundscreen 2.0	–	54/45
			(h) 50 MAB Polyester 11kg	–	50/43
			Wall Thickness mm	90	128
– /90/90 FCO 3063	CSR 10019 	BETWEEN STUDS • 1 x 25mm Gyprock Shaft Liner MP. SIDE ONE • 2 x 13mm Gyprock EC08 Extreme.	(a) Nil	40/33	45/39
			(c) 75 Acoustigard 11kg	–	54/46
			(f) 50 Acoustigard 14kg	48/39	53/45
			(g) 70 Soundscreen 2.0	–	54/45
			(h) 50 MAB Polyester 11kg	–	50/43
			Wall Thickness mm	90	128

Internal Services Wall – Shaft Wall System



NOTE: Acoustic performance valid for studs with BMT stated in table. Polyester insulation may NOT be used where the system has non-combustible construction requirements.

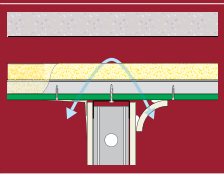
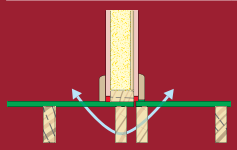
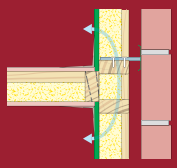
SYSTEM SPECIFICATION Refer to GYP546, Gyprock Shaft Wall Installation Guide for further information			ACOUSTIC REPORT: PKA Predictor V16		
			STUD DEPTH mm	**64**	**102**
			STUD BMT mm	**0.5**	**0.5**
FRL Report	**SYSTEM Nº**	**WALL LININGS**	**CAVITY INFILL** (Refer to TABLE B6)	**R_w / R_w+C_{tr}**	
– /90/90 FCO 3063	**CSR 7670** 	BETWEEN STUDS • 1 x 25mm Gyprock Shaft Liner MP. SIDE ONE • 2 x 13mm Gyprock Fyrchek MR Plasterboard.	(a) Nil	40/33	45/39
			(c) 75 Acoustigard 11kg	–	53/45
			(f) 50 Acoustigard 14kg	48/39	53/45
			(g) 70 Soundscreen 2.0	–	54/45
			(h) 50 MAB Polyester 11kg	–	50/43
			Wall Thickness mm	90	128
– /120/120 FCO 3063	**CSR 7675** 	BETWEEN STUDS • 1 x 25mm Gyprock Shaft Liner MP. SIDE ONE • 2 x 16mm Gyprock Fyrchek Plasterboard.	(a) Nil	40/33	45/39
			(c) 75 Acoustigard 11kg	–	54/46
			(f) 50 Acoustigard 14kg	48/39	53/45
			(g) 70 Soundscreen 2.0	–	54/45
			(h) 50 MAB Polyester 11kg	–	50/43
			Wall Thickness mm	96	134
– /120/120 FCO 3063	**CSR 7680** 	BETWEEN STUDS • 1 x 25mm Gyprock Shaft Liner MP. SIDE ONE • 2 x 16mm Gyprock Fyrchek MR Plasterboard.	(a) Nil	41/34	46/40
			(c) 75 Acoustigard 11kg	–	54/46
			(f) 50 Acoustigard 14kg	49/40	54/46
			(g) 70 Soundscreen 2.0	–	55/46
			(h) 50 MAB Polyester 11kg	–	51/44
			Wall Thickness mm	96	134

NOTES

FLANKING PATH SYSTEMS

J

SECTION CONTENTS

Introduction	J2
Design Considerations	J2
System Selection Tables	
 Flanking Via Ceiling	J3
 Flanking Via Floor	J14
 Flanking Via Wall	J15

INTRODUCTION

This section provides detailed performance information for the correct selection and application of flanking path treatments.

Building systems and construction methods can vary greatly from site to site. CSR recommends that where acoustic performance is important, an acoustic engineer be consulted to assess the suitability of the flanking system values detailed in this section.

DESIGN CONSIDERATIONS

DESIGNER RESPONSIBILITY

It remains the responsibility of the customer (in conjunction with their designer or engineer, when applicable) to ensure that CSR's products/systems are suitable for their chosen application for any given project. CSR recommends that a comprehensive assessment of the performance requirements be undertaken prior to selection, including in respect of project-specific matters such as, but not limited structural adequacy, seismic, acoustic, fire resistance/combustibility, thermal, condensation and weatherproofing requirements.

CSR offers online digital tools for the most updated information, including but not limited to update of products/components, inclusion of new and modified systems, to meet the requirements of the National Construction Code of Australia (NCC) and any relevant Australian Standards.

For the most up-to-date product & system performance information, visit:

CSR System Selector: https://apps.csr.com.au/systemselector/search-option

CSR Thermal Calculator: https://apps.csr.com.au/thermalcalculator

Seismic Loads

Seismic actions must be considered for building elements in accordance with the NCC. The loads and effects of earthquakes may be determined in accordance with AS 1170.4 'Earthquake Actions in Australia'. The Standard has design procedures for houses (Class 1), and to buildings (Classes 2 to 9) with importance levels 2, 3 or 4 as defined in the NCC.

FLANKING PATHS & ACOUSTIC PERFORMANCE

Flanking sounds reach adjoining areas by indirect paths, rather than through the dividing element. The components and cavities of the walls, floors and ceilings that surround the dividing element are the main paths for flanking transmission. When designing for room-to-room performance, all flanking paths should be considered, as well as the dividing element itself, which may be found in other sections of this guide.

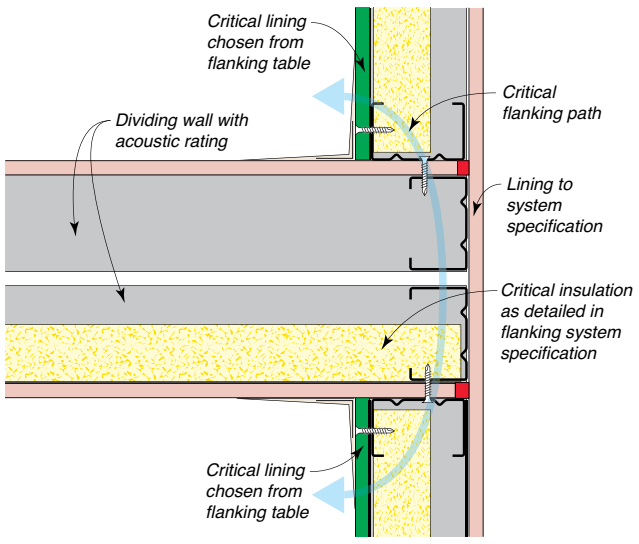
The flanking path values in this section are a guide to the maximum sound transmission values that would be achieved in a laboratory test. The rating assumes that the dividing wall that is being flanked has an equivalent or higher sound transmission performance (R_W or $R_W + C_{tr}$) than the flanking value. Where a flanking system has a rating higher than that of the dividing wall, the room-to-room transmission should be taken as the wall value.

Each flanking path system is represented by a typical layout, and is associated with one or more options. The details show an example of the construction required, but must be amended to suit the system specification and lining. Dividing walls shown as single studs may be substituted with other construction such as staggered studs, double studs and masonry walls to achieve the same results, and Fyrchek MR of the same thickness may be used in lieu of Fyrchek without reducing the acoustic values.

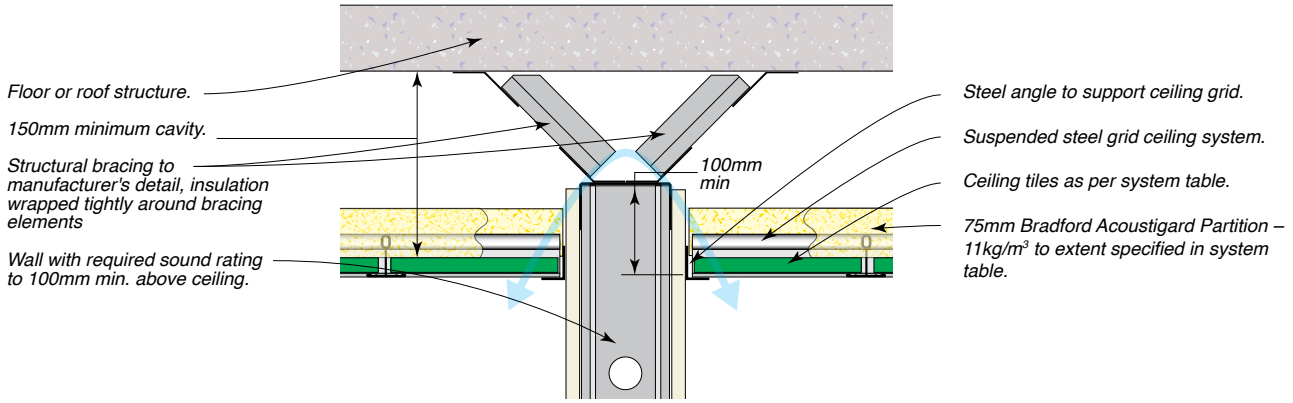
Suspended grid tile ceiling systems must have no lights or penetrations within 600mm of a dividing wall, and plasterboard ceilings must have no acoustically untreated penetrations in rooms adjacent to a dividing wall.

For the example shown in FIG J1, performance values are given in the tables for various options of the critical linings with the specified insulation.

FIG J1: FLANKING PATH GUIDE

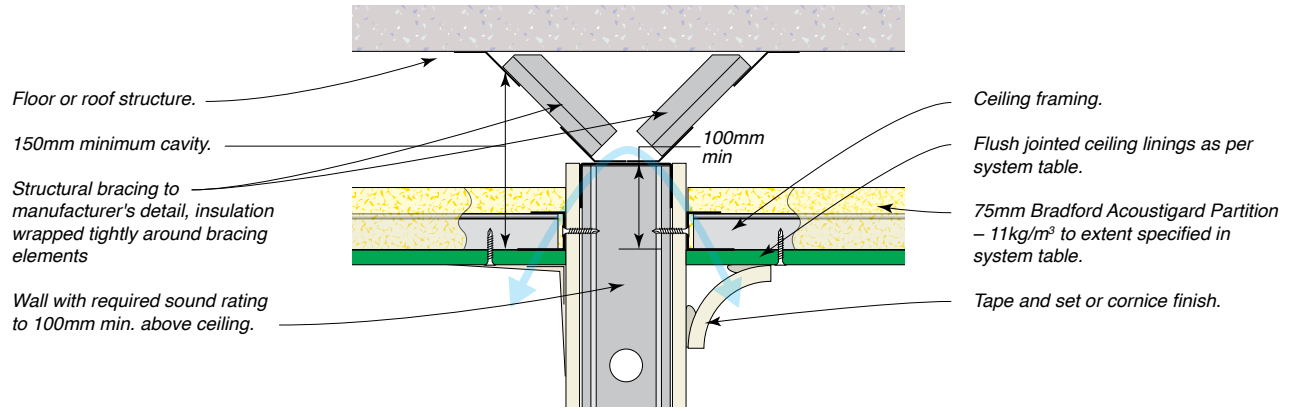


SYSTEM SPECIFICATIONS Flanking Path via Suspended Grid Tile Ceiling – Over Stud Wall



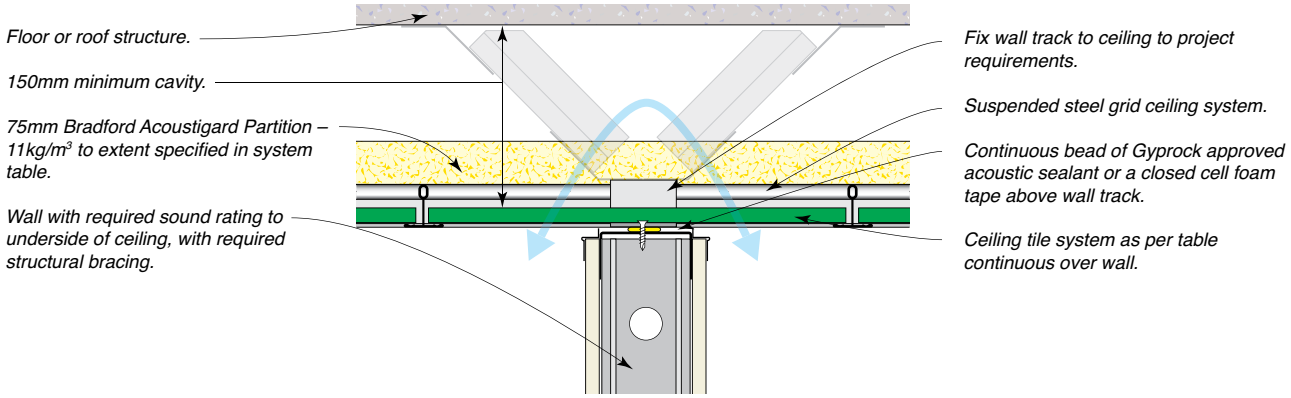
SYSTEM SPECIFICATION		ACOUSTIC REPORT: PKA-A126		
SYSTEM Nº	CEILING LININGS	EXTENT OF INSULATION		
		(a) Nil	(b) 1200mm each side of the wall	(c) Entire Ceiling
		R_w		
CSR 8005	1 x 10mm Gyprock plasterboard tiles.	38	44	45
CSR 8009	OWA Brillianto A.	33	35	37
CSR 8016	OWA New Sandila.	35	37	39
CSR 8019	OWA Finetta.	35	37	39
CSR 8020	OWA Sinfonia Privacy.	37	41	42
CSR 8022	OWA Constellation A.	35	37	39

SYSTEM SPECIFICATIONS Flanking Path via Flush Jointed Ceiling – Over Stud Wall



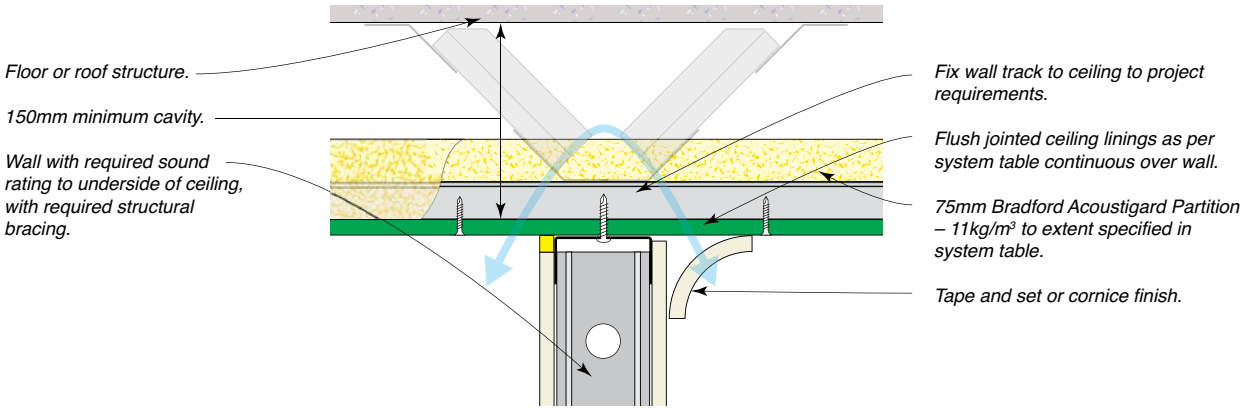
SYSTEM SPECIFICATION		ACOUSTIC REPORT: PKA-A126		
SYSTEM Nº	CEILING LININGS	EXTENT OF INSULATION		
		(a) Nil	(b) 1200mm each side of the wall	(c) Entire Ceiling
		R_w / R_w+C_{tr}		
CSR 8030	1 x 10mm Gyprock Supaceil plasterboard.	41/32	47/38	48/39
CSR 8032	1 x 13mm Gyprock Standard plasterboard.	43/34	49/40	50/41
CSR 8034	1 x 13mm Gyprock Fyrchek plasterboard.	46/38	52/44	53/45
CSR 8036	2 x 13mm Gyprock Fyrchek plasterboard.	54/46	58/**50**	59/**51**
CSR 8038	1 x 13mm + 1 x 16mm Gyprock Fyrchek plasterboard.	55/47	59/**51**	60/**52**
CSR 8040	2 x 16mm Gyprock Fyrchek plasterboard.	55/47	59/**51**	60/**52**

SYSTEM SPECIFICATIONS Flanking Path via Suspended Grid Tile Ceiling – Over Stud Wall



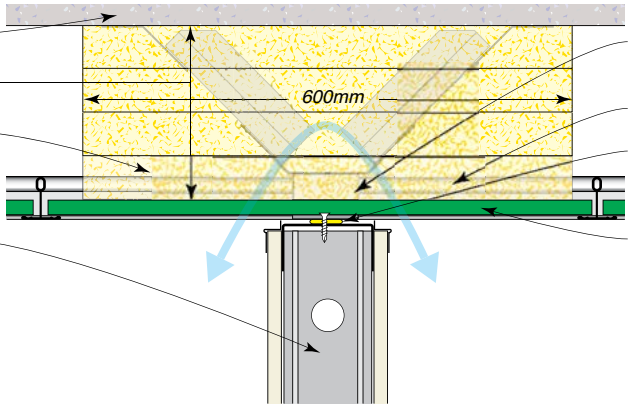
SYSTEM SPECIFICATION		ACOUSTIC REPORT: PKA-A126		
SYSTEM Nº	CEILING LININGS	EXTENT OF INSULATION		
		(a) Nil	(b) 1200mm each side of the wall	(c) Entire Ceiling
		R_w		
CSR 8055	1 x 10mm Gyprock plasterboard tile.	35	40	42
CSR 8056	OWA Brillianto A.	31	34	37
CSR 8062	OWA New Sandila.	33	36	39
CSR 8065	OWA Finetta.	33	36	39
CSR 8066	OWA Sinfonia Privacy.	34	39	41
CSR 8067	OWA Constellation A.	33	36	39

SYSTEM SPECIFICATIONS Flanking Path via Flush Jointed Ceiling – Over Stud Wall



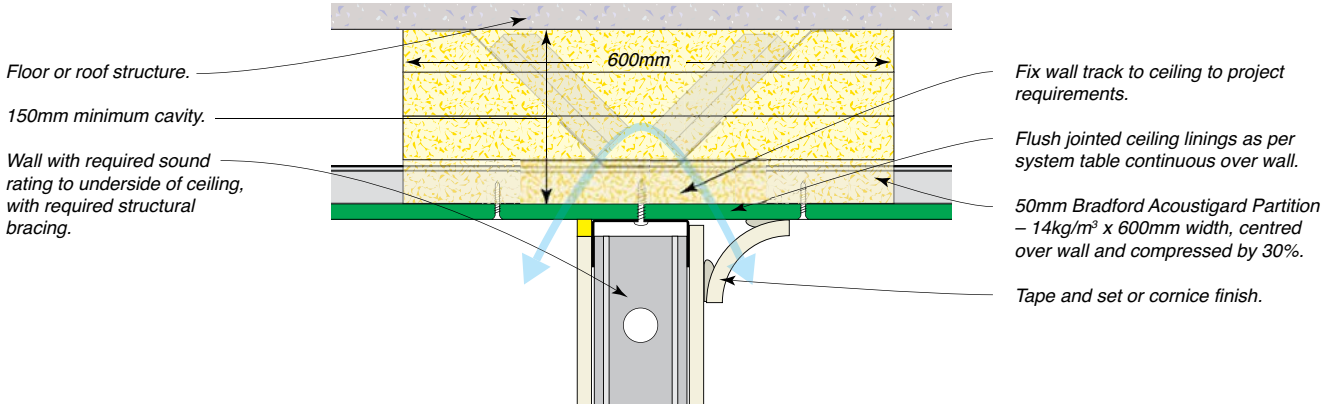
SYSTEM SPECIFICATION		ACOUSTIC REPORT: PKA-A126		
SYSTEM Nº	CEILING LININGS	EXTENT OF INSULATION		
		(a) Nil	(b) 1200mm each side of the wall	(c) Entire Ceiling
		R_w		
CSR 8080	1 x 10mm Gyprock Supaceil plasterboard.	37	42	42
CSR 8082	1 x 13mm Gyprock Standard plasterboard.	39	45	45
CSR 8084	2 x 13mm Gyprock Fyrchek plasterboard.	47	48	50
CSR 8086	1 x 16mm Gyprock Fyrchek plasterboard.	43	48	50
CSR 8088	1 x 13mm + 1 x 16mm Gyprock Fyrchek plasterboard.	47	48	50
CSR 8090	2 x 16mm Gyprock Fyrchek plasterboard.	48	48	50

SYSTEM SPECIFICATIONS Flanking Path via Suspended Grid Tile Ceiling – Over Stud Wall



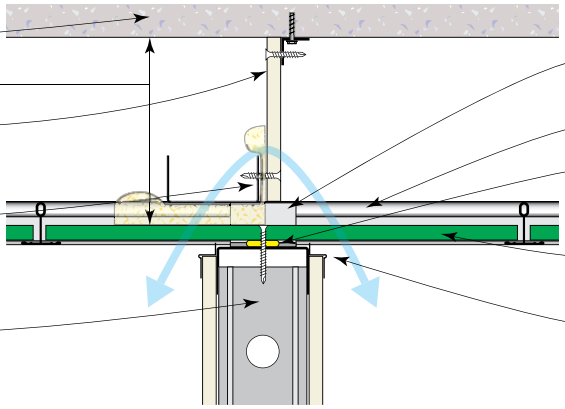
SYSTEM SPECIFICATION		ACOUSTIC REPORT: PKA-A126
SYSTEM Nº	**CEILING LININGS**	**R_w**
CSR 8105	1 x 10mm Gyprock plasterboard tile.	45
CSR 8106	OWA Brillianto A.	40
CSR 8116	OWA New Sandila.	42
CSR 8119	OWA Finetta.	42
CSR 8120	OWA Sinfonia Privacy.	43
CSR 8121	OWA Constellation A.	42

SYSTEM SPECIFICATIONS Flanking Path via Flush Jointed Ceiling – Over Stud Wall



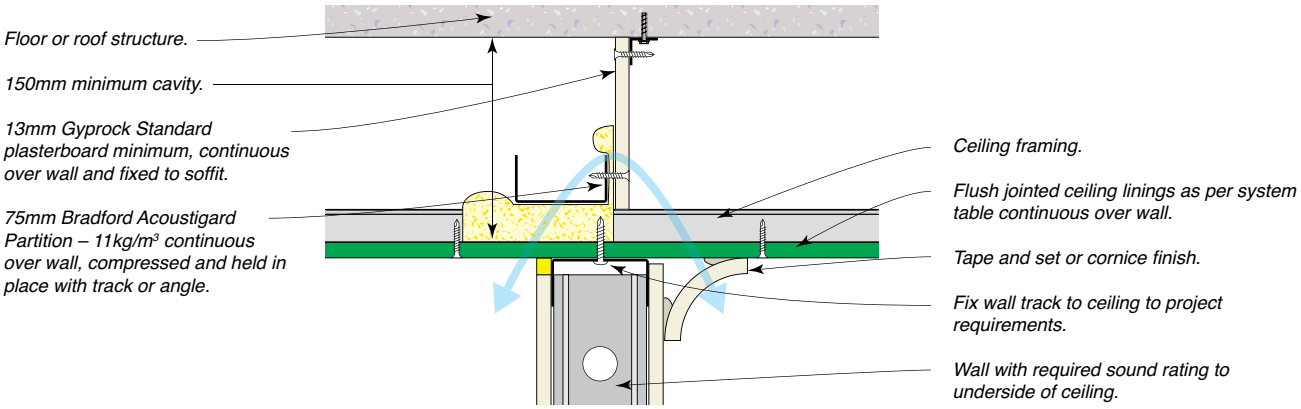
SYSTEM SPECIFICATION		ACOUSTIC REPORT: PKA-A126
SYSTEM Nº	**CEILING LININGS**	**R_w**
CSR 8130	1 x 10mm Gyprock Supaceil plasterboard.	50
CSR 8132	1 x 13mm Gyprock Standard plasterboard.	50
CSR 8134	2 x 13mm Gyprock Fyrchek plasterboard.	50
CSR 8136	1 x 16mm Gyprock Fyrchek plasterboard.	50
CSR 8138	1 x 13mm + 1 x 16mm Gyprock Fyrchek plasterboard.	50
CSR 8140	2 x 16mm Gyprock Fyrchek plasterboard.	50

SYSTEM SPECIFICATIONS Flanking Path via Suspended Grid Tile Ceiling – Over Stud Wall



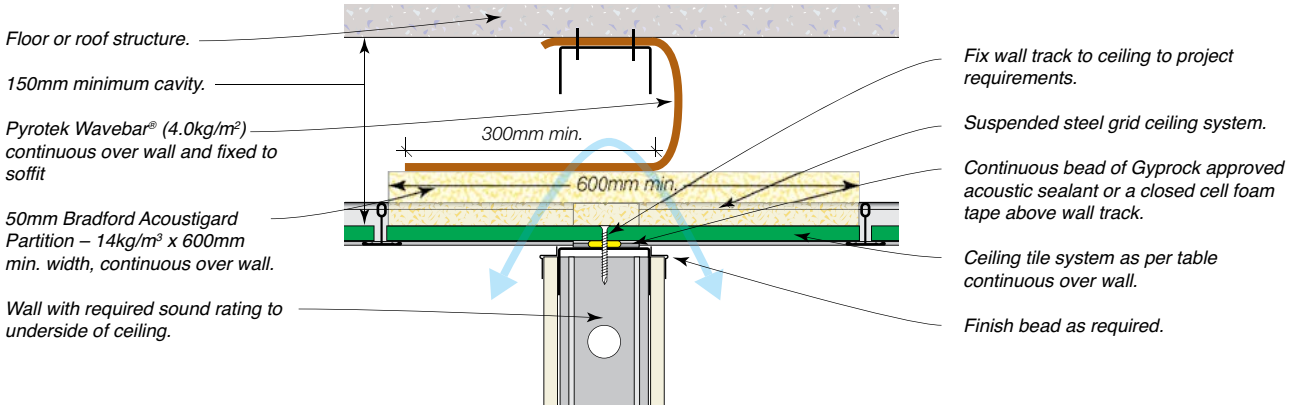
SYSTEM SPECIFICATION		ACOUSTIC REPORT: PKA-A126
SYSTEM Nº	**CEILING LININGS**	**R_w**
CSR 8155	1 x 10mm Gyprock plasterboard tile.	48
CSR 8156	OWA Brillianto A.	43
CSR 8166	OWA New Sandila.	45
CSR 8169	OWA Finetta.	45
CSR 8170	OWA Sinfonia Privacy.	46
CSR 8171	OWA Constellation A.	45

SYSTEM SPECIFICATIONS Flanking Path via Flush Jointed Ceiling – Over Stud Wall



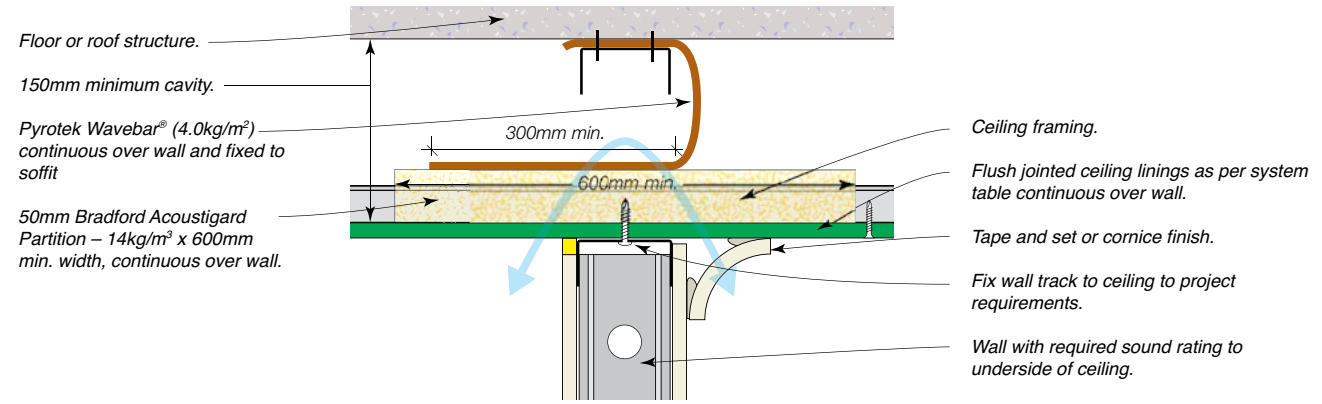
SYSTEM SPECIFICATION		ACOUSTIC REPORT: PKA-A126
SYSTEM Nº	**CEILING LININGS**	**R_w**
CSR 8180	1 x 10mm Gyprock Supaceil plasterboard.	50
CSR 8182	1 x 13mm Gyprock Standard plasterboard.	50
CSR 8184	2 x 13mm Gyprock Fyrchek plasterboard.	50
CSR 8186	1 x 16mm Gyprock Fyrchek plasterboard.	50
CSR 8188	1 x 13mm + 1 x 16mm Gyprock Fyrchek plasterboard.	50
CSR 8190	2 x 16mm Gyprock Fyrchek plasterboard.	50

SYSTEM SPECIFICATIONS Flanking Path via Suspended Grid Tile Ceiling – Over Stud Wall



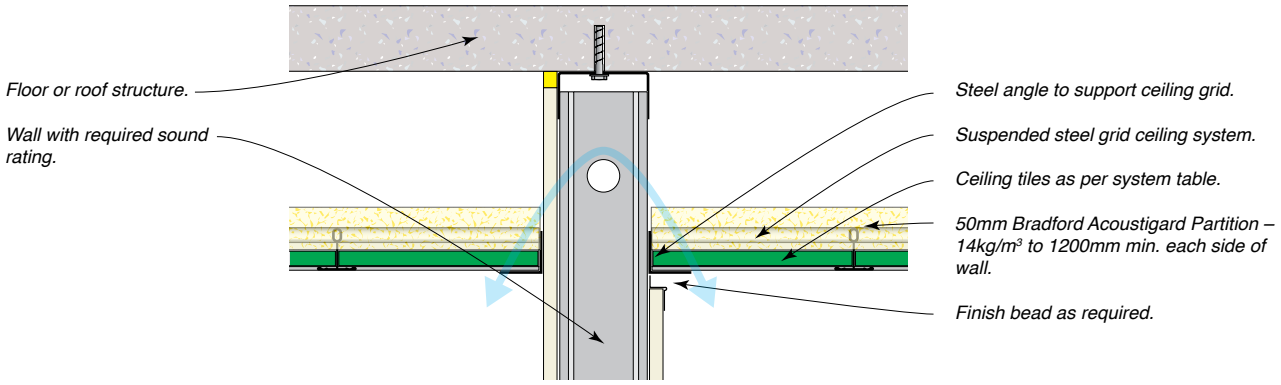
SYSTEM SPECIFICATION		ACOUSTIC REPORT: PKA-A126
SYSTEM Nº	**CEILING LININGS**	**R_w**
CSR 8205	1 x 10mm Gyprock plasterboard tile.	48
CSR 8206	OWA Brillianto A.	43
CSR 8216	OWA New Sandila.	45
CSR 8219	OWA Finetta.	45
CSR 8220	OWA Sinfonia Privacy.	46
CSR 8221	OWA Constellation A.	45

SYSTEM SPECIFICATIONS Flanking Path via Flush Jointed Ceiling – Over Stud Wall



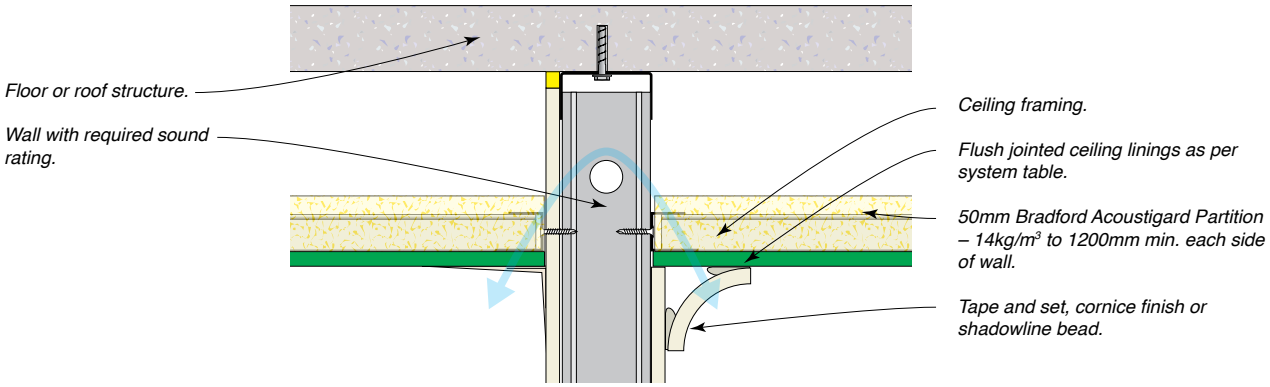
SYSTEM SPECIFICATION		ACOUSTIC REPORT: PKA-A126
SYSTEM Nº	**CEILING LININGS**	**R_w / R_w+C_{tr}**
CSR 8230	1 x 10mm Gyprock Supaceil plasterboard.	50/40
CSR 8232	1 x 13mm Gyprock Standard plasterboard.	50/40
CSR 8234	2 x 13mm Gyprock Fyrchek plasterboard.	50/42
CSR 8236	1 x 16mm Gyprock Fyrchek plasterboard.	50/41
CSR 8238	1 x 13mm + 1 x 16mm Gyprock Fyrchek plasterboard.	50/42
CSR 8240	2 x 16mm Gyprock Fyrchek plasterboard.	50/42

SYSTEM SPECIFICATIONS Flanking Path via Suspended Grid Tile Ceiling – Over Stud Wall



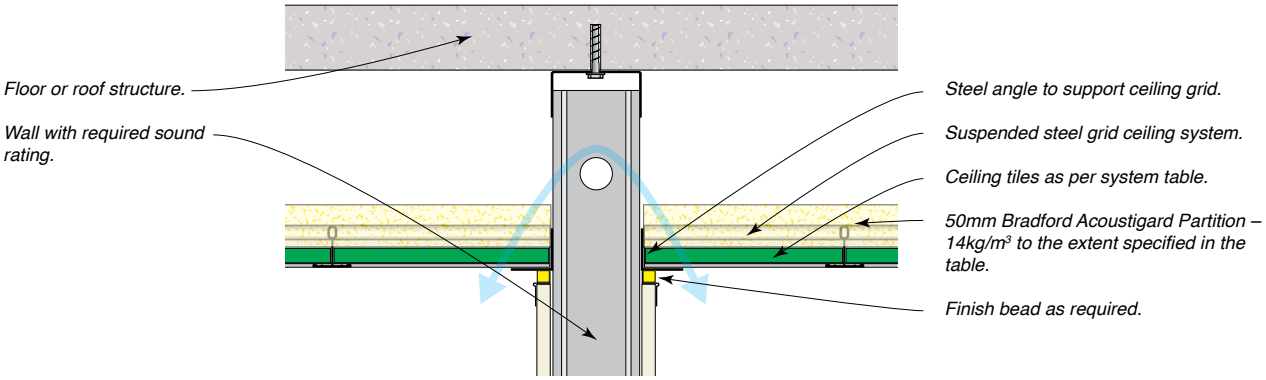
SYSTEM SPECIFICATION		ACOUSTIC REPORT: PKA-A126
SYSTEM Nº	**CEILING LININGS**	**R_w**
CSR 8255	1 x 10mm Gyprock plasterboard tile.	48
CSR 8256	OWA Brillianto A.	43
CSR 8266	OWA New Sandila.	45
CSR 8269	OWA Finetta.	45
CSR 8270	OWA Sinfonia Privacy.	46
CSR 8271	OWA Constellation A.	45

SYSTEM SPECIFICATIONS Flanking Path via Flush Jointed Ceiling – Over Stud Wall



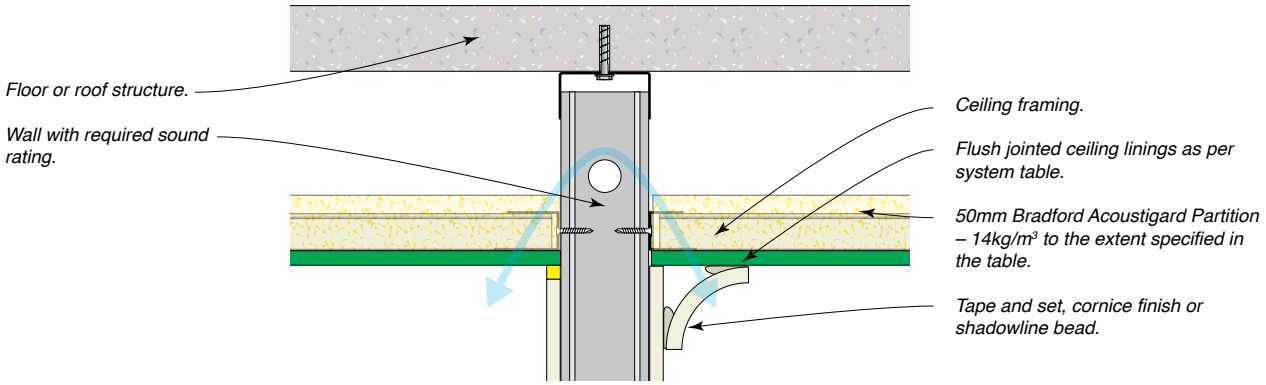
SYSTEM SPECIFICATION		ACOUSTIC REPORT: PKA-A126
SYSTEM Nº	**CEILING LININGS**	**R_w**
CSR 8280	1 x 10mm Gyprock Supaceil plasterboard.	50
CSR 10201	1 x 10mm Gyprock HD plasterboard.	52
CSR 8288	1 x 13mm Gyprock Standard plasterboard.	52
CSR 8292	1 x 13mm Gyprock Soundchek plasterboard.	55

SYSTEM SPECIFICATIONS Flanking Path via Suspended Grid Tile Ceiling – Over Stud Wall



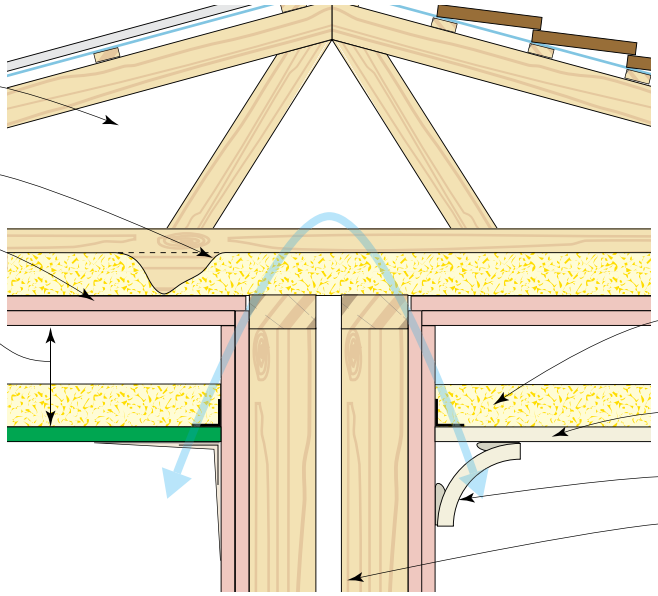
SYSTEM SPECIFICATION		ACOUSTIC REPORT: PKA-A126		
SYSTEM Nº	CEILING LININGS	EXTENT OF INSULATION		
		(a) Nil	(b) 1200mm each side of the wall	(c) Entire Ceiling
		R_w		
CSR 8273	1 x 10mm Gyprock plasterboard tile.	35	39	41
CSR 8274	OWA Brillianto A.	30	34	37
CSR 8276	OWA New Sandila.	33	35	38
CSR 8277	OWA Finetta.	33	35	38
CSR 8278	OWA Sinfonia Privacy.	34	38	40
CSR 8279	OWA Constellation A.	33	36	39

SYSTEM SPECIFICATIONS Flanking Path via Flush Jointed Ceiling – Over Stud Wall



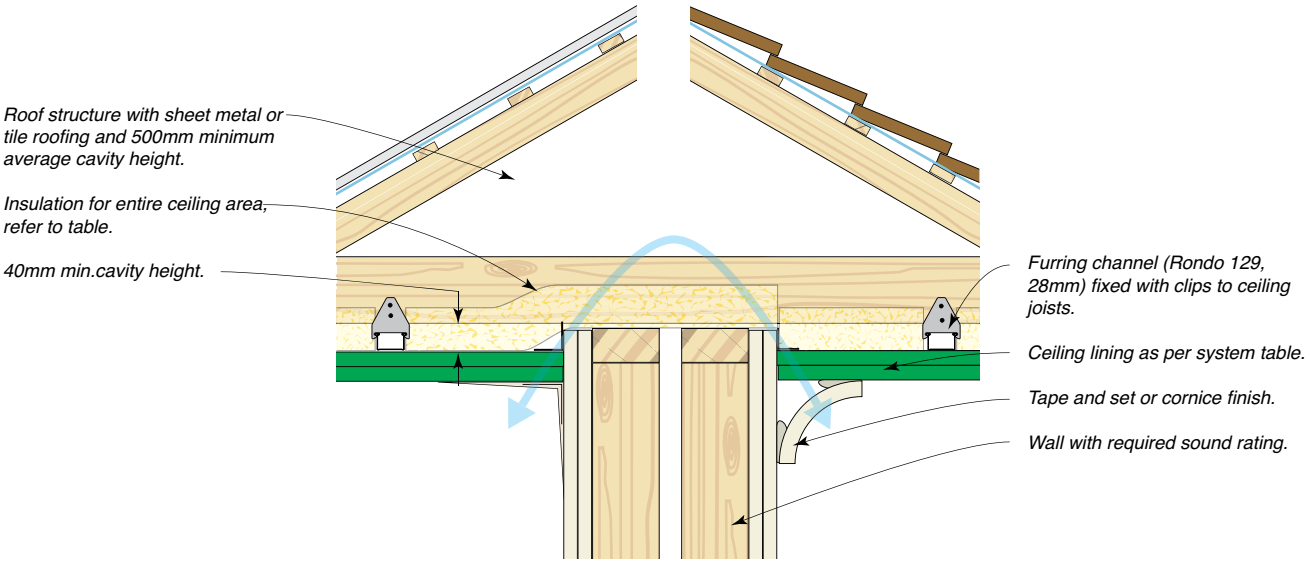
SYSTEM SPECIFICATION		ACOUSTIC REPORT: PKA-A126		
SYSTEM Nº	CEILING LININGS	EXTENT OF INSULATION		
		(a) Nil	(b) 1200mm each side of the wall	(c) Entire Ceiling
		R_w		
CSR 8293	1 x 10mm Gyprock Supaceil plasterboard.	37	41	41
CSR 8295	2 x 13mm Gyprock Fyrchek plasterboard.	47	47	49
CSR 8296	1 x 16mm Gyprock Fyrchek plasterboard.	43	47	49
CSR 8297	1 x 13mm + 1 x 16mm Gyprock Fyrchek plasterboard.	47	47	49
CSR 8298	2 x 16mm Gyprock Fyrchek plasterboard.	48	47	49

SYSTEM SPECIFICATIONS Flanking Path via Flush Jointed Ceiling – Over Party Wall



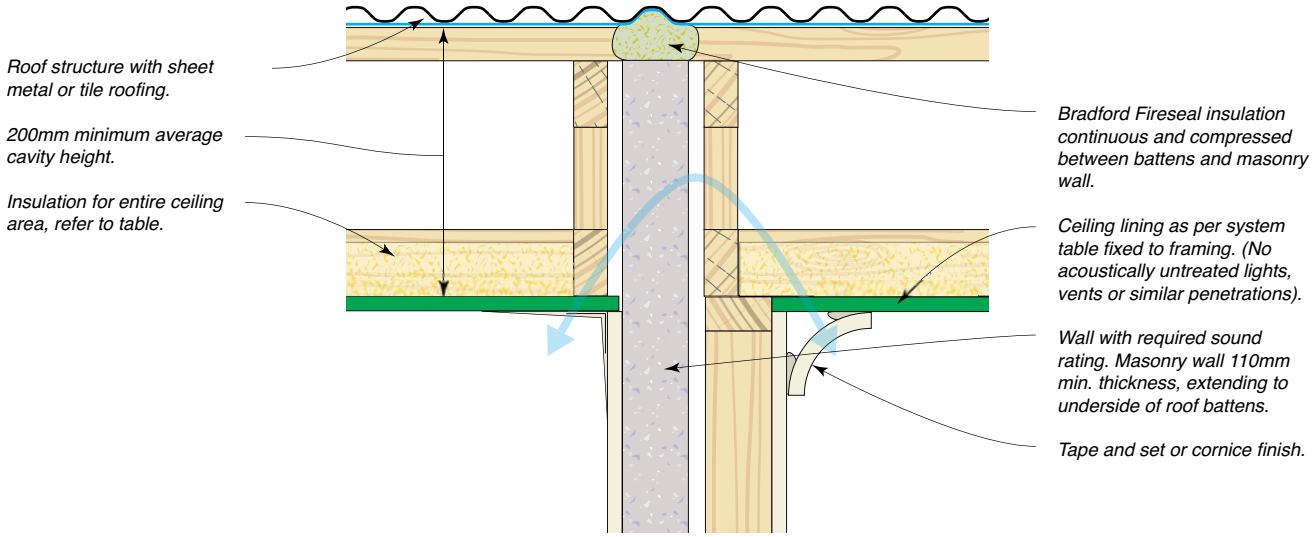
SYSTEM SPECIFICATION		ACOUSTIC REPORT: PKA-A126
SYSTEM Nº	**LOWER CEILING LININGS**	**R_w / R_w+C_{tr}**
CSR 8305	1 x 10mm Gyprock Supaceil plasterboard.	65/**53**
CSR 10202	1 x 10mm Gyprock HD plasterboard.	66/**54**
CSR 8313	1 x 13mm Gyprock Standard plasterboard.	66/**54**
CSR 8317	1 x 13mm Gyprock Soundchek plasterboard.	67/**55**

SYSTEM SPECIFICATIONS Flanking Path via Flush Jointed Ceiling – Over Wall



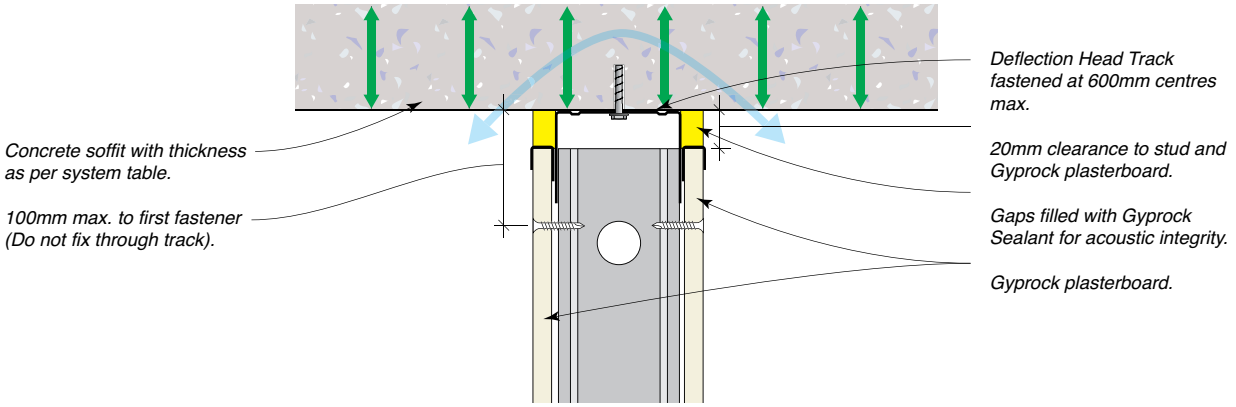
SYSTEM SPECIFICATION		ACOUSTIC REPORT: PKA-A126	
SYSTEM Nº	**CEILING LININGS**	**CAVITY INFILL** (Refer to TABLE B6)	**R_w / R_w+C_{tr}**
CSR 8331	1 x 10mm Gyprock Supaceil plasterboard.	(a) 50 Acoustigard 14kg	46/38
		(b) 90 Gold Batts 2.5	47/39
		(c) 165 Gold Batts 3.0	47/39
CSR 10203	1 x 10mm Gyprock HD plasterboard.	(a) 50 Acoustigard 14kg	50/42
		(b) 90 Gold Batts 2.5	51/43
		(c) 165 Gold Batts 3.0	51/43
CSR 8335	1 x 13mm Gyprock Standard plasterboard.	(a) 50 Acoustigard 14kg	50/42
		(b) 90 Gold Batts 2.5	51/43
		(c) 165 Gold Batts 3.0	51/43
CSR 8337	1 x 13mm Gyprock Fyrchek plasterboard.	(a) 50 Acoustigard 14kg	51/43
		(b) 90 Gold Batts 2.5	53/45
		(c) 165 Gold Batts 3.0	53/45
CSR 8339	1 x 13mm + 1 x 16mm Gyprock Fyrchek plasterboard.	(a) 50 Acoustigard 14kg	57/49
		(b) 90 Gold Batts 2.5	59/**51**
		(c) 165 Gold Batts 3.0	59/**51**

SYSTEM SPECIFICATIONS Flanking Path via Flush Jointed Ceiling – Over Party Wall



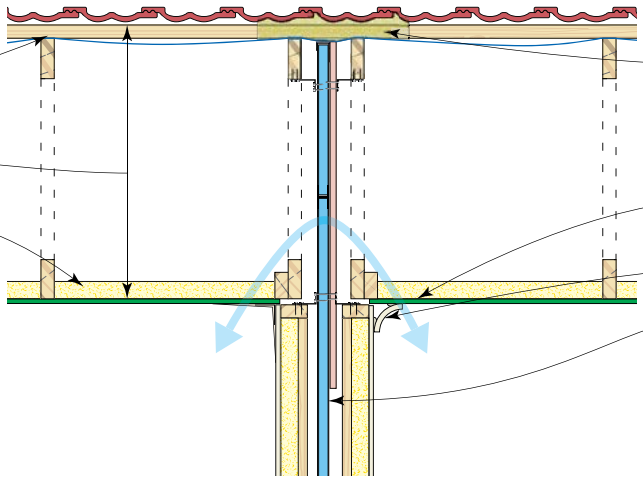
SYSTEM SPECIFICATION		ACOUSTIC REPORT: PKA-A126	
SYSTEM Nº	**CEILING LININGS**	**CAVITY INFILL** (Refer to TABLE B6)	**R_w / R_w+C_{tr}**
CSR 8356	1 x 10mm Gyprock Plus plasterboard.	(a) 50 Acoustigard 14kg	63/**53**
		(b) 90 Gold Batts 2.5	65/**55**
		(c) 165 Gold Batts 3.0	65/**55**
CSR 8361	1 x 10mm Gyprock Supaceil plasterboard.	(a) 50 Acoustigard 14kg	63/**53**
		(b) 90 Gold Batts 2.5	65/**55**
		(c) 165 Gold Batts 3.0	65/**55**

SYSTEM SPECIFICATIONS Flanking Path via Concrete Soffit – Over Stud Wall



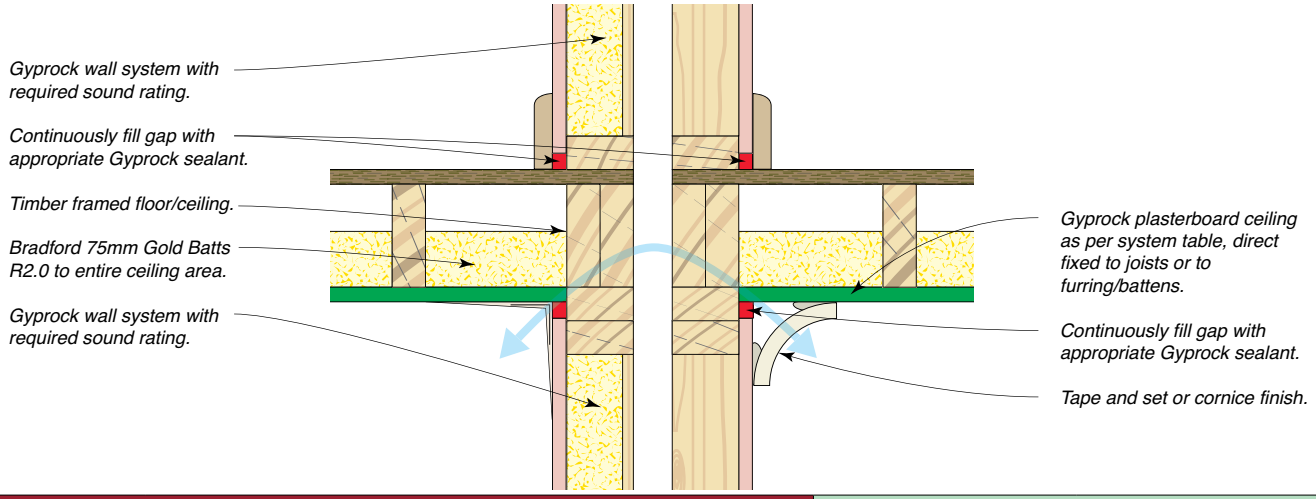
SYSTEM SPECIFICATION		ACOUSTIC REPORT: PKA-A126
SYSTEM Nº	**CONCRETE SOFFIT THICKNESS**	**R_w / R_w+C_{tr}**
CSR 8380	100mm	55/**50**
CSR 8382	125mm	55/**52**
CSR 8384	150mm	56/**53**
CSR 8386	175mm	57/**54**
CSR 8388	200mm	58/**55**
CSR 8390	225mm	58/**56**
CSR 8392	250mm	58/**56**

SYSTEM SPECIFICATIONS Flanking Path via Flush Jointed Ceiling – Over Party Wall



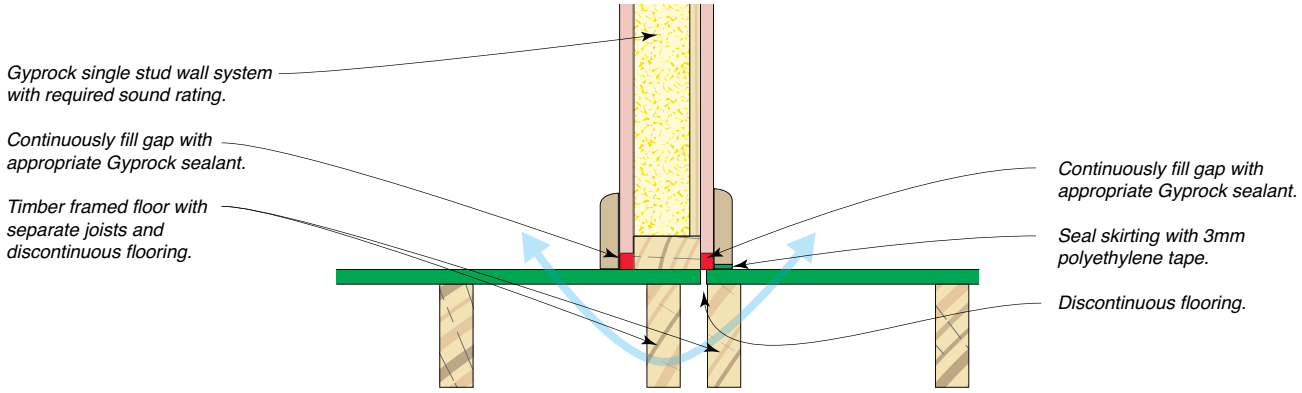
SYSTEM SPECIFICATION		ACOUSTIC REPORT: PKA-A126	
SYSTEM Nº	CEILING LININGS	CAVITY INFILL (Refer to TABLE B6)	R_w / R_w+C_{tr}
CSR 8406	1 x 10mm Gyprock Plus plasterboard.	(a) 50 Acoustigard 14kg	61/49
		(b) 75 Gold Batts 2.0	62/**50**
		(c) 75 Acoustigard 11kg	62/**50**
		(d) 165 Gold Batts 3.0	63/**51**
CSR 8411	1 x 10mm Gyprock Supaceil plasterboard.	(a) 50 Acoustigard 14kg	61/49
		(b) 75 Gold Batts 2.0	62/**50**
		(c) 75 Acoustigard 11kg	62/**50**
		(d) 165 Gold Batts 3.0	63/**51**

SYSTEM SPECIFICATIONS Flanking Path via Flush Jointed Ceiling – Over Party Wall



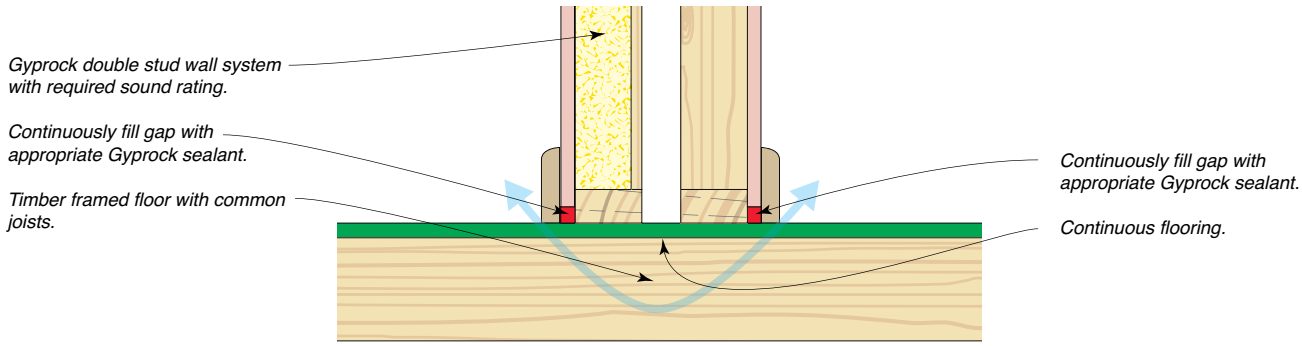
SYSTEM SPECIFICATION		ACOUSTIC REPORT: PKA-A126	
		CEILING PLASTERBOARD FIXING SYSTEM	
SYSTEM Nº	CEILING LININGS	(a) DIRECT FIXED TO TRUSS OR JOIST	(b) DIRECT FIXED TO FURRING OR BATTEN
		R_w / R_w+C_{tr}	
CSR 8430	1 x 13mm Gyprock Standard plasterboard.	53/47	53/47
CSR 8432	2 x 13mm Gyprock Fyrchek plasterboard.	57/**51**	57/**51**
CSR 8434	1 x 13mm + 1 x 16mm Gyprock Fyrchek plasterboard.	58/**52**	58/**52**
CSR 8436	1 x 16mm Gyprock Fyrchek plasterboard.	55/49	55/49
CSR 8438	2 x 16mm Gyprock Fyrchek plasterboard.	58/**52**	58/**52**

SYSTEM SPECIFICATIONS Flanking Path via Timber Floor – Under Single Stud Wall



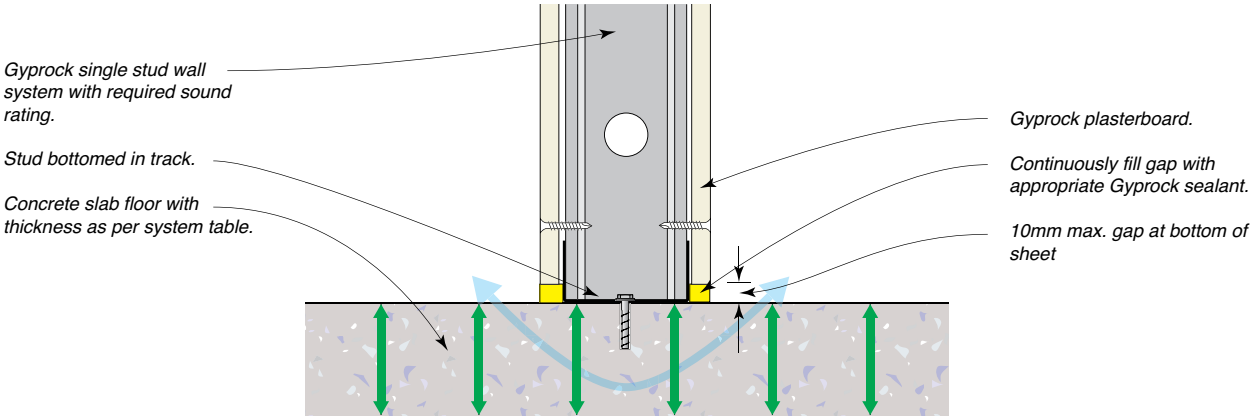
SYSTEM SPECIFICATION		ACOUSTIC REPORT: PKA-A126
SYSTEM Nº	FLOOR SHEETING	R_w / R_w+C_{tr}
CSR 8455	Particleboard Flooring.	48/42
CSR 8460	15mm Cemintel Compressed Sheet.	50/44
CSR 8465	18mm Cemintel Compressed Sheet.	50/45
CSR 8470	19mm Cemintel Constructafloor Sheet.	50/46

SYSTEM SPECIFICATIONS Flanking Path via Timber Floor – Under Double Stud Wall



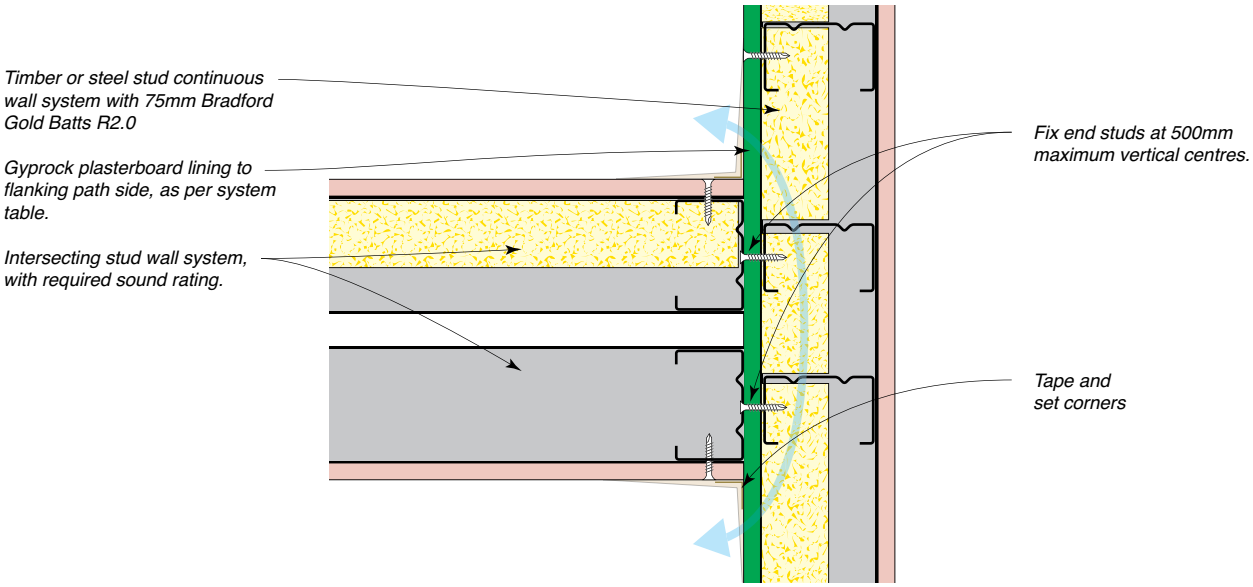
SYSTEM SPECIFICATION		ACOUSTIC REPORT: PKA-A126
SYSTEM Nº	FLOOR SHEETING	R_w / R_w+C_{tr}
CSR 8480	Particleboard Flooring.	45/39
CSR 8485	15mm Cemintel Compressed Sheet.	47/41
CSR 8490	18mm Cemintel Compressed Sheet.	47/41
CSR 8495	19mm Cemintel Constructafloor Sheet.	47/41

SYSTEM SPECIFICATIONS Flanking Path via Concrete Floor – Under Single Stud Wall



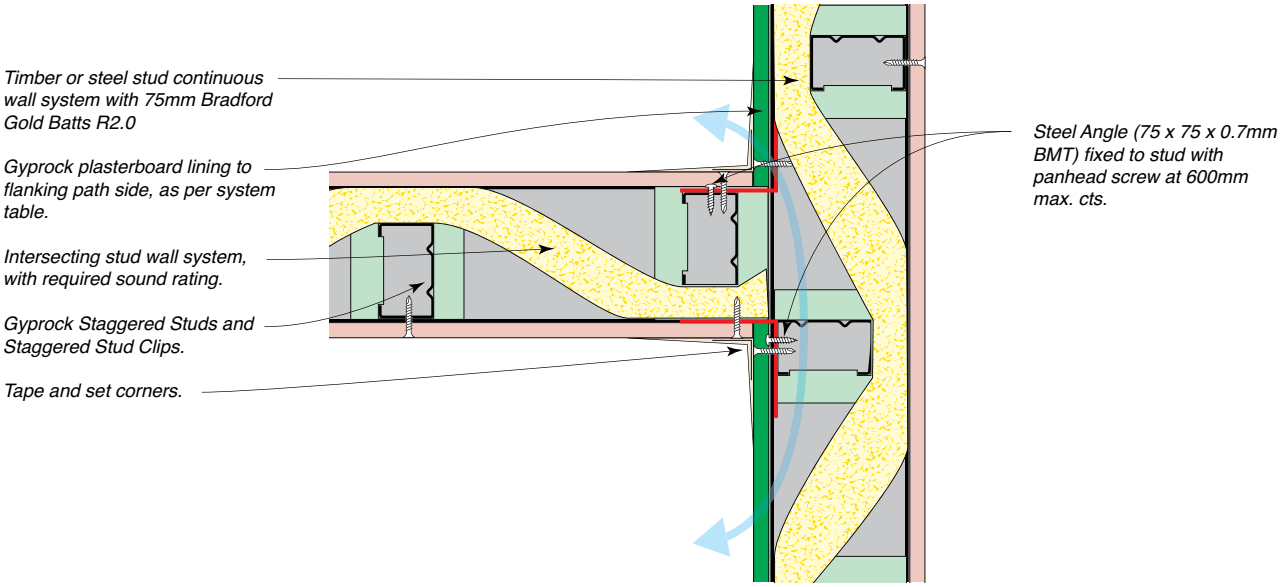
SYSTEM SPECIFICATION		ACOUSTIC REPORT: PKA-A126
SYSTEM Nº	**CONCRETE SLAB THICKNESS**	**R_w / R_w+C_{tr}**
CSR 8505	100mm	55/**50**
CSR 8507	125mm	55/**52**
CSR 8509	150mm	56/**53**
CSR 8511	175mm	57/**54**
CSR 8513	200mm	58/**55**
CSR 8515	225mm	58/**56**
CSR 8517	250mm	58/**56**

SYSTEM SPECIFICATIONS Flanking Path via Wall – Double Stud to Single Stud Wall Junction



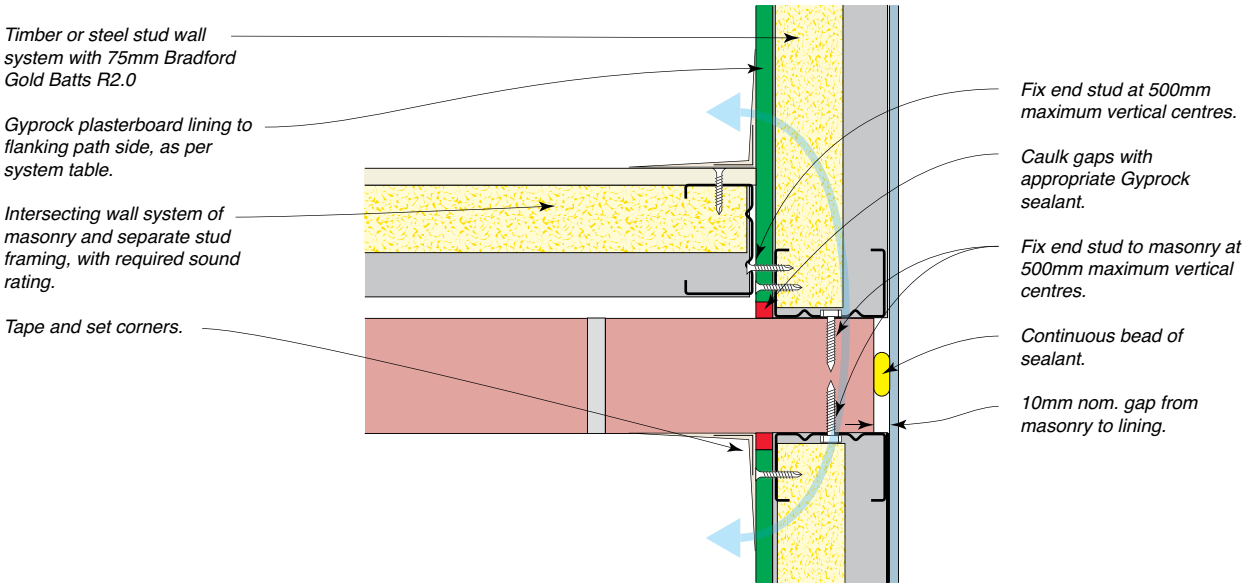
SYSTEM SPECIFICATION		ACOUSTIC REPORT: PKA-A126
SYSTEM Nº	**WALL LININGS**	**R_w / R_w+C_{tr}**
CSR 10204	2 x 10mm Gyprock HD plasterboard.	50/45
CSR 8532	1 x 13mm Gyprock Soundchek plasterboard.	50/45
CSR 8534	2 x 13mm Gyprock Standard plasterboard.	50/45
CSR 8536	1 x 13mm Gyprock Fyrchek plasterboard.	50/45
CSR 8538	1 x 16mm Gyprock Fyrchek plasterboard.	50/45

SYSTEM SPECIFICATIONS Flanking Path via Wall – Staggered Stud to Staggered Stud Wall Junction



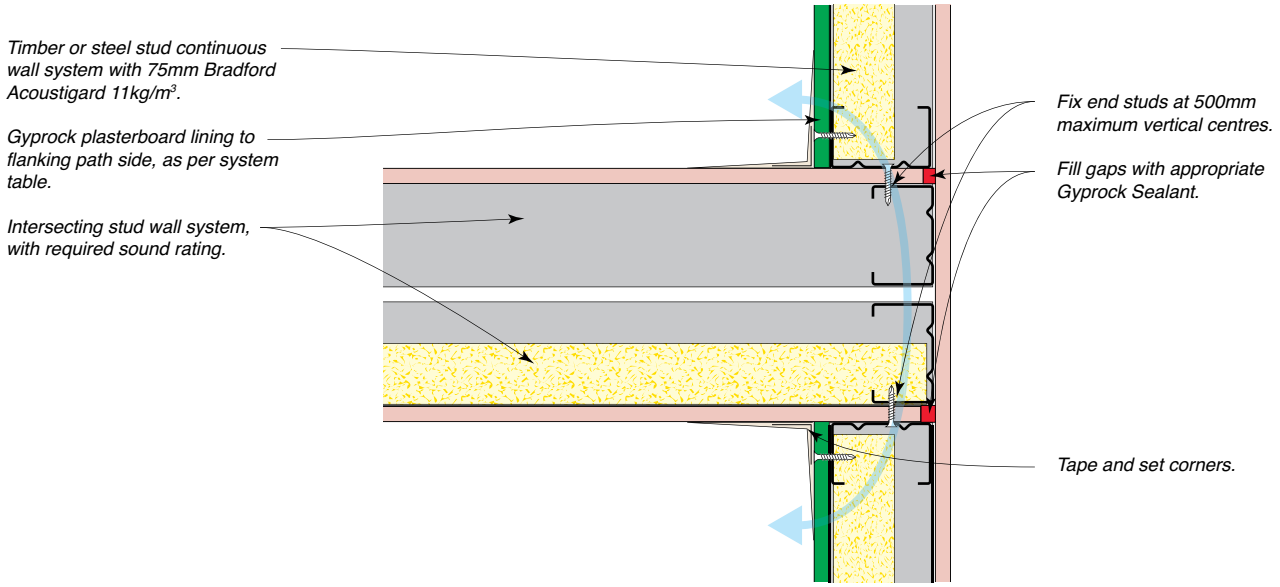
SYSTEM SPECIFICATION		ACOUSTIC REPORT: PKA-A126
SYSTEM Nº	WALL LININGS	R_w / R_w+C_{tr}
CSR 10205	2 x 10mm Gyprock HD plasterboard.	54/46
CSR 8557	1 x 13mm Gyprock Soundchek plasterboard.	54/46
CSR 8559	2 x 13mm Gyprock Standard plasterboard.	53/45
CSR 8561	1 x 13mm Gyprock Fyrchek plasterboard.	53/45
CSR 8563	1 x 16mm Gyprock Fyrchek plasterboard.	54/46

SYSTEM SPECIFICATIONS Flanking Path via Wall – Stud and Masonry Wall to Stud Wall Junction



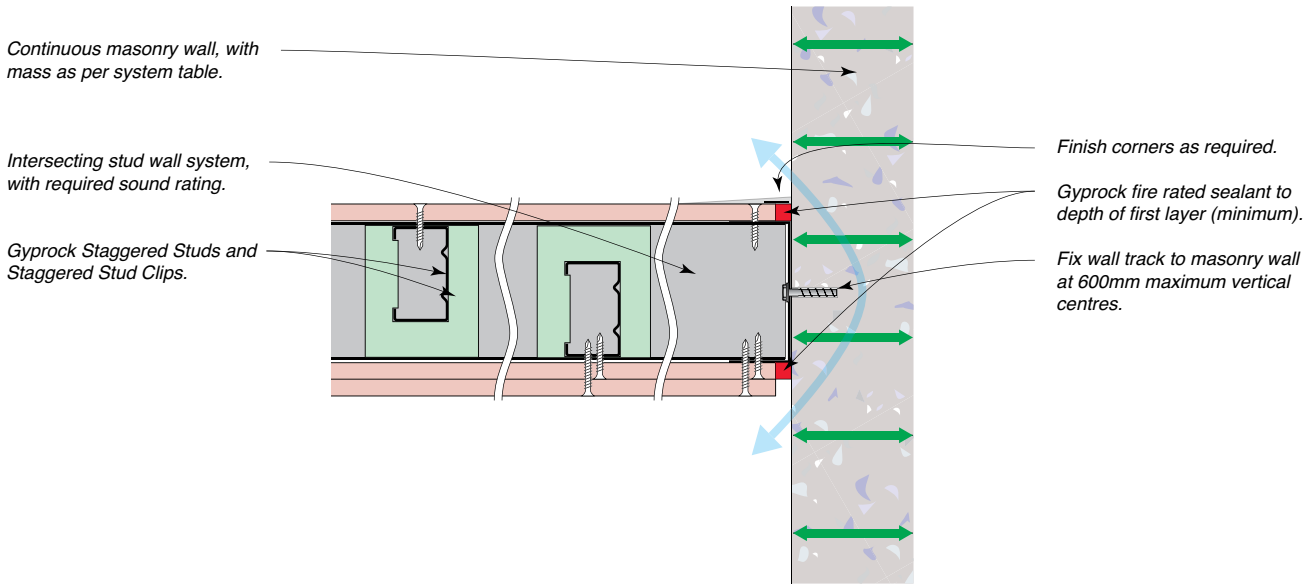
SYSTEM SPECIFICATION		ACOUSTIC REPORT: PKA-A126
SYSTEM Nº	WALL LININGS	R_w / R_w+C_{tr}
CSR 8580	1 x 10mm Gyprock Plus plasterboard.	50/42
CSR 10206	1 x 10mm Gyprock HD plasterboard.	51/43
CSR 8584	1 x 13mm Gyprock Soundchek plasterboard.	54/46
CSR 8586	1 x 13mm Gyprock Fyrchek plasterboard.	53/45
CSR 8588	1 x 16mm Gyprock Fyrchek plasterboard.	54/46

SYSTEM SPECIFICATIONS Flanking Path via Wall – Double Stud Wall to Single Stud Wall Junction



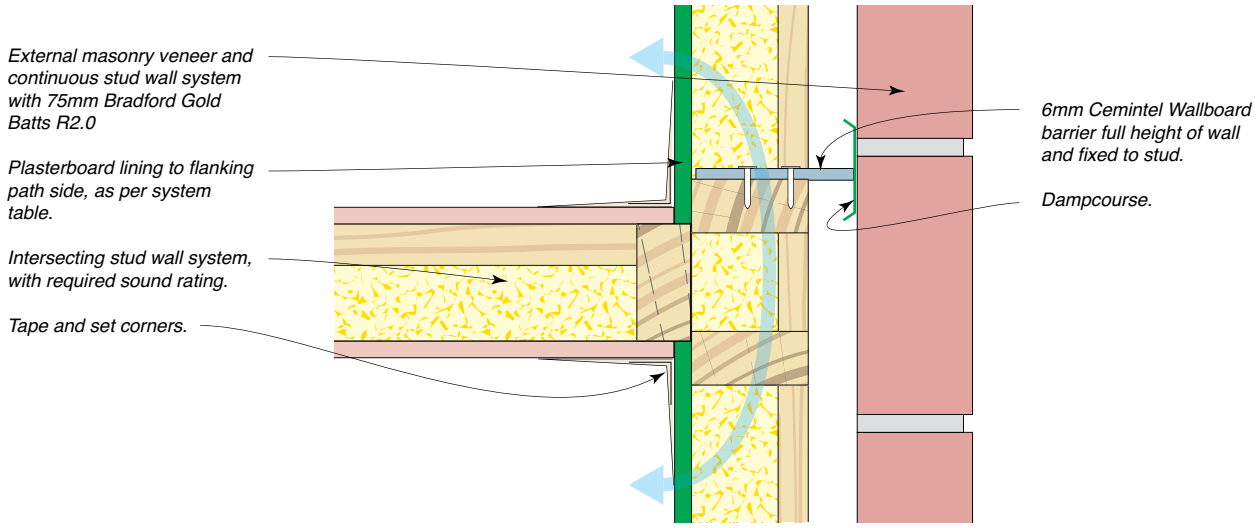
SYSTEM SPECIFICATION		ACOUSTIC REPORT: PKA-A126
SYSTEM Nº	WALL LININGS	R_w / R_w+C_{tr}
CSR 10207	2 x 10mm Gyprock HD plasterboard.	58/**50**
CSR 8607	1 x 13mm Gyprock Soundchek plasterboard.	58/**50**
CSR 8609	2 x 13mm Gyprock Standard plasterboard.	58/**50**
CSR 8611	1 x 13mm Gyprock Fyrchek plasterboard.	58/**50**
CSR 8613	1 x 16mm Gyprock Fyrchek plasterboard.	58/**50**

SYSTEM SPECIFICATIONS Flanking Path via Wall – Staggered Stud Wall to Masonry Wall Junction



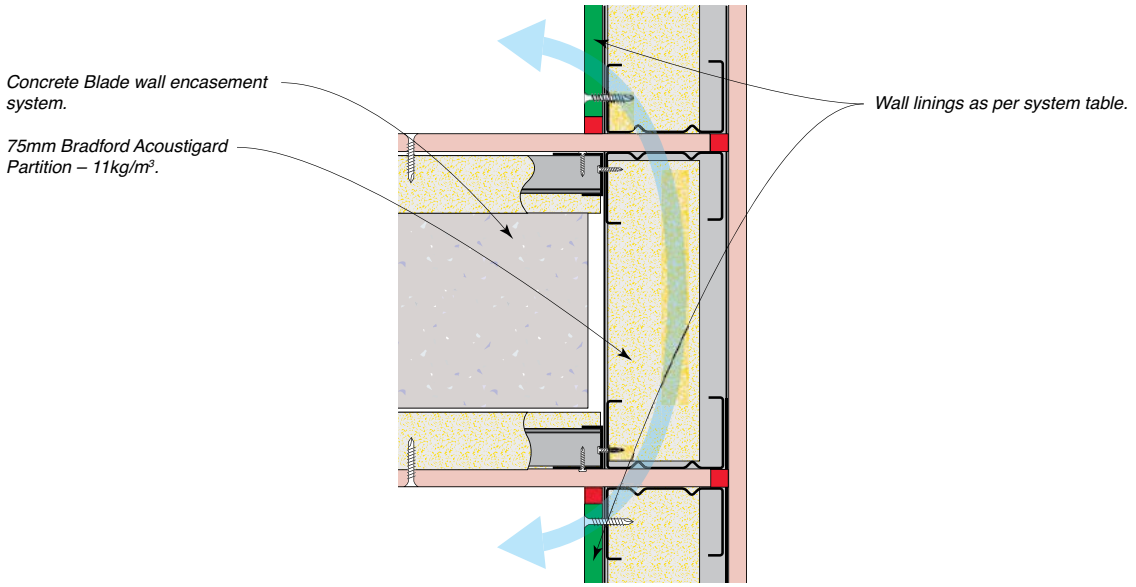
SYSTEM SPECIFICATION		ACOUSTIC REPORT: PKA-A126
SYSTEM Nº	MASONRY WALL MASS	R_w / R_w+C_{tr}
CSR 8630	90kg/m²	53/48
CSR 8632	150kg/m²	55/**50**
CSR 8634	200kg/m²	56/**51**

SYSTEM SPECIFICATIONS Flanking Path via Wall – Single Stud Wall to Masonry & Stud Wall Junction



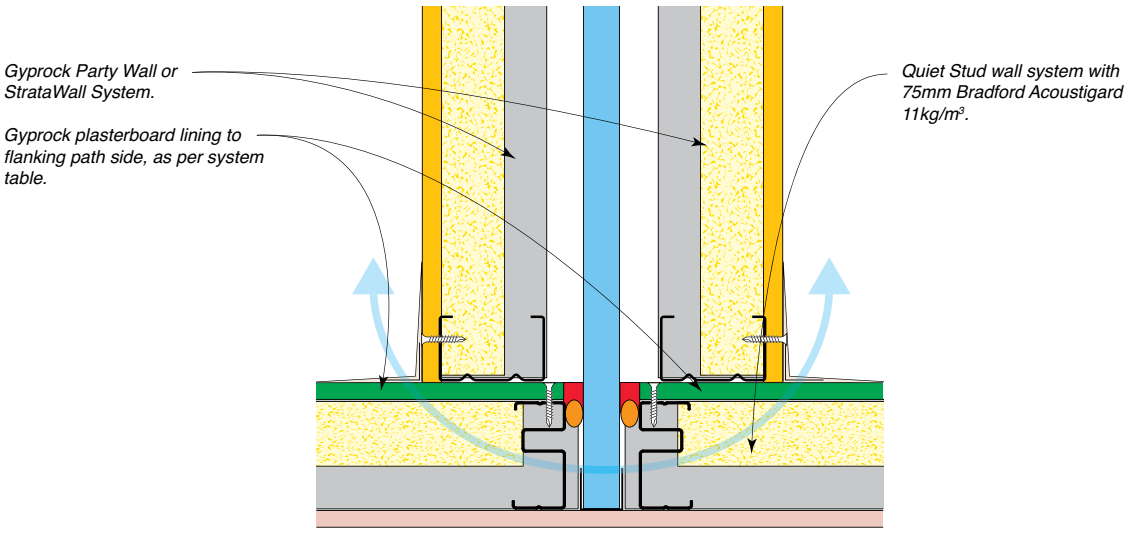
SYSTEM SPECIFICATION		ACOUSTIC REPORT: PKA-A126	
SYSTEM Nº	WALL LININGS	BARRIER	
		(a) Nil	(b) 6mm Cemintel Wallboard
		R_w / R_w+C_{tr}	
CSR 8655	1 x 10mm Gyprock Supaceil plasterboard.	39/30	59/**50**
CSR 10208	1 x 10mm Gyprock HD plasterboard.	41/32	60/**51**
CSR 8659	1 x 13mm Gyprock Soundchek plasterboard.	45/37	60/**52**
CSR 8661	1 x 13mm Gyprock Fyrchek plasterboard.	43/35	60/**52**
CSR 8663	1 x 16mm Gyprock Fyrchek plasterboard.	45/37	60/**52**

SYSTEM SPECIFICATIONS Flanking Path via Wall – Blade Wall Junction



SYSTEM SPECIFICATION		ACOUSTIC REPORT: PKA-A126
SYSTEM Nº	WALL LININGS	R_w / R_w+C_{tr}
CSR 10209	2 x 10mm Gyprock HD plasterboard.	58/**50**
CSR 8682	1 x 13mm Gyprock Soundchek plasterboard.	58/**50**
CSR 8684	2 x 13mm Gyprock Standard plasterboard.	58/**50**
CSR 8686	1 x 13mm Gyprock Fyrchek plasterboard.	58/**50**
CSR 8688	1 x 16mm Gyprock Fyrchek plasterboard.	58/**50**

Flanking Path via Wall – Party Wall to Quiet Stud Wall



SYSTEM SPECIFICATION		ACOUSTIC REPORT: PKA-A126
SYSTEM N°	**WALL LININGS**	**R_w / R_w+C_{tr}**
CSR 10210	2 x 10mm Gyprock HD plasterboard.	58/**50**
CSR 8707	1 x 13mm Gyprock Soundchek plasterboard.	58/**50**
CSR 8709	2 x 13mm Gyprock Standard plasterboard.	58/**50**
CSR 8711	1 x 13mm Gyprock Fyrchek plasterboard.	58/**50**
CSR 8713	1 x 16mm Gyprock Fyrchek plasterboard.	58/**50**

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