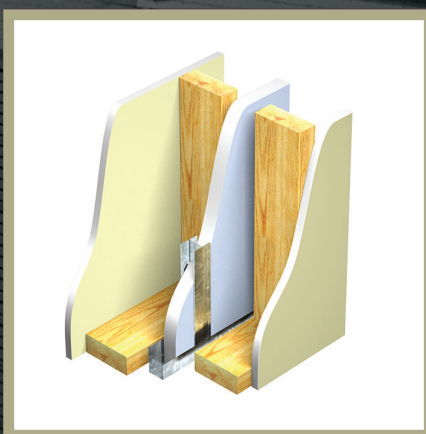
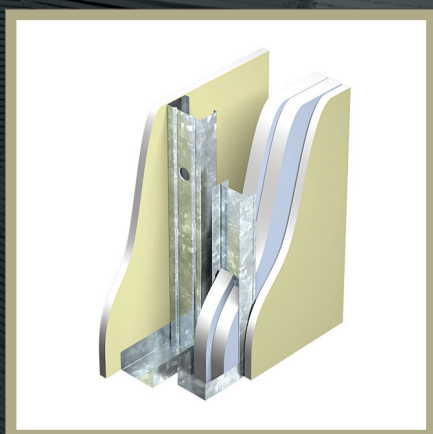
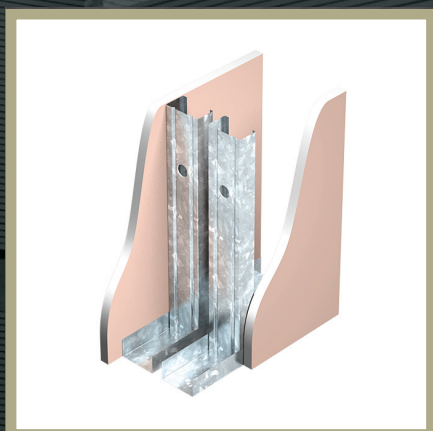


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PLASTERBOARD SYSTEMS **ISSUE 2**



Contents

A General Information

A1 Introduction

A2 Properties

A3 Appearance

A4 Acoustics

A5 Fire Resistance

A6 Structure

A7 Wet Areas

A8 Design

B System Index

B1 Notes

B2 Walls

B3 Ceilings

B4 Other Systems

C Design Tables

C1 Frameless Walls

C2 Height Tables

C3 Charfactors

C4 Ceiling Span Tables

C5 Installation Details

D1 General

D2 Walls

D3 Ceilings

D4 Reference

A | General Information

A1 | Introduction

A2 | Plasterboard Properties

A3 | Appearance

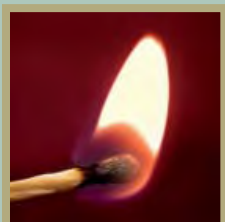
A4 | Acoustics

A5 | Fire Resistance

A6 | Structure

A7 | Wet Areas

A8 | Design Considerations



A | Contents

A1 | Introduction

Applications	A1.1
Advantages	A1.1
Building Systems Design And Performance	A1.1
Abbreviations Used In This Document	A1.2
System Designation	A1.3
Steel Component Designation	A1.3
Quality Assurance	A1.3
Certification	A1.3
Environmental Issues	A1.4
Safety and First Aid	A1.4

A2 | Plasterboard Properties

Board Weights	A2.1
Embodied Energy	A2.1
Thermal Resistance	A2.1
Specific Heat Capacity	A2.1
Temperature Effects	A2.2
Moisture Effects	A2.2
Impact Resistance	A2.2

A3 | Appearance

Levels of Finish	A3.1
Influences	A3.1
Glancing Light	A3.1
Gloss/Sheen Paints	A3.1
Paint Discolouration	A3.1

A4 | Acoustics

Introduction	A4.1
Sound Insulation	A4.1
Sound Isolation Criteria	A4.4
Acoustical Opinion	A4.9

A5 | Fire Resistance

Fire Resistance Levels	A5.1
Support	A5.1
Adjacent Structure	A5.1
Portal Frame Behaviour	A5.1
Direction of Attack by Fire	A5.2
Limiting Heights	A5.2
Resistance to the Incipient Spread of Fire	A5.2
Charfactors	A5.2
Insulation Materials	A5.2
Fire Hazard Properties	A5.3
Combustibility	A5.3
Gas Appliances	A5.3
Gas Reticulation in Fire Rated Walls	A5.3
Smoke Walls	A5.3

A6 | Structure

Vertical Deflections	A6.1
Plasterboard as Structural Bracing	A6.1
Limiting Heights	A6.1
Shelf Loading	A6.1
Load Bearing Fire Rated Steel Stud Walls	A6.2
Limiting Spans	A6.2
Allowable Ceiling Loads	A6.2

A7 | Wet Areas

Application	A7.1
Boral Wet Area System™	A7.1
Standards	A7.1
Boral Wet Area Board™	A7.1

A8 | Design Considerations

General	A8.1
Wall Systems	A8.2
Ceiling Systems	A8.2
Maximum Plasterboard Spans	A8.2
Design Options	A8.3

A1 | Introduction

This document is a guide to the extensive range of Boral Plasterboard construction systems and assemblies. These products include acoustic and fire rated systems and have been designed to meet the needs and constraints of Australian conditions, while also providing space saving, dry, and lightweight constructions that are fast and economical to construct.

It has been compiled for specifiers, builders, contractors and Boral Plasterboard sales personnel. It consolidates fire rated and non fire rated plasterboard systems and incorporates more recent testing and advances in plasterboard technology.

Applications

Applications possible with lightweight plasterboard construction include partitioning, acoustic and fire rated walls and ceilings, load bearing walls, security walls, chase walls, shaft walls, separating walls, duct enclosures and structure protecting systems.

The scope of fire rated systems includes systems with a fire resistance of up to four hours.

Ceiling systems are available to provide a horizontal fire separating barrier to roof plenums and between occupancies. For the usual fire resistance levels required it is often the lightest and most suitable solution for horizontal fire separation. Fire resistance for most of the horizontal systems represented in this manual are assessed for fire attack from below as is the usual requirement. Also listed are other horizontal systems which are assessed for fire attack from both above and below or from above only.

Refer to relevant Boral Plasterboard publications for further details.

Advantages

Boral Plasterboard systems accommodate the heights/spans and pressures as listed by utilising appropriate stud depths, sizes/gauges and centres. Plasterboard systems with the appropriate cavity insulation have been tested acoustically to achieve high sound insulation ratings. Fire rated systems of up to -/240/240 and 120/120/120 fire resistance level (FRL) as defined in the Building Code of Australia are readily achievable.

Building Systems Design and Performance

As noted elsewhere in this manual, the performance ratings provided are based on laboratory tests carried out under ideal conditions. In-situ performance may experience some variation from the tested result. Whilst Boral Plasterboard confirms the performance ratings of the building systems listed in this manual, it is the responsibility of the appointed project consultant to ensure the building system specified is suitable for its intended in-service conditions.

Abbreviations Used in This Document

A	Boral Soundstop® plasterboard
AM	Acoustic Mounting for furred or suspended systems
AS	Australian Standard
AWTA	Australian Wool Testing Authority
BCA	Building Code of Australia
BFT	BHP fire test
BHP	BHP fire assessment
BMT	Base metal thickness (mm), ie taken underneath any zinc or other coating
BRANZ	Building Research Association of New Zealand
BS	Both sides
CAC	Ceiling Attenuation Class
CCAA	Cement and Concrete Association of Australia
Cf	Charfactor, as used in fire rated timber wall design
CH	C+H section galvanized steel Shaft Wall stud
CS	Lipped Rondo C section galvanized steel stud
CSIRO	Commonwealth Scientific and Industrial Research Organization
CT	Rondo C section galvanized steel track, 32mm flanges
ctrs	Centres
dir	Fire resistance is directional
$D_{n,c,w}$	Weighted suspended ceiling normalised sound level difference (applies to over partition systems)
$D_{n,T,w} + C_{tr}$	Weighted standardised sound level difference with spectrum adaptation term (field performance)
DR	Galvanized steel Shaft Wall deflection head runner, 50mm and 75mm flanges
DT	Rondo C section galvanized steel deflection head track, 50mm flanges
EFH	Early Fire Hazard
ES	E section galvanized steel Shaft Wall stud
ESA/M	Exposed surface area of steel member (m ²) divided by its mass per metre length (tonnes)
F	Boral Firestop® plasterboard
FAR	BRANZ fire assessment
FCO	CSIRO fire assessment
FPC	Fire Protective Covering
FR	BRANZ fire test
FRFC	Face recessed furring channel
FRL	Fire resistance level (structural adequacy/integrity/insulation)
FSH	CSIRO horizontal fire test
FSP	CSIRO pilot fire test
FSV	CSIRO vertical fire test
GHA	Graeme E Harding & Associates Pty Ltd
GW	Glasswool
HW	Hardwood
IIC	Impact Insulation Class (acoustic classification)
Iso	Fire rating applies from lined side only
JR	Galvanized steel Shaft Wall runner, 25mm and 57mm flanges
JS	Unlipped C section galvanized steel Shaft Wall jamb stud, 50mm and 75mm flanges
kN	Kilonewton (unit of force)
kPa	Kilopascal (1000 Pascals)

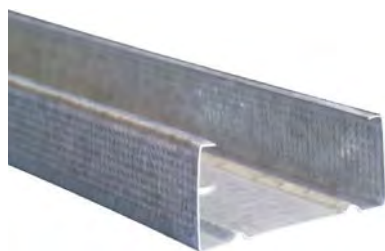
$L_{n,T,w} + C_1$	Floor weighted standardised impact sound pressure level with spectrum adaptation term (field)
$L_{n,w} + C_1$	Floor weighted normalised impact sound pressure level with spectrum adaptation term (laboratory)
MPa	Megapascal (unit of stress)
NA	Not Applicable
NAL	National Acoustic Laboratories
NR	Not Required
NRC	Noise Reduction Coefficient
NZS	New Zealand Standard
OS	One side
Pa	Pascal (unit of pressure)
Pbd	Plasterboard
pgs	Pages
prev	Previous
pl	Plate
RC	Resilient Channel
RH	Relative Humidity
RISF	Resistance to the incipient spread of fire
RMIT	Royal Melbourne Institute of Technology
R_w	Weighted sound reduction index (laboratory)
$R_w + C_{tr}$	Weighted sound reduction index with spectrum adaptation term (laboratory)
R'_w	Weighted apparent sound reduction index (field test)
Sht	Sheet
SI	CSIRO fire test (Sponsored Investigation)
Srf	(for masonry walls) Maximum Slenderness Ratio
STC	Sound Transmission Class
std	Standard
TE-FIRTO	Technical Evaluation of The Loss Prevention Council UK
TR	CSIRO fire test
U	Boral Unispan® plasterboard
U of C	University of California
W	Boral Wet Area plasterboard
WF	Boral Wetarea Firestop™ plasterboard
WFIC	Impact Insulation Class for walls by field testing (acoustic classification)
WFRA	Warrington Fire Research (Aust) Pty Ltd
WIIC	Impact Insulation Class for walls by laboratory testing (acoustic classification)
Wt	Weight
WT	BHP fire test
xxCHyy	Designation (for Rondo CH studs) in format of stud depth (mm), CH stud, BMT (mm x 100)
xxCSyy	Designation (for Rondo lipped C studs) in format of stud depth (mm), CS stud, BMT (mm x 100)
xxCTyy	Designation (for Rondo (32mm flange) standard track) in format of track depth (mm), CT track, BMT (mm x 100)
xxDSyy	Designation for tophat stud sections in format of stud depth (mm), DS stud, BMT (mm x 100)
xxDTyy	Designation (for Rondo (50mm flange) deflection track) in format of track depth (mm), DT track, BMT (mm x 100)
xxGyy	Glasswool insulation in format of thickness (mm), G (glasswool), density (kg/m ³)
xxPyy	Polyester insulation (Tontine or equivalent) in format of thickness (mm), P, density (kg/m ³)

System Designation

Systems are called up by their system number, eg TS1313. This new system numbering replaces the previous system identification which is also referenced in the System Index for convenience. Refer to Section B for an explanation of the new system identification.

Steel Component Designation

Stud Sections are called up by depth and gauge, for example a 64mm deep C Stud of 0.75mm base metal thickness (BMT) is called up as a "64CS75". Track sections are similarly named. Unless otherwise noted the steel studs, associated tracks and other component types in the various sizes referred to in this selector are to be manufactured by Rondo Building Services Pty Ltd. These are distributed by Boral Plasterboard.



Steel C Stud (CS)

Quality Assurance

Boral Plasterboard is a Quality Endorsed Company (Lic No 0400) conforming to AS/NZS ISO 9001:2008 'Quality management systems – Requirements'.

Boral plasterboard is machine made under a continuous process to the requirements of AS/NZS 2588:1998 'Gypsum plasterboard'.

Certification

Boral Plasterboard systems have been assessed to meet the relevant requirements of Australian Standards and the Building Code of Australia.

Fire testing and assessment has been done to AS 1530.4:2005 'Methods for fire tests on building materials, components and structures - Fire resistance test of elements of construction' carried out by:

- CSIRO, Manufacturing and Infrastructure Technology, North Ryde, NSW
- Warrington Fire Research, Dandenong, Victoria
- BHP Research, Clayton, Victoria
- BRANZ, Judgeford, New Zealand.

Acoustic testing has been done to AS 1191:2002 'Acoustics - Method for laboratory measurement of airborne sound transmission insulation of building elements' & AS/NZS 717.1:2004 'Acoustics - Rating of sound insulation in buildings and of building elements - Airborne sound insulation' carried out by:

- Royal Melbourne Institute of Technology (RMIT), Victoria
- CSIRO, Highett, Victoria
- National Acoustic Laboratories, Chatswood, NSW.

Structural testing of wall systems has been carried out at the NATA registered laboratories of Boral Plasterboard at Port Melbourne. Structural appraisal of the systems was carried out by Wynton Stone Australia Pty Ltd and Taylor Thomson Whitting of Melbourne.

Fire, acoustic and structural test reports and opinions can be made available on request from all Boral Plasterboard Sales Offices.

The systems published in this document and their certification are valid only when constructed in accordance with Boral Plasterboard details and using the stated Boral plasterboard manufactured in Australia by Boral Australian Gypsum Limited, ie Boral Standard Core, Flexiboard®, Unispan®, Soundstop®, Firestop®, Wet Area Board™, Wet Area Firestop™ and Shaftliner™. Fastening should be of the same type and at centres no greater than detailed for particular systems.

Environmental Issues

Boral Plasterboard is manufactured from naturally occurring Gypsum mined at Kevin in South Australia by Gypsum Resources Australia Pty Ltd. The mine has a remediation plan in place which will result in a gently undulating landscape using the overburden previously stripped and will allow re-growth of native local vegetation, mostly salt bush.

The paper liner is manufactured from recycled pulp with almost all of it coming from used paper and cardboard packaging.

In Australia, Boral Plasterboard has developed an environmental policy which targets the recycling of its plaster products. The Standard Core plasterboard products (which is the majority of production) can all be recycled either into new plasterboard or soil conditioner.

The company can also accept clean plasterboard off-cuts from some building sites to recycle for use in new plaster products.

For further information contact a local Boral Plasterboard office.

Safety and First Aid

Although there are no health hazards known in the normal use and application of plasterboard, observe the following precautions:

- Avoid creating dust when handling plasterboard or mixing plasterboard products
- Reduce sanding by passing a wet sponge over the edges of the finished joints after trowelling
- If dry sanding is necessary and dust is created, provide adequate ventilation, wear eye protection and a disposable respiratory mask conforming to AS/NZS 1716:1994 'Respiratory protective devices'
- Keep all construction materials and tools out of reach of children
- Compound or dust in the eyes - Wash the eyes thoroughly with water
- Compound or dust on skin - Wash the skin with soap and water
- Dust inhalation - Move to fresh air area
- Ingestion of compounds or dust - Drink plenty of water
- Material Safety Data Sheets for Boral Plasterboard products are available on Boral website www.boral.com.au or through Boral TecASSIST® 1800 811 222.

A2 | Plasterboard Properties

The following is information on various properties and aspects of plasterboard that the designer may find useful in specifying plasterboard systems.

Board Weights

The weights for various board types produced by Boral Plasterboard are provided in the following table:

Plasterboard Type	Thickness (mm)	Mass (kg/m ²)
Flexiboard®	6	4.1
Std Core	10	6.8
	13	8.6
Unispan®	10	7.2
Wet Area Board™	10	7.4
	13	9.4
Firestop®	13	10.5
	16	13
Wet Area Firestop™	13	10.5
	16	13
Soundstop®	10	8.2
	13	11.2
Foil-backed board	10	6.8
	13	8.6
Shaftliner™	25	20.5
Impactstop™	13	11.3

Embodied Energy

The Process Energy Requirement (PER) of plasterboard is 4.4MJ/kg of plasterboard. This PER refers to the amount of energy required in the manufacture of the plasterboard including the mining of the gypsum, shipping the gypsum to the plant, and the production of the paper liner. The energy used in the transport of the plasterboard from the manufacturing plant to the distribution outlets or building site is not included in the PER figure.

Thermal Resistance

Commonly, plasterboard is fixed to framework, creating a cavity construction. Thus, thermal resistance ratings (R-values) of plasterboard systems can be easily upgraded through addition of bulk or reflective insulation.

The R-values of various plasterboard products produced by Boral are provided in the following table:

Plasterboard Product	R-value
10mm Std Core	0.056m ² K/W ±10%
13mm Std Core	0.073m ² K/W ±10%
13mm Firestop®	0.061m ² K/W ±10%
16mm Firestop®	0.074m ² K/W ±10%
25mm Shaftliner™	0.112m ² K/W ±10%

Calculation of the above R-values is from test data of thermal conductivity as reported in BRANZ Report No EC0713, 22/10/2003. Thermal resistance ratings of various external wall systems are shown in the System Index.

Specific Heat Capacity

The Specific Heat Capacity is a measure of a material's capacity to store heat, the higher the Specific Heat Capacity the greater the capacity to store heat.

Pbd Product	Specific Heat Capacity	Basis
10mm Std Core	1028J/kgK ±10%	BRANZ Report No EC0713/2, 22/10/03
13mm Firestop®	960J/kgK ±10%	BRANZ Report No EC0713/2, 22/10/03
25mm Shaftliner™	979J/kgK ±10%	BRANZ Report No EC0713/2, 22/10/03

Temperature Effects

Thermal co-efficient of linear expansion = $16.2 \times 10^{-6} \text{mm}/(\text{mm}^\circ\text{C})$ over the range 4°C to 38°C .

Boral Plasterboard does not recommend the use of radiant heating systems continuously subjecting plasterboard ceilings to temperatures in excess of 42°C .

Moisture Effects

The hygrometric co-efficient of linear expansion of plasterboard is $7.2 \times 10^{-6} \text{mm}/(\text{mm}\% \text{RH})$ over the range 5% to 90% relative humidity.

As exposure to moisture may affect performance of plasterboard linings, it is recommended that plasterboard is installed in well ventilated areas protected from moisture penetration.

Building designers should be aware that some types of bulk insulation tend to absorb and retain the moisture against the face of plasterboard.

Impact Resistance

Impacts on walls come in three basic forms; soft body, abrasive and hard body. Each of these can affect the wall lining in different ways and consequently affect the choice of the lining system.

Soft Body Impact

Soft body impact is the type of impact one would associate with people hitting walls with their shoulder or hip. Soft body impact testing is a requirement under the Building Code of Australia (BCA) for certain types of wall systems.

Up to the point of breaking the lining, soft body impacts rarely leave any visible marks on the face of the wall, unlike hard body and abrasive impacts.

Where required, Boral Plasterboard systems comply with the soft body impact resistance provisions of the BCA.

Abrasive Impact

This impact occurs when an object is scraped along the face of the wall and usually is seen by marks in the paint covering the wall lining. Resistance against abrasion is more a function of the surface coating over the face of the wall lining, than the lining itself. However, the harder the lining material is, the better it will resist determined scratching associated with vandalism.

With a glancing impact, where a hard body object strikes the wall at an angle of less than 90 degrees, the damage will often be a combination of abrasion and denting.

Hard Body Impact

These impacts result in dents or gouges and sometimes penetration of the wall lining. Examples of hard body impacts would include kicks and hits with trolleys or hockey sticks. The BCA specifies a static test measuring resistance to indentation of wall linings (Specification C1.8.6), but no hard body impact requirements. All plasterboard products produced by Boral Plasterboard meet this surface indentation criteria.

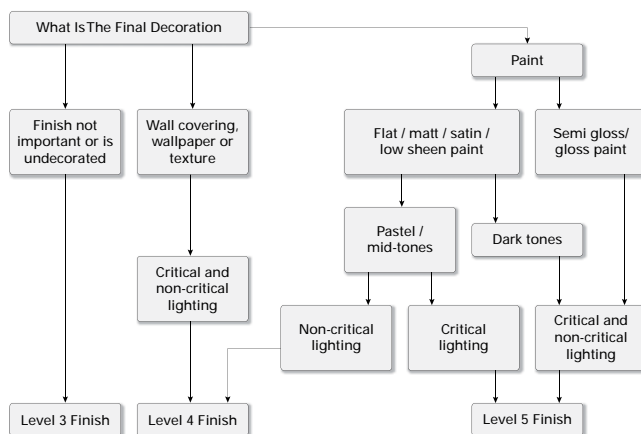
When considering what solution to use in a particular situation, it is important to look at the lifecycle costs for the alternatives available. Lifecycle costs include the up front capital cost to build the wall and the costs of maintaining the wall linings that are incurred over the life of the building. While some alternative systems may have lower maintenance costs in service, their up front installation costs may be quite high and plasterboard may provide a more cost effective solution.

A3 | Appearance

Levels of Finish

To quantify the quality of finish desired, AS/NZS 2589:2007 'Gypsum Linings - Application and Finishing' applies a system known as 'levels of finish'. There are 3 levels of finish (3-5), with Level 4 being the default for residential construction.

Since each level of finish requires specific tolerances for frame alignment and plasterboard fixing and finishing, it is essential that the level of finish required is determined at the design stage. The desired level of finish is achievable only when these requirements are met throughout the various stages of construction.



Influences

There are many factors in modern building design that influence the overall appearance of a wall or ceiling.

Modern features such as lower unbroken ceiling areas across adjoining rooms, large open living areas, and importantly, larger windows with greater use of natural light from skylights and mirrored walls etc often create conditions in which it is difficult to achieve the desired level of finish.

Consumers are often not aware of the difficulties involved in achieving their expectations, particularly when some design conditions highlight rather than camouflage surface conditions. It is therefore very important that the consumer's expected standard of finish matches the level of finish the tradesperson is capable of achieving given the particular design features of the project.

Glancing Light

Glancing light is the light that shines across the surface of a wall or ceiling rather than directly on it. When considering the type of finish required it is important to understand how the overall appearance is likely to be affected by glancing light in a particular situation.

Refer Boral Plasterboard publication 'Lighting and Decoration – The Facts' for guidance on good lighting and decoration practices.

Gloss/Sheen Paints

Full gloss paint finish is not recommended on plasterboard walls or ceilings. When semi-gloss paint is to be used in large open rooms or vast areas with uncurtained windows, the highest level of finish (Level 5) is essential.

Where gloss or impervious sheen paint finishes are desired for purely functional reasons eg, kitchens, bathrooms etc, some loss of appearance should be accepted.

Paint Discolouration

Whilst a plasterboard installation may conform to the relevant Australian Standards, discolouration of the joints may occur in colder climate conditions/regions ie ACT, Tasmania and Alpine Regions, due to effects of condensation. Mould growth, contaminated paint, staining and smoke affected joints are among contributing factors of paint discolouration and visible joints in subtropical and tropical regions.

Refer to Boral Plasterboard publication 'Lighting and Decoration – The Facts' for good design practices aimed at avoiding paint discolouration due to the above causes.

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A4 | Acoustics

Introduction

All acoustic ratings listed in Section B have been verified by acoustical consultants Graeme E Harding & Associates and are covered by opinion Sheet No 104 (copy attached at the end of this Section). A list of tested systems can be provided on request.

Building acoustics is the science of controlling noise in buildings, including the minimisation of noise transmission from one space to another and the control of noise levels and characteristics within a space. The term 'building acoustics' embraces **sound insulation** and **sound absorption**. The two functions are quite distinct and should not be confused.

Noise has been defined as sound which is undesired by the recipient, but it is very subjective and depends on the reactions of the individual. However, when a noise is troublesome it can reduce comfort and efficiency and, if a person is subjected to it for long enough periods, it can result in physical discomfort or mental distress. Ideally, the sound insulation requirements for a building should be considered at the design stage and take into account both internal and external sound transmission. Remedial measures after occupation can be expensive and inconvenient.

Sound Insulation

Any wall or floor/ceiling partition system that separates one sole-occupancy unit from another, must comply with the acoustic provisions as set out in the Building Code of Australia (BCA).

Walls or floor/ceilings that separate one room from another within the dwelling fall outside the scope of the BCA. However, an owner may wish to create quiet zones within the home by selecting internal wall or ceiling systems that have improved acoustic isolation properties.

There are two types of noise transfer through partitions, **airborne transfer**, and **structure borne transfer**. Both may need to be considered in order to achieve the desired result.

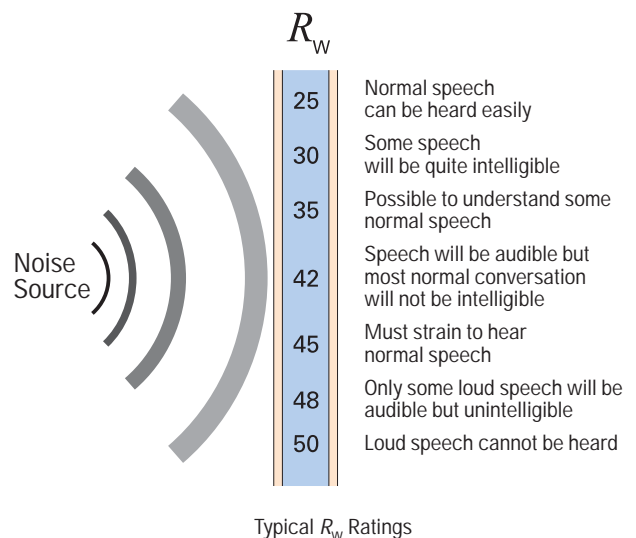
Airborne Noise

Weighted Sound Reduction Index (R_w)

Noise sources such as voices, television sets/home theatre and musical instruments, generate noise in the air in one room and this noise passes through the partition and into the room on the other side. This is known as airborne noise.

The BCA has adopted the **Weighted Sound Reduction Index (R_w)** as a measure of sound isolating properties of building elements. A partition with a high R_w rating isolates sound better than a partition with a low R_w rating. If two partitions are compared subjectively and one has an R_w which is 10 rating points higher, then the noise passing through the better wall will be about half the loudness of the lesser wall. The R_w ratings are obtained from tests carried out in certified laboratories, under controlled conditions.

Determination of R_w is defined in AS/NZS ISO 717.1 Acoustics – Rating of sound insulation in buildings and of building elements Part 1: Airborne sound insulation.



» Sound Insulation

R_w vs STC

In 2000, the BCA replaced the Sound Transmission Class (STC) rating with R_w .

For most partitions $STC = R_w$, however the rating between the two can vary by as much as 3dB for the same partition. This is due to the different rules that apply when determining the two sets of numbers.

Spectrum Adaptation Term (C_{tr})

The R_w alone is not a good indicator of how well the partition isolates low frequency (bass) sounds. To improve the low frequency performance of wall & floor/ceiling partitions, the BCA requires specific walls to meet an $R_w + C_{tr}$ criterion.

When the C_{tr} is combined with the R_w the result is a single number index which provides a more reliable indicator of the ability of the partition to isolate noise containing low frequency components.

Two partitions with the same $R_w + C_{tr}$ value will have similar low frequency isolation properties regardless if their respective C_{tr} terms are vastly different. The higher the $R_w + C_{tr}$ value for a wall or ceiling partition the better the sound insulation performance, particularly in the low frequencies.

The C_{tr} typically ranges between -1dB to -15dB and is calculated from the airborne performance of a partition in the range of frequency bands measured. Determination of C_{tr} is defined in AS/NZS ISO 717.1 Acoustics – Rating of sound insulation in buildings and of building elements Part 1: Airborne sound insulation.

Structure-borne Noise

When a building element is directly, or indirectly, impacted or vibrated then some of the energy passes through the partition and is reradiated as noise to the room on the other side. This is called structure borne noise or impact noise.

Impact Sound Isolation for Walls

The most common sources of structure borne noise through walls are:

- Cupboard doors, fixed to party walls, being closed
- Kitchen appliances being used on benches touching walls
- Plumbing fittings, particularly taps, being connected to walls
- Light switches being turned on and off
- Dishwashers, washing machines, clothes dryers, etc touching party walls.

The BCA has adopted the approach that for walls requiring impact sound performance then the construction must be of 'discontinuous construction'. The BCA defines discontinuous construction as a wall having a minimum 20mm cavity between two separate leaves, and:

- For masonry, where wall ties are required to connect leaves, the ties are of the resilient type
- For other than masonry, there is no mechanical linkage between leaves except at the periphery.

Boral Plasterboard wall systems qualifying as 'discontinuous construction' include:

- Twin stud wall systems, both in timber and steel
- IntRwall® systems (which include a separate steel stud at least to one side)
- Partiwall® systems (with aligned floors on each side of separate dwellings)
- Masonry wall systems to Detail E & F only (ref Section B)

The BCA and the 'Guide to the BCA' states that for Class 1 Buildings and Class 2 to 9 Buildings respectively a staggered stud wall is not deemed to be discontinuous construction.

» Sound Insulation

Impact Sound Isolation for Floors

The most common source of structure borne noise to the occupants below is footsteps.

In addition to a minimum airborne sound isolation performance ($R_w + C_{tr}$), the BCA has introduced a requirement for an impact rating of floors between sole occupancy units of Class 2 or 3 Buildings expressed as $L_{n,w} + C_I$.

The $L_{n,w}$ (Weighted normalised impact sound pressure level) is measured in very controlled conditions in a laboratory and indicates how much sound reaches the receiving room from a standard tapping machine. The lower the number the better the performance of the floor at isolating impact sounds.

The Spectrum adaptation term (C_I) is used to modify $L_{n,w}$ to more closely simulate foot step noise.

$L_{n,w}$ and C_I are defined in AS ISO 717-2 Acoustics – Rating of sound insulation in buildings and of building elements – Impact sound insulation.

Difference Between Laboratory and Field Test Results

When identical partitions are tested on site it is often found that the site rating is lower than the R_w (laboratory performance).

This reduction in performance can be due to:

- flanking paths, ie noise passing through adjacent parts of the building
- incorrect installation procedures, or
- non-ideal measurement conditions. For instance, small room sizes may affect accurate measurements in particular frequencies.

On-site field testing is now allowed as a verification method to comply with the provisions of the BCA.

The on-site rating measurement under the BCA is the $D_{nT,w}$ (Weighted standardised level difference) and is, technically, slightly different to the laboratory R_w assessment. The BCA allows a 5dB concession between the laboratory performance and the field performance to allow for flanking and the technical difference in units. Therefore, the $D_{nT,w} + C_{tr}$ may be up to 5dB less than the $R_w + C_{tr}$.

For the transmission of impact generated sound through floors, the BCA does not allow any concession from the laboratory performance to the field performance. Therefore, the on site performance requirement, $L'_{nT,w}$ (Weighted standardised impact sound pressure level) + C_I , cannot exceed the $L_{n,w} + C_I$.

Sound Insulation Rating of Services

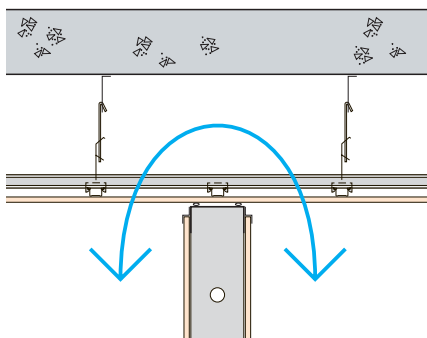
The BCA requires ducts, soil and waste pipes and water supply pipes located in a party wall or floor cavity to be acoustically separated by a construction with a minimum $R_w + C_{tr}$ rating. Supplementary to the airborne rating, the BCA requires that **water supply pipes must only be installed in the cavity of discontinuous construction.**

To achieve the sound insulation requirements of the BCA, one of the options for soil and waste pipe treatment includes acoustic lagging of the pipes which typically comprises a loaded vinyl isolated from the pipe with foam or fibreglass. It is important that the lagging and pipe are not in contact with ceilings, walls or supports and the pipe mounts and supports are not contact the surrounding bulkheads or risers.

» Sound Insulation

Over-partition Noise Rating

Sound can easily travel through an exposed grid or flush suspended ceiling and over the top of a partition where it abuts the underside of a suspended ceiling. This is a common source of sound transmission particularly where the ceiling is porous to sound.



In this case the sound rating of the ceiling element is stated as the $D_{n,c,w}$ – Weighted Suspended-ceiling Normalised Level Difference. The rating formerly used was CAC (Ceiling Attenuation Class).

Where sound insulation is important, partitions should, wherever possible, continue through the ceiling to the structural soffit and be sealed at their perimeter.

Determination of $D_{n,c,w}$ is defined in AS/NZS 2499:2000 Acoustics – Measurements of sound insulation in buildings and of building elements – Laboratory measurement of room-to-room airborne sound insulation of a suspended ceiling with a plenum above it.

Sound Absorption Rating

The level of sound absorbency for a material is stated as the 'Weighted Sound Absorption Coefficient' (α_w).

The α_w value is derived as a result of acoustic testing on a material and determined by shifting a reference curve over the measured values as specified in the Standard. The Weighted Sound Absorption Coefficient α_w is defined as the value of the shifted reference curve at 500Hz.

The rating formerly used was NRC (Noise Reduction Coefficient).

Determination of α_w is defined in AS ISO 11654-2002 Acoustics – Rating of sound absorption – Materials and systems.

Sound Isolation Criteria

The Building Code of Australia specifies minimum standards for sound isolation between attached dwellings. Experience has shown, however, that achieving these minimum standards is not always sufficient to meet the expectations of the building occupants. In view of this it is recommended that architects, developers, builders, etc consider a higher degree of sound insulation, commensurate with the expectations of the end user. To this end the Association of Australian Acoustical Consultants (AAAC) developed the acoustical 'Star Rating' system that ranks the acoustical quality of apartments and townhouses. The rating system covers noises associated with intertenancy activities eg, voices and home theatre, internal building services and appliances eg, air conditioning, lifts, water supply systems and external noise intrusion eg, road, rail, and air traffic.

The Acoustical Star Rating guidelines are available on the AAAC website www.aaac.org.au

Construction Changes and Substitutions

Changes in construction and substitution of different materials can increase or decrease the acoustical isolation of wall and floor/ceiling systems. Some variations may provide better sound isolation, while others may result in the acoustical isolation falling below the specification or code requirements. The following comments apply to wall systems unless otherwise noted.

Studs

- Except for staggered stud and twin stud wall systems, substituting timber studs in place of steel studs generally results in a significant decrease in sound isolation
- Increasing the thickness of steel studs from 0.55 BMT to 0.75 BMT or 1.15 BMT will decrease sound isolation
- Decreasing the stud spacing will decrease the sound isolation.

Plasterboard

- Substituting types of plasterboard of the same thickness, say Wet Area Board™ for Standard Core, will usually result in a change in R_w of less than 1dB for most systems, although a greater reduction may occur with separating wall systems such as Partiwall®
- Substituting with thinner plasterboard may result in a substantial reduction in sound isolation.

» Sound Isolation Criteria

Insulation

- Thinner insulation will decrease the sound isolation
- Thicker insulation may increase the sound isolation
- The following insulation will typically have a similar performance:
 - Rockwool blanket or batts, 50mm thick and not less than 30kg/m³ density
 - Glass wool blanket or batts, 50mm thick and not less than 10kg/m³ density
 - Acoustic grade polyester fibre blanket or batts, 50mm thick and not less than 14kg/m³ density.

Fixings

- Using more screws or nails than specified may reduce the sound isolation
- Using cornice cement or other methods of laminating plasterboard, other than nailing or screw fixing, will reduce the sound isolation.

Perimeter Acoustical Sealing

It should be noted that as the sound isolation requirement of a partition increases, the control of flanking paths becomes more critical. Consequently, the perimeter sealing requirements for a low sound rating wall, such as $R_w=30\text{dB}$, are much lower than for a high sound rating wall, such as $R_w=60\text{dB}$. It cannot be over emphasised that for high performance walls, the sealing of each face must be virtually airtight.

For a sealant to be effective at controlling noise passing through gaps, it must have the following properties:

- Good flexibility, elastic set
- Low hardness
- Excellent adhesion, usually to concrete, timber, plaster and galvanised steel
- Minimal shrinkage (less than 5%)
- Density greater than 800kg/m³
- Fire rated (where required).

All of the above properties must be maintained over the useful life of the building.

Some silicone sealants and some acrylic latex sealants are examples of suitable sealants.

Reference should be made to the manufacturer to ensure the particular type or grade of sealant is suitable for the purpose.

Note:

The use of expanding foam sealants is not acceptable.

» Sound Isolation Criteria

Noise Flanking

Noise flanking can significantly reduce the perceived isolation of a wall or floor/ceiling system and should therefore be given careful consideration.

Typical flanking paths for a wall include:

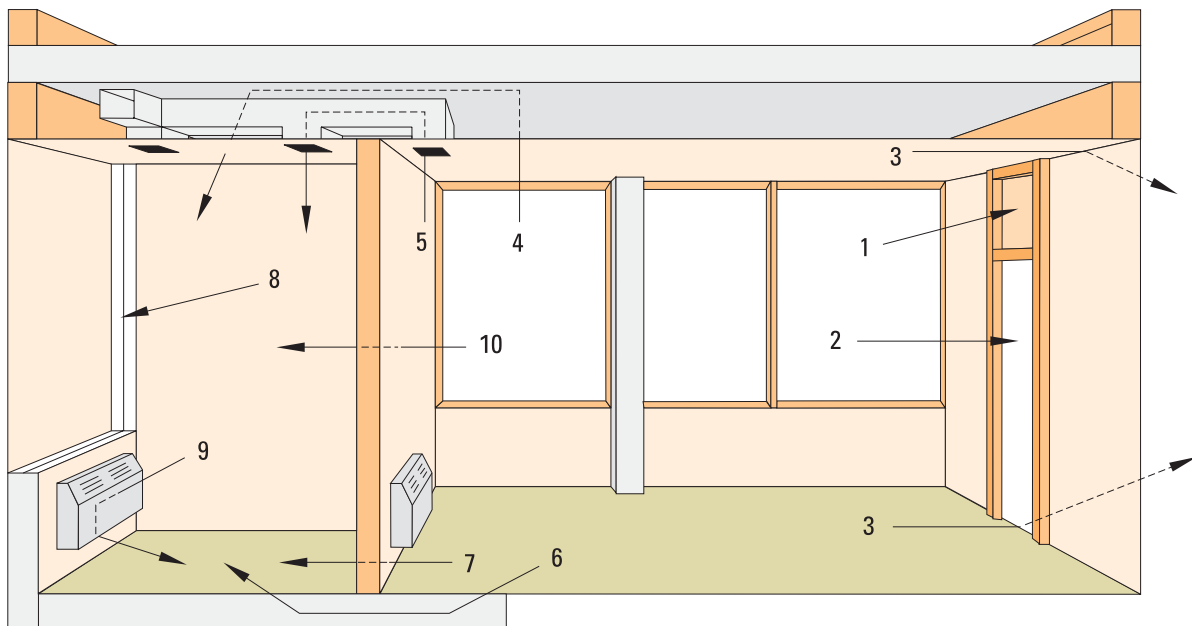
- Through ceilings and the above ceiling cavity
- Through floors and the below floor crawl space
- Through windows
- Through light switches, or GPO's, located in the wall
- Through shared building elements such as floor boards, floor joists, continuous plasterboard walls, continuous plasterboard ceilings and even continuous concrete walls and floors
- Through any sound leaks
- Through the perimeter joints between the wall and the floor, or the wall and the ceiling (or underside of the floor slab) or wall junctions.

Typical flanking paths for a floor/ceiling system include:

- Through windows
- Through light fittings or air conditioning fixtures in the ceiling
- Through shared building elements, such as external walls
- Through any sound leaks
- Through the perimeter joints between the floor and walls, or between the ceiling and wall.

Diagram Key

- 1 Lightweight panels above doors
- 2 Doors
- 3 Air leaks through gaps, cracks or holes
- 4 Sound transmission via suspended ceilings/partitions
- 5 Common ventilation system without sound absorbent treatment
- 6 Common floor duct
- 7 Electrical outlets and service pipes
- 8 Lightweight mullions or mullion/partition closers
- 9 Continuous runs of ducting
- 10 Partition performance



» Sound Isolation Criteria

Acoustic Performance On Site

Acoustic ratings stated in this manual have been achieved by testing or calculated based on controlled laboratory conditions. To reproduce the stated performance in the field, attention to detail in the design and construction of the partition/ceiling and its associated structure is of prime importance. Even the most basic principles, if ignored, can significantly downgrade the sound insulation performance.

Boral Plasterboard cannot guarantee the field performance matching laboratory test results or estimated ratings. However, with careful attention during erection of the wall or ceiling, correct installation to specification and proper caulking/sealing, the assembly should produce a field performance close to and comparable with tested or estimated values.

Apart from installation procedures, workmanship and caulking the following factors can also affect the acoustic performance on site.

Doors

Hollow core and even solid doors generally provide unsatisfactory sound insulation between rooms. Doors can also provide direct air leaks between rooms thus having a detrimental effect on the overall sound insulation of the partition in which they are inserted. The higher the insulation of the partition, the worse is the effect of doors.

Where sound insulation is important, specialised heavyweight doors or, preferably, two doors separated by an absorbent lined airspace or lobby should be used. Because air leakage largely determines the sound insulation of a single door, consideration must be given to providing airtight seals between the door and the frame and at the threshold.

The joints between the door frame and partition structure should also be sealed. The door seal must be compatible with the fire resistance of a door if required.

Lightweight Panels Above Doors

These are often incorporated for aesthetic reasons, however, the performance of a partition with high sound insulation can be considerably downgraded by lightweight panels.

Air Paths Through Gaps, Cracks or Holes

Gaps, cracks or openings, however small, readily conduct airborne sounds and can considerably reduce the sound insulation of a construction.

Appliances

In cases where sound insulation is important, noise producing fixtures or appliances such as water closets, cisterns, water storage tanks, sluices, dishwashers, washing machines and pumps should be repositioned or isolated from the structure with resilient mountings and flexible service leads and connections. Where fittings are duplicated on opposite sides of partitions, such as back to back baths or unit shower cubicles, the partition wall should be continuous between the fittings, otherwise a path for direct sound transmission will exist.

Electrical Outlets and Service Pipe Penetrations

Penetrations in party walls should be avoided where sound insulation is important. This includes recessed fittings or ducts such as skirting heating, electrical or telephone wiring trunking, light fittings, intercommunication systems and alarms, medical and laboratory gas outlets. Plumbing connections between fittings or appliances on opposite sides of a partition offer a path for transmission of sound and should be sealed. If possible introduce discontinuity in the pipe work between fittings, such as a flexible connection within or on the face of a partition.

The acoustic performance may be downgraded where penetrations or services exist within the wall unless extreme care is taken at the detailing and construction stages. This is especially likely with acoustical bridging caused by plumbing or electrical services or by structural members including flooring.

Where penetrations are not avoidable in party walls, electrical outlets, switch boxes and similar penetrations should not be placed back-to-back. Seal backs and sides of boxes and the perimeter of all penetrations with acoustic sealant. Preferably, sound-rated electrical outlets and switches should be used, or outlets and switches should be surface mounted on sound-rated walls.

The BCA states that electrical outlets must be offset from each other in timber or steel framed walls not less than 300mm.

» Sound Isolation Criteria

Penetrations in Linings Separating Soil and Waste Pipes

The acoustic ratings for soil and waste pipes provided in Section B4 apply when the plasterboard linings are unpenetrated. In some cases, penetrations will downgrade the stated acoustic performance.

In wet areas, penetrations in ceiling linings typically include recessed lighting (eg down lights), together with a return air, air conditioning, or toilet exhaust grille.

The effect of penetrations differs between the unlagged and lagged and clad pipes. Lagging and cladding has the benefit of reducing the noise emitted from the pipe itself.

In the following tables, penetrations due to recessed adjustable low voltage gimble downlights and a toilet exhaust grille are used by way of example for the corresponding total area of opening in the wall or ceiling. To determine the estimated acoustic rating with penetrations, choose the appropriate range that the system without penetrations falls within and scroll down to the rating for the corresponding total opening area.

Pipes Unlagged

The following table provides the revised R_w or $R_w + C_{tr}$ rating due to penetrations in the wall or ceiling partition systems listed on page B4.1. The ratings apply for systems with and without insulation.

**Unlagged Soil and Waste Pipe Systems -
Estimated Acoustic Rating Due to
Penetrations in the Plasterboard Lining**

Total Area of Opening in Wall or Ceiling mm ²	$R_w/R_w + C_{tr}$ of wall or ceiling partition system (with or without insulation)			
	25 - 29	30 - 34	35 - 39	40 - 45
300 (1 downlight)	25 - 29	30 - 33	34 - 38	38 - 41
600 (2 downlights)	25 - 29	30 - 33	34 - 36	37 - 39
1200 (4 downlights)	25 - 28	29 - 32	33 - 35	35 - 36
10,000 (small toilet exhaust grille)	23 - 25	26 - 27	27 - 28	27 - 28

The following is an example on the use of the table above:

System specified: WP20 (ref pg B4.1)
 Acoustic rating: $R_w=31$ dB (without insulation)
 Penetration: 4 downlights
 Estimated acoustic rating from table above:
 1: $R_w=29 - 32$ dB

Pipes Lagged and Clad

The following table provides the revised R_w or $R_w + C_{tr}$ rating due to penetrations in the wall or ceiling partition systems listed on page B4.2. The ratings apply for systems with and without insulation and assume that lagging and cladding of the pipe improves the effective R_w or $R_w + C_{tr}$ by 10dB.

**Lagged and Clad Soil and Waste Pipe Systems -
Estimated Acoustic Rating Due to
Penetrations in the Plasterboard Lining**

Total Area of Opening in Wall or Ceiling mm ²	$R_w/R_w + C_{tr}$ of wall or ceiling partition system (with or without insulation)			
	30 - 34	35 - 39	40 - 44	45 - 49
300 (1 downlight)	30 - 34	35 - 39	40 - 43	44 - 48
600 (2 downlights)	30 - 34	35 - 39	40 - 43	44 - 46
1200 (4 downlights)	30 - 34	35 - 38	39 - 42	43 - 45
10,000 (small toilet exhaust grille)	29 - 33	33 - 35	36 - 37	37 - 38

The following is an example on the use of the table above:

System specified: WPL13A (ref pg B4.2)
 Acoustic rating: $R_w + C_{tr} = 40$ dB (with insulation)
 Penetration: small toilet exhaust grille
 Estimated acoustic rating from table above:
 $R_w + C_{tr} = 36 - 37$ dB

Acoustic Opinion



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Consultants in Acoustics, Noise and Vibration
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SHEET NO. 104 – REVISION C
Page 1 of 1

ACOUSTICAL OPINION -
BORAL AUSTRALIAN GYPSUM LIMITED
PARTITION WALLS, FLOORS AND CEILINGS

Systems included in the Boral Selector - Plasterboard Systems (PB101, March 2007), which are not laboratory tested systems, have an acoustic rating which has been determined by opinion by Graeme E. Harding & Associates.

The acoustic rating was based either on the ratings of similar tested constructions from various sources, or by calculation using predictive models, or by a combination of both where appropriate.

Notes:

1. The R_w (Weighted Sound Reduction Index) is a single number index used to rate the sound isolation of a partition for noises which do not have significant low frequency components, such as speech. The R_w value given is the expected performance of a building element in a laboratory that tests to AS1191-2002 "Acoustics - Method for Laboratory Measurement of the Airborne Sound Transmission Loss of Building Partitions", and determined according to the procedure in AS/NZS ISO 717.1:2004 "Acoustics - Rating of sound insulation in buildings and of building elements - Airborne sound insulation".

The expected tolerance of opinions is ± 2 dB for the R_w . This allows for variations in the test method, the difference between laboratories and the accuracy of the estimating techniques. The rating obtained on a building site, called the Weighted Apparent Sound Reduction Index (R'_w), may differ from the laboratory result.

2. The $R_w + C_{tr}$ is a single number index that provides a more reliable indicator of the ability of the partition to isolate noise containing significant low frequency components (such as traffic noise and home theater sound) than the R_w . In several countries the R_w combined with the C_{tr} (an adaptation term) is simplified to a single number rating, the $R_{A,2}$. The $R_w + C_{tr}$ value given is the expected performance of a building element in a laboratory that tests to AS1191-2002 "Acoustics - Method for Laboratory Measurement of the Airborne Sound Transmission Loss of Building Partitions", and determined according to the procedure in AS/NZS ISO 717.1:2004 "Acoustics - Rating of sound insulation in buildings and of building elements - Airborne sound insulation".

The expected tolerance of opinions is ± 3 dB for the $R_w + C_{tr}$. This allows for variations in the test method, the difference between laboratories and the accuracy of the estimating techniques. The rating obtained on a building site may differ from the laboratory result.

3. The $L_{n,w} + C_1$ is a single number index used to rate the sound isolation of a floor/ceiling partition against footfall noise, particularly high heeled, hard surfaced shoes. The $L_{n,w} + C_1$ value is the expected performance in a laboratory that tests to ISO 140/6-1998 "Acoustics - Measurement of Sound Insulation of Buildings and of Building Elements - Part 6: Laboratory Measurements of Impact Insulation of Floors" and determined according to the procedure in AS ISO 717.2-2004 "Acoustics - Rating of sound insulation in buildings and of building elements - Impact sound insulation".

The expected tolerance of opinions is ± 3 dB for the $L_{n,w} + C_1$. The expected tolerance allows for variations due to the test method, differences between laboratories, and accuracy of the estimate. The $L_{n,w} + C_1$ rating does not allow for the amount of low frequency noise to the room below the partition when a person walks on the floor above. This low frequency noise can be significant with lightweight floor/ceiling systems. The field rating may differ significantly from the laboratory result.

Prepared by:

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2007 March 16

Member – Association of Australian Acoustical Consultants

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A5 | Fire Resistance

Fire Resistance Levels (FRLs)

Fire rating requirements of the Building Code of Australia are specified in terms of Fire Resistance Levels (FRL). The FRL specifies the performance, in minutes, of fire tested specimens for each of the following three design criteria when fire tested to the requirements of the Australian Standard AS1530 'Methods for Fire Tests on Building materials, Components and Structures' part 4 'Fire-Resistance Tests of Elements of Building Construction':

Structural Adequacy

The specimen can no longer carry its load.

Integrity

Cracks or openings develop that allow the passage of flames or hot gasses.

Insulation

The unexposed face temperature rises by more than 140°C on average or 180°C for a single point.

For example, a wall system under fire test that carries its load for 120 minutes and maintains its integrity and insulation for 120 minutes is given a FRL of 120/120/120, ie 120 minutes structural adequacy, 120 minutes integrity and 120 minutes insulation.

Systems constructed to the standard required for a particular FRL may be used to satisfy the requirements of a lesser FRL.

Support

Any structure required to support a fire rated system must have a fire resistance structural adequacy level of at least that of the system. This includes vertical support to ceilings and walls and lateral support to the top of walls which may be provided from both sides.

Adjacent Structure

The BCA requires that building elements, other than roof sarking or certain roof battens, must not pass through or cross a fire wall unless the fire resistance of that fire wall is maintained.

Where trusses and beams pass over or through a fire rated partition, the following measures can be taken to ensure that the Fire Resistance Level of the partition is not degraded due to a failure of these members in the case of fire:

- Construct a fire rated ceiling that protects the structural members
- Fire protect the structural member or
- Ensure the partition can carry loading from the fire affected structural member and that the member can still carry its loading when it is supported on a partition (for trusses this may mean the inclusion of additional webbing above the partition). Ensuring the partition can carry these new loadings may require:
 - Making it into a load bearing partition
 - Constructing the partition with a protected column within it or
 - Constructing unprotected columns on both sides of the partition.

Portal Frame Behaviour

In portal frames affected by the fire the rafters often push outwards on the column members until the ridge sinks and then pulls the columns inwards. Should drywall be used to provide a fire separation within portal framed building the above mode of failure needs to be recognised by the builder. As mentioned above, load bearing elements may need to be incorporated within, or adjacent to, the partition to maintain support to the roof structure during a fire event.

Direction of Attack by Fire

In most cases the direction of attack by fire is assumed to be from both sides of the partition and this is the default condition for FRLs listed within the Systems Index. In some cases, for example in exterior walls adjacent to a fire source feature (as defined in the BCA), the rating may be required from one side only.

Limiting Heights

Limiting heights listed for fire rated steel stud partitions are the lesser of maximum fire heights and structural heights for a given wall configuration and stated lateral pressure. Maximum fire heights were derived from full scale tests carried out by CSIRO, BHP, BRANZ and from fire engineering principles. Limiting structural heights have been obtained by computation and from extensive mechanical testing. These heights meet the requirements of the Building Code of Australia and have been certified by Engineers.

Resistance to the Incipient Spread of Fire (RISF)

The BCA stipulates instances when a ceiling system must be resistant to the incipient spread of fire. This requirement determines the ability of the ceiling to provide adequate thermal insulation to combustible materials within the ceiling plenum thus avoiding the danger of the materials there igniting. Many of the ceiling systems in this System Selector carry an RISF rating which is noted as such. RISF is a more onerous requirement than a FRL. Systems constructed to the standard required for a particular RISF may be used to satisfy the requirements of a lesser RISF.

Charfactors

Charfactor numbers apply only to timber stud partition systems listed in the System Index. A Charfactor number is a dimensionless factor relating the amount of permissible char area of timber studs, when under fire test at the time of its structural collapse, to a given height and loading.

Charfactor Tables are provided in Part C of this System Selector for the purpose of assisting the designer in the selection of the appropriate timber partition frame sizes to meet the fire-rating requirements of the Building Code of Australia. Charfactor numbers were derived from joint studies carried out by CSIRO and BRANZ, to develop a method of determining the expected fire performance of timber systems by extrapolation from existing test data. The methods used to derive these Charfactor numbers are detailed in CSIRO and BRANZ technical reports.

Insulation Materials

Insulation for thermal or acoustic reasons may be placed within partition cavities. The following is a list of insulation materials, that will not adversely affect the FRL.

Insulation Materials

Material	Restriction
Foil-backed sarking; batt, blanket, or loose rockwool or ceramic fibre	No restriction
Batt, blanket, or loose glass wool	Any density or thickness, but no greater than 10% binder
Batt, blanket, or loose polyester, or polyurethane sheet foam (with or without vinyl laminate)	Any thickness but density within 20% of tested value
Batt, blanket, or loose wool	Any thickness but density not less than a tested system

Fire Hazard Properties

Plasterboard satisfies the Building Code of Australia requirements for Early Fire Hazard (EFH) properties of wall and ceiling linings. EFH properties for plasterboard and plaster products are as follows:

Early Fire Hazard Properties

Product	Ignitability (0-20)	Spread of Flame (0-10)	Heat Evolved (0-10)	Smoke Developed (0-10)	Basis
Boral Std Core pbd 10, 13mm	14	0	1	0-1	CSIRO FNE6351
Boral Unispan® 10mm	14	0	2	0-1	CSIRO FNE6142
Boral Wet Area pbd 10, 13mm	14	0	2	1	CSIRO FNE6032
Boral Firestop® pbd 13, 16mm	13	0	1	2	CSIRO FNE6328
Boral Wet Area Firestop® 13, 16mm	14	0	2	1	CSIRO FNE6032
Boral Shaftliner™ 25mm	14	0	1	2	CSIRO FNE6031

The EFH classification for wall and ceiling linings is being replaced in the BCA by classifications derived from Cone Calorimeter testing. Testing to this requirement carried out by BRANZ produced the following results:

Cone Calorimeter Testing

Product	BCA Classification	Basis
Boral Std Core pbd	Group 1	BRANZ FH3235/FH2188
Boral Unispan® pbd	Group 1	BRANZ FH3470
Boral Soundstop® pbd	Group 1	BRANZ FH3471
Boral Wet Area pbd	Group 1	BRANZ FH3236/FH2189
Boral Firestop® pbd	Group 1	BRANZ FH3237/FH2190
Boral Shaftliner™ pbd	Group 1	BRANZ FH3473
Boral Wet Area Firestop™ pbd	Group 1	BRANZ FH3472

Combustibility

Plasterboard is deemed to be a non combustible material for the purposes of the Building Code of Australia.

Gas Appliances

Care is needed in the detailing of plasterboard walls around domestic gas cooking appliances and commercial catering equipment. Designers should check with the instructions and clearance requirements set out in Australian Standard AS 5601/AG601 'Gas Installations'.

Gas Reticulation in Fire Rated Walls

Oxygen or combustible fluid reticulation systems should not be located within fire rated walls unless designed, fire tested and constructed to suit this application.

Smoke Walls

Where smoke walls are required in accordance with the BCA, such walls can be lined with minimum 13mm thick Standard Core plasterboard.

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A6 | Structure

As required by the relevant Australian design codes, walls must be checked against dead, live and wind loads etc for structural adequacy independently of any acoustic or fire design.

The wall frame design must allow for:

- Deflection expected from building movement and thermal expansion during fire service
- The support, including lateral support of any door or access panel frames, wall supported external cladding, internal lining, dampers, shelves, cupboards, attachments or other loadings required to be supported by the wall or wall embedded frame
- Any loadings due to internal or external pressure differentials.

Vertical Deflections

Almost all structures will deflect during service. Designers should be aware of the expected deflections of the building structure as they affect partitions. These deflections may be due to both dead and live loadings. Non load bearing partitions are not designed to take any axial loading due to building deflection.

In fire rated steel stud walls, thermal expansion of studs of up to 5mm/m should be expected during fire service. Stud shortening due to thermal bowing may reduce the expansion, especially in thinner walls.

For ceilings systems, specifiers should be aware of the likelihood of frame movement due to structural, thermal, or seasoning effects on direct fixed plasterboard ceilings. Where necessary specify a furred system to minimise the risk of ceiling damage due to these effects.

Designers should make due allowance for expected framing deflections in considering deflection head requirements and, where necessary, refer to Boral Plasterboard Sales Offices for further information. Standard partition head details should accommodate normal service deflections. For load bearing, fire rated, steel stud walls, refer directly to Boral Plasterboard TecAssist 1800 811 222.

Plasterboard as Structural Bracing

Boral Plasterboard does not recommend the use of plasterboard ceiling linings to brace the roof structure or individual roof truss chords.

Boral Plasterboard does not recommend the use of plasterboard for the dedicated bracing of walls.

Limiting Heights

Wall heights for non load bearing walls must be within the maximum heights as set out in the tables in Section C.

Limiting heights for non load bearing steel framed walls have been provided for 0.25kPa and 0.35kPa lateral pressures and are based on L/240 deflection criteria set out in the BCA. Refer also to comments on limiting heights in Section A5.

For timber partition systems refer to comments on Charfactors in Section A5.

Maximum wall heights for load bearing non fire rated steel stud walls will be determined by the loadings, layout and sections used. Maximum wall heights for load bearing fire rated steel stud walls will be similarly determined by the loadings, layout and sections used, but an appropriate system must be adopted to provide protection to the wall frame as listed on page A6.2

Shelf Loading

Walls, including fire rated walls, that carry shelf loadings must be designed accordingly. Refer Section C5 for permissible shelf loadings for steel stud walls. Refer to Boral Plasterboard for further information.

Load Bearing Fire Rated Steel Stud Walls

A load bearing wall is a wall that is intended to resist vertical forces additional to those due to its own weight.

The following wall types with board to each side of single stud or twin stud wall may be used as load-bearing fire rated walls achieving the FRLs stated under the conditions listed below:

FRLs for Load Bearing Walls

Firestop® Wall Lining		Fire Resistance Level	Fire Attack Direction
Side 1	Side 2		
1x13mm	1x13mm	30/30/30	Both Sides
1x16mm	1x16mm	60/60/60	Both Sides
2x13mm	2x13mm	90/90/90	Both Sides
2x16mm	2x16mm	120/120/120	Both Sides

Conditions:

- All joints to be backed by nogging or studs. Elsewhere nogging to be provided at 1200mm maximum centres
- Bracing to be provided within the wall as required by structural design ignoring plasterboard contribution
- Frame to be designed by an appropriately qualified structural engineer and shall comply with AS/NZS 4600: 1996 Cold-formed steel structures
- Any structure providing support, including lateral support, to the load bearing fire rated wall must have an FRL of at least that of the wall
- Stud splicing not allowed
- Otherwise wall to be lined to standard Boral Plasterboard non load bearing fire rated details.

Limiting Spans

Ceiling spans must be within the maximum spans as set out in the Design Tables in Section C.

Allowable Ceiling Loads

The mass of insulation or other materials supported directly by the plasterboard ceiling lining must not exceed 2kg/m². Unless fastened directly to the ceiling frame, designers must provide for extra framework above the ceiling to support heavy items such as large light fittings, hanging chairs, hanging TV monitors, etc.

A7 | Wet Areas

Application

Boral Wet Area System™ is designed for use in wet areas of residential buildings and other buildings where the use of wet areas is similar to that in residential buildings.

A Wet Area is defined as an area within a building supplied with water from a water supply system and includes bathrooms, showers, laundries and sanitary compartments.

Boral Wet Area System™

Boral Wet Area System™ is a wall system comprising Boral Wet Area Board™, Boral Wet Area Taping Cement™, Boral Wet Area Sealant™ and Boral Wet Area SealCote™ (if required).

Boral Wet Area System™ must be installed in accordance with specification contained in Boral Plasterboard Installation Manual to achieve the intended performance and to be covered by the manufacturer's guarantee.

Standards

Boral Wet Area System™ complies with the requirements of AS3740-2004 'Waterproofing of wet areas within residential buildings'.

Note:

In South Australia installers should also refer Minister's Specification F1.7 for additional waterproofing requirements in wet areas.

Two liberal coats of Boral Wet Area SealCote™ (min coating 500g/sq m each coat) constitute a waterproofing membrane complying with the requirements of AS/NZS 4858-2004 'Wet area membranes'.

Boral Wet Area Board™ is manufactured to the requirements of ASTM C630 'Specification for water-resistant gypsum backing board'.

Boral Wet Area Board™

Boral Wet Area Board™ is manufactured with a moisture resistant core that stops water wicking up the board causing damage to the substrate or surface finish.

Boral Wet Area Board™ can be recognised by its blue-grey face liner and is manufactured with recessed edges for flush jointing within and outside of tiled areas.

Boral Wet Area Board™ must:

- Be fixed to framing only with mechanical fasteners when used as a substrate for tiling. Stud adhesives must not be used in tiled areas
- Be faced with ceramic tiles or other approved water resistant materials when installed in wet areas
- Only be applied to timber or steel framing or to a base layer of Boral Wet Area Board™, never to other types of plasterboard, plaster (gypsum or cement) or similar materials. Multiple layers of Boral Wet Area Board™ must be fastened to framing individually
- Be jointed with paper tape
- Not be installed over a vapour barrier
- Not be used in critical exposure areas such as group shower rooms or steam rooms
- Not be used in un-protected external applications
- Not be used if fractured or damaged.

Where fire isolation is required in wet areas Boral Wet Area Firestop™ plasterboard is available and may, thickness for thickness, be substituted in place of Boral Firestop® plasterboard without adversely affecting the system's FRL.

Boral Plasterboard does not recommend the use of Wet Area Board™ in ceilings.

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A8 | Design Considerations

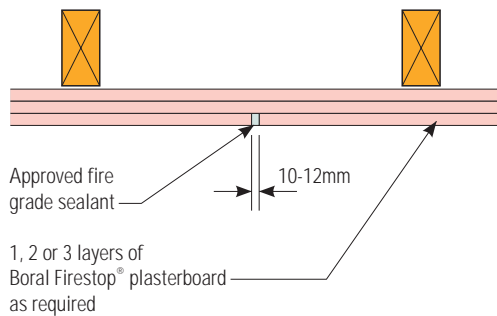
General

Design

In addition to the requirements for correct installation of linings, all wall and ceiling frames are to be designed and constructed to meet the relevant codes and regulations.

Control Joints

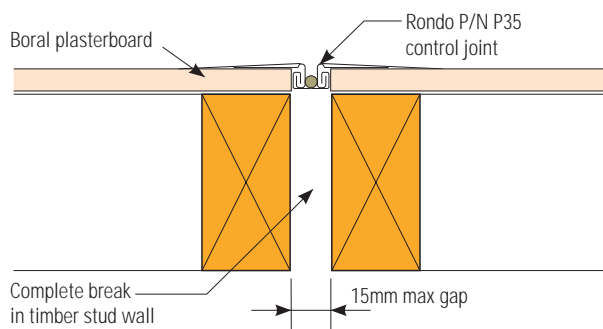
Control joints are required in unbroken walls and ceilings at no greater than 12 metre centres. Their purpose is to accommodate hygrometric (moisture caused) and/or thermally caused changes in the plasterboard dimensions.



Control Joint in Fire Rated System

Movement Joints

These joints are required in walls and/or ceilings in order to accommodate movements in the building structure due to, for example, shrinkage, settlement, wind or seismic forces. They include construction and expansion joints and joints at changes in substrates.



Movement Joint

Acoustically Isolated Furring

Acoustically isolated furring systems listed in the System Index incorporate acoustic mounts with a rubber element. To work effectively in ceilings, the hardness of these elements must be matched to the ceiling weight. Several types of acoustic mounts are available depending on the type of ceiling frame and applied loading.

Boral Acoustic Ceiling Mounts are suitable for multiple layer ceiling systems. Rubber elements within the mounts are colour coded to indicate load bearing capacity (blue dot - 17kg max load, white dot - 25kg max load).

Rondo Sound Isolation Mounts are recommended for single layer ceilings.

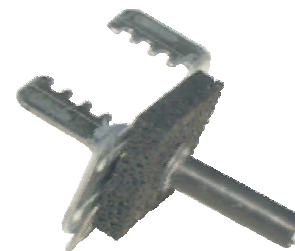


Boral Acoustic Ceiling Mount - Direct Fix Application



Rondo Sound Isolation Mount STWC

Boral Acoustic Impact Clips have been used in acoustic upgrades of masonry wall systems.



Boral Acoustic Impact Clip

Resilient Channel

This steel section, when fixed appropriately, provides a resilient mounting for plasterboard wall and ceiling linings thus reducing the transfer of acoustic energy between the frame and the linings. Care must be taken during construction that plasterboard screws do not bridge across the gap formed by the resilient channel.

» General

Fasteners

For the correct selection of screws and nails for the construction of Boral Plasterboard systems refer to 'Boral Plasterboard Installation Manual' and the brochures for specific systems.

Jointing

Compounds used in finishing plasterboard joints may be any plaster or vinyl based compounds supplied by Boral Plasterboard that are normally used for this purpose.

Boral Plasterboard vinyl jointing compounds have been shown by test not to self ignite at temperatures below 200°C and thus are suitable for use in fire rated systems.

Wall Systems

Unless specified otherwise, Boral Plasterboard wall systems are to be constructed using Rondo lipped C studs and track or timber frame with stud spacings of up to 600mm in straight, vertical sections and with standard fasteners and fastening centres. Base and head details, changes of direction and wall intersections, control and movement joints, doorways and plasterboard linings orientation and jointing should be in accordance with appropriate Boral Plasterboard installation details.

Changes in Direction, Intersections and Terminations

Using the appropriate installation details, changes in direction, acute, right and obtuse angles and terminations may be formed in a wall without adversely affecting the FRL of the wall.

Doors

At doorsets in steel framed walls the studs adjacent to the jamb are usually boxed together for the purposes of supporting the door jamb. The remaining studs are single studs unless required to be boxed for other reasons.

When in doubt contact Boral Plasterboard or the door frame manufacturer.

Ceiling Systems

In fire rated ceiling systems the plasterboard may be attached directly to the frame or via furring and/or a suspension system without adversely affecting the FRL of the system.

All fire resisting and acoustic ceilings require the perimeter to be sealed and joints to be finished.

Unless otherwise noted, ceiling linings are assumed to be supported at 600mm centres.

Maximum Plasterboard Spans

Apart from the framing spacings determined by structural, fire and acoustic considerations, plasterboard support spacings should not exceed maximum plasterboard spans as indicated in the following table:

Maximum Plasterboard Spans (mm)

Plasterboard Type	Thickness (mm)	Walls	Internal Ceilings
Flexiboard®	6	300	-
Standard Core	10	600	450
	13	600	600
Unispan®	10	600	600
Wet Area Board™	10	600	300
	13	600	450
Firestop®	13	600	600
	16	600	600
Wet Area Firestop™	13	600	450
	16	600	600
Soundstop®	10	600	450
	13	600	600
Foil backed board	10	600	450
	13	600	600
Shaftliner™	25	600	600
Impactstop™	13	600	600

Reduced spans may be applicable to external ceilings. Greater plasterboard spans may be possible for some fire-rated wall systems such as D-Stud™ Cinema Wall. Refer Boral Plasterboard

Design Options

for further information.

The following design options can be incorporated in Boral Plasterboard wall systems if required:

Insulation

Various forms of insulation can be placed within wall cavities and over ceilings to achieve acoustic or thermal requirements. However, designers should be aware of the following:

- The mass of insulation acting directly on ceilings must not exceed 2kg/m²
- Insulation that attracts and holds moisture for prolonged periods is not recommended for use in Boral Plasterboard ceiling systems.

Overall Width of Partition

Twin, chase and staggered stud walls, often used to form a services duct, can be varied in width to suit the building design. Note that reducing the width may adversely affect the acoustic and fire resisting properties of the partitions.

Frame

Other aspects remaining the same, steel stud depth and gauge greater than that specified may be used without adversely affecting the fire resistance of the wall system.

Permissible variations for fire rated timber framed systems include the following:

- Timber sections other than specified can be used provided that they are:
 - Of the same stress grade or higher
 - Of the same section or deeper, and/or wider
 - Of the same or higher average density.
- Treated timber can be used in place of untreated timber provided that its charring rate is proven to be no greater than by fire testing
- Studs or noggings may be paired, or installed at closer centres than shown (Acoustic considerations may limit the minimum stud centres)
- Flat strap, sheet or angle bracing flattened over studs before lining is applied may be used in timber framed walls without affecting the FRL or design capacity of the system provided

the studs remain unnotched. These types of bracing can also be used in staggered stud walls

- Top plates in timber framed walls should be designed by a suitably qualified structural engineer where dead and/or live loads are applied at more than 1.5 x plate depth from the stud.

Frame Spacing

UNO all plasterboard supporting framework must be spaced at no greater than 600mm centres. In some systems such as D-Stud™ Cinema Wall this spacing may be exceeded. Refer to Boral Plasterboard for further details.

Stud Substitution

Rondo steel studs have been used in the development of Boral Plasterboard acoustic, fire rated and structural systems. Limiting heights and spans listed are for Rondo studs only. Other stud sections should not be used unless it can be shown that they are at least equal to Rondo studs in all of the relevant performance characteristics.

Structural and fire properties of unlippped C section studs can vary significantly from those of lipped studs, therefore unlippped C Studs must not be used without their independent assessment for the prevailing conditions.

The Cinema Wall and D-Stud™ systems were developed using Bluescope Steel and Stramit top hat sections. Other sections may be used providing their mechanical and geometrical properties are at least equivalent to those stated for Bluescope Steel and Stramit top hat sections.

» Design Options

Cavity Structures

Ballistic or forcible entry protective items may be included within walls. In the case of fire rated walls adequate allowance must be made for expansion relief at the perimeter of ballistic/protective steel sheets.

Security mesh may be incorporated within steel framed fire rated walls to Boral Plasterboard details.

Noggings and plates may be incorporated within steel framed fire rated walls except that:

- The minimum cross sectional dimension of timber fixing plates or noggings to be 35mm, and
- The maximum weight of external attachments fixed to timber noggings or plates must not exceed 50% of that applicable to an equivalent non fire rated wall.

Board Orientation

In wall systems the sheets of plasterboard may be oriented with the bound edges horizontal, vertical or, in the case of multilayer systems, both horizontally and vertically oriented layers. This option may be useful in achieving the best outcome in the prevailing lighting conditions.

Fastener Details and Fixing

Screws and nails of greater gauge and at lesser centres than specified may be used without adversely affecting the fire resistance level of a partition or ceiling.

Curved Walls and Ceilings

Curved non fire rated walls and ceilings are to be supported at spacings as specified in Boral Plasterboard Installation Manual.

Refer to Boral Plasterboard for construction details for curved fire rated walls.

Curved fire rated ceilings to have a radius of no less than 6000mm.

Beams and Columns

Wall support beams, walls under beams, structural frames and columns within walls may be incorporated as per standard Boral Plasterboard details.

Attachments, Shelf Loading Capacity

In general, items may be attached through a fire rated lining to the wall frame beneath providing that:

- The frame is designed and constructed to take the loading from the attachments and
- The attachments have a self ignition temperature of greater than 200°C.

Electrical conduits may be attached to steel stud partitions by means of clipping to screw fixed pressed metal sections without detrimentally affecting the already established fire resistance levels of the partition provided that:

- The conduits are self supporting and do not impose any axial load to the partition and
- The clips used to restrain the conduits are manufactured from a material having a melting point not exceeding 250°C.

Refer to Boral Plasterboard for attachment options for non load bearing walls.

For load bearing steel stud walls, framing and fastenings are to be designed by an appropriately qualified structural engineer and shall comply with AS/NZS 4600:1996 Cold-formed steel structures.

Exterior Cladding, Lining

Exterior cladding or interior lining may be added to walls providing the frame is designed and constructed to accommodate the extra loading and, in the case of fire rated walls, the self ignition temperature of the cladding components exceeds 200°C.

As with other materials, plasterboard clad exterior walls will require careful detailing to avoid problems associated with effects of moisture.

Penetrations

Access hatch, duct, GPO, lighting recesses, tapsets, pipe and cable penetrations in fire rated walls and ceilings are to be constructed to fire tested or assessed details.

The incorporation of services and penetrations must not adversely affect the structural capacity of the framing members or the acoustic properties of the wall system.

» Design Options

Lighting Recesses and Service Chases

Where items such as lights, plumbing, heating or electrical services are fitted within or pass up through a fire rated wall, the recess/chase must first be framed out then the top, bottom, sides and back are to be lined using the same thickness and number of linings as on the penetrated face of the wall. All corners between plasterboard are to be formed herringbone style, backed by a stud, metal stud track or angle of greater than 0.4mm (BMT) and any cable penetrations are to be sealed with an approved fire grade sealant. Refer to the relevant Boral Plasterboard technical publications for further details.

Note:

The acoustic isolation capacity of walls is likely to suffer where chases and/or lighting recesses are provided within the wall or ceiling.

Lighting or other heat producing items should not be included within walls where there is any likelihood that, through continuous, extensive use, temperatures in the plasterboard surrounding the fitting remain above 42°C for a prolonged period of time.

Access Panels

Access panels up to 600mm square may be constructed within non load bearing fire rated walls with a FRL of up to -/120/120. Pre-fabricated non fire rated and fire rated access panels are also available – refer to panel manufacturers for further details and fire test reports/certificates.

Ducts, Dampers and Grilles

Where items such as ducts, dampers and grilles pass through a fire rated wall, the aperture must first be framed out allowing for lining and sealing of the aperture and expansion of the penetrating item during fire service. A useful rule of thumb for the amount of expansion to be allowed for is 10mm + 1% of the side under consideration. Some dampers are built to absorb their thermal expansion within their outside dimensions.

The wall frame may need to be strengthened locally to account for any crippling of studs causing redistribution of loadings into the adjacent full height studs (ie these studs may be required to be boxed).

The aperture should be lined using the same thickness and number of linings as on the face of the wall. The sealing/ mounting system around the penetrating item is to be as tested or assessed for that particular item.

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B | System Index

B1 | System Index Notes

B2 | Walls

B3 | Ceilings

B4 | Other Systems



B | Contents

B1 | System Index Notes

System Identification	B1.1
System Index Overview	B1.3
System Selection	B1.5
System Specification	B1.6
System Construction	B1.6
System Types	B1.7
System Key	B1.8

B2 | Walls

Walls Lined One Side – Timber Framed	B2.1
Walls Lined One Side – Steel Framed	B2.1
Walls Lined Both Sides – Timber Framed	B2.2
Walls Lined Both Sides – Steel Framed	B2.5
Timber Framed Staggered Stud Systems	B2.9
Steel Framed Staggered Stud Systems	B2.10
D-Stud Walls	B2.12
D-Stud Cinema Walls	B2.13
Timber Framed Twin Stud Systems	B2.14
Steel Framed Twin Stud Systems	B2.16
Separating Wall Systems – Partiwall	B2.20
Separating Wall Systems – IntRwall	B2.24
Shaft Systems – Shaft Wall	B2.33
Shaft Systems - Ventshaft	B2.34
Masonry Wall System - Lining	B2.35
Masonry Wall Systems – Fire Upgrades	B2.36
Masonry Wall Systems – Acoustic Upgrades	B2.37
External Wall Systems – Fireclad	B2.48
External Wall Systems – OutRwall	B2.49
External Wall Systems – Brick Veneer	B2.51
External Wall Systems - Spandrel	B2.53
Other Wall Systems – Subfloor Separation	B2.55
Other Wall Systems – Hybrid Wall System, 4hr fire rated	B2.55

B3 | Ceilings

Ceilings Under Tile Roof	
Direct Fixed	B3.1
Furred	B3.2
Furred on Acoustic Mounts	B3.3
On Resilient Channels	B3.3
Ceilings Under Metal Roof	
Direct Fixed	B3.4
Furred	B3.5
Furred on Acoustic Mounts	B3.6
On Resilient Channels	B3.7
Suspended	B3.8
Suspended on Acoustic Mounts	B3.9
Ceilings Under Bare Timber Floor	
Direct Fixed	B3.10
Furred	B3.11
Furred on Acoustic Mounts	B3.12
On Resilient Channels	B3.13
Ceilings Under Carpeted Timber Floor	
Direct Fixed	B3.14
Furred	B3.15
Furred on Acoustic Mounts	B3.16
On Resilient Channels	B3.17
Ceilings Under Tiled Timber Floor	
Direct Fixed	B3.18
Furred	B3.19
Furred on Acoustic Mounts	B3.20
On Resilient Channels	B3.21
Ceilings Under Bare Concrete Floor	
Furred	B3.22
Furred on Acoustic Mounts	B3.23
Suspended	B3.24
Suspended on Acoustic Mounts	B3.25
Ceilings Under Carpeted Concrete Floor	
Furred	B3.26
Suspended	B3.27
Over Partition Room-to-Room Via Ceiling	B3.28
Spanning Ceiling Systems – D-span	B3.31
Spanning Ceiling Systems – C-sections	B3.31
Spanning Ceiling Systems – Horizontal Shaft Wall	B3.32
Special Ceiling Systems	B3.33

B4 | Other Systems

Soil and Waste Pipe Systems	B4.1
Protection - Concrete Columns	B4.5
Protection - Steel Columns	B4.6
Protection - Timber Columns	B4.9
Protection - Steel Beams	B4.10
Protection - Timber Beams	B4.11
Fire Tunnels	B4.12

B1 | System Index Notes

System Identification

For some time it has been recognised that the naming of plasterboard systems varied widely within the industry and was not helpful in ready recognition of the system quoted or in the description of the system. Boral Plasterboard has derived and adopted an identifying method that reflects the basic physical form, be it a wall, a ceiling etc of all its plasterboard systems. An explanation of this system labelling as used in this publication is set out below.

How it Works

System labels describe the physical system commencing with the frame and continuing through to the linings.

All labels are of the form AABBCDD.

AA is the type of system in the order function/substrate/type as listed within the System Types (AA) table at the end of this subsection.

BB is the total thickness of plasterboard to the thinner, upper, outer, (or only) side of the system.

CC is the total plasterboard thickness to the other side of the system (if there is one).

DD is the board type applied as set out below where that type is not Standard Core plasterboard.

Key

DD	Plasterboard Type
A	Boral Soundstop®
F	Boral Firestop® (may include Shaftliner™)
W	Boral Wet Area Board™
WF	Boral Wet Area Firestop™
U	Boral Unispan®

Note:

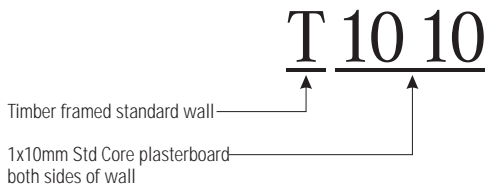
- Board type identifier has been omitted for Boral Standard Core plasterboard
- Where multiple layers of the same type of plasterboard are applied to one side of system, their thicknesses are combined into one total board thickness number followed by the board type identifier
- Where the same type of board is used on both sides of the system, total board thicknesses on each side are shown consecutively followed by the board type identifier
- Where different types of board are used in the system, the relevant board type identifier is shown for each type of board
- Board type identifiers should not be confused with the similar system type identifiers which may be present in the beginning of the system label
- Any plasterboard thickness shown in brackets is to be installed between the studs rather than across the stud flanges in the normal manner.

Plasterboard Identification Examples

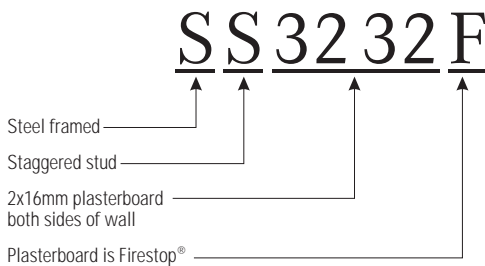
- 2x13mm Firestop® plasterboard on one side only of a wall frame would be listed as 26F
- 13mm Firestop® plasterboard on both sides of a wall frame would be listed as 1313F
- 1x16mm Firestop® plasterboard on both sides of a wall frame + 13mm Firestop® plasterboard on one side would be listed as 1629F
- 16mm Firestop® plasterboard on both sides of a wall frame + 10mm Standard Core plasterboard on one side would be listed as 1616F10
- 16mm Firestop® plasterboard + 13mm Soundstop® plasterboard on both sides of a wall frame would be listed as 16F13A16F13A.

» System Identification

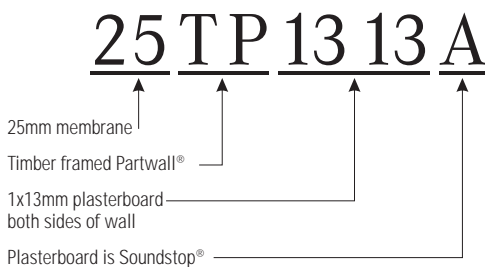
- a Where previously a timber framed wall lined on both sides with a single layer of Boral 10mm Standard Core plasterboard was referred to as system ATS4 (in the Plasterboard Building Systems Acoustic Selector), it is now known as system T1010.



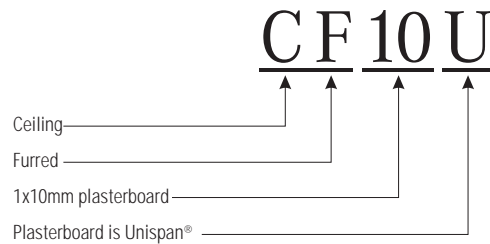
- b Where previously a steel framed staggered stud wall lined on both sides with two layers of Boral 16mm Firestop® plasterboard was referred to as system SSS4, it is now known as system SS3232F.



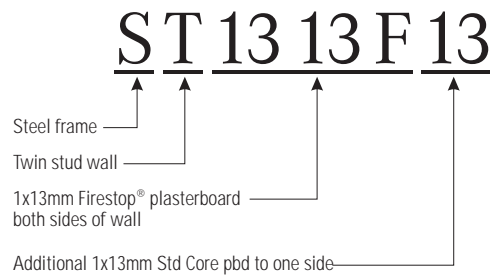
- c Where previously a timber framed Partwall® lined on both sides with a single layer of Boral 13mm Soundstop® plasterboard was referred to as system PWT3, it is now known as system 25TP1313A.



- d Where previously a ceiling lined with a single layer of Boral 10mm Unispan® plasterboard on furring channels was one of the CS18 systems, it is now known as system CF10U.



- e A steel framed twin stud wall lined with a single layer of Boral 13mm Firestop™ plasterboard to both sides plus a layer of 13mm Standard Core plasterboard to one side only is now known as system ST1313F13.



System Index Overview

Abbreviations used in the index are listed in the Abbreviations part of Section A1.

Moving from left to right of the Index the first column is Layout. The layout graphic gives a ready visual identification of the generic system as a check.

Next column is System Reference. For those familiar with the old system references there is listing at the end of the System Selector comparing the new references with the old naming convention.

Both the Layout and System Reference should be read in conjunction with the comments in the Description column. Details A to J mentioned in the masonry and column protective system listings are as described prior to those listings.

The Description is followed by Approx Pbd Mass column containing the weights of plasterboard component of various systems in kg/m². The mass listed depends on the type, thickness and number of layers of plasterboard used.

Fire Resistance


Fire Resistance columns contain the Fire Resistance Levels (FRL) of various systems and the basis, usually a fire test opinion, upon which the FRL is claimed.

Unless otherwise noted all fire ratings for ceilings and walls are from both directions. Note that FRL's without a structural adequacy figure (ie -/90/90), indicate non load bearing systems. In the case of some ceilings the FRL is followed by the Resistance to the Incipient Spread of Fire (RISF).

Physical Features

The Stud Size is listed primarily to define the cavity for acoustic properties or to limit the range of stud sizes for fire resistance reasons.

The Nominal Width is the overall width of the system including the frame and the plasterboard lining on it.

B System Index		Selector+ PLASTERBOARD SYSTEMS									
Layout	System Ref	Description	Approx Pbd Mass (kg/m ²)	Fire Resistance		Stud Size (mm)	Nom Wall Width (mm)	Acoustic Ratings			
				FRL	Basis			Nil Insul	With Insulation		Insulation Type
								R _w	R _w	R _w +C _{tr}	
Walls Lined Both Sides - Steel Framed											
 <p>System S1313 illustrated</p>	S1010	1x10mm Std Core pbd to each side of stud	13.6	-/20/20	WRFA F91815	51	71	34	38	28	50G11, 50P14
						64	84	34	40	29	50G11, 50P14
						76	96	34	40	29	70G11, 75P14
						92	112	35	41	30	90G11, 100P14
	150	170	34	40	29	90G11, 100P14					
	S1010A	1x10mm Soundstop pbd to each side of stud	16.4	Nil	NA	51	71	35	42	32	50G11, 50P14
						64	84	36	43	32	50G11, 50P14
						76	96	36	45	33	70G11, 75P14
						92	112	37	46	34	90G11, 100P14
	150	170	36	44	33	90G11, 100P14					
	S1313	1x13mm Std Core pbd to each side of stud	17.2	-/30/30 20/20/20	WFRA C91553 WFRA C91555	51	77	35	42	31	50G11, 50P14
						64	90	35	43	31	50G11, 50P14
						76	102	36	44	33	70G11, 75P14
						92	118	37	45	34	90G11, 100P14
	150	176	36	44	33	90G11, 100P14					
	S1313A	1x13mm Soundstop pbd to each side of stud	22.4	Nil	NA	51	77	36	44	33	50G11, 50P14
64						90	37	45	34	50G11, 50P14	
76						102	38	49	36	75G14	
92						118	38	49	37	70G11, 100P14	
150	176	37	48	36	90G11, 100P14						

* These tables should be read in conjunction with Section A • For explanation of System Reference notation refer Section B1 • For Limiting Heights refer Section C • Acoustic ratings by GHA, Sheet No 104 (refer Section A4) • Bold acoustic ratings indicate a tested system

B2 Walls

Sample Table

» System Index Overview

Acoustic Isolation

Acoustic ratings are provided for systems with or without insulation. All acoustic ratings are based on opinion Sheet No.104 from Graeme E. Harding and Associates Pty Ltd. For a copy of the opinion refer to Section A4.

All acoustic ratings listed are for a stud spacing of 600mm. Where insulation is listed, unless noted otherwise, it is required in one side only of staggered, twin or furred systems.

Twin timber or steel stud walls and some Partiwall® and IntRwall® systems comply as discontinuous construction under BCA 2005 vol 1, part F5 and vol 2, part 3.8.6. For Partiwall® systems this assumes that floors are aligned. Staggered stud walls may be deemed to be discontinuous construction for certain types of building construction. A ruling from a building certifier would be required for specific projects.

$L_{n,w} + C_1$ ratings are provided for floor systems to indicate their impact noise isolation properties.

The acoustic values listed for timber floor/ceiling systems assume:

- A minimum of 19mm chipboard on 190mm deep joists
- All furred systems incorporate a clip for the attachment of the furring channel
- Tiles are laid on a 6mm thick cement sheet (total mass nom 15kg/m²)
- Carpeted timber floors assume that an underlay is used.

For ceilings under concrete floors:

- The airborne and impact noise isolation of most ceilings is limited by flanking transmission
- Ceilings under bare concrete floors assume a minimum 150mm thickness of concrete.

Thermal Resistance

Thermal Resistance (R) ratings are provided for external wall systems.

These R values:

- Include an allowance of 0.09 (internal) + 0.03 (external) = 0.12m²K/W for surface resistance
- Assume, UNO, that all stud gauges are 1.15mm BMT
- Are calculated using the Isothermal Planes method according to H.A. Trethowan
- For Standard Core, Firestop™ and Shaftliner™ plasterboard are calculated from thermal conductivities per BRANZ report EC0713 of 22 Oct 2003
- Are calculated assuming the insulation listed is fitted tightly between the studs.

A System Key is included at the end of Section B1 to assist with selection of systems for particular applications.

System Selection

System Selection Procedure Example

Select non load bearing steel stud wall system that satisfies the following performance requirements:

Fire rating:	FRL -/120/120 from both sides
Acoustic rating:	$R_w+C_{tr}=50\text{dB}$ and discontinuous construction
Height:	4100mm slab to slab
Head deflection:	20mm
Design pressure:	0.25kPa

Procedure

Step 1 - Select the most economical wall system satisfying fire rating requirements

- Refer to Section B2 Walls
- Under 'Steel Framed Twin Stud Systems', scroll down the Fire Resistance columns to find the first system with FRL -/120/120. This system is ST2626F (page B2.18).

Step 2 - Check if the system satisfies acoustic requirements

- On the same page move across to Acoustic Ratings columns to confirm that the system achieves $R_w+C_{tr}=50\text{dB}$. System ST2626F with acoustic insulation exceeds $R_w+C_{tr}=50\text{dB}$ acoustic rating for stud sizes from 51mm to 150mm

Step 3 - Select the stud size and spacing to satisfy structural requirements

- Refer to page C2.6 'Maximum Wall Heights: Non-load Bearing Steel C Studs – Lined One Side'
- Under Maximum Wall Pressure 0.25kPa and Maximum Stud Centres 600mm (Nogged) scroll down the column 2x13mm lining both sides FRL -/120/120 to find the wall height at least equal to 4100mm (in this case the table contains the height 4180mm with subscript '2d' indicating that this height is limited by deflection criteria)
- Move across to Stud column to identify the stud size required to achieve this height: 92CS75
- From the notes on page C2.2 we note that nogged walls lined one side that are between 3000mm – 6000mm in height require noggings at 1/3 spacing and an extra nogging 100mm from the top.

Step 4 - Check head track capacity

- Deflection head track (DT) must be used to accommodate 20mm head deflection
- Stud head (and base) reaction at 250Pa is 0.6 (stud spacing in metres) \times 4.1 (stud height in metres) / 2×250 (Pa pressure) = 308N (0.31kN)
- Refer to relevant table of head capacities (Rondo TDS/03-106) which, in this configuration, allows 0.44kN for track capacity with a 20mm gap at head for 0.75mm BMT gauge track. This capacity exceeds the 0.31kN required so is OK.

Step 5 - Confirm Acoustic Rating

- Refer back to Section B2 Walls
- For system ST2626F and stud size 92CS75 find that actual acoustic rating is $R_w+C_{tr}=54\text{dB}$ (with 50G14 or 50P14 insulation).

Step 6 - Check List

- Refer to Check List to confirm that all the relevant aspects have been addressed.

Conclusion

System ST2626F with 92CT75 base tracks, 92DT75 deflection head tracks, 92CS75 studs at 600mm spacings with noggings at 1/3 spacing and 100mm from the top, satisfies fire, acoustic and structural performance requirements.

System Specification

Although the system label contains information about the basic system, it does not provide a full description of the system as required for the purposes of project specification.

For a full and unambiguous description of a Boral Plasterboard system, the label must be accompanied by the performance specification, which may include:

- Fire resistance level (FRL)
- Acoustic isolation rating (R_w or R_w+C_{tr})
- Acoustic impact noise isolation rating ($L_{n,w}+C_i$)
- Design lateral pressure
- Any imposed loads
- Maximum (or minimum) wall width
- Maximum wall deflection
- Expected soffit deflection.

To adequately specify a system, the above system label and performance specification should be accompanied by additional information such as:

- Stud size
- Wall height
- Type and location of acoustic/thermal insulation
- Number, location and size of noggings and fixing plates
- Requirement for special heads
- Additional furring channels
- The required level of finish
- The presence within the system of other items eg protective steel mesh or sheet.

Example of system specification is:

Boral Plasterboard system SS3232F

FRL -/120/120

$R_w = 50\text{dB}$

Max wall width 214mm

Wall height 3000mm

0.25kPa lateral pressure.

System Construction

A check list is included at the end of Section C as a guide to parameters that may influence system design and specification.

While adequate system specification is extremely important, Boral Plasterboard installation instructions must be followed in order to achieve the specified performance on site. Refer to relevant Boral Plasterboard publications for installation details of particular systems.

System Types (Refer System Identification Notes on page B1.1)

Panel Thickness	Function	Substrate	Type	System Type
	(wall)	Timber frame	(standard)	T
	(wall)	Timber frame, furred	(standard)	TF
	(wall)	Timber frame, RC 1 side	(standard)	TR
	(wall)	Steel frame	(standard)	S
	(wall)	Timber frame	Staggered	TS
	(wall)	Steel frame	Staggered	SS
	(wall)	(only ever steel)	D-Stud	D
	(wall)	Timber frame	Twin	TT
	(wall)	Steel frame	Twin	ST
25 mm	(wall)	Timber frame	Partiwall	25TP
50 mm	(wall)	Timber frame	Partiwall	50TP
25 mm	(wall)	Steel frame	Partiwall	25SP
50 mm	(wall)	Steel frame	Partiwall	50SP
	(wall)	(only ever steel)	IntRwall	50IW
	(wall)	(only ever steel)	IntRwall, Furred	50IWF
	(wall)	(only ever steel)	IntRwall, FRFC	50IWFR
	(wall)	(only ever steel)	SHaft Wall	SH
	(wall)	(nil)	Ventshaft	VS
	(wall)	(only ever steel)	Sub Floor	SF
	(wall)	(only ever steel)	Fireclad	FC
	(wall)	(only ever timber)	OutRwall	OW
	(wall)	Timber frame	Brick Veneer	TBV
	(wall)	Steel frame	Brick Veneer	SBV
	(wall)	(only ever steel)	SPandrel	SP
	(wall)	Masonry	(upgrade)	M
	(wall)	Masonry	Furring	MF
	Ceiling	(steel or timber)	(standard)	C
	Ceiling	(steel or timber)	Furred	CF
	Ceiling	(steel or timber)	Furred, Acoustic mount	CFA
	Ceiling	(steel or timber)	Resilient channel	CR
	Ceiling	(steel or timber)	Suspended	CS
	Ceiling	(steel or timber)	Suspend, Acoustic mount	CSA
	Ceiling	(only ever steel)	D-Span	CD
	Ceiling	(only ever steel)	SPanning	CSP
	Ceiling	(only ever steel)	Horizontal Shaft wall	CHS
	Ceiling	(steel or timber)	Over Partition, Plenum Barrier	COB
	Ceiling	(steel or timber)	Over Partition, Continuous Ceiling	COC
	Ceiling	(steel or timber)	Over Partition, Discontinuous Ceiling	COD
	Ceiling	(steel or timber)	Over Partition, Oarrier, Tiled	COBT
	Ceiling	(steel or timber)	Over Partition, Continuous, Tiled	COCT
	Ceiling	(steel or timber)	Over Partition, Discontinuous, Tiled	CODT
	(acoustic)	(steel or timber)	Waste Pipe	WP
	(acoustic)	(steel or timber)	Waste Pipe, Boxed	WPB
	(acoustic)	(steel or timber)	Waste Pipe, Lagged	WPL
	(acoustic)	Steel frame adjacent	Waste Pipe	SWP
	(acoustic)	Timber frame adjacent	Waste Pipe	TWP
	Protection	Concrete	Soffit	PCS
	Protection	Concrete	Column	PCC
	Protection	Steel	Column	PSC
	Protection	Timber	Column	PTC
	Protection	Steel	Beam	PSB
	Protection	Steel	Beam, Concrete floor	PSBC
	Protection	Steel	Beam, Timber floor	PSBT
	Protection	Timber	Beam	PTB
	Fire Tunnel	(only ever steel)	From Both directions	FTB
	Fire Tunnel	(only ever steel)	From Outside only	FTO

With reference to the above table note that:

- Shaft Wall and Horizontal Shaft Wall only ever has 1x25mm Shaftliner™ and therefore this layer is identified within the SH and CHS labels.

Layout	System Ref	Description	Approx Pbd Mass (kg/m ²)	Fire Resistance		Stud Size (mm)	Nom Wall Width (mm)	Acoustic Ratings			
				FRL	Basis			Nil Insulation		With Insulation	
								R _w	R _w +C _{tr}	R _w	R _w +C _{tr}

Walls Lined One Side - Timber Framed



System **T13** illustrated

T10	1x10mm Std Core pbd to one side of stud	6.8	Nil	NA	Any stud	10 + stud	28	25	NA	NA
T13	1x13mm Std Core pbd to one side of stud	8.6	Nil	NA	Any stud	13 + stud	28	26	NA	NA
T13A	1x13mm Soundstop pbd to one side of stud	11.2	Nil	NA	Any stud	13 + stud	30	28	NA	NA
T16F	1x16mm Firestop pbd to one side of stud	13.0	-/30/30	FCO-1658 FCO-0568	Any stud	16 + stud	30	28	NA	NA
T32F	2x16mm Firestop pbd to one side of stud	26.0	60/60/60 Iso	SI95	Any stud	32 + stud	34	31	NA	NA
T39F	3x13mm Firestop pbd to one side of stud	31.5	90/90/90 Iso	FCO-2423	Any stud	39 + stud	37	34	NA	NA
T48F	3x16mm Firestop pbd to one side of stud	39.0	120/120/120 Iso	FSV0538	Any stud	48 + stud	38	35	NA	NA

Walls Lined One Side - Steel Framed



System **S13** illustrated

S10	1x10mm Std Core pbd to one side of stud	6.8	Nil	NA	Any stud	10 + stud	28	25	NA	NA
S13	1x13mm Std Core pbd to one side of stud	8.6	Nil	NA	Any stud	13 + stud	28	26	NA	NA
S13A	1x13mm Soundstop pbd to one side of stud	11.2	Nil	NA	Any stud	13 + stud	30	28	NA	NA
S16F	1x16mm Firestop pbd to one side of stud	13.0	-/30/30	FCO-0568 FCO-1658	Any stud	16 + stud	30	28	NA	NA
S32F	2x16mm Firestop pbd to one side of stud	26.0	60/60/60 Iso	FCO-0037 FCO-1763	Any stud	32 + stud	34	31	NA	NA
S39F	3x13mm Firestop pbd to one side of stud	31.5	90/90/90 Iso	FCO-2423	Any stud	39 + stud	37	35	NA	NA
S48F	3x16mm Firestop pbd to one side of stud	39.0	120/120/120 Iso	FSV 0538	Any stud	48 + stud	38	36	NA	NA

• These tables should be read in conjunction with Section A • For explanation of System Reference notation refer Section B1 • For Limiting Heights refer Section C • Acoustic ratings by GHA, Sheet No 104 (refer Section A4) • Bold acoustic ratings indicate a tested system

B | System Index

Selector+ PLASTERBOARD SYSTEMS

Layout	System Ref	Description	Approx Pbd Mass (kg/m ²)	Fire Resistance		Stud Size (mm)	Nom Wall Width (mm)	Acoustic Ratings			
				FRL	Basis			Nil Insul	With Insulation		Insulation Type
								R _w	R _w	R _w +C _{tr}	

Walls Lined Both Sides - Timber Framed

System **T1313** illustrated

T1010	1x10mm Std Core pbd to each side of stud	13.6	-/20/20 15/15/15	WFRA C91556 WFRA C91559	70x45	90	33	38	28	50G11, 50P14
					90x35	110	34	38	29	50G11, 50P14
T1010A	1x10mm Soundstop pbd to each side of stud	16.4	Nil	NA	70x45	90	35	39	31	50G11, 50P14
					90x35	110	35	39	31	50G11, 50P14
TR1010A	1x10mm Soundstop pbd to one side of stud RC and 1x10mm Soundstop pbd to other side	16.4	Nil	NA	70x45	103	39	45	32	70G14, 75P14
					90x35	123	39	45	32	70G14, 75P14
T1313	1x13mm Std Core pbd to each side of stud	17.2	-/30/30 20/20/20	WFRA C91557 WFRA C91552	70x45	96	35	39	31	50G11, 50P14
					90x35	116	35	39	31	50G11, 50P14
T1313A	1x13mm Soundstop pbd to each side of stud	22.4	Nil	NA	70x45	96	36	41	33	50G11, 50P14
					90x35	116	37	41	33	50G11, 50P14
T1313F	1x13mm Firestop pbd to each side of stud	21.0	-/60/60 30/30/30	FCO-2393 WFRA 460081 WFRA C91550	70x45	96	36	40	32	50G11, 50P14
					90x35	116	37	40	32	50G11, 50P14
TR1313A	1x13mm Soundstop to one side of stud RC and 1x13mm Soundstop pbd to other side	22.4	Nil	NA	70x35	109	39	47	34	70G14, 75P14
					90x35	129	40	48	35	70G14, 75P14
T1616F	1x16mm Firestop pbd to each side of stud	26.0	-/60/60 60/60/60 Cf11	WFRA C91202 FCO-0619 FCO-0626	70x45	102	37	41	33	50G11, 50P14
					90x35	122	38	42	34	50G11, 50P14
TF1616F	1x16mm Firestop pbd to one side of stud 1x16mm Firestop pbd to other side of stud on 28mm furring channel	26.0	60/60/60	FCO-0619	70x45	130	42	50	42	70G14, 70P14
					90x35	150	43	51	43	90G14

• These tables should be read in conjunction with Section A • For explanation of System Reference notation refer Section B1 • For Limiting Heights refer Section C • Acoustic ratings by GHA, Sheet No 104 (refer Section A4)

Layout	System Ref	Description	Approx Pbd Mass (kg/m ²)	Fire Resistance		Stud Size (mm)	Nom Wall Width (mm)	Acoustic Ratings			
				FRL	Basis			Nil Insul	With Insulation		Insulation Type
								R _w	R _w	R _w +C _{tr}	

» Walls Lined Both Sides - Timber Framed



System **T2626** illustrated

TR1616F	1x16mm Firestop to one side of stud RC and 1x16mm Firestop pbd to other side	26.0	60/60/60	FCO-0619	70x35	115	39	46	34	50G11, 50P14
					90x35	135	39	46	34	50G11, 50P14
					100x38 (HW)	145	40	48	35	R2.5 GW wall batt
TR1616F10	1x16mm Firestop pbd to each side of stud Additional layer of 10mm Std Core pbd to one side Lining on double layer side is on resilient channel.	32.8	60/60/60	FCO-0619	70x35	125	42	48	39	50G11, 50P14
					90x35	145	43	49	40	50G11, 50P14
T2020	2x10mm Std Core pbd to each side of stud	27.2	-/30/30	WFRA C91558	70x45	110	39	43	35	50G11, 50P14
					90x35	130	41	45	39	90G14, 90P14
T2020A	2x10mm Soundstop pbd to each side of stud	32.8	Nil	NA	70x45	110	43	45	40	50G11, 50P14
					90x35	130	43	46	40	50G11, 50P14
TR26A10	CinemaZone Bronze system 1x10mm Std Core pbd to one side RC and 2x13mm Soundstop pbd to other side	29.2	Nil	NA	70x45	119	39	45	37	70G14, 75P14
					90x35	139	39	45	37	70G14, 75P14
TF26(13)A10	CinemaZone Silver retrofit system 2x13mm Soundstop pbd on resiliently mounted furring channel to one side 1x13mm Soundstop pbd between studs plus 1x10mm Std Core pbd to the other side	40.4	Nil	NA	70x45	151	49	55	47	70G14, 75P14
					90x35	171	49	55	47	70G14, 75P14
T2626	2x13mm Std Core pbd to each side of stud	34.4	-/30/30	WFRA C91558	70x45	122	43	44	39	50G11, 50P14
					90x35	142	43	45	39	50G11, 50P14
T2626F	2x13mm Firestop pbd to each side of stud	42.0	90/90/90 Cf11	FCO-2564 91/103	70x45	122	45	46	41	50G11, 50P14
					90x35	142	45	46	41	50G11, 50P14

• These tables should be read in conjunction with Section A • For explanation of System Reference notation refer Section B1 • For Limiting Heights refer Section C • Acoustic ratings by GHA, Sheet No 104 (refer Section A4) • Bold acoustic ratings indicate a tested system

B | System Index

Selector+ PLASTERBOARD SYSTEMS

Layout	System Ref	Description	Approx Pbd Mass (kg/m ²)	Fire Resistance		Stud Size (mm)	Nom Wall Width (mm)	Acoustic Ratings			
				FRL	Basis			Nil Insul	With Insulation		Insulation Type
								R _w	R _w	R _w +C _{tr}	

» Walls Lined Both Sides - Timber Framed

System **TF39(26)A10** illustrated

TR2626A	2x13mm Soundstop pbd to one side of stud RC and 2x13mm Soundstop pbd to other side	44.8	Nil	NA	70x45	135	48	56	48	70G14, 75P14
					90x35	155	48	56	48	70G14, 75P14
TR2626F	2x13mm Firestop pbd to one side of stud RC and 2x13mm Firestop pbd to other side	42.0	90/90/90	FCO-2564	70x45	135	48	54	46	50G14, 50P14,
					90x35	155	48	54	46	50G14, 50P14,
T3232F	2x16mm Firestop pbd to each side of stud	52.0	120/120/120 Cf15	FCO-2564	70x45	134	43	46	40	50G11, 50P14
					90x35	154	43	46	40	50G11, 50P14
TR3232F	2x16mm Firestop pbd to one side of stud RC and 2x16mm Firestop pbd to other side	52.0	120/120/120	FCO-2564	70x35	147	48	56	47	50G11, 50P14
					90x35	167	49	57	49	50G11, 50P14
TF39(26)A10	CinemaZone Gold retrofit system 3x13mm Soundstop pbd on resiliently mounted furring channel to one side 2x13mm Soundstop pbd between studs plus 1x10mm Std Core pbd to the other	62.8	Nil	NA	70x45	164	57	65	57	90G14, 100P14
					90x35	184	57	65	57	90G14, 100P14

• These tables should be read in conjunction with Section A • For explanation of System Reference notation refer Section B1 • For Limiting Heights refer Section C • Acoustic ratings by GHA, Sheet No 104 (refer Section A4)

Layout	System Ref	Description	Approx Pbd Mass (kg/m ²)	Fire Resistance		Stud Size (mm)	Nom Wall Width (mm)	Acoustic Ratings			
				FRL	Basis			Nil Insul	With Insulation		Insulation Type
								R _w	R _w	R _w +C _{tr}	

Walls Lined Both Sides - Steel Framed



System **S1313** illustrated

S1010	1x10mm Std Core pbd to each side of stud	13.6	-/20/20	WRFA F91815	51	71	34	38	28	50G11, 50P14
					64	84	34	40	29	50G11, 50P14
					76	96	34	40	29	70G11, 75P14
					92	112	35	41	30	90G11, 100P14
					150	170	34	40	29	90G11, 100P14
S1010A	1x10mm Soundstop pbd to each side of stud	16.4	Nil	NA	51	71	35	42	32	50G11, 50P14
					64	84	36	43	32	50G11, 50P14
					76	96	36	45	33	70G11, 75P14
					92	112	37	46	34	90G11, 100P14
					150	170	36	44	33	90G11, 100P14
S1313	1x13mm Std Core pbd to each side of stud	17.2	-/30/30 20/20/20	WFRA C91553 WFRA C91555	51	77	35	42	31	50G11, 50P14
					64	90	35	43	31	50G11, 50P14
					76	102	36	44	33	70G11, 75P14
					92	118	37	45	34	90G11, 100P14
					150	176	36	44	33	90G11, 100P14
S1313A	1x13mm Soundstop pbd to each side of stud	22.4	Nil	NA	51	77	36	44	33	50G11, 50P14
					64	90	37	45	34	50G11, 50P14
					76	102	38	49	36	75G14
					92	118	38	49	37	70G11, 100P14
					150	176	37	48	36	90G11, 100P14

• These tables should be read in conjunction with Section A • For explanation of System Reference notation refer Section B1 • For Limiting Heights refer Section C • Acoustic ratings by GHA, Sheet No 104 (refer Section A4) • Bold acoustic ratings indicate a tested system

B | System Index

Selector+ PLASTERBOARD SYSTEMS

Layout	System Ref	Description	Approx Pbd Mass (kg/m ²)	Fire Resistance		Stud Size (mm)	Nom Wall Width (mm)	Acoustic Ratings			
				FRL	Basis			Nil Insul	With Insulation		Insulation Type
								R _w	R _w	R _w +C _{tr}	

» Walls Lined Both Sides - Steel Framed

System **S1326F** illustrated

S1313F	1x13mm Firestop pbd to each side of stud	21.0	30/30/30 -/60/60	FCO-1045 FCO-1360	51	77	36	43	32	50G11, 50P14
					64	90	37	44	33	50G11, 50P14
					76	102	37	45	34	70G11, 75P14
					76	102	37	47	34	75G14
					92	118	37	46	35	90G11, 100P14
					92	118	37	44	32	85P9
					150	176	36	43	31	90G11, 100P14
S1326F	1x13mm Firestop pbd to each side of stud Additional 1x13mm Firestop pbd to one side only	31.5	-/90/90 30/30/30	SI 515 FCO-1360 FCO-1045	51	90	40	49	37	50G11, 50P14
					64	103	40	49	37	50G11, 50P14
					76	115	42	50	39	70G11, 75P14
					92	131	43	51	40	90G11, 75P14
					150	189	42	50	38	90G11, 100P14
S1616F	1x16mm Firestop pbd to each side of stud	26.0	-/90/90 60/60/60	FCO- 1360 FCO-1045 T2489n	51	83	37	45	34	50G11, 50P14
					64	96	38	45	35	50G11, 50P14
					76	108	39	46	37	70G11, 75P14
					92	124	40	46	38	90G11, 100P14
					92	124	40	46	37	R1.5 GW wall batt
					150	182	39	44	36	90G11, 100P14
S1616F13	1x16mm Firestop pbd to each side of stud Additional 1x13mm Std Core pbd to one side only	34.6	-/90/90	FCO- 1360	51	96	42	49	37	50G11, 50P14
					64	109	43	50	38	50G11, 50P14
					76	121	43	50	39	70G11, 75P14
					92	137	44	52	42	90G11, 100P14
					150	195	42	49	40	90G11, 100P14

• These tables should be read in conjunction with Section A • For explanation of System Reference notation refer Section B1 • For Limiting Heights refer Section C • Acoustic ratings by GHA, Sheet No 104 (refer Section A4) • Bold acoustic ratings indicate a tested system

Layout	System Ref	Description	Approx Pbd Mass (kg/m ²)	Fire Resistance		Stud Size (mm)	Nom Wall Width (mm)	Acoustic Ratings			
				FRL	Basis			Nil Insul	With Insulation		Insulation Type
								R _w	R _w	R _w +C _{tr}	

» Walls Lined Both Sides - Steel Framed



System **S2626** illustrated

S2020	2x10mm Std Core pbd to each side of stud	27.2	-/30/30	WFRA C91554	51	91	40	47	36	50G11, 50P14
					64	104	41	48	36	50G11, 50P14
					76	116	41	49	37	70G11, 75P14
					92	132	42	50	39	90G11, 100P14
					150	190	41	48	38	90G11, 100P14
S2020A	2x10mm Soundstop pbd to each side of stud	32.8	Nil	NA	51	91	44	50	39	50G11, 50P14
					64	104	45	51	40	50G11, 50P14
					76	116	45	53	42	70G11, 75P14
					92	132	46	53	43	90G14, 100P14
					150	190	45	51	42	90G14, 100P14
S2626	2x13mm Std Core pbd to each side of stud	34.4	-/30/30	WFRA C91554	51	103	43	49	40	50G11, 50P14
					64	116	44	50	41	50G11, 50P14
					76	128	44	52	42	70G11, 75P14
					92	144	45	52	43	90G11, 100P14
					150	202	44	50	42	90G11, 100P14
S2626A	2x13mm Soundstop pbd to each side of stud	44.8	Nil	NA	51	103	46	52	42	50G11, 50P14
					64	116	47	52	44	50G11, 50P14
					76	128	47	54	45	70G11, 75P14
					92	144	48	54	46	90G11, 100P14
					150	202	47	52	45	90G11, 100P14
S2626F	2x13mm Firestop pbd to each side of stud	42.0	-/120/120 90/90/90	SI 720 SI 474 FCO-1360 FCO-1045 WFRA C91228	51	103	45	51	42	50G11, 50P14
					64	116	46	52	43	50G11, 50P14
					76	128	46	53	44	70G11, 75P14
					92	144	47	53	45	90G11, 100P14
					150	202	46	51	44	90G11, 100P14

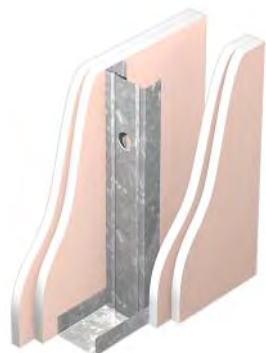
• These tables should be read in conjunction with Section A • For explanation of System Reference notation refer Section B1 • For Limiting Heights refer Section C • Acoustic ratings by GHA, Sheet No 104 (refer Section A4)

B | System Index

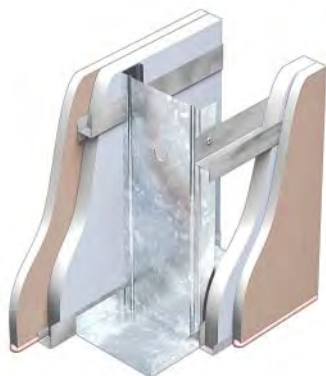
Selector+ PLASTERBOARD SYSTEMS

Layout	System Ref	Description	Approx Pbd Mass (kg/m ²)	Fire Resistance		Stud Size (mm)	Nom Wall Width (mm)	Acoustic Ratings			
				FRL	Basis			Nil Insul	With Insulation		Insulation Type
								R _w	R _w	R _w +C _{tr}	

» Walls Lined Both Sides - Steel Framed



System **S3232F** illustrated



System **S4141F** illustrated

S3232F	2x16mm Firestop pbd to each side of stud	52.0	-/180/180 120/120/120	SI 1453 FCO-1360 FCO-1045 WFRA C91228	51	115	47	52	43	50G11, 50P14
					64	128	48	53	44	50G11, 50P14
					76	140	49	53	45	70G11, 75P14
					92	156	49	53	45	90G11, 100P14
					150	214	48	51	43	90G11, 100P14
S4141F	LinerSTRIP LS1 [®] , 1x25 Shaftliner™ & 1x16 Firestop™ each side of frame	67.0	-/180/180 Both sides	FCO-2440	Refer Engineer	150	47	51	46	100G14, 100P14
					Refer Engineer	200	48	52	47	100G14, 100P14
S6666F	LinerSTRIP LS1 [®] , 2x25 Shaftliner™ & 1x16 Firestop™ each side of frame	108.5	180/180/180 -/240/240 Both sides	FCO-2440	Refer Engineer	150	50	55	50	100G14, 100P14
					Refer Engineer	200	50	55	50	100G14, 100P14

• These tables should be read in conjunction with Section A • For explanation of System Reference notation refer Section B1 • For Limiting Heights refer Section C • Acoustic ratings by GHA, Sheet No 104 (refer Section A4)

Layout	System Ref	Description	Approx Pbd Mass (kg/m ²)	Fire Resistance		Stud Size (mm)	Nom Wall Width (mm)	Acoustic Ratings			
				FRL	Basis			Nil Insul	With Insulation		Insulation Type
								R _w	R _w	R _w +C _{tr}	

Timber Framed Staggered Stud Systems



System **TS1313A** illustrated

TS1010A	1x10mm Soundstop pbd to each side of frame	16.4	Nil	NA	70x45, 90pl	110	36	46	36	90G11, 75P14
					90x35, 120pl	140	37	48	38	90G11, 100P14
TS1313A	1x13mm Soundstop pbd to each side of frame	22.4	Nil	NA	70x45, 90pl	116	39	50	39	75G14
					90x35, 120pl	146	40	50	40	90G14, 100P14
TS1313F	1x13mm Firestop pbd to each side of frame	21.0	-/60/60	FCO-2393	70x45, 90pl	116	39	45	36	70G11, 50P14
					90x35, 120pl	146	40	46	38	70G11, 50P14
TS1313F10	1x13mm Firestop pbd to each side of frame Additional 1x10mm Std Core pbd to one side only	27.8	-/60/60	FCO-2393	70x45, 90pl	126	41	48	39	50G11, 50P14
					90x35, 120pl	156	42	49	41	50G11, 50P14
TS1616F	1x16mm Firestop pbd to each side of frame	26.0	60/60/60 Cf11	FCO-0626	70x45, 90pl	122	40	46	38	50G11, 50P14
					90x35, 120pl	152	41	46	39	50G11, 50P14
TS2020A	2x10mm Soundstop pbd to each side of frame	32.8	Nil	NA	70x45, 90pl	130	46	53	45	70G14, 75P14
					90x35, 120pl	160	47	54	46	90G14, 100P14
TS2626F	2x13mm Firestop pbd to each side of frame	42.0	90/90/90 Cf11	FCO-2564	70x45, 90pl	142	47	52	47	50G11, 50P14
					90x35, 120pl	172	48	57	50	90G14, 100P14
TS3232F	2x16mm Firestop pbd to each side of frame	52.0	120/120/120 Cf14	FCO-2564	70x45, 90pl	154	49	53	48	50G11, 50P14
					90x35, 120pl	184	50	58	51	90G14, 100P14

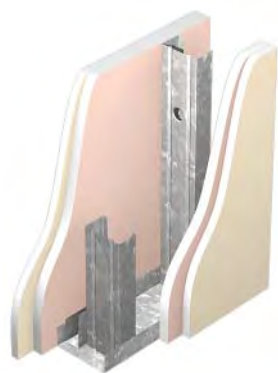
• These tables should be read in conjunction with Section A • For explanation of System Reference notation refer Section B1 • For Limiting Heights refer Section C • Acoustic ratings by GHA, Sheet No 104 (refer Section A4) • Bold acoustic ratings indicate a tested system

B | System Index

Selector+ PLASTERBOARD SYSTEMS

Layout	System Ref	Description	Approx Pbd Mass (kg/m ²)	Fire Resistance		Stud Size (mm)	Nom Wall Width (mm)	Acoustic Ratings			
				FRL	Basis			Nil Insul	With Insulation		Insulation Type
								R _w	R _w	R _w +C _{tr}	

Steel Framed Staggered Stud Systems

System **SS16F1316F13** illustrated

SS1010A	1x10mm Soundstop pbd to each side of frame	16.4	Nil	NA	(92 track)	112	38	46	36	70G11, 75P14
					(150 track)	170	39	48	39	90G14, 100P14
SS1313A	1x13mm Soundstop pbd to each side of frame	22.4	Nil	NA	(92 track)	118	39	50	39	75G14
					(150 track)	176	41	53	43	90G14, 100P14
SS1313F	1x13mm Firestop pbd to each side of frame	21.0	-/60/60	FR2539 99/1370 FCO-0512	(92 track)	118	39	48	37	50G11, 50P14
					(150 track)	176	40	50	38	70G11, 50P14
SS1313F13	1x13mm Firestop pbd to each side of frame Additional layer of 13mm Std Core pbd to one side	29.6	-/60/60	FR2539 99/1370 FCO-0512	(92 track)	131	43	52	41	50G11, 50P14
					(150 track)	189	45	54	45	50G11, 50P14
SS1616F	1x16mm Firestop pbd to each side of frame	26.0	-/90/90	FR2539 99/1370 FCO-0512	(92 track)	124	40	49	39	50G11, 50P14
					(92 track)	124	40	52	44	75G14
					(150 track)	182	43	51	42	50G11, 50P14
SS16F1316F13	1x16mm Firestop plus 1x13mm Std Core pbd to each side of frame	43.2	-/90/90	FR2539 99/1370 FCO-0512	(92 track)	150	48	57	50	75P14
					(150 track)	208	51	58	50	70G11, 50P14
SS2020A	2x10mm Soundstop pbd to each side of frame	32.8	Nil	NA	(92 track)	132	46	56	47	70G14, 75P14
					(150 track)	190	48	57	49	90G14, 100P14
SS2626A	2x13mm Soundstop pbd to each side of frame	44.8	Nil	NA	(92 track)	144	48	57	50	70G14, 75P14
					(150 track)	202	51	58	52	90G14, 100P14

• These tables should be read in conjunction with Section A • For explanation of System Reference notation refer Section B1 • For Limiting Heights refer Section C • Acoustic ratings by GHA, Sheet No 104 (refer Section A4) • Bold acoustic ratings indicate a tested system

Layout	System Ref	Description	Approx Pbd Mass (kg/m ²)	Fire Resistance		Stud Size (mm)	Nom Wall Width (mm)	Acoustic Ratings			
				FRL	Basis			Nil Insul	With Insulation		Insulation Type
								R _w	R _w	R _w +C _{tr}	

» Steel Framed Staggered Stud Systems



System **SS2626F** illustrated

SS2626F	2x13mm Firestop pbd to each side of frame	42.0	-/120/120	FR2539 99/1370 FCO-0512	(92 track)	144	49	55	48	50P14
					(92 track)	144	49	56	48	50G14
					(92 track)	144	49	54	47	50P7
					(92 track)	144	49	58	51	100P14
					(150 track)	202	50	57	49	50G11, 50P14
SS3232F	2x16mm Firestop pbd to each side of frame	52.0	-/180/180	FR2539 99/1370 FCO-0512	(92 track)	156	50	57	50	70G11, 50P14
					(92 track)	156	50	59	54	100P14
					(150 track)	214	52	58	51	70G11, 50P14

• These tables should be read in conjunction with Section A • For explanation of System Reference notation refer Section B1 • For Limiting Heights refer Section C • Acoustic ratings by GHA, Sheet No 104 (refer Section A4) • Bold acoustic ratings indicate a tested system

B | System Index

Selector+ PLASTERBOARD SYSTEMS


Layout	System Ref	Description	Approx Pbd Mass (kg/m ²)	Fire Resistance		Stud Size (mm)	Nom Wall Width (mm)	Acoustic Ratings			
				FRL	Basis			Nil Insul	With Insulation		Insulation Type
								R _w	R _w	R _w +C _{tr}	

D-Stud Walls

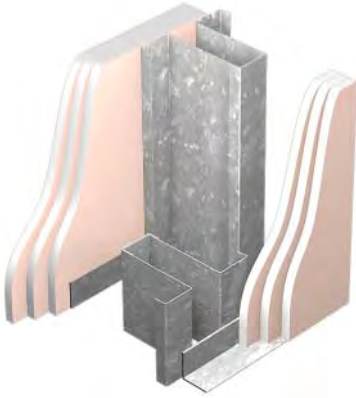
System **D16F1316F13** illustrated

D1010A	1x10mm Soundstop pbd to each side of frame	16.4	Nil	NA	(92 track)	112	38	44	36	70G11, 75P14
					(150 track)	170	39	47	39	90G14, 100P14
D1313A	1x13mm Soundstop pbd to each side of frame	22.4	Nil	NA	(92 track)	118	39	50	39	70G14, 75P14
					(150 track)	176	41	53	43	90G14, 100P14
D1313F	1x13mm Firestop pbd to each side of frame	21.0	-/30/30	FCO-1485	(92 track)	118	39	48	36	50G11, 50P14
					(150 track)	176	40	50	38	70G11, 50P14
D1313F13	1x13mm Firestop pbd to each side of frame Additional 13mm Std Core pbd to one side only	29.6	-/30/30	FCO-1485	(92 track)	131	43	52	41	50G11, 50P14
					(150 track)	189	45	54	45	50G11, 50P14
D1616F	1x16mm Firestop pbd to each side of frame	26.0	-/90/60	FSV 0466 FCO-1485	(92 track)	124	40	49	40	50G14
					(92 track)	124	40	47	39	50P14
					(150 track)	182	43	51	42	70G11, 50P14
D16F1316F13	1x16mm Firestop pbd plus 1x13mm Std Core pbd to each side of frame	43.2	-/90/90	FCO-1485	(92 track)	150	48	57	50	70G14, 75P14
					(150 track)	208	51	58	50	70G11, 50P14
D2020A	2x10mm Soundstop pbd to each side of frame	32.8	Nil	NA	(92 track)	132	46	56	47	70G14, 75P14
					(150 track)	190	48	57	49	90G14, 100P14
D2626A	2x13mm Soundstop pbd to each side of frame	44.8	Nil	NA	(92 track)	144	48	57	50	70G14, 75P14
					(150 track)	202	51	58	52	90G14, 100P14
D2626F	2x13mm Firestop pbd to each side of frame	42.0	-/90/90	FCO-1485	(92 track)	144	48	56	46	50G11, 50P14
					(92 track)	144	48	58	51	90G14, 100P14
					(150 track)	202	50	57	49	50G11, 50P14

• These tables should be read in conjunction with Section A • For explanation of System Reference notation refer Section B1 • For Limiting Heights refer Section C • Acoustic ratings by GHA, Sheet No 104 (refer Section A4) • Bold acoustic ratings indicate a tested system

Layout	System Ref	Description	Approx Pbd Mass (kg/m ²)	Fire Resistance		Stud Size (mm)	Nom Wall Width (mm)	Acoustic Ratings			
				FRL	Basis			Nil Insul	With Insulation		Insulation Type
								R _w	R _w	R _w +C _{tr}	
» D-Stud Walls											
 <p>System D3232F</p>	D3232F	2x16mm Firestop pbd to each side of frame	52.0	-/120/120	FCO-1485	(92 track)	156	50	57	50	70G11, 50P14
						(92 track)	156	50	59	54	90G14, 100P14
						(150 track)	214	52	58	51	70G11, 50P14

D-Stud Cinema Walls

 <p>System D4848F illustrated</p>	D4848F	3x16mm Firestop pbd to each side of frame	78.0	-/180/180	FSV 1073	as required	500	63	74	-	200G14, 200P25
	D4864F	3x16mm Firestop pbd layers to one side of frame 4x16mm Firestop pbd to other side	91.0	-/180/180	FSV 1073	as required	500	64	76	-	200G14, 200P25
	D6464F	4x16mm Firestop pbd to each side of frame	104.0	-/180/180	FSV 1073	as required	500	64	77	-	200G14, 200P25

• These tables should be read in conjunction with Section A • For explanation of System Reference notation refer Section B1 • For Limiting Heights refer Section C • Acoustic ratings by GHA, Sheet No 104 (refer Section A4)

B | System Index

Selector+ PLASTERBOARD SYSTEMS

Layout	System Ref	Description	Approx Pbd Mass (kg/m ²)	Fire Resistance		Stud Size (mm)	Nom Wall Width (mm)	Acoustic Ratings			
				FRL	Basis			Nil Insul	With Insulation		Insulation Type
								R _w	R _w	R _w +C _{tr}	

Timber Framed Twin Stud Systems

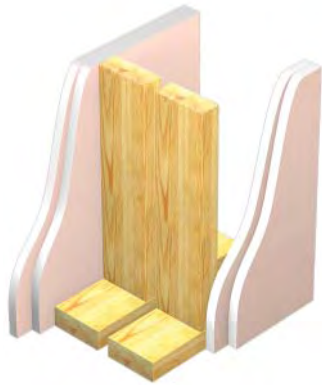
System **TT1313** illustrated

TT1010	1x10mm Std Core pbd to each side of frame	13.6	Nil	NA	70x45	185	35	43	31	50G11, 50P14
					90x35	225	36	45	34	50G11, 50P14
TT1313	1x13mm Std Core pbd to each side of frame	17.2	Nil	NA	70x45	191	38	49	38	50G11, 50P14
					90x35	231	39	49	39	50G11, 50P14
TT1313A	1x13mm Soundstop pbd to each side of frame	22.4	Nil	NA	70x45	191	42	55	45	90G14, 100P14
					90x35	231	43	56	46	90G14, 100P14
TT1313F	1x13mm Firestop pbd to each side of frame	21.0	-/60/60	FCO-2393	70x45	191	41	51	41	70G11, 50P14
					90x35	231	42	52	42	70G11, 50P14
TT1326F	1x13mm Firestop pbd to each side of frame	31.5	-/60/60	FCO-2393	70x45	204	47	57	47	50G11, 50P14
	Additional layer of 13mm Firestop to one side only				90x35	244	47	58	48	50G11, 50P14
					90x35	244	47	62	50	180G14, 200P14
TT13F1313F13	1x13mm Firestop pbd plus 1x13mm Std Core pbd to each side of frame	38.2	-/60/60	FCO-2393	70x45	217	50	63	52	50G11, 50P14
					90x35	257	51	64	53	50G11, 50P14
TT1616F	1x16mm Firestop pbd to each side of frame	26.0	60/60/60	FCO-0626	70x45	197	44	54	44	50G11, 50P14
					90x35	237	45	55	46	50G11, 50P14
TT16F1016F10	1x16mm Firestop pbd plus 1x10mm Std Core pbd to each side of frame	39.6	60/60/60	FCO-0626	70x45	217	51	63	53	50G11, 50P14
					90x35	257	52	64	54	50G11, 50P14
TT2626A	CinemaZone Gold system	44.8	Nil	NA	70x45	217	53	65	55	90G14, 100P14
	2x13mm Soundstop pbd to each side of frame				90x35	257	54	66	56	180G14, 200P14
TT2626F	2x13mm Firestop pbd to each side of frame	42.0	90/90/90 Cf21	FCO-2564	70x45	217	51	63	53	50G11, 50P14
					90x35	257	52	64	54	50G11, 50P14
TT2929F	1x16mm + 1x13mm Firestop pbd to both sides of frame	47.0	90/90/90 Cf10	FCO-2564	70x45	223	52	65	54	50G11, 50P14
					90x35	263	53	65	55	50G11, 50P14

- These tables should be read in conjunction with Section A
- For explanation of System Reference notation refer Section B1
- For Limiting Heights refer Section C
- Acoustic ratings by GHA, Sheet No 104 (refer Section A4)
- Referenced insulation thicknesses greater than 100mm is the sum of two halves installed in each stud cavity eg 140G14 => 70G14 installed in each stud cavity, 150P14 => 75P14 installed in each stud cavity.

Layout	System Ref	Description	Approx Pbd Mass (kg/m ²)	Fire Resistance		Stud Size (mm)	Nom Wall Width (mm)	Acoustic Ratings			
				FRL	Basis			Nil Insul	With Insulation		Insulation Type
								R _w	R _w	R _w +C _{tr}	

» Timber Framed Twin Stud Systems



System **TT3232F**

TT3232F	2x16mm Firestop pbd to each side of frame	52.0	120/120/120 Cf10	FCO-2564	70x45	229	54	66	56	50G11, 50P14
					90x35	269	55	67	57	50G11, 50P14

• These tables should be read in conjunction with Section A • For explanation of System Reference notation refer Section B1 • For Limiting Heights refer Section C • Acoustic ratings by GHA, Sheet No 104 (refer Section A4)
 • Referenced insulation thicknesses greater than 100mm is the sum of two halves installed in each stud cavity eg 140G14 => 70G14 installed in each stud cavity, 150P14 => 75P14 installed in each stud cavity.

B | System Index

Selector+ PLASTERBOARD SYSTEMS

Layout	System Ref	Description	Approx Pbd Mass (kg/m ²)	Fire Resistance		Stud Size (mm)	Nom Wall Width (mm)	Acoustic Ratings			
				FRL	Basis			Nil Insul	With Insulation		Insulation Type
								R _w	R _w	R _w +C _{tr}	

Steel Framed Twin Stud Systems

System **ST1313** illustrated

ST1010	1x10mm Std Core pbd to each side of frame	13.6	Nil	NA	51	147	35	44	31	50G11, 50P14
					64	173	36	45	33	50G11, 50P14
					76	197	36	45	34	50G11, 50P14
					92	229	37	46	35	50G11, 50P14
					150	345	38	46	37	50G11, 50P14
ST1313	1x13mm Std Core pbd to each side of frame	17.2	Nil	NA	51	153	37	47	36	50G11, 50P14
					64	179	38	48	37	50G11, 50P14
					76	203	39	49	38	50G11, 50P14
					92	235	39	49	39	50G11, 50P14
					150	351	42	51	41	50G11, 50P14
ST1313A	1x13mm Soundstop pbd to each side of frame	22.4	Nil	NA	51	153	41	53	42	90G14, 100P14
					64	179	42	54	43	90G14, 100P14
					76	203	43	55	45	160G14, 150P14
					92	235	43	57	46	180G14, 200P14
					150	351	44	59	48	180G14, 200P14

- These tables should be read in conjunction with Section A
- For explanation of System Reference notation refer Section B1
- For Limiting Heights refer Section C
- Acoustic ratings by GHA, Sheet No 104 (refer Section A4)
- Referenced insulation thicknesses greater than 100mm is the sum of two halves installed in each stud cavity eg 140G14 => 70G14 installed in each stud cavity, 150P14 => 75P14 installed in each stud cavity.

Layout	System Ref	Description	Approx Pbd Mass (kg/m ²)	Fire Resistance		Stud Size (mm)	Nom Wall Width (mm)	Acoustic Ratings			
				FRL	Basis			Nil Insul	With Insulation		Insulation Type
								R _w	R _w	R _w +C _{tr}	

» Steel Framed Twin Stud Systems



System **ST1326F** illustrated

ST1313F	1x13mm Firestop pbd to each side of frame	21.0	-/60/60	FR2539 99/1370	51	153	40	50	39	70G11, 50P14
					64	179	41	51	40	70G11, 50P14
					64	250	43	51	41	50P14
					64	250	43	54	46	100P14
					64	240	42	57	45	200P14
					64	300	43	54	43	100P14
					76	203	42	51	41	70G11, 50P14
					92	235	42	52	43	50G11, 50P14
					150	351	45	53	45	50G11, 50P14
ST1313F13	1x13mm Firestop pbd to each side of frame Additional 1x13mm Std Core pbd to one side only	29.6	-/60/60	FR2539 99/1370	51	166	44	56	45	50G11, 50P14
					64	193	45	57	46	50G11, 50P14
					64	253	46	56	47	50P14
					64	253	46	60	50	200P14
					76	216	46	57	47	50G11, 50P14
					92	248	46	58	48	50G11, 50P14
ST1326F	1x13mm Firestop pbd to each side of frame Additional 1x13mm Firestop pbd to one side only	31.5	-/90/90	SI 515 FR2539 99/1370	51	166	45	56	45	50G11, 50P14
					64	192	46	57	46	50G11, 50P14
					76	216	47	57	47	50G11, 50P14
					92	248	47	58	48	50G11, 50P14
					92	253	47	60	50	180G14, 200P14
					150	364	50	59	51	70G11, 50P14

• These tables should be read in conjunction with Section A • For explanation of System Reference notation refer Section B1 • For Limiting Heights refer Section C • Acoustic ratings by GHA, Sheet No 104 (refer Section A4) • Bold acoustic ratings indicate a tested system • Referenced insulation thicknesses greater than 100mm is the sum of two halves installed in each stud cavity eg 140G14 => 70G14 installed in each stud cavity, 150P14 => 75P14 installed in each stud cavity.

B | System Index

Selector+ PLASTERBOARD SYSTEMS

Layout	System Ref	Description	Approx Pbd Mass (kg/m ²)	Fire Resistance		Stud Size (mm)	Nom Wall Width (mm)	Acoustic Ratings			
				FRL	Basis			Nil Insul	With Insulation		Insulation Type
								R _w	R _w	R _w +C _{tr}	

» Steel Framed Twin Stud Systems



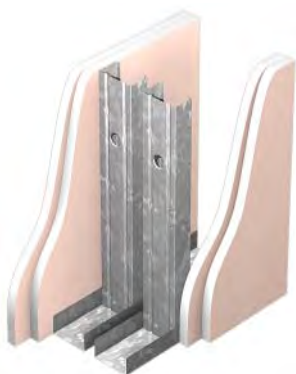
System **ST1616F** illustrated

ST1616F	1x16mm Firestop pbd to each side of frame	26.0	-/90/90	FR2539 99/1370	51	159	42	53	42	50G11, 50P14
					64	185	43	54	44	50G11, 50P14
					64	180	43	58	49	100G14 150G14
							43	59	50	
					76	209	44	54	45	50G11, 50P14
					76	204	44	58	48	100G14 150G14
							44	60	52	
ST1616F10	1x16mm Firestop pbd to each side of frame Additional 1x10mm Std Core pbd to one side only	32.8	-/90/90	FR2539 99/1370	51	169	45	56	48	90G14, 100P14
					64	195	46	57	50	140G14, 150P14
					64	190	46	56	49	100P14
					76	219	47	57	50	140G14, 150P14
					92	251	48	58	51	140G14, 150P14
					150	367	50	59	53	140G14, 150P14
					ST16F1016F10	1x16mm Firestop pbd plus 1x10mm Std Core pbd to each side of frame	39.6	-/90/90	FR2539 99/1370	51
64	205	50	63	52						50G11, 50P14
76	229	51	63	53						50G11, 50P14
92	261	52	64	54						50G11, 50P14
150	377	55	64	56						50G11, 50P14
ST2626A	CinemaZone Gold system 2x13mm Soundstop pbd to each side of frame	44.8	Nil	NA	51	179	50	67	55	90G14, 100P14
					64	205	51	68	56	90G14, 100P14
					76	229	52	68	57	140G14, 150P14
					92	261	53	69	58	180G14, 200P14
					150	377	56	70	60	180G14, 200P14

• These tables should be read in conjunction with Section A • For explanation of System Reference notation refer Section B1 • For Limiting Heights refer Section C • Acoustic ratings by GHA, Sheet No 104 (refer Section A4) • Bold acoustic ratings indicate a tested system • Referenced insulation thicknesses greater than 100mm is the sum of two halves installed in each stud cavity eg 140G14 => 70G14 installed in each stud cavity, 150P14 => 75P14 installed in each stud cavity.

Layout	System Ref	Description	Approx Pbd Mass (kg/m ²)	Fire Resistance		Stud Size (mm)	Nom Wall Width (mm)	Acoustic Ratings			
				FRL	Basis			Nil Insul	With Insulation		Insulation Type
								R _w	R _w	R _w +C _{tr}	

» **Steel Framed Twin Stud Systems**



System **ST3232F** illustrated



System **ST4141F** illustrated

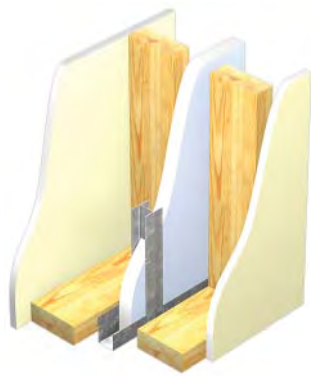
ST2626F	2x13mm Firestop pbd to each side of frame	42.0	-/120/120	FR2539 99/1370		51	179	49	62	52	50G11, 50P14
						64	205	50	63	52	50G11, 50P14
						76	229	51	63	52	50G11, 50P14
						92	261	52	64	54	50G11, 50P14
						150	377	55	64	56	50G11, 50P14
ST3232F	2x16mm Firestop pbd to each side of frame	52.0	-/180/180	FR2539 99/1370		51	197	52	65	54	50G11, 50P14
						64	217	53	66	55	50G11, 50P14
						76	241	54	66	56	50G11, 50P14
						92	273	55	67	58	50G11, 50P14
						150	389	58	67	60	50G11, 50P14
ST4141F	LinerSTRIP LS1 [®] , 1x25 Shaftliner™ & 1x16 Firestop™ each side of frame	67.0	-/180/180 Both sides	FCO-2440	Refer Engineer	350		58	72	63	180G14, 200P14
						400		59	73	64	180G14, 200P14
						450		60	74	65	180G14, 200P14
ST4848F	3x16mm Firestop pbd to each side of frame	78.0	-/180/180	FCO-2440		51	223	58	71	59	50G11, 50P14
						64	249	59	72	60	50G11, 50P14
						76	273	59	72	62	50G11, 50P14
						92	305	60	72	62	50G11, 50P14
						150	421	62	73	65	50G11, 50P14
ST6666F	LinerSTRIP LS1 [®] , 2x25 Shaftliner™ & 1x16 Firestop™ each side of frame	108.5	180/180/180 -/240/240 Both sides	FCO-2440	Refer Engineer	350		63	76	67	180G14, 200P14
						400		64	77	68	180G14, 200P14
						450		65	78	69	180G14, 200P14

• These tables should be read in conjunction with Section A • For explanation of System Reference notation refer Section B1 • For Limiting Heights refer Section C • Acoustic ratings by GHA, Sheet No 104 (refer Section A4)
 • Referenced insulation thicknesses greater than 100mm is the sum of two halves installed in each stud cavity eg 140G14 => 70G14 installed in each stud cavity, 150P14 => 75P14 installed in each stud cavity.

B | System Index Selector+ PLASTERBOARD SYSTEMS

Layout	System Ref	Description	Approx Pbd Mass (kg/m ²)	Fire Resistance		Stud Size (mm)	Nom Wall Width (mm)	Acoustic Ratings			
				FRL	Basis			Nil Insul	With Insulation		Insulation Type
								R _w	R _w	R _w +C _{tr}	

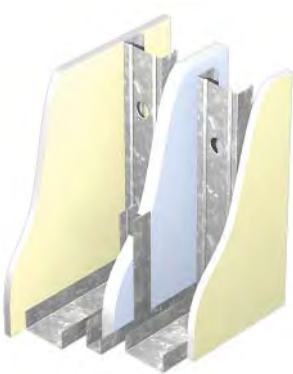
Separating Wall Systems - Partiwall®



System **25TP1313A** illustrated

25TP1010	1x25mm Shaftliner panel 1x10mm Std Core pbd to each side of timber frame	34.1	60/60/60 Cf NA	FSV 0381 FCO-2256	70x45	225	35	51	40	OS R2 GW wall batt, 100P14	
					70x45	225	35	54	42	BS R2 GW wall batt, 100P14	
					90x35	265	36	55	41	OS R2 GW wall batt, 100P14	
					90x35	265	36	60	42	BS R2.5 GW wall batt	
	25TP1010A	1x25mm Shaftliner panel 1x10mm Soundstop pbd to each side of timber frame	36.9	60/60/60 Cf NA	FCO-2256	70x45	225	36	57	46	OS R2 GW wall batt
						70x45	225	36	60	49	BS R2 GW wall batt
						90x35	265	37	59	48	OS 115mm thick R2.5 ceiling batt
						90x35	265	37	63	53	BS 115mm thick R2.5 ceiling batt
	25TP1313A	1x25mm Shaftliner panel 1x13mm Soundstop pbd to each side of timber frame	42.9	60/60/60 Cf NA	FCO-2256	70x45	231	37	59	46	OS R2 GW wall batt, 100P14
						70x45	231	37	62	47	BS R2 GW wall batt
						90x35	271	38	61	48	OS R2 GW wall batt, 100P14
						90x35	271	38	62	50	BS R2 GW wall batt
90x35						271	38	62	50	BS 100P14	
90x35						271	38	57	44	BS 85P9	
25TP2020	1x25mm Shaftliner panel 2x10mm Std Core pbd to each side of timber frame	47.7	60/60/60 Cf NA	FCO-2256	70x45	245	38	64	50	BS R2 GW wall batt, 100P14	
					90x35	285	38	65	51	BS R1.5 GW wall batt	

• These tables should be read in conjunction with Section A • For explanation of System Reference notation refer Section B1 • For Limiting Heights refer Section C • Acoustic ratings by GHA, Sheet No 104 (refer Section A4) • Bold acoustic ratings indicate a tested system

Layout	System Ref	Description	Approx Pbd Mass (kg/m ²)	Fire Resistance		Stud Size (mm)	Nom Wall Width (mm)	Acoustic Ratings				
				FRL	Basis			Nil Insul		With Insulation		Insulation Type
								R _w	R _w	R _w +C _{tr}		
 <p>System 25SP1313A illustrated</p>	25SP1010	1x25mm Shaftliner panel 1x10mm Std Core pbd to each side of steel frame	34.1	60/60/60 Cf NA	FCO-1945 FCO-2256	76	237	35	51	40	OS R2 GW wall batt, 100P14	
						76	237	35	54	43	BS R2 GW wall batt, 100P14	
						92	269	36	55	41	OS R2 GW wall batt, 100P14	
						92	269	36	58	44	BS R2 GW wall batt, 100P14	
	25SP1010A	1x25mm Shaftliner panel 1x10mm Soundstop pbd to each side of steel frame	36.9	60/60/60 Cf NA	FCO-2256	76	237	36	57	46	OS R2 GW wall batt	
						76	237	36	60	49	BS R2 GW wall batt	
						92	269	37	59	48	OS 115mm thick R2.5 ceiling batt	
						92	269	37	63	53	BS 115mm thick R2.5 ceiling batt	
	25SP1313A	1x25mm Shaftliner panel 1x13mm Soundstop pbd to each side of steel frame	42.9	60/60/60 Cf NA	FCO-2256	76	243	37	59	46	OS R2 GW wall batt, 100P14	
						76	243	37	62	47	BS R2 GW wall batt, 100P14	
						92	275	38	61	48	OS R2 GW wall batt, 100P14	
						92	275	38	62	50	BS R2 GW wall batt, 100P14	
						92	275	38	57	44	BS 85P9	
	25SP2020	1x25mm Shaftliner panel 2x10mm Std Core pbd to each side of steel frame	47.7	60/60/60 Cf NA	FCO-2256	76	257	38	64	50	BS R2 GW wall batt, 100P14	
						92	289	38	65	51	BS R1.5 GW wall batt	

• These tables should be read in conjunction with Section A • For explanation of System Reference notation refer Section B1 • For Limiting Heights refer Section C • Acoustic ratings by GHA, Sheet No 104 (refer Section A4)

B | System Index

Selector+ PLASTERBOARD SYSTEMS

Layout	System Ref	Description	Approx Pbd Mass (kg/m ²)	Fire Resistance		Stud Size (mm)	Nom Wall Width (mm)	Acoustic Ratings			
				FRL	Basis			Nil Insul	With Insulation		Insulation Type
								R _w	R _w	R _w +C _{tr}	

» Separating Wall Systems - Partiwall®



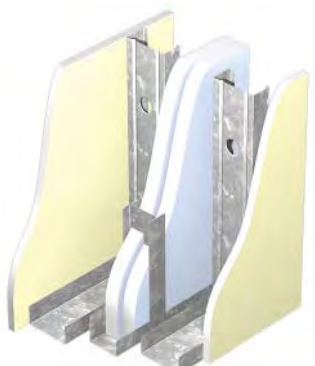
System 50TP1313A illustrated

<p>50TP1010</p> <p>2x25mm Shaftliner panels 1x10mm Std Core pbd to each side of timber frame</p>	54.6	90/90/90 Cf NA	FCO-1446 FCO-2016 FCO-2256	70x45	250	38	54	41	OS R2 GW wall batt, 100P14	
				70x45	250	38	57	44	BS R2 GW wall batt, 100P14	
				90x35	290	39	59	46	OS R2 GW wall batt, 100P14	
				90x35	290	39	62	49	BS R2 GW wall batt, 100P14	
	<p>50TP1313A</p> <p>2x25mm Shaftliner panels 1x13mm Soundstop pbd to each side of timber frame</p>	63.4	90/90/90 Cf NA	FCO-1446 FCO-2016 FCO-2256	70x45	256	40	62	50	OS R2 GW wall batt, 100P14
					70x45	256	40	65	53	BS R2 GW wall batt, 100P14
					90x35	296	41	65	53	OS R2 GW wall batt, 100P14
					90x35	296	41	68	56	BS R2 GW wall batt, 100P14

• These tables should be read in conjunction with Section A • For explanation of System Reference notation refer Section B1 • For Limiting Heights refer Section C • Acoustic ratings by GHA, Sheet No 104 (refer Section A4)

B | System Index

Selector+ PLASTERBOARD SYSTEMS

Layout	System Ref	Description	Approx Pbd Mass (kg/m ²)	Fire Resistance		Stud Size (mm)	Nom Wall Width (mm)	Acoustic Ratings			
				FRL	Basis			Nil Insul	With Insulation		Insulation Type
								R _w	R _w	R _w +C _{tr}	
» Separating Wall Systems - Partiwall®											
 <p>System 50SP1313A illustrated</p>	50SP1010	2x25mm Shaftliner panels 1x10mm Std Core pbd to each side of steel frame	54.6	90/90/90 Cf NA	FCO-2256	76	262	38	54	41	OS R2 GW wall batt, 100P14
						76	262	38	57	44	BS R2 GW wall batt, 100P14
						92	294	39	59	46	OS R2 GW wall batt, 100P14
						92	294	39	62	49	BS R2 GW wall batt, 100P14
	50SP1313A	2x25mm Shaftliner panels 1x13mm Soundstop pbd to each side of steel frame	63.4	90/90/90 Cf NA	FCO-2256	76	268	40	62	50	OS R2 GW wall batt, 100P14
						76	268	40	65	53	BS R2 GW wall batt, 100P14
						92	300	41	65	53	OS R2 GW wall batt, 100P14
						92	300	41	68	56	BS R2 GW wall batt, 100P14



• These tables should be read in conjunction with Section A • For explanation of System Reference notation refer Section B1 • For Limiting Heights refer Section C • Acoustic ratings by GHA, Sheet No 104 (refer Section A4)

B | System Index

Selector+ PLASTERBOARD SYSTEMS

Layout	System Reference	Nom Width (mm)	Stud Size (mm)	Pbd Weight (kg/m ²)	Fire	Acoustic Ratings			Total R Value (m ² K/W)
					FRL Basis	R _w	R _w +C _{tr}	Insulation	

Separating Wall Systems - IntRwall[®] (formerly EurekaWall[®]) Max height 3000mm (max pressure 0.35kPa)

	50IW13 2x25mm Shaftliner™ panels 1x13mm Std Core pbd to one side I studs @ 600mm ctrs	64	51IS55	49.6	Nil	35	32	Nil	0.57
	50IW13F 2x25mm Shaftliner™ panels 1x13mm Firestop™ pbd to one side. I studs @ 600mm ctrs *Increase FRL with IBS rod in Deflection Head Track	64	51IS55	51.5	-/60/60 FCO 2660 -/90/90* FSV 0883	36	33	Nil	0.56
	50IWS13 2x25mm Shaftliner™ panels 1x13mm Std Core pbd to other side on separate steel stud frame I studs @ 600mm ctrs max C studs @ 600mm ctrs max – engineer to design (min 20mm gap between I studs and C studs)	148	51IS55 + min 64mm steel stud	49.6	Nil	45 50	— 40	Nil 50G14 or 50P14	0.72 2.02 or 1.80

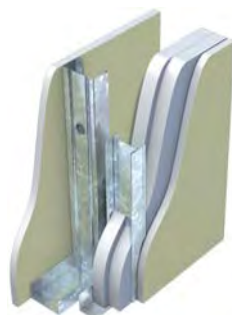
• For explanation of System Reference notation refer Section B1 of Boral Selector+ Plasterboard Systems. • For Limiting Heights of steel C Studs refer Section C of Boral Selector+ Plasterboard Systems.
 • Insulation abbreviation: XXGYG = Glasswool insulation in format of thickness (mm), G (Glasswool), Density (kg/m³). XXPYG = Polyester insulation in format of thickness (mm), P (Polyester), Density (kg/m³).

Layout	System Reference	Nom Width (mm)	Stud Size (mm)	Pbd Weight (kg/m ²)	Fire	Acoustic Ratings			Total R Value (m ² K/W)
					FRL Basis	R _w	R _w +C _{tr}	Insulation	

» Separating Wall Systems - IntRwall[®] (formerly EurekaWall[®]) Max height 3000mm (max pressure 0.35kPa)



<p>50IW13S13</p> <p>2x25mm Shaftliner™ panels 1x13mm Std Core pbd to one side 1x13mm Std Core pbd to other side on separate steel stud frame I studs @ 600mm ctrs max C studs @ 600mm ctrs max – engineer to design (min 20mm gap between I studs and C studs)</p> <p>*Increase FRL with IBS rod in Deflection Head Track</p>	161	51IS55 + min 64mm steel stud	58.2	-/60/60 FCO-2660	45	—	Nil	0.83
	177				50	42	50G14 or 50P14	2.12 or 1.90
<p>50IW13FS13F</p> <p>2x25mm Shaftliner™ panels 1x13mm Firestop™ pbd to one side 1x13mm Firestop™ pbd to other side on separate steel stud frame I studs @ 600mm ctrs max C studs @ 600mm ctrs max – engineer to design (min 20mm gap between I studs and C studs)</p> <p>*Increase FRL with IBS rod in Deflection Head Track</p>	161	51IS55 + min 64mm steel stud	62.0	-/90/90* WFRA 40970 WFRA 41038 FCO-2256	46	—	Nil	0.80
	177				54	45	75P9	2.05
<p>As above (min 36mm gap between I studs and C studs)</p>	161	51IS55 + min 64mm steel stud	62.0	-/90/90 FCO-2660	58	49	75P14	2.35
	177				47	50	Nil	0.81
<p>As above (min 36mm gap between I studs and C studs)</p>	177			-/120/120* FCO-2434	58	50	90G11 or 75P14	2.91 or 2.40



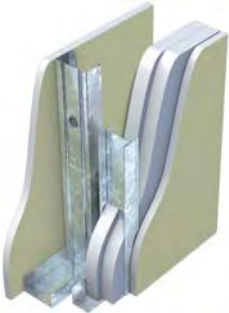
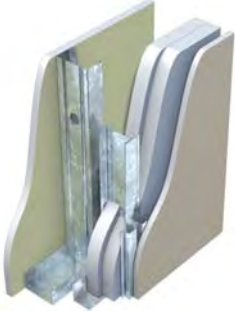
• For explanation of System Reference notation refer Section B1 of Boral Selector+ Plasterboard Systems. • For Limiting Heights of steel C Studs refer Section C of Boral Selector+ Plasterboard Systems.
• Insulation abbreviation: XXGY = Glasswool insulation in format of thickness (mm), G (Glasswool), Density (kg/m³). XXPY = Polyester insulation in format of thickness (mm), P (Polyester), Density (kg/m³).

B | System Index

Selector+ PLASTERBOARD SYSTEMS

Layout	System Reference	Nom Width (mm)	Stud Size (mm)	Pbd Weight (kg/m ²)	Fire	Acoustic Ratings			Total R Value (m ² K/W)
					FRL Basis	R _w	R _w +C _{tr}	Insulation	

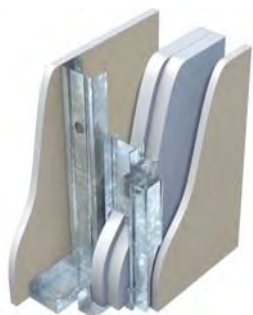
» Separating Wall Systems - IntRwall[®] (formerly EurekaWall[®]) Max height 3000mm (max pressure 0.35kPa)

	50IW13AS13A 2x25mm Shaftliner™ panels 1x13mm Soundstop® pbd to one side 1x13mm Soundstop® pbd to other side on separate steel stud frame I studs @ 600mm ctrs max C studs @ 600mm ctrs max – engineer to design (min 20mm gap between I studs and C studs) *Increase FRL with IBS rod in Deflection Head Track	161	51IS55 + min 64mm steel stud	63.4	-/60/60 FCO-2660	48	—	Nil	0.80
						58	50	70G14 or 75P14	2.59 or 2.35
						57	49	75P14	2.35
						60	52	100P14	2.53
					-/90/90* WFRA 40970		CSIRO TL418-fg		
							CSIRO TL439b		
	50IWFR10S13A 2x25mm Shaftliner™ panels 10mm Std Core pbd to one side on 13mm recessed face furring channels 1x13mm Soundstop® pbd to other side on separate steel stud frame I studs @ 600mm ctrs max C studs @ 600mm ctrs max – engineer to design (min 49mm gap between I studs and C studs) IBS rod required in Deflection Head Track	200	51IS55 + min 64mm steel stud	59.0	-/60/60 FCO-2256	44	—	Nil	0.93
						57	50	100P14 stud side only	3.02
								CSIRO TL439e	
						57	50	90G16 stud side only	3.36

• For explanation of System Reference notation refer Section B1 of Boral Selector+ Plasterboard Systems. • For Limiting Heights of steel C Studs refer Section C of Boral Selector+ Plasterboard Systems.
 • Insulation abbreviation: XXGYY = Glasswool insulation in format of thickness (mm), G (Glasswool), Density (kg/m³). XXPYY = Polyester insulation in format of thickness (mm), P (Polyester), Density (kg/m³).

Layout	System Reference	Nom Width (mm)	Stud Size (mm)	Pbd Weight (kg/m ²)	Fire	Acoustic Ratings			Total R Value (m ² K/W)
					FRL Basis	R _w	R _w +C _{tr}	Insulation	

» Separating Wall Systems - IntRwall[®] (formerly EurekaWall[®]) Max height 3000mm (max pressure 0.35kPa)



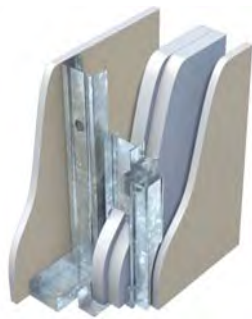
<p>50IWF13S13</p> <p>2x25mm Shaftliner™ panels 1x13mm Std Core pbd to one side on 28mm furring channel 1x13mm Std Core pbd to other side on separate steel stud frame I studs @ 600mm ctrs max C studs @ 600mm ctrs max – engineer to design (min 20mm gap between I studs and C studs) *Increase FRL with IBS rod in Deflection Head Track</p>	189	51IS55 + min 64mm steel stud	58.2	-/60/60 FCO-2660	40	—	Nil	0.98	
						50	42	50G14 or 50P14 stud side only	2.28 or 2.05
	As above (min 50mm gap between I studs and C studs. Nom 50mm cavity on furring channel side)	240			-/90/90* FSV-0883 FCO-2256	61	50	90G16 or 100P14 in stud cavity. 50G11 or 50P14 in furring cavity	4.43 or 3.96
<p>50IWF13FS13F</p> <p>2x25mm Shaftliner™ panels 1x13mm Firestop™ pbd to one side on 28mm furring channel 1x13mm Firestop™ pbd to other side on separate steel stud frame I studs @ 600mm ctrs max C studs @ 600mm ctrs max – engineer to design (min 20mm gap between I studs and C studs) *Increase FRL with IBS rod in Deflection Head Track</p>	189	51IS55 + min 64mm steel stud	59.8	-/90/90 FCO-2660	43	—	Nil	0.96	
						53	43	75P14 stud side only	2.51
	As above (min 50mm gap between I studs and C studs. Nom 50mm cavity on furring channel side)	240			-/120/120* FSV-2434	62	50	90G11 or 100P14 in stud cavity. 50G11 or 50P14 in furring cavity	4.12 or 3.94

• For explanation of System Reference notation refer Section B1 of Boral Selector+ Plasterboard Systems. • For Limiting Heights of steel C Studs refer Section C of Boral Selector+ Plasterboard Systems.
 • Insulation abbreviation: XXGY = Glasswool insulation in format of thickness (mm), G (Glasswool), Density (kg/m³). XXPY = Polyester insulation in format of thickness (mm), P (Polyester), Density (kg/m³).

B | System Index Selector+ PLASTERBOARD SYSTEMS

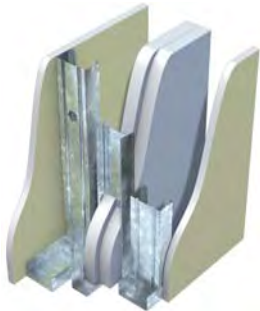
Layout	System Reference	Nom Width (mm)	Stud Size (mm)	Pbd Weight (kg/m ²)	Fire	Acoustic Ratings			Total R Value (m ² K/W)
					FRL Basis	R _w	R _w +C _{tr}	Insulation	

» Separating Wall Systems - IntRwall[®] (formerly EurekaWall[®]) Max height 3000mm (max pressure 0.35kPa)



<p>50IWF13AS13A</p> <p>2x25mm Shaftliner™ panels 1x13mm Soundstop® pbd on 28mm furring channels to one side 1x13mm Soundstop® pbd to other side on separate steel stud frame I studs @ 600mm ctrs max C studs @ 600mm ctrs max – engineer to design (min 20mm gap between I studs and C studs)</p> <p>*Increase FRL with IBS rod in Deflection Head Track</p>	211	51IS55 + min 64mm steel stud	63.4	-/60/60 FCO-2660	44	—	Nil	0.96
				-/90/90* WFRA 40970	61	50	90G16 or 100P14 in stud cavity. 50G11 or 50P14 in furring cavity	4.09 or 3.48
	As above (min 50mm gap between I studs and C studs. Nom 50mm cavity on furring channel side)	240				62	50	70G11 or 75P14 in stud cavity. 50G11 or 50P14 in furring cavity

• For explanation of System Reference notation refer Section B1 of Boral Selector+ Plasterboard Systems. • For Limiting Heights of steel C Studs refer Section C of Boral Selector+ Plasterboard Systems.
• Insulation abbreviation: XXGY Y = Glasswool insulation in format of thickness (mm), G (Glasswool), Density (kg/m³). XXPY Y = Polyester insulation in format of thickness (mm), P (Polyester), Density (kg/m³).

Layout	System Reference	Nom Width (mm)	Stud Size (mm)	Pbd Weight (kg/m ²)	Fire	Acoustic Ratings			Total R Value (m ² K/W)
					FRL Basis	R _w	R _w +C _{tr}	Insulation	
	50IWS13S13 2x25mm Shaftliner™ panels 1x13mm Std Core pbd to one side on separate steel stud frame 1x13mm Std Core pbd to other side on separate steel stud frame I studs @ 600mm ctrs max C studs @ 600mm ctrs max – engineer to design (min 20mm gap between I studs and C studs both sides)	245	51IS55 + min 64mm steel stud	58.2	-/90/90 WFRA 40970	36	—	Nil	0.98
	55					41	50G14 or 50P14 one side only	2.28 or 2.05	
	62					48	75G14 both sides	4.76	
	61					50	90G16 or 100P14 both sides	5.24 or 4.43	
	50IWS13AS13A 2x25mm Shaftliner™ panels 1x13mm Soundstop® pbd to one side on separate steel stud frame 1x13mm Soundstop® pbd to other side on separate steel stud frame I studs @ 600mm ctrs max C studs @ 600mm ctrs max – engineer to design (min 20mm gap between I studs and C studs both sides)	245	51IS55 + min 64mm steel stud	63.4	-/90/90 FSV 0883	40	—	Nil	0.95
	63					50	70G14 or 75P14 both sides	4.53 or 4.05	
As above (min 26mm gap between I studs and C studs both sides)	257					68	56	90G11 both sides	4.89
						Renzo Tonin & Assoc TD252-01F02			

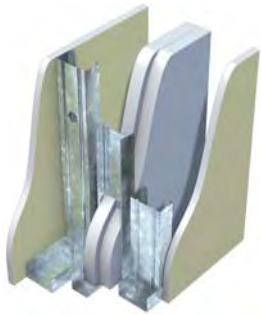
• For explanation of System Reference notation refer Section B1 of Boral Selector+ Plasterboard Systems. • For Limiting Heights of steel C Studs refer Section C of Boral Selector+ Plasterboard Systems.
 • Insulation abbreviation: XXGY = Glasswool insulation in format of thickness (mm), G (Glasswool), Density (kg/m³). XXPY = Polyester insulation in format of thickness (mm), P (Polyester), Density (kg/m³).

B | System Index

Selector+ PLASTERBOARD SYSTEMS

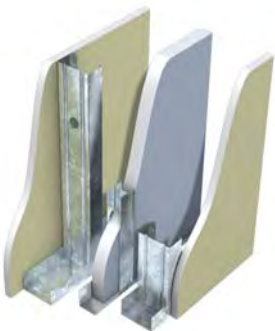
Layout	System Reference	Nom Width (mm)	Stud Size (mm)	Pbd Weight (kg/m ²)	Fire	Acoustic Ratings			Total R Value (m ² K/W)
					FRL Basis	R _w	R _w +C _{tr}	Insulation	

» Separating Wall Systems - IntRwall[®] (formerly EurekaWall[®]) Max height 3000mm (max pressure 0.35kPa)



<p>50IWS13FS13F</p> <p>2x25mm Shaftliner™ panels 1x13mm Firestop™ pbd to one side on separate steel stud frame 1x13mm Firestop™ pbd to other side on separate steel stud frame I studs @ 600mm ctrs max C studs @ 600mm ctrs max – engineer to design (min 20mm gap between I studs and C studs both sides)</p>	245	51IS55 + min 64mm steel stud	62.0	-/120/120 FCO-2434	40 62	— 50	Nil 90G14 or 100P14 both sides	0.96 5.03 or 4.41
	<p>50IWS13WS13W</p> <p>2x25mm Shaftliner™ panels 1x13mm Wet Area pbd to one side on separate steel stud frame 1x13mm Wet Area pbd to other side on separate steel stud frame I studs @ 600mm ctrs max C studs @ 600mm ctrs max – engineer to design (min 20mm gap between I studs and C studs both sides)</p>	245	51IS55 + min 64mm steel stud	59.8	-/90/90 WFRA 40970	39 61	— 50	Nil 90G16 or 100P14 both sides

• For explanation of System Reference notation refer Section B1 of Boral Selector+ Plasterboard Systems. • For Limiting Heights of steel C Studs refer Section C of Boral Selector+ Plasterboard Systems.
• Insulation abbreviation: XXGYG = Glasswool insulation in format of thickness (mm), G (Glasswool), Density (kg/m³). XXPLY = Polyester insulation in format of thickness (mm), P (Polyester), Density (kg/m³).

Layout	System Reference	Nom Width (mm)	Stud Size (mm)	Pbd Weight (kg/m ²)	Fire	Acoustic Ratings			Total R Value (m ² K/W)
					FRL Basis	R _w	R _w +C _{tr}	Insulation	
	25IWS13S13 1x25mm Shaftliner™ panels 1x13mm Std Core pbd to one side on separate steel stud frame 1x13mm Std Core pbd to other side on separate steel stud frame I studs @ 600mm ctrs max C studs @ 600mm ctrs max – engineer to design (min 46mm gap between I studs and C studs both sides)	271	51IS55 + min 64mm steel stud	37.7	-/60/60 FCO-2256	37 61	— 50	Nil 90G16 or 100P14 both sides	0.88 5.73 or 5.04
	25IWS13AS13A 1x25mm Shaftliner™ panels 1x13mm Soundstop® pbd to one side on separate steel stud frame 1x13mm Soundstop® pbd to other side on separate steel stud frame I studs @ 600mm ctrs max C studs @ 600mm ctrs max – engineer to design (min 36mm gap between I studs and C studs both sides)	251	51IS55 + min 64mm steel stud	42.9	-/60/60 FCO-2256	39 62	— 50	Nil 90G16 or 100P14 both sides	0.86 5.63 or 4.73
	25IWS13WS13W 1x25mm Shaftliner™ panels 1x13mm Wet Area pbd to one side on separate steel stud frame 1x13mm Wet Area pbd to other side on separate steel stud frame I studs @ 600mm ctrs max C studs @ 600mm ctrs max – engineer to design (min 36mm gap between I studs and C studs both sides)	251	51IS55 + min 64mm steel stud	39.3	-/60/60 FCO-2256	38 61	— 50	Nil 90G16 or 100P14 both sides	0.87 5.65 or 4.74

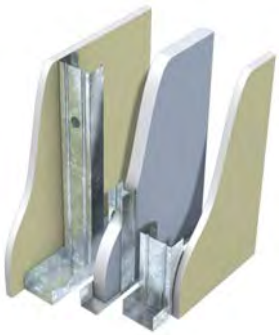
Note: Systems shown on this page are not to be used for corridor walls. Penetrations in Shaftliner™ panels are not permitted. Contact Boral Plasterboard for further information.

• For explanation of System Reference notation refer Section B1 of Boral Selector+ Plasterboard Systems. • For Limiting Heights of steel C Studs refer Section C of Boral Selector+ Plasterboard Systems.
 • Insulation abbreviation: XXGY = Glasswool insulation in format of thickness (mm), G (Glasswool), Density (kg/m³). XXPY = Polyester insulation in format of thickness (mm), P (Polyester), Density (kg/m³).

B | System Index Selector+ PLASTERBOARD SYSTEMS

Layout	System Reference	Nom Width (mm)	Stud Size (mm)	Pbd Weight (kg/m ²)	Fire	Acoustic Ratings			Total R Value (m ² K/W)
					FRL Basis	R _w	R _w +C _{tr}	Insulation	

» Separating Wall Systems - IntRwall[®] (formerly EurekaWall[®]) Max height 3000mm (max pressure 0.35kPa)

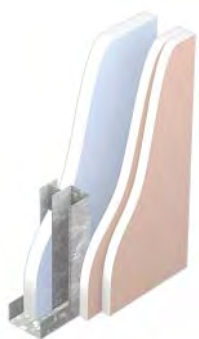
	25IWS20S20 1x25mm Shaftliner™ panels 2x10mm Std Core pbd to one side on separate steel stud frame 2x10mm Std Core pbd to other side on separate steel stud frame I studs @ 600mm ctrs max C studs @ 600mm ctrs max – engineer to design (min 26mm gap between I studs and C studs both sides)	245	51IS55 + min 64mm steel stud	47.7	-/60/60 FC0-2256	40 64	— 50	Nil 90G11 or 100P14 both sides	0.95 4.88 or 4.57
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Note: Systems shown on this page are not to be used for corridor walls. Penetrations in Shaftliner™ panels are not permitted. Contact Boral Plasterboard for further information.

• For explanation of System Reference notation refer Section B1 of Boral Selector+ Plasterboard Systems. • For Limiting Heights of steel C Studs refer Section C of Boral Selector+ Plasterboard Systems.
 • Insulation abbreviation: XXGY Y = Glasswool insulation in format of thickness (mm), G (Glasswool), Density (kg/m³). XXPY Y = Polyester insulation in format of thickness (mm), P (Polyester), Density (kg/m³).

Layout	System Ref	Description	Approx Pbd Mass (kg/m ²)	Fire Resistance		Stud Size (mm)	Nom Wall Width (mm)	Acoustic Ratings			
				FRL	Basis			Nil Insul	With Insulation		Insulation Type
								R _w	R _w	R _w +C _{tr}	

Shaft Systems - Shaft Wall



System **SH32F** illustrated

SH16F	1x25mm Shaftliner 1x16mm Firestop pbd to other side of frame	33.5	-/60/60	FCO-1556	64CH55	80	38	46	34	50G11, 50P14
					64CH90	80	38	45	33	50G11, 50P14
					102CH55	118	42	48	37	50G11, 50P14
					102CH90	118	41	47	36	50G11, 50P14
SH26F	1x25mm Shaftliner 2x13mm Firestop pbd to other side of frame	41.5	-/120/90 from occupancy -/120/120 from shaft	FCO-1828 FCO-1503	64CH55	90	44	50	38	50G11, 50P14
					64CH90	90	43	49	37	50G11, 50P14
					102CH55	128	46	52	41	50G11, 50P14
					102CH90	128	45	51	41	50G11, 50P14
SH29F	1x25mm Shaftliner 1x16mm + 1x13mm Firestop pbd to other side of frame	44.0	-/120/120	FCO-1828 FCO-1503	64CH55	93	43	50	37	50G11, 50P14
					64CH90	93	42	49	36	50G11, 50P14
					102CH55	131	46	52	42	50G11, 50P14
					102CH90	131	45	51	41	50G11, 50P14
SH32F	1x25mm Shaftliner 2x16mm Firestop pbd to other side of frame	46.5	-/120/120	SI 1017 FCO-1828 FCO-1659 FCO-1503	64CH55	96	43	50	40	50G10
					64CH90	96	42	49	38	50G11, 50P14
					102CH55	134	46	52	42	50G11, 50P14
					102CH90	134	45	51	41	50G11, 50P14
SH1616F	1x25mm Shaftliner 1x16mm Firestop pbd to each side of frame	46.5	-/120/120	FR1429	64CH55	96	42	50	38	50G14, 50P14
					64CH90	96	41	49	37	50G11, 50P14
					102CH55	134	45	52	41	50G11, 50P14
					102CH90	134	44	51	40	50G11, 50P14

• These tables should be read in conjunction with Section A • For explanation of System Reference notation refer Section B1 • For Limiting Heights refer Section C • Acoustic ratings by GHA, Sheet No 104 (refer Section A4) • Bold acoustic ratings indicate a tested system

B | System Index

Selector+ PLASTERBOARD SYSTEMS

Layout	System Ref	Description	Approx Pbd Mass (kg/m ²)	Fire Resistance		Stud Size (mm)	Nom Wall Width (mm)	Acoustic Ratings			
				FRL	Basis			Nil Insul	With Insulation		Insulation Type
								R _w	R _w	R _w +C _{tr}	

Shaft Systems - Ventshaft



System VS48F illustrated

VS39F	3x13mm Firestop pbd layers screw laminated together	31.5	-/90/90	FCO-2423	Nil	39	37	–	34	Nil
VS48F	3x16mm Firestop pbd layers screw laminated together	39.0	-/120/120	FSV-0538	Nil	48	38	NA	35	Nil
VS48F+T10	3x16mm Firestop pbd layers screw laminated together 1x10mm Std Core pbd on independent timber frame (85mm air cavity)	45.8	-/120/120	FCO-1665	70x45	143 min	43	53	40	50P7
VS48F+S10	3x16mm Firestop pbd layers screw laminated together 1x10mm Std Core pbd on independent steel frame (85mm air cavity)	45.8	-/120/120	FCO-1480	64CS50	143 min	43	53	40	50P7
VS57F	16mm Firestop pbd adhesive + screw laminated to each side of 1x25mm Shaftliner	46.5	-/120/120	FSV-0169	Nil	60	31	NA	NA	Nil

Shaft Systems - IntRwall® (formerly EurekaWall®)

Refer systems 50IW13 and 50IW13F listed under Separating Wall Systems - IntRwall®

• These tables should be read in conjunction with Section A • For explanation of System Reference notation refer Section B1 • For maximum panel sizes refer Section C • Acoustic ratings by GHA, Sheet No 104 (refer Section A4)

Layout	System Ref	Description	Approx Pbd Mass (kg/m ²)	Fire Resistance		Stud Size (mm)	Nom Wall Width (mm)	Acoustic Ratings			
				FRL	Basis			Nil Insul	With Insulation		Insulation Type
								R _w	R _w	R _w +C _{tr}	

Masonry Wall Systems - Lining



System **M1010** illustrated

M10	1x10mm Std Core pbd to one side of masonry	6.8	NA	NA	Nil	12 + masonry	NA	NA	NA	NA
M1010	1x10mm Std Core pbd to both sides of masonry	13.6	NA	NA	Nil	24 + masonry	NA	NA	NA	NA

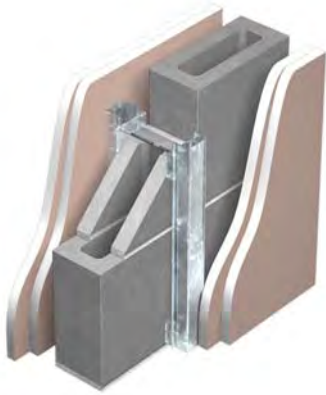
• These tables should be read in conjunction with Section A • For explanation of System Reference notation refer Section B1 • Acoustic ratings by GHA, Sheet No 104 (refer Section A4)

B | System Index

Selector+ PLASTERBOARD SYSTEMS

Layout	System Ref	Description	Approx Pbd Mass (kg/m ²)	Fire Resistance		Stud Size (mm)	Nom Width (mm)
				FRL	Basis		

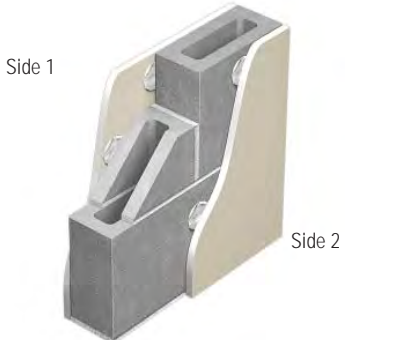
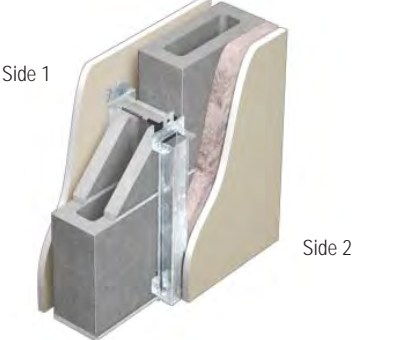
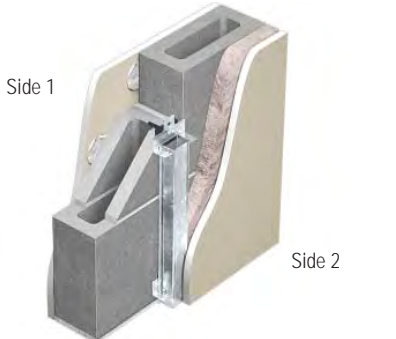
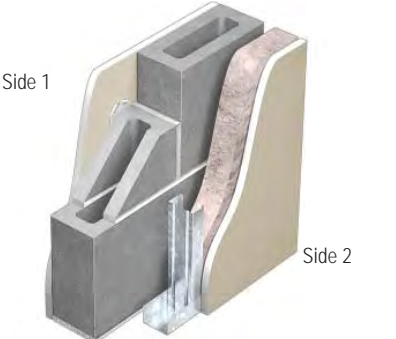
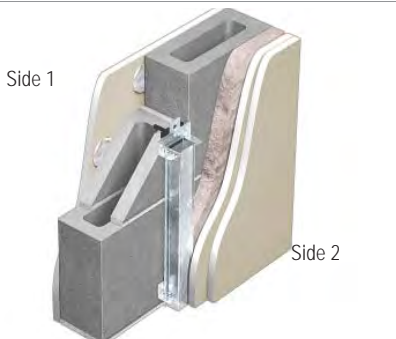
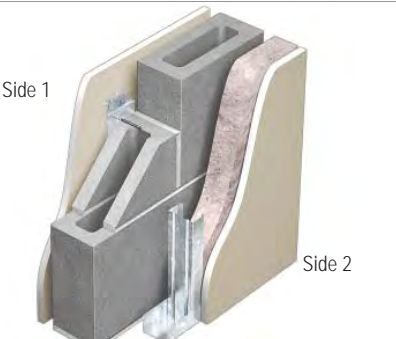
Masonry Wall Systems - Fire Upgrades

System **MF3232F** illustrated

MF16F	1x16mm Firestop pbd furred to one side of masonry	13.0	X+30/X+30/X+30 from lined side only	FCO-0394R	NA	34 + masonry
MF26F	2x13mm Firestop pbd furred to one side of masonry	21.0	X+60/X+60/X+60 from lined side only	FCO-0394R	NA	44 + masonry
MF32F	2x16mm Firestop pbd furred to one side of masonry	26.0	X+90/X+90/X+90 from lined side only	FCO-0394R	NA	50 + masonry
MF1616F	1x16mm Firestop pbd furred to both sides of masonry	26.0	X+30/X+60/X+60	FCO-0394R	NA	68 + masonry
MF2626F	2x13mm Firestop pbd furred to both sides of masonry	42.0	X+60/X+120/X+120	FCO-0394R	NA	88 + masonry
MF3232F	2x16mm Firestop pbd furred to both sides of masonry	52.0	X+90/X+180/X+180	FCO-0394R	NA	100 + masonry

X = FRL of masonry wall

Masonry Wall Systems - Acoustic Upgrades

Description	Layout	Description	Layout
<p>Detail A</p> <p>Wall lining side 1: 1x13mm Boral Std Core plasterboard adhesive fixed</p> <p>Wall lining side 2: 1x13mm Boral Std Core plasterboard adhesive fixed</p>	<p>Side 1</p>  <p>Side 2</p>	<p>Detail D</p> <p>Wall lining side 1: 1x13mm Boral Std Core plasterboard 16mm furring channels at 600mm ctrs Furring channel clips</p> <p>Wall lining side 2: 1x13mm Boral Std Core plasterboard 28mm furring channels at 600mm centres Boral Acoustic Impact Clips 50G14 or 50P14 insulation (if required)</p>	<p>Side 1</p>  <p>Side 2</p>
<p>Detail B</p> <p>Wall lining side 1: 1x13mm Boral Std Core plasterboard adhesive fixed</p> <p>Wall lining side 2: 1x13mm Boral Std Core plasterboard 28mm furring channels at 600mm centres Boral Acoustic Impact Clips 50G14 or 50P14 insulation (if required)</p>	<p>Side 1</p>  <p>Side 2</p>	<p>Detail E</p> <p>Wall lining side 1: 1x13mm Boral Std Core plasterboard adhesive fixed</p> <p>Wall lining side 2: 1x13mm Boral Std Core plasterboard Minimum 51mm steel studs 20mm gap between masonry & stud 50G14 or 50P14 insulation (if required)</p>	<p>Side 1</p>  <p>Side 2</p>
<p>Detail C</p> <p>Wall lining side 1: 1x13mm Boral Std Core plasterboard adhesive fixed</p> <p>Wall lining side 2: 2x13mm Boral Std Core plasterboard 28mm furring channels at 600mm centres Boral Acoustic Impact Clips 50G14 or 50P14 insulation (if required)</p>	<p>Side 1</p>  <p>Side 2</p>	<p>Detail F</p> <p>Wall lining side 1: 1x13mm Boral Std Core plasterboard 16mm furring channels at 600mm ctrs Furring channel clips</p> <p>Wall lining side 2: 1x13mm Boral Std Core plasterboard Minimum 51mm steel studs 20mm gap between masonry & stud 50G14 or 50P14 insulation (if required)</p>	<p>Side 1</p>  <p>Side 2</p>

B | System Index

Selector+ PLASTERBOARD SYSTEMS

Layout	System Ref	Description	Approx Pbd Mass (kg/m ²)	Fire Resistance		Stud Size (mm)	Nom Wall Width (mm)	Acoustic Ratings			
				FRL	Basis			Nil Insul	With Insulation		Insulation Type
								R _w	R _w	R _w +C _{tr}	

» Masonry Wall Systems - Acoustic Upgrades

Refer details on page B2.37	M125C	125mm conc tilt panel nom 300kg/m ² To detail A	17.2	Refer CCAA	Refer CCAA	NA	155	51	NA	NA	NA
		125mm conc tilt panel nom 300kg/m ² To detail B	17.2			NA	195	53	56	48	50G11, 50P14
		125mm conc tilt panel nom 300kg/m ² To detail C	25.8			NA	208	56	63	54	50G11, 50P14
		125mm conc tilt panel nom 300kg/m ² To detail D	17.2			NA	209	52	55	47	50G11, 50P14
		125mm conc tilt panel nom 300kg/m ² To detail E	17.2			Min 51CS50	212	56	62	52	50G11, 50P14
		125mm conc tilt panel nom 300kg/m ² To detail F	17.2			Min 51CS50	238	55	61	52	50G11, 50P14

• These tables should be read in conjunction with Section A • For explanation of System Reference notation refer Section B1 • For Limiting Heights of steel C Studs refer Section C • Acoustic ratings by GHA, Sheet No 104 (refer Section A4)

Layout	System Ref	Description	Approx Pbd Mass (kg/m ²)	Fire Resistance		Stud Size (mm)	Nom Wall Width (mm)	Acoustic Ratings			
				FRL	Basis			Nil Insul	With Insulation		Insulation Type
								R _w	R _w	R _w +C _{tr}	

» Masonry Wall Systems - Acoustic Upgrades

Refer details on page B2.37	M150C	150mm conc tilt panel nom 360kg/m ² To detail A	17.2	Refer CCAA	Refer CCAA	NA	180	53	NA	NA	NA
		150mm con tilt panel nom 360kg/m ² To detail B	17.2			NA	220	54	57	49	50G11, 50P14
		150mm conc tilt panel nom 360kg/m ² To detail C	25.8			NA	233	58	64	55	50G11, 50P14
		150mm conc tilt panel nom 360kg/m ² To detail D	17.2			NA	234	53	56	48	50G11, 50P14
		150mm conc tilt panel nom 360kg/m ² To detail E	17.2			Min 51CS50	237	58	63	54	50G11, 50P14
		150mm conc tilt panel nom 360kg/m ² To detail F	17.2			Min 51CS50	263	57	62	53	50G11, 50P14

• These tables should be read in conjunction with Section A • For explanation of System Reference notation refer Section B1 • For Limiting Heights of steel C Studs refer Section C • Acoustic ratings by GHA, Sheet No 104 (refer Section A4)

B | System Index

Selector+ PLASTERBOARD SYSTEMS

Layout	System Ref	Description	Approx Pbd Mass (kg/m ²)	Fire Resistance		Stud Size (mm)	Nom Wall Width (mm)	Acoustic Ratings			
				FRL	Basis			Nil Insul	With Insulation		Insulation Type
								R _w	R _w	R _w +C _{tr}	

» Masonry Wall Systems - Acoustic Upgrades

Refer details on page B2.37	M10.01	90mm Boral Masonry Hollow Block (10.01) nom 135kg/m ² laid To detail A	17.2	Refer Boral Masonry	Refer Boral Masonry	NA	120	47	NA	NA	NA
		90mm Boral Masonry Hollow Block (10.01) nom 135kg/m ² laid To detail B	17.2			NA	160	50	53	44	50G11, 50P14
		90mm Boral Masonry Hollow Block (10.01) nom 135kg/m ² laid To detail C	25.8			NA	173	52	60	51	50G11, 50P14
		90mm Boral Masonry Hollow Block (10.01) nom 135kg/m ² laid To detail D	17.2			NA	174	49	52	43	50G11, 50P14
		90mm Boral Masonry Hollow Block (10.01) nom 135kg/m ² laid To detail E	17.2			Min 51CS50	177	52	59	50	50G11, 50P14
		90mm Boral Masonry Hollow Block (10.01) nom 135kg/m ² laid To detail F	17.2			Min 51CS50	203	51	58	49	50G11, 50P14

• These tables should be read in conjunction with Section A • For explanation of System Reference notation refer Section B1 • For Limiting Heights of steel C Studs refer Section C • Acoustic ratings by GHA, Sheet No 104 (refer Section A4)

Layout	System Ref	Description	Approx Pbd Mass (kg/m ²)	Fire Resistance		Stud Size (mm)	Nom Wall Width (mm)	Acoustic Ratings			
				FRL	Basis			Nil Insul	With Insulation		Insulation Type
								R _w	R _w	R _w +C _{tr}	

» Masonry Wall Systems - Acoustic Upgrades

Refer details on page B2.37	M15.01	140mm Boral Masonry Hollow Block (15.01) nom 180kg/m ² laid To detail A	17.2	Refer Boral Masonry	Refer Boral Masonry	NA	170	48	NA	NA	NA
		140mm Boral Masonry Hollow Block (15.01) nom 180kg/m ² laid To detail B	17.2			NA	210	51	54	45	50G11, 50P14
		140mm Boral Masonry Hollow Block (15.01) nom 180kg/m ² laid To detail C	25.8			NA	223	53	60	51	50G11, 50P14
		140mm Boral Masonry Hollow Block (15.01) nom 180kg/m ² laid To detail D	17.2			NA	224	50	53	44	50G11, 50P14
		140mm Boral Masonry Hollow Block (15.01) nom 180kg/m ² laid To detail E	17.2			Min 51CS50	229	53	59	50	50G11, 50P14
		140mm Boral Masonry Hollow Block (15.01) nom 180kg/m ² laid To detail F	17.2			Min 51CS50	253	52	58	49	50G11, 50P14

• These tables should be read in conjunction with Section A • For explanation of System Reference notation refer Section B1 • For Limiting Heights of steel C Studs refer Section C • Acoustic ratings by GHA, Sheet No 104 (refer Section A4)

B | System Index

Selector+ PLASTERBOARD SYSTEMS

Layout	System Ref	Description	Approx Pbd Mass (kg/m ²)	Fire Resistance		Stud Size (mm)	Nom Wall Width (mm)	Acoustic Ratings			
				FRL	Basis			Nil Insul	With Insulation		Insulation Type
								R _w	R _w	R _w +C _{tr}	

» Masonry Wall Systems - Acoustic Upgrades

Refer details on page B2.37	M15.01CF and Boral Connex™ 150	140mm Boral Masonry Hollow Block (15.01), core filled nom 295kg/m ² laid To detail A	17.2	Refer Boral Masonry	Refer Boral Masonry	NA	170	50	NA	NA	NA
		140mm Boral Masonry Hollow Block (15.01), core filled nom 295kg/m ² laid To detail B	17.2			NA	210	52	56	48	50G11, 50P14
		140mm Boral Masonry Hollow Block (15.01), core filled nom 295kg/m ² laid To detail C	25.8			NA	223	55	63	54	50G11, 50P14
		140mm Boral Masonry Hollow Block (15.01), core filled nom 295kg/m ² laid To detail D	17.2			NA	224	51	55	47	50G11, 50P14
		140mm Boral Masonry Hollow Block (15.01), core filled nom 295kg/m ² laid To detail E	17.2			Min 51CS50	229	55	62	53	50G11, 50P14
		140mm Boral Masonry Hollow Block (15.01), core filled nom 295kg/m ² laid To detail F	17.2			Min 51CS50	253	54	61	52	50G11, 50P14

• These tables should be read in conjunction with Section A • For explanation of System Reference notation refer Section B1 • For Limiting Heights of steel C Studs refer Section C • Acoustic ratings by GHA, Sheet No 104 (refer Section A4)

Layout	System Ref	Description	Approx Pbd Mass (kg/m ²)	Fire Resistance		Stud Size (mm)	Nom Wall Width (mm)	Acoustic Ratings			
				FRL	Basis			Nil Insul	With Insulation		Insulation Type
								R _w	R _w	R _w +C _{tr}	

» Masonry Wall Systems - Acoustic Upgrades

Refer details on page B2.37	M20.01	190mm Boral Masonry Hollow Block (20.01) nom 220kg/m ² laid To detail A	17.2	Refer Boral Masonry	Refer Boral Masonry	NA	220	49	NA	NA	NA
		190mm Boral Masonry Hollow Block (20.01) nom 220kg/m ² laid To detail B	17.2			NA	260	52	55	46	50G11, 50P14
		190mm Boral Masonry Hollow Block (20.01) nom 220kg/m ² laid To detail C	25.8			NA	273	54	61	52	50G11, 50P14
		190mm Boral Masonry Hollow Block (20.01) nom 220kg/m ² laid To detail D	17.2			NA	274	51	54	45	50G11, 50P14
		190mm Boral Masonry Hollow Block (20.01) nom 220kg/m ² laid To detail E	17.2			Min 51CS50	279	54	60	52	50G11, 50P14
		190mm Boral Masonry Hollow Block (20.01) nom 220kg/m ² laid To detail F	17.2			Min 51CS50	303	53	59	51	50G11, 50P14

• These tables should be read in conjunction with Section A • For explanation of System Reference notation refer Section B1 • For Limiting Heights of steel C Studs refer Section C • Acoustic ratings by GHA, Sheet No 104 (refer Section A4)

B | System Index

Selector+ PLASTERBOARD SYSTEMS

Layout	System Ref	Description	Approx Pbd Mass (kg/m ²)	Fire Resistance		Stud Size (mm)	Nom Wall Width (mm)	Acoustic Ratings			
				FRL	Basis			Nil Insul	With Insulation		Insulation Type
								R _w	R _w	R _w +C _{tr}	

» Masonry Wall Systems - Acoustic Upgrades

Refer details on page B2.37	M20.01CF and Boral Connex™ 200	190mm Boral Masonry Hollow Block (20.01), core filled nom 400kg/m ² laid To detail A	17.2	Refer Boral Masonry	Refer Boral Masonry	NA	220	52	NA	NA	NA
		190mm Boral Masonry Hollow Block (20.01), core filled nom 400kg/m ² laid To detail B	17.2			NA	260	54	57	49	50G11, 50P14
		190mm Boral Masonry Hollow Block (20.01), core filled nom 400kg/m ² laid To detail C	25.8			NA	273	57	64	55	50G11, 50P14
		190mm Boral Masonry Hollow Block (20.01), core filled nom 400kg/m ² laid To detail D	17.2			NA	274	53	56	48	50G11, 50P14
		190mm Boral Masonry Hollow Block (20.01), core filled nom 400kg/m ² laid To detail E	17.2			Min 51CS50	279	57	63	54	50G11, 50P14
		190mm Boral Masonry Hollow Block (20.01), core filled nom 400kg/m ² laid To detail F	17.2			Min 51CS50	303	56	62	53	50G11, 50P14

• These tables should be read in conjunction with Section A • For explanation of System Reference notation refer Section B1 • For Limiting Heights of steel C Studs refer Section C • Acoustic ratings by GHA, Sheet No 104 (refer Section A4)

Layout	System Ref	Description	Approx Pbd Mass (kg/m ²)	Fire Resistance		Stud Size (mm)	Nom Wall Width (mm)	Acoustic Ratings			
				FRL	Basis			Nil Insul	With Insulation		Insulation Type
								R _w	R _w	R _w +C _{tr}	

» Masonry Wall Systems - Acoustic Upgrades

Refer details on page B2.37	M90B	90mm clay brick min wall surface density 130 kg/m ² To detail A	17.2	Refer Boral Bricks/ Midland Bricks	Refer Boral Bricks/ Midland Bricks	NA	120	42	NA	NA	NA
		90mm clay brick min wall surface density 130 kg/m ² To detail B	17.2			NA	160	46	53	45	50P11, 50G14
		90mm clay brick min wall surface density 130 kg/m ² To detail C	25.8			NA	173	49	60	51	50P11, 50G14
		90mm clay brick min wall surface density 130 kg/m ² To detail D	17.2			NA	174	45	52	44	50P11, 50G14
		90mm clay brick min wall surface density 130 kg/m ² To detail E	17.2			Min 51CS50	177	49	59	49	50P11, 50G14
		90mm clay brick min wall surface density 130 kg/m ² To detail F	17.2			Min 51CS50	203	48	58	49	50P11, 50G14

• These tables should be read in conjunction with Section A • For explanation of System Reference notation refer Section B1 • For Limiting Heights of steel C Studs refer Section C • Acoustic ratings by GHA, Sheet No 104 (refer Section A4)

B | System Index

Selector+ PLASTERBOARD SYSTEMS

Layout	System Ref	Description	Approx Pbd Mass (kg/m ²)	Fire Resistance		Stud Size (mm)	Nom Wall Width (mm)	Acoustic Ratings			
				FRL	Basis			Nil Insul	With Insulation		Insulation Type
								R _w	R _w	R _w +C _{tr}	

» Masonry Wall Systems - Acoustic Upgrades

Refer details on page B2.37	M110B	110mm clay brick min wall surface density 170kg/m ² To detail A	17.2	Refer Boral Bricks/ Midland Bricks	Refer Boral Bricks/ Midland Bricks	NA	140	45	NA	NA	NA
		110mm clay brick min wall surface density 170kg/m ² To detail B	17.2			NA	180	49	52	42	50P11, 50G14
		110mm clay brick min wall surface density 170kg/m ² To detail C	25.8			NA	193	52	58	50	50P11, 50G14
		110mm clay brick min wall surface density 170kg/m ² To detail D	17.2			NA	194	48	51	41	50P11, 50G14
		110mm clay brick min wall surface density 170kg/m ² To detail E	17.2			Min 51CS50	197	52	57	49	50P11, 50G14
		110mm clay brick min wall surface density 170kg/m ² To detail F	17.2			Min 51CS50	223	51	56	48	50P11, 50G14

• These tables should be read in conjunction with Section A • For explanation of System Reference notation refer Section B1 • For Limiting Heights of steel C Studs refer Section C • Acoustic ratings by GHA, Sheet No 104 (refer Section A4)

Layout	System Ref	Description	Approx Pbd Mass (kg/m ²)	Fire Resistance		Stud Size (mm)	Nom Wall Width (mm)	Acoustic Ratings			
				FRL	Basis			Nil Insul	With Insulation		Insulation Type
								R _w	R _w	R _w +C _{tr}	

» Masonry Wall Systems - Acoustic Upgrades

Refer details on page B2.37	M150B	150mm clay brick min wall surface density 240kg/m ² To detail A	17.2	Refer Boral Bricks/ Midland Bricks	Refer Boral Bricks/ Midland Bricks	NA	180	48	NA	NA	NA
		150mm clay brick min wall surface density 240kg/m ² To detail B	17.2			NA	220	50	53	44	50P11, 50G14
		150mm clay brick min wall surface density 240kg/m ² To detail C	25.8			NA	233	53	60	51	50P11, 50G14
		150mm clay brick min wall surface density 240kg/m ² To detail D	17.2			NA	234	49	52	43	50P11, 50G14
		150mm clay brick min wall surface density 240kg/m ² To detail E	17.2			Min 51CS50	237	53	59	50	50P11, 50G14
		150mm clay brick min wall surface density 240kg/m ² To detail F	17.2			Min 51CS50	263	52	58	49	50P11, 50G14

• These tables should be read in conjunction with Section A • For explanation of System Reference notation refer Section B1 • For Limiting Heights of steel C Studs refer Section C • Acoustic ratings by GHA, Sheet No 104 (refer Section A4)

B | System Index **Selector+** PLASTERBOARD SYSTEMS

Layout	System Ref	Description	Approx Pbd Mass (kg/m ²)	Fire Resistance		Stud Size (mm)	Nom Wall Width (mm)	Acoustic Ratings		Insulation Type	R Value (m ² K/W)
				FRL	Basis			Nil Insul	W/- Insul		
								R _w	R _w		

External Wall Systems - Fireclad®



System **FC39F** illustrated

FC32F	To girts, 2x16mm Firestop pbd followed by Tyvek® HomeWrap membrane, battens and cladding	26.0	60/60/60 from outside only	FCO-1419 FCO-1555 FCO-1890	NA	Adds 54mm	34	NA	Nil insulation, 20x0.75mm batten, 40mm wide	0.5
FC39F	To girts, 3x13mm Firestop pbd followed by Tyvek® HomeWrap membrane, battens and cladding	31.5	90/90/90 from outside only	FCO-1419 FCO-1555 FCO-1890	NA	Adds 61mm	37	NA	Nil insulation, 20x0.75mm batten, 40mm wide	0.5
FC48F	To girts, 3x16mm Firestop pbd followed by Tyvek® HomeWrap membrane, battens and cladding	39.0	120/120/120 from outside only	FCO-1890	NA	Adds 70mm	38	NA	Nil insulation, 20x0.75mm batten, 40mm wide	0.5

• These tables should be read in conjunction with Section A • For explanation of System Reference notation refer Section B1 • Acoustic ratings by GHA, Sheet No 104 (refer Section A4)

Layout	System Ref	Description	Approx Pbd Mass (kg/m ²)	Fire Resistance		Stud Size (mm)	Nom Wall Width (mm)	Acoustic Ratings		Insulation Type	R Value (m ² K/W)
				FRL	Basis			Nil Insul	W/- Insul		
								R _w	R _w		

External Wall Systems - OutRwall®



System **OW16WF10** illustrated

OW16WF10	1x16mm Wet Area Firestop pbd to external side of timber stud followed by Tyvek® HomeWrap membrane, battens and cladding 1x10mm Std Core pbd to internal side	19.8	60/60/60 from outside only Cf11	C91580	as required	26 + frame + cladding system	35	38	R2 GW wall batt	2.2
OW16WFR10A	1x16mm Wet Area Firestop pbd to external side of timber stud followed by Tyvek® HomeWrap membrane, battens and cladding 1x10mm Soundstop pbd on resilient channel to internal side	21.2	60/60/60 from outside only Cf11	C91580	as required	39 + frame + cladding system	39	44	R2 GW wall batt	2.3
OW16WF16F	1x16mm Wet Area Firestop pbd to external side of timber stud, Rockwool, followed by Tyvek® HomeWrap membrane, battens and cladding 1x16mm Firestop pbd to internal side	26.0	90/90/90 from outside 60/60/60 from inside	C91580 C91585 FCO-1708	as required	32 + frame + cladding system	37	40	R2 GW wall batt	2.3
OW16WF26F (Rockwool)	1x16mm Wet Area Firestop pbd to external side of timber stud, Rockwool, followed by Tyvek® HomeWrap membrane, battens and cladding 2x13mm Firestop pbd to internal side	34.0	90/90/90	C91580 C91585 FCO-1708	as required	42 + frame + cladding system	39	42	R2 GW wall batt	2.4
OW16WF26F (Double Stud)	1x16mm Wet Area Firestop pbd to external side of <u>double</u> timber stud followed by Tyvek® HomeWrap membrane, battens and cladding 2x13mm Firestop pbd to internal side	34.0	90/90/90	C91580 C91585	as required	42 + frame + cladding system	39	42	R2 GW wall batt	2.3

• These tables should be read in conjunction with Section A • For explanation of System Reference notation refer Section B1 • For Limiting Heights refer Section C • Acoustic ratings by GHA, Sheet No 104 (refer Section A4)

B | System Index

Selector+ PLASTERBOARD SYSTEMS

Layout	System Ref	Description	Approx Pbd Mass (kg/m ²)	Fire Resistance		Stud Size (mm)	Nom Wall Width (mm)	Acoustic Ratings		Insulation Type	R Value (m ² K/W)
				FRL	Basis			Nil Insul	W/- Insul		
								R _w	R _w		

» External Wall Systems - OutRwall®



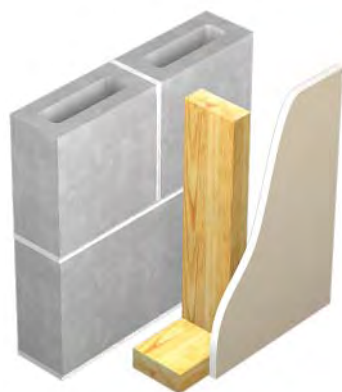
System OW32WF10 illustrated

OW26WF10 (Rockwool)	2x13mm Wet Area Firestop pbd to external side of timber stud, Rockwool, followed by Tyvek® HomeWrap membrane, battens and cladding 1x10mm Std Core pbd to internal side	27.8	90/90/90 from outside only	C91580 85 FCO-1708	as required	36 + frame + cladding system	37	40	R2 GW wall batt	2.3
OW26WF10 (Double Stud)	2x13mm Wet Area Firestop pbd to external side of double timber stud followed by Tyvek® HomeWrap membrane, battens and cladding 1x10mm Std Core pbd to internal side	27.8	90/90/90 from outside only	C91580 85	as required	36 + frame + cladding system	37	40	R2 GW wall batt	2.2
OW32WF10	2x16mm Wet Area Firestop pbd to external side of timber stud followed by Tyvek® HomeWrap membrane, battens and cladding 1x10mm Std Core pbd to internal side	32.8	90/90/90 from outside only Cf21	C91580	as required	42 + frame + cladding system	37	40	R2 GW Wall batt	2.3
OW32WF16F	2x16mm Wet Area Firestop pbd to external side of timber stud followed by Tyvek® HomeWrap membrane, battens and cladding 1x16mm Wet Area Firestop pbd to internal side	39.0	90/90/90 from outside 60/60/60 from inside.	C91580	as required	48 + frame + cladding system	40	43	R2 GW wall batt	2.3

• These tables should be read in conjunction with Section A • For explanation of System Reference notation refer Section B1 • For Limiting Heights refer Section C • Acoustic ratings by GHA, Sheet No 104 (refer Section A4)

Layout	System Ref	Description	Approx Pbd Mass (kg/m ²)	Fire Resistance		Stud Size (mm)	Nom Wall Width (mm)	Acoustic Ratings		Insulation Type	R Value (m ² K/W)
				FRL	Basis			Nil Insul	W/- Insul		
								R _w	R _w		

External Wall Systems - Brick Veneer



System **TBV10** illustrated

TBV10	1x10mm Std Core pbd on timber stud with external FRL 60/60/60 brick veneer	6.8	60/60/60 from outside only	FCO-0626	as required	10 + frame + cav + veneer	52	55	R2 GW wall batt 90mm stud	2.2
TBV10A	1x10mm Soundstop pbd on timber stud with external non fire rated brick veneer	8.2	Nil	NA	as required	10 + frame + cav + veneer	54	57	R2 GW wall batt 90mm stud	2.2
TBV16F	1x16mm Firestop pbd on timber stud with external non fire rated brick veneer	13.0	60/60/60 from inside only	FCO-0021	as required	16 + frame + cav + veneer	55	60	R2 GW wall batt 90mm stud	2.2
	1x16mm Firestop pbd on timber stud with external FRL 60/60/60 brick veneer		60/60/60	FCO-0626		16 + frame + cav + veneer	55	60	R2 GW wall batt 90mm stud	2.2
TBV20A	2x10mm Soundstop pbd on timber stud with external non fire rated brick veneer	16.4	Nil	NA	as required	20 + frame + cav + veneer	57	62	R2 GW wall batt 90mm stud	2.2
TBV26A	2x13mm Soundstop pbd on timber stud with external non fire rated brick veneer	22.4	Nil	NA	as required	26 + frame + cav + veneer	59	64	R2 GW wall batt 90mm stud	2.2
TBV26F	2x13mm Firestop pbd on timber stud with external FRL 90/90/90 brick veneer	21.0	90/90/90	FCO-0966	as required	26 + frame + cav + veneer	58	63	R2 GW wall batt 90mm stud	2.2
TBV32F	2x16mm Firestop pbd on timber stud with external FRL 120/120/120 brick veneer	26.0	120/120/120	FCO-0966	as required	32 + frame + cav + veneer	60	65	R2 GW wall batt 90mm stud	2.3

• These tables should be read in conjunction with Section A • For explanation of System Reference notation refer Section B1 • For Limiting Heights refer Section C • Acoustic ratings by GHA, Sheet No 104 (refer Section A4)

B | System Index

Selector+ PLASTERBOARD SYSTEMS

Layout	System Ref	Description	Approx Pbd Mass (kg/m ²)	Fire Resistance		Stud Size (mm)	Nom Wall Width (mm)	Acoustic Ratings		Insulation Type	R Value (m ² K/W)
				FRL	Basis			Nil Insul	W/- Insul		
								R _w	R _w		

» External Wall Systems - Brick Veneer

System **SBV10** illustrated

SBV10	1x10mm Std Core pbd on steel stud with external FRL 60/60/60 brick veneer	6.8	60/60/60 from outside only	NA	as required	10 + frame + cav + veneer	50	52	R1.5 GW wall batt 75mm stud	1.3
SBV10A	1x10mm Soundstop pbd on steel stud with external non fire rated brick veneer	8.2	Nil	NA	as required	10 + frame + cav + veneer	51	54	R1.5 GW wall batt 75mm stud	1.3
SBV20A	2x10mm Soundstop pbd on steel stud with external non fire rated brick veneer	16.4	Nil	NA	as required	20 + frame + cav + veneer	54	59	R1.5 GW wall batt 75mm stud	1.4
SBV26A	2x13mm Soundstop on steel stud with external non fire rated brick veneer	22.4	Nil	NA	as required	26 + frame + cav. + veneer	46	61	R1.5 GW wall batt 75mm stud	1.4

• These tables should be read in conjunction with Section A • For explanation of System Reference notation refer Section B1 • For Limiting Heights refer Section C • Acoustic ratings by GHA, Sheet No 104 (refer Section A4)

B | System Index

Selector+ PLASTERBOARD SYSTEMS

Layout	System Ref	Description	Approx Pbd Mass (kg/m ²)	Fire Resistance		Stud Size (mm)	Nom Wall Width (mm)	Acoustic Ratings		Insulation Type	R Value (m ² K/W)
				FRL	Basis			Nil Insul	W/- Insul		
								R _w	R _w		

External Wall Systems - Spandrel max height 1000mm



System **SP2626F** illustrated

SP1616F	1x16mm Firestop plasterboard to each side of steel spandrel frame	26.0	-/60/60	FCO-0504R FCO-0788R (hanging)	51	83	NA	NA	NA	NA
					64	96	NA	NA	NA	NA
					76	108	NA	NA	NA	NA
					92	124	NA	NA	NA	NA
					150	182	NA	NA	NA	NA
SP1326F	2x13mm Firestop plasterboard to one side of steel spandrel frame, 1x13 to other side	31.5	-/90/90	FCO-0504R FCO-0788R (hanging)	51	90	NA	NA	NA	NA
					64	103	NA	NA	NA	NA
					76	115	NA	NA	NA	NA
					92	131	NA	NA	NA	NA
					150	189	NA	NA	NA	NA
SP2626F	2x13mm Firestop plasterboard to each side of steel spandrel frame	42.0	-/120/120	FCO-0504R FCO-0788R (hanging)	51	103	NA	NA	NA	NA
					64	116	NA	NA	NA	NA
					76	128	NA	NA	NA	NA
					92	144	NA	NA	NA	NA
					150	202	NA	NA	NA	NA

• These tables should be read in conjunction with Section A • For explanation of System Reference notation refer Section B1 • For Limiting Heights refer Section C • Acoustic ratings by GHA, Sheet No 104 (refer Section A4)

B | System Index

Selector+ PLASTERBOARD SYSTEMS

Layout	System Ref	Description	Approx Pbd Mass (kg/m ²)	Fire Resistance		Stud Size (mm)	Nom Wall Width (mm)	Acoustic Ratings		Insulation Type	R Value (m ² K/W)
				FRL	Basis			Nil Insul	W/- Insul		
								R _w	R _w		

» External Wall Systems - Spandrel max height 1000mm



System **SP3232F** illustrated

SP3232F	2x16mm Firestop plasterboard to each side of steel spandrel frame	52.0	-/180/180	FCO-0504R	51	115	NA	NA	NA	NA
					64	128	NA	NA	NA	NA
					76	140	NA	NA	NA	NA
					92	156	NA	NA	NA	NA
					150	214	NA	NA	NA	NA
SP3245F	2x16mm Firestop plasterboard to each side of steel spandrel frame, additional 1x13mm Firestop to interior face only	62.5	-/180/180	FCO-0788R (hanging)	51	115	NA	NA	NA	NA
					64	128	NA	NA	NA	NA
					76	140	NA	NA	NA	NA
					92	156	NA	NA	NA	NA
					150	214	NA	NA	NA	NA


• These tables should be read in conjunction with Section A • For explanation of System Reference notation refer Section B1

B | System Index

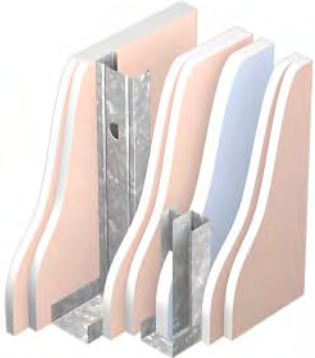
Selector+ PLASTERBOARD SYSTEMS

Layout	System Ref	Description	Approx Pbd Mass (kg/m ²)	Fire Resistance		Stud Size (mm)	Nom Wall Width (mm)	Acoustic Ratings			Insulation Type
				FRL	Basis			Nil Insul	W/- Insulation		
								R _w	R _w	R _w +C _{tr}	

Subfloor Separation

 <p>System SF32F</p>	SF32F	2x16mm Firestop pbd screw laminated as per fire opinion	26.0	-/60/60	FCO-1763	nil	32	NA	NA	NA	NA
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Hybrid Wall System - 4 Hour Fire Rated

 <p>System S3232F+SH32F illustrated</p>	S3232F+SH32F	2x16mm Firestop pbd to each side of CS stud 1x25mm Shaftliner on separate CH stud 2x16mm Firestop pbd to other side of frame	98.5	-/240/240	FCO-1163	xxCSyy + xxCHyy	211-348	NA	NA	NA	NA
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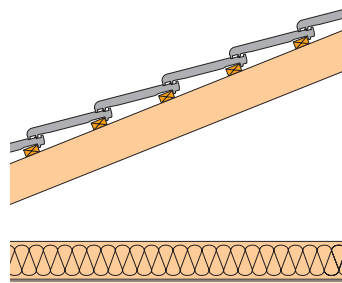
• These tables should be read in conjunction with Section A • For explanation of System Reference notation refer Section B1 • For Limiting Heights refer Section C



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Layout	System Ref	Description	Approx Pbd Mass (kg/m ²)	Fire Resistance		Acoustic Ratings			
				FRL	Basis	Nil Insul	With Insulation		Insulation Type
						R _w	R _w	R _w +C _{tr}	

Ceilings Under Tile Roof - Direct Fixed



System **C10U** illustrated

C10A	1x10mm Soundstop pbd	8.2	Nil	NA	34	43	37	R2.5 GW ceiling batt
C10U	1x10mm Unispan pbd	7.2	Nil	NA	33	42	36	R2.5 GW ceiling batt
C13	1x13mm Std Core pbd	8.6	Nil	NA	34	43	37	R2.5 GW ceiling batt
C13A	1x13mm Soundstop pbd	11.2	Nil	NA	35	44	38	R2.5 GW ceiling batt
C13F	1x13mm Firestop pbd	10.5	30/30/30 from below FPC	FCO-1658	35	44	38	R2.5 GW ceiling batt
C16F	1x16mm Firestop pbd	13.0	30/30/30 from below RISF 30min	FCO-1658 FCO-0568	36	45	39	R2.5 GW ceiling batt
C20A	2x10mm Soundstop pbd	16.4	Nil	NA	38	47	41	R2.5 GW ceiling batt
C26F	2x13mm Firestop	21.0	60/60/60 from below RISF 30min	FCO-1658	40	49	43	R2.5 GW ceiling batt
C29F	13+16mm Firestop pbd	23.5	60/60/60 from below RISF 60min	FCO-1658	40	49	43	R2.5 GW ceiling batt
C32F	2x16mm Firestop	26.0	90/90/90 from below RISF 60min	FCO-1658	41	50	44	R2.5 GW ceiling batt
C48F	3x16mm Firestop pbd	39.0	120/120/120 from below RISF 90min	SI 1891 FTO-0029 FCO-1658	44	53	47	R2.5 GW ceiling batt
C64F	2x16mm Firestop pbd Furring 2x16mm Firestop pbd	52.0	120/120/120 from below RISF 120min	FCO-1856	44	53	47	R2.5 GW ceiling batt

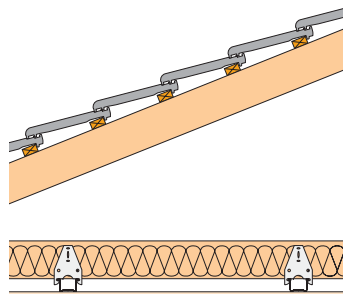
• These tables should be read in conjunction with Section A • For explanation of System Reference notation refer Section B1 • Acoustic ratings by GHA, Sheet No 104 (refer Section A4)

B | System Index

Selector+ PLASTERBOARD SYSTEMS

Layout	System Ref	Description	Approx Pbd Mass (kg/m ²)	Fire Resistance		Acoustic Ratings			
				FRL	Basis	Nil Insul	With Insulation		Insulation Type
						R _w	R _w	R _w +C _{tr}	

Ceilings Under Tile Roof - Furred



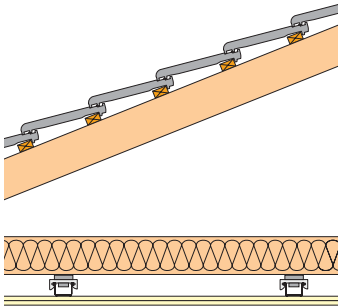
System CF10U illustrated

CF10A	1x10mm Soundstop pbd	8.2	Nil	NA	36	45	39	R2.5 GW ceiling batt
CF10U	1x10mm Unispan pbd	7.2	Nil	NA	35	44	38	R2.5 GW ceiling batt
CF13	1x13mm Std Core pbd	8.6	Nil	NA	36	45	39	R2.5 GW ceiling batt
CF13A	1x13mm Soundstop pbd	11.2	Nil	NA	37	46	40	R2.5 GW ceiling batt
CF16F	1x16mm Firestop pbd	13.0	30/30/30 from below RISF 30min	FCO-1658 FCO-0568	38	47	41	R2.5 GW ceiling batt
CF20A	2x10mm Soundstop pbd	16.4	Nil	NA	40	49	43	R2.5 GW ceiling batt
CF26A	2x13mm Soundstop pbd	22.4	Nil	NA	42	51	45	R2.5 GW ceiling batt
CF26F	2x13mm Firestop pbd	21.0	60/60/60 from below RISF 30min	FCO-1658	42	51	45	R2.5 GW ceiling batt
CF29F	13mm Firestop pbd + 16mm Firestop pbd	23.5	60/60/60 from below RISF 60min	FCO-1658	42	51	45	R2.5 GW ceiling batt
CF32F	2x16mm Firestop pbd	26.0	90/90/90 from below RISF 60min	FCO-1658	43	52	46	R2.5 GW ceiling batt
CF48F	3x16mm Firestop pbd	39.0	120/120/120 from below RISF 90min	SI 1891 FTO-0029 FCO-1658	46	55	49	R2.5 GW ceiling batt
CF64F	2x16mm Firestop pbd Furring 2x16mm Firestop pbd	52.0	120/120/120 from below RISF 120min	FCO-1856	46	55	49	R2.5 GW ceiling batt

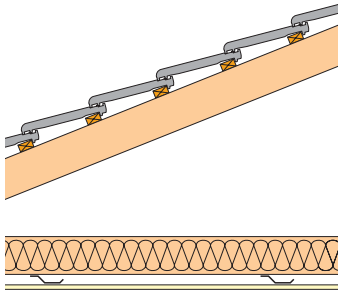
• These tables should be read in conjunction with Section A • For explanation of System Reference notation refer Section B1 • Acoustic ratings by GHA, Sheet No 104 (refer Section A4)

Layout	System Ref	Description	Approx Pbd Mass (kg/m ²)	Fire Resistance		Acoustic Ratings			
				FRL	Basis	Nil Insul	With Insulation		Insulation Type
						R _w	R _w	R _w +C _{tr}	

Ceilings Under Tile Roof - Furred on Acoustic Mounts

 <p>System CFA26A illustrated</p>	CFA20A	2x10mm Soundstop pbd Acoustic mount	16.4	Nil	NA	42	51	45	R2.5 GW ceiling batt
	CFA26A	2x13mm Soundstop pbd Acoustic mount	22.4	Nil	NA	44	53	47	R2.5 GW ceiling batt

Ceilings Under Tile Roof - on Resilient Channels

 <p>System CR10A illustrated</p>	CR10A	1x10mm Soundstop pbd	8.2	Nil	NA	38	47	41	R2.5 GW ceiling batt
	CR13A	1x13mm Soundstop pbd	11.2	Nil	NA	39	48	42	R2.5 GW ceiling batt
	CR16F	1x16mm Firestop pbd	13.0	30/30/30 from below RISF 30min	FCO-1658 FCO-0568	40	49	43	R2.5 GW ceiling batt
	CR20A	2x10mm Soundstop pbd	16.4	Nil	NA	42	51	45	R2.5 GW ceiling batt

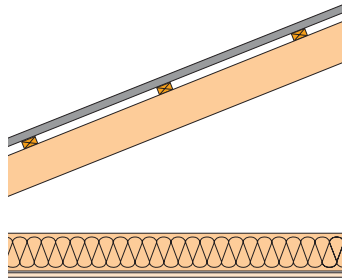
• These tables should be read in conjunction with Section A • For explanation of System Reference notation refer Section B1 • Acoustic ratings by GHA, Sheet No 104 (refer Section A4)

B | System Index

Selector+ PLASTERBOARD SYSTEMS

Layout	System Ref	Description	Approx Pbd Mass (kg/m ²)	Fire Resistance		Acoustic Ratings			
				FRL	Basis	Nil Insul	With Insulation		Insulation Type
						R _w	R _w	R _w +C _{tr}	

Ceilings Under Metal Roof - Direct Fixed



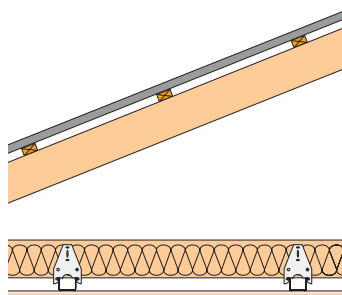
System C10U illustrated

C10U	1x10mm Unispan pbd	7.2	Nil	NA	32	41	34	R2.5 GW ceiling batt
C13	1x13mm Std Core pbd	8.6	Nil	NA	33	42	35	R2.5 GW ceiling batt
C16F	1x16mm Firestop pbd	13.0	30/30/30 from below RISF 30min	FCO-1658 FCO-0568	35	44	37	R2.5 GW ceiling batt
C26F	2x13mm Firestop pbd	21.0	60/60/60 from below RISF 30min	FCO-1658	39	48	41	R2.5 GW ceiling batt
C29F	13mm + 16mm Firestop pbd	23.5	60/60/60 from below RISF 60min	FCO-1658	39	48	41	R2.5 GW ceiling batt
C32F	2x16mm Firestop pbd	26.0	90/90/90 from below RISF 60min	FCO-1658	40	49	42	R2.5 GW ceiling batt
C48F	3x16mm Firestop pbd	39.0	120/120/120 from below RISF 90min	SI 1891 FTO-0029 FCO-1658	43	52	45	R2.5 GW ceiling batt
C64F	2x16mm Firestop pbd Furring 2x16mm Firestop pbd	52.0	120/120/120 from below RISF 120min	FCO-1856	43	52	45	R2.5 GW ceiling batt

• These tables should be read in conjunction with Section A • For explanation of System Reference notation refer Section B1 • Acoustic ratings by GHA, Sheet No 104 (refer Section A4) • Acoustic ratings based on corrugated iron/decking roof 0.56mm BMT (nom 4.4kg/m²)

Layout	System Ref	Description	Approx Pbd Mass (kg/m ²)	Fire Resistance		Acoustic Ratings			
				FRL	Basis	Nil Insul	With Insulation		Insulation Type
						R _w	R _w	R _w +C _{tr}	

Ceilings Under Metal Roof - Furred



System **CF10U** illustrated

CF10U	1x10mm Unispan pbd	7.2	Nil	NA	34	43	36	R2.5 GW ceiling batt
CF13	1x13mm Std Core pbd	8.6	Nil	NA	35	44	37	R2.5 GW ceiling batt
CF16F	1x16mm Firestop pbd	13.0	30/30/30 from below RISF 30min	FCO-1658 FCO-0568	37	46	39	R2.5 GW ceiling batt
CF20A	2x10mm Soundstop pbd	16.4	Nil	NA	39	48	41	R2.5 GW ceiling batt
CF26F	2x13mm Firestop pbd	21.0	60/60/60 from below RISF 30min	FCO-1658	41	50	43	R2.5 GW ceiling batt
CF29F	13mm Firestop pbd + 16mm Firestop pbd	23.5	60/60/60 from below RISF 60min	FCO-1658	41	50	43	R2.5 GW ceiling batt
CF32F	2x16mm Firestop pbd	26.0	90/90/90 from below RISF 60min	FCO-1658	42	51	44	R2.5 GW ceiling batt
CF48F	3x16mm Firestop pbd	39.0	120/120/120 from below RISF 90min	SI 1891 FTO-0029 FCO-1658	45	54	47	R2.5 GW ceiling batt
CF64F	2x16mm Firestop pbd Furring 2x16mm Firestop pbd	52.0	120/120/120 from below RISF 120min	FCO-1856	45	44	47	R2.5 GW ceiling batt

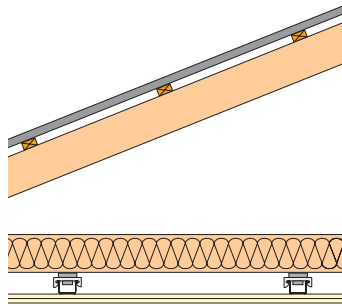
• These tables should be read in conjunction with Section A • For explanation of System Reference notation refer Section B1 • Acoustic ratings by GHA, Sheet No 104 (refer Section A4) • Acoustic ratings based on corrugated iron/decking roof 0.56mm BMT (nom 4.4kg/m²)

B | System Index

Selector+ PLASTERBOARD SYSTEMS

Layout	System Ref	Description	Approx Pbd Mass (kg/m ²)	Fire Resistance		Acoustic Ratings			
				FRL	Basis	Nil Insul	With Insulation		Insulation Type
						R _w	R _w	R _w +C _{tr}	

Ceilings Under Metal Roof - Furred on Acoustic Mounts



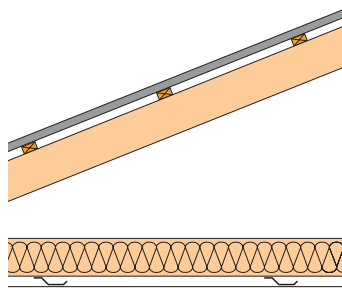
System **CFA26A** illustrated

CFA20A	2x10mm Soundstop pbd Acoustic mount	16.4	Nil	NA	41	50	43	R2.5 GW ceiling batt
CFA26A	2x13mm Soundstop pbd Acoustic mount	22.4	Nil	NA	42	51	44	R2.5 GW ceiling batt

• These tables should be read in conjunction with Section A • For explanation of System Reference notation refer Section B1 • Acoustic ratings by GHA, Sheet No 104 (refer Section A4) • Acoustic ratings based on corrugated iron/decking roof 0.56mm BMT (nom 4.4kg/m²)

Layout	System Ref	Description	Approx Pbd Mass (kg/m ²)	Fire Resistance		Acoustic Ratings			
				FRL	Basis	Nil Insul	With Insulation		Insulation Type
						R _w	R _w	R _w +C _{tr}	

Ceilings Under Metal Roof - on Resilient Channels



System **CR13A** illustrated

CR10A	1x10mm Soundstop pbd	8.2	Nil	NA	37	46	39	R2.5 GW ceiling batt
CR13A	1x13mm Soundstop pbd	11.2	Nil	NA	38	47	40	R2.5 GW ceiling batt
CR16F	1x16mm Firestop pbd	13.0	30/30/30 from below RISF 30min	FCO-1658 FCO-0568	39	48	41	R2.5 GW ceiling batt
CR20A	2x10mm Soundstop pbd	16.4	Nil	NA	41	50	43	R2.5 GW ceiling batt
CR26F	2x13mm Firestop pbd	21.0	60/60/60 from below RISF 30min	FCO-1658	43	52	45	R2.5 GW ceiling batt
CR29F	13mm + 16mm Firestop pbd	23.5	60/60/60 from below RISF 60min	FCO-1658	43	52	45	R2.5 GW ceiling batt
CR32F	2x16mm Firestop pbd	26.0	90/90/90 from below RISF 60min	FCO-1658	44	53	46	R2.5 GW ceiling batt

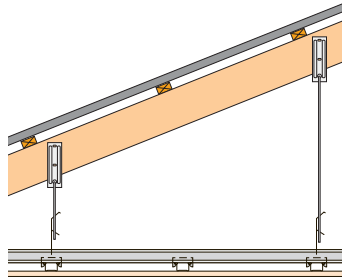
• These tables should be read in conjunction with Section A • For explanation of System Reference notation refer Section B1 • Acoustic ratings by GHA, Sheet No 104 (refer Section A4) • Acoustic ratings based on corrugated iron/decking roof 0.56mm BMT (nom 4.4kg/m²)

B | System Index

Selector+ PLASTERBOARD SYSTEMS

Layout	System Ref	Description	Approx Pbd Mass (kg/m ²)	Fire Resistance		Acoustic Ratings			
				FRL	Basis	Nil Insul	With Insulation		Insulation Type
						R _w	R _w	R _w +C _{tr}	

Ceilings Under Metal Roof - Suspended



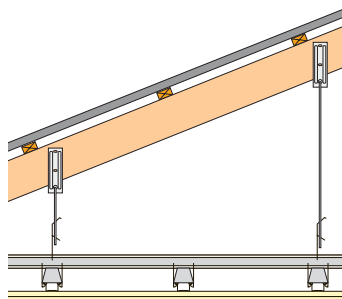
System CS10U illustrated

CS10U	1x10mm Unispan pbd	7.2	Nil	NA	35	44	37	R2.5 GW ceiling batt
CS13	1x13mm Std Core pbd	8.6	Nil	NA	36	45	38	R2.5 GW ceiling batt
CS16F	1x16mm Firestop pbd	13.0	30/30/30 from below RISF 30min	FCO-1658 FCO-0568	38	47	40	R2.5 GW ceiling batt
CS20A	2x10mm Soundstop pbd	16.4	Nil	NA	40	49	42	R2.5 GW ceiling batt
CS26F	2x13mm Firestop pbd	21.0	60/60/60 from below RISF 30min	FCO-1658	42	51	44	R2.5 GW ceiling batt
CS29F	13mm + 16mm Firestop pbd	23.5	60/60/60 from below RISF 60min	FCO-1658	42	51	44	R2.5 GW ceiling batt
CS32F	2x16mm Firestop pbd	26.0	90/90/90 from below RISF 60min	FCO-1658	43	52	45	R2.5 GW ceiling batt
CS48F	3x16mm Firestop pbd	39.0	120/120/120 from below RISF 90min	SI 1891 FTO-0029 FCO-1658	46	55	48	R2.5 GW ceiling batt
CS64F	2x16mm Firestop pbd Furring 2x16mm Firestop pbd	52.0	120/120/120 from below RISF 120min	FCO-1856	46	55	48	R2.5 GW ceiling batt

• These tables should be read in conjunction with Section A • For explanation of System Reference notation refer Section B1 • Acoustic ratings by GHA, Sheet No 104 (refer Section A4) • Acoustic ratings based on corrugated iron/decking roof 0.56mm BMT (nom 4.4kg/m²)

Layout	System Ref	Description	Approx Pbd Mass (kg/m ²)	Fire Resistance		Acoustic Ratings			
				FRL	Basis	Nil Insul	With Insulation		Insulation Type
						R _w	R _w	R _w +C _{tr}	

Ceilings Under Metal Roof - Suspended on Acoustic Mounts



System **CSA20A**

CSA20A	2x10mm Soundstop pbd Acoustic mount	16.4	Nil	NA	42	51	44	R2.5 GW ceiling batt
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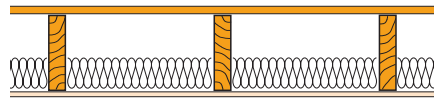
• These tables should be read in conjunction with Section A • For explanation of System Reference notation refer Section B1 • Acoustic ratings by GHA, Sheet No 104 (refer Section A4) • Acoustic ratings based on corrugated iron/decking roof 0.56mm BMT (nom 4.4kg/m²)

B | System Index

Selector+ PLASTERBOARD SYSTEMS

Layout	System Ref	Description	Approx Pbd Mass (kg/m ²)	Fire Resistance		Acoustic Ratings			
				FRL	Basis	Nil Insul	With Insulation		Insulation Type
						R _w	R _w	R _w +C _{tr}	

Ceilings Under Bare Timber Floor - Direct Fixed



System C10U illustrated

C10	1x10mm Std Core pbd	6.8	Nil	NA	29	30	24	85	R2.5 GW ceiling batt
C10A	1x10mm Soundstop pbd	8.2	Nil	NA	30	31	25	84	R2.5 GW ceiling batt
C10U	1x10mm Unispan pbd	7.2	Nil	NA	29	30	24	85	R2.5 GW ceiling batt
C13	1x13mm Std Core pbd	8.6	Nil	NA	30	31	25	84	R2.5 GW ceiling batt
C13F	1x13mm Firestop pbd	10.5	30/30/30 from below FPC.	FCO-1658	32	33	27	82	R2.5 GW ceiling batt
C16F	1x16mm Firestop pbd	13.0	30/30/30 from below RISF 30min	FCO-1658 FCO-0568	33	34	28	81	R2.5 GW ceiling batt
C20A	2x10mm Soundstop pbd	16.4	Nil	NA	35	36	30	79	R2.5 GW ceiling batt
C26F	2x13mm Firestop pbd	21.0	60/60/60 from below RISF 30min	FCO-1658	36	37	31	78	R2.5 GW ceiling batt
C29F	13mm + 16mm Firestop pbd	23.5	60/60/60 from below RISF 60min	FCO-1658	37	38	32	77	R2.5 GW ceiling batt
C32F	2x16mm Firestop pbd	26.0	90/90/90 from below RISF 60min	FCO-1658 FCO-0629	38	39	33	76	R2.5 GW ceiling batt
C48F	3x16mm Firestop pbd	39.0	120/120/120 from below RISF 90min	SI 1891 FTO-0029 FCO-1658	42	43	37	74	R2.5 GW ceiling batt
C64F	2x16mm Firestop pbd Furring 2x16mm Firestop pbd	52.0	120/120/120 from below RISF 120min	FCO-1856	44	45	39	72	R2.5 GW ceiling batt

NOTES:

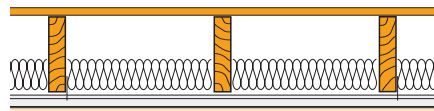
Acoustic ratings based on:

- Minimum 19mm particleboard flooring
- Minimum 190mm deep joists.

• These tables should be read in conjunction with Section A • For explanation of System Reference notation refer Section B1 • Acoustic ratings by GHA, Sheet No 104 (refer Section A4) • Bold acoustic ratings indicate a tested system

Layout	System Ref	Description	Approx Pbd Mass (kg/m ²)	Fire Resistance		Acoustic Ratings				
				FRL	Basis	Nil Insul	With Insulation			Insulation Type
						R _w	R _w	R _w +C _{tr}	L _{n,w} +C _l	

Ceilings Under Bare Timber Floor - Furred



System **CF10U** illustrated

CF10U	1x10mm Unispan pbd	7.2	Nil	NA	40	47	40	69	R2.5 GW ceiling batt
CF13	1x13mm Std Core pbd	8.6	Nil	NA	41	48	41	68	R2.5 GW ceiling batt
CF13F	1x13mm Firestop pbd	10.5	30/30/30 from below FPC.	FCO-1658	43	50	43	66	R2.5 GW ceiling batt
CF16F	1x16mm Firestop pbd	13.0	30/30/30 from below RISF 30min	FCO-1658 FCO-0568	44	51	44	65	R2.5 GW ceiling batt
CF26F	2x13mm Firestop pbd	21.0	60/60/60 from below RISF 30min	FCO-1658	47	54	47	62	R2.5 GW ceiling batt
CF29F	13mm + 16mm Firestop pbd	23.5	60/60/60 from below RISF 60min	FCO-1658	48	55	48	61	R2.5 GW ceiling batt
CF32F	2x16mm Firestop pbd	26.0	90/90/90 from below RISF 60min	FCO-1658 FCO-0629	49	56	49	60	R2.5 GW ceiling batt
CF48F	3x16mm Firestop pbd	39.0	120/120/120 from below RISF 90min	SI 1891 FTO-0029 FCO-1658	53	60	53	58	R2.5 GW ceiling batt
CF64F	2x16mm Firestop pbd Furring 2x16mm Firestop pbd	52.0	120/120/120 from below RISF 120min	FCO-1856	55	62	55	56	R2.5 GW ceiling batt

NOTES:

Acoustic ratings based on:

- Minimum 19mm particleboard flooring
- Minimum 190mm deep joists
- Furring channel housed in a direct fixing clip arrangement.

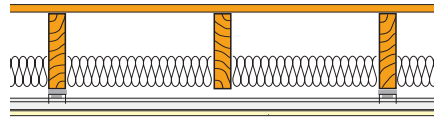
• These tables should be read in conjunction with Section A • For explanation of System Reference notation refer Section B1 • Acoustic ratings by GHA, Sheet No 104 (refer Section A4) • Bold acoustic ratings indicate a tested system

B | System Index

Selector+ PLASTERBOARD SYSTEMS

Layout	System Ref	Description	Approx Pbd Mass (kg/m ²)	Fire Resistance		Acoustic Ratings				Insulation Type
				FRL	Basis	Nil Insul	With Insulation			
						R _w	R _w	R _w +C _{tr}		

Ceilings Under Bare Timber Floor - Furred on Acoustic Mounts

System **CFA13A** illustrated

CFA10A	1x10mm Soundstop pbd	8.2	Nil	NA	42	49	43	64	R2.5 GW ceiling batt
CFA13A	1x13mm Soundstop pbd	11.2	Nil	NA	44	51	45	62	R2.5 GW ceiling batt
CFA13F	1x13mm Firestop pbd	10.5	30/30/30 from below FPC	FCO-1658	44	51	45	63	R2.5 GW ceiling batt
CFA16F	1x16mm Firestop pbd	13.0	30/30/30 from below RISF 30min	FCO-1658 FCO-0568	45	52	46	61	R2.5 GW ceiling batt
CFA20A	2x10mm Soundstop pbd	16.4	Nil	NA	47	54	48	60	R2.5 GW ceiling batt
CFA26A	2x13mm Soundstop pbd	22.4	Nil	NA	49	56	50	58	R2.5 GW ceiling batt
CFA26F	2x13mm Firestop pbd	21.0	60/60/60 from below RISF 30min	FCO-1658	48	55	49	59	R2.5 GW ceiling batt
CFA29F	13mm + 16mm Firestop pbd	23.5	60/60/60 from below RISF 60min	FCO-1658	49	56	50	58	R2.5 GW ceiling batt
CFA32F	2x16mm Firestop pbd	26.0	90/90/90 from below RISF 60min	FCO-1658 FCO-0629	50	57	51	57	R2.5 GW ceiling batt
CFA48F	3x16mm Firestop pbd	39.0	120/120/120 from below RISF 90min	SI 1891 FTO-0029 FCO-1658	54	61	55	55	R2.5 GW ceiling batt
CFA64F	2x16mm Firestop pbd Furring 2x16mm Firestop pbd	52.0	120/120/120 from below RISF 120min	FCO-1856	56	63	57	53	R2.5 GW ceiling batt

NOTES:

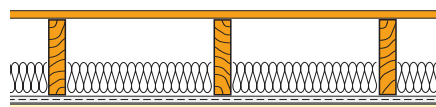
Acoustic ratings based on:

- Minimum 19mm particleboard flooring
- Minimum 190mm deep joists
- Boral Acoustic Ceiling Mount.

• These tables should be read in conjunction with Section A • For explanation of System Reference notation refer Section B1 • Acoustic ratings by GHA, Sheet No 104 (refer Section A4) • Bold acoustic ratings indicate a tested system

Layout	System Ref	Description	Approx Pbd Mass (kg/m ²)	Fire Resistance		Acoustic Ratings			
				FRL	Basis	Nil Insul	With Insulation		Insulation Type
						R _w	R _w	R _w +C _{tr}	

Ceilings Under Bare Timber Floor - on Resilient Channels



System **CR13A** illustrated

CR10A	1x10mm Soundstop pbd	8.2	Nil	NA	42	49	43	66	R2.5 GW ceiling batt
CR13A	1x13mm Soundstop pbd	11.2	Nil	NA	44	51	45	64	R2.5 GW ceiling batt
CR13F	1x13mm Firestop pbd	10.5	30/30/30 from below FPC	FCO-1658	44	51	45	64	R2.5 GW ceiling batt
CR16F	1x16mm Firestop pbd	13.0	30/30/30 from below RISF 30min	FCO-1658 FCO-0568	45	52	46	63	R2.5 GW ceiling batt
CR20A	2x10mm Soundstop pbd	16.4	Nil	NA	47	54	48	61	R2.5 GW ceiling batt
CR26A	2x13mm Soundstop	22.4	Nil	NA	49	56	50	59	R2.5 GW ceiling batt
CR26F	2x13mm Firestop pbd	21.0	60/60/60 from below RISF 30min	FCO-1658	48	55	49	60	R2.5 GW ceiling batt
CR29F	13mm + 16mm Firestop pbd	23.5	60/60/60 from below RISF 60min	FCO-1658	49	56	50	59	R2.5 GW ceiling batt
CR32F	2x16mm Firestop pbd	26.0	90/90/90 from below RISF 60min	FCO-1658 FCO-0629	50	57	51	58	R2.5 GW ceiling batt

NOTES:

Acoustic ratings based on:

- Minimum 19mm particleboard flooring
- Minimum 190mm deep joists.

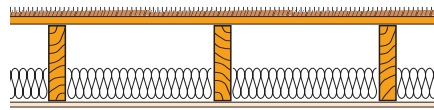
• These tables should be read in conjunction with Section A • For explanation of System Reference notation refer Section B1 • Acoustic ratings by GHA, Sheet No 104 (refer Section A4)

B | System Index

Selector+ PLASTERBOARD SYSTEMS

Layout	System Ref	Description	Approx Pbd Mass (kg/m ²)	Fire Resistance		Acoustic Ratings			
				FRL	Basis	Nil Insul	With Insulation		Insulation Type
						R _w	R _w	R _w +C _{tr}	

Ceilings Under Carpeted Timber Floor - Direct Fixed



System C10U illustrated

C10	1x10mm Std Core pbd	6.8	Nil	NA	30	31	25	58	R2.5 GW ceiling batt
C10A	1x10mm Soundstop pbd	8.2	Nil	NA	31	32	26	57	R2.5 GW ceiling batt
C10U	1x10mm Unispan pbd	7.2	Nil	NA	30	31	25	58	R2.5 GW ceiling batt
C13	1x13mm Std Core pbd	8.6	Nil	NA	31	32	26	56	R2.5 GW ceiling batt
C13A	1x13mm Soundstop pbd	11.2	Nil	NA	33	34	28	55	R2.5 GW ceiling batt
C13F	1x13mm Firestop pbd	10.5	30/30/30 from below FPC	FCO-1658	33	34	28	55	R2.5 GW ceiling batt
C16F	1x16mm Firestop pbd	13.0	30/30/30 from below RISF 30min	FCO-1658 FCo-0568	34	35	29	54	R2.5 GW ceiling batt
C20A	2x10mm Soundstop pbd	16.4	Nil	NA	36	37	31	52	R2.5 GW ceiling batt
C26F	2x13mm Firestop pbd	21.0	60/60/60 from below RISF 30min	FCO-1658	37	38	32	51	R2.5 GW ceiling batt
C29F	13mm + 16mm Firestop pbd	23.5	60/60/60 from below RISF 60min	FCO-1658	38	39	33	50	R2.5 GW ceiling batt
C32F	2x16mm Firestop pbd	26.0	90/90/90 from below RISF 60min	FCO-1658 FCO-0629	39	40	34	49	R2.5 GW ceiling batt
C48F	3x16mm Firestop pbd	39.0	120/120/120 from below RISF 90min	SI 1891 FTO-0029 FCO-1658	43	44	38	47	R2.5 GW ceiling batt
C64F	2x16mm Firestop pbd Furring 2x16mm Firestop pbd	52.0	120/120/120 from below RISF 120min	FCO-1856	45	46	40	45	R2.5 GW ceiling batt

NOTES:

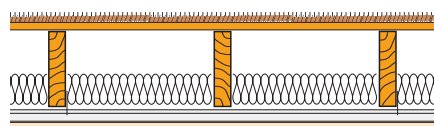
Acoustic ratings based on:

- An underlay used under carpet
- Minimum 19mm particleboard flooring
- Minimum 190mm deep joists.

• These tables should be read in conjunction with Section A • For explanation of System Reference notation refer Section B1 • Acoustic ratings by GHA, Sheet No 104 (refer Section A4)

Layout	System Ref	Description	Approx Pbd Mass (kg/m ²)	Fire Resistance		Acoustic Ratings			
				FRL	Basis	Nil Insul	With Insulation		Insulation Type
						R _w	R _w	R _w +C _{tr}	

Ceilings Under Carpeted Timber Floor - Furred



System **CF10U** illustrated

CF10A	1x10mm Soundstop pbd	8.2	Nil	NA	42	49	42	41	R2.5 GW ceiling batt
CF10U	1x10mm Unispan pbd	7.2	Nil	NA	41	48	41	42	R2.5 GW ceiling batt
CF13	1x13mm Std Core pbd	8.6	Nil	NA	42	49	42	40	R2.5 GW ceiling batt
CF13A	1x13mm Soundstop pbd	11.2	Nil	NA	44	51	44	39	R2.5 GW ceiling batt
CF13F	1x13mm Firestop pbd	10.5	30/30/30 from below FPC	FCO-1658	44	51	44	39	R2.5 GW ceiling batt
CF16F	1x16mm Firestop pbd	13.0	30/30/30 from below RISF 30min	FCO-1658 FCO-0568	45	52	45	38	R2.5 GW ceiling batt
CF20A	2x10mm Soundstop pbd	16.4	Nil	NA	47	54	47	36	R2.5 GW ceiling batt
CF26A	2x13mm Soundstop pbd	22.4	Nil	NA	49	56	49	34	R2.5 GW ceiling batt
CF26F	2x13mm Firestop pbd	21.0	60/60/60 from below RISF 30min	FCO-1658	48	55	48	35	R2.5 GW ceiling batt
CF29F	13mm + 16mm Firestop pbd	23.5	60/60/60 from below RISF 60min	FCO-1658	49	56	49	34	R2.5 GW ceiling batt
CF32F	2x16mm Firestop pbd	26.0	90/90/90 from below RISF 60min	FCO-1658 FCO-0629	50	57	50	33	R2.5 GW ceiling batt
CF48F	3x16mm Firestop pbd	39.0	120/120/120 from below RISF 90min	SI 1891 FTO-0029 FCO-1658	54	60	54	31	R2.5 GW ceiling batt
CF64F	2x16mm Firestop pbd Furring 2x16mm Firestop pbd	52.0	120/120/120 from below RISF 120min	FCO-1856	56	62	56	29	R2.5 GW ceiling batt

NOTES:

Acoustic ratings based on:

- An underlay used under carpet
- Minimum 19mm particleboard flooring
- Minimum 190mm deep joists
- Furring channel housed in a direct fixing clip arrangement.

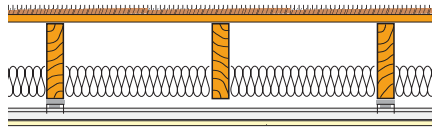
• These tables should be read in conjunction with Section A • For explanation of System Reference notation refer Section B1 • Acoustic ratings by GHA, Sheet No 104 (refer Section A4)

B | System Index

Selector+ PLASTERBOARD SYSTEMS

Layout	System Ref	Description	Approx Pbd Mass (kg/m ²)	Fire Resistance		Acoustic Ratings			
				FRL	Basis	Nil Insul	With Insulation		Insulation Type
						R _w	R _w	R _w +C _{tr}	

Ceilings Under Carpeted Timber Floor - Furred on Acoustic Mounts

System **CFA13A** illustrated

CFA10A	1x10mm Soundstop pbd	8.2	Nil	NA	43	50	44	37	R2.5 GW ceiling batt
CFA13A	1x13mm Soundstop pbd	11.2	Nil	NA	45	52	46	35	R2.5 GW ceiling batt
CFA20A	2x10mm Soundstop pbd	16.4	Nil	NA	48	55	49	33	R2.5 GW ceiling batt
CFA26A	2x13mm Soundstop pbd	22.4	Nil	NA	49	57	51	31	R2.5 GW ceiling batt
CFA26F	2x13mm Firestop pbd	21.0	60/60/60 from below RISF 30min	FCO-1658	49	56	50	32	R2.5 GW ceiling batt
CFA29F	13mm + 16mm Firestop pbd	23.5	60/60/60 from below RISF 60min	FCO-1658	50	57	51	31	R2.5 GW ceiling batt
CFA32F	2x16mm Firestop pbd	26.0	90/90/90 from below RISF 60min	FCO-1658 FCO-0629	51	58	52	30	R2.5 GW ceiling batt
CFA48F	3x16mm Firestop pbd	39.0	120/120/120 from below RISF 90min	SI 1891 FTO-0029 FCO-1658	55	61	56	28	R2.5 GW ceiling batt

NOTES:

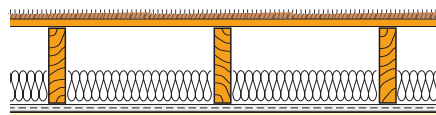
Acoustic ratings based on:

- An underlay used under carpet
- Minimum 19mm particleboard flooring
- Minimum 190mm deep joists
- Boral Acoustic Ceiling Mount.

• These tables should be read in conjunction with Section A • For explanation of System Reference notation refer Section B1 • Acoustic ratings by GHA, Sheet No 104 (refer Section A4) • Bold acoustic ratings indicate a tested system

Layout	System Ref	Description	Approx Pbd Mass (kg/m ²)	Fire Resistance		Acoustic Ratings			
				FRL	Basis	Nil Insul	With Insulation		Insulation Type
						R _w	R _w	R _w +C _{tr}	

Ceilings Under Carpeted Timber Floor - on Resilient Channels



System **CR13A** illustrated

CR10A	1x10mm Soundstop pbd	8.2	Nil	NA	43	50	44	39	R2.5 GW ceiling batt
CR13A	1x13mm Soundstop pbd	11.2	Nil	NA	45	52	46	37	R2.5 GW ceiling batt
CR13F	1x13mm Firestop pbd	10.5	30/30/30 from below FPC	FCO-1658	45	52	48	37	R2.5 GW ceiling batt
CR16F	1x16mm Firestop pbd	13.0	30/30/30 from below RISF 30min	FCO-1658 FCO-0568	46	53	47	36	R2.5 GW ceiling batt
CR20A	2x10mm Soundstop pbd	16.4	Nil	NA	48	55	49	34	R2.5 GW ceiling batt
CR26F	2x13mm Firestop pbd	21.0	60/60/60 from below RISF 30min	FCO-1658	49	56	50	33	R2.5 GW ceiling batt
CR29F	13mm + 16mm Firestop pbd	23.5	60/60/60 from below RISF 60min	FCO-1658	50	57	51	32	R2.5 GW ceiling batt
CR32F	2x16mm Firestop pbd	26.0	90/90/90 from below RISF 60min	FCO-1658 FCO-0629	51	58	52	31	R2.5 GW ceiling batt

NOTES:

Acoustic ratings based on:

- An underlay used under carpet
- Minimum 19mm particleboard flooring
- Minimum 190mm deep joists.

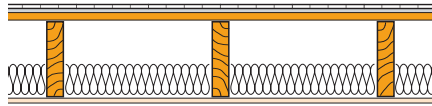
• These tables should be read in conjunction with Section A • For explanation of System Reference notation refer Section B1 • Acoustic ratings by GHA, Sheet No 104 (refer Section A4)

B | System Index

Selector+ PLASTERBOARD SYSTEMS

Layout	System Ref	Description	Approx Pbd Mass (kg/m ²)	Fire Resistance		Acoustic Ratings			
				FRL	Basis	Nil Insul	With Insulation		Insulation Type
						R _w	R _w	R _w +C _{tr}	

Ceilings Under Tiled Timber Floor - Direct Fixed



System C10U illustrated

C10	1x10mm Std Core pbd	6.8	Nil	NA	37	38	32	82	R2.5 GW ceiling batt
C10U	1x10mm Unispan pbd	7.2	Nil	NA	38	39	33	82	R2.5 GW ceiling batt
C13	1x13mm Std Core pbd	8.6	Nil	NA	38	39	33	81	R2.5 GW ceiling batt
C13F	1x13mm Firestop pbd	10.5	30/30/30 from below FPC	FCO-1658	39	40	34	79	R2.5 GW ceiling batt
C16F	1x16mm Firestop pbd	13.0	30/30/30 from below RISF 30min	FCO-1658 FCO-0568	39	40	34	78	R2.5 GW ceiling batt
C20A	2x10mm Soundstop pbd	16.4	Nil	NA	40	41	35	76	R2.5 GW ceiling batt
C26F	2x13mm Firestop pbd	21.0	60/60/60 from below RISF 30min	FCO-1658	41	42	36	75	R2.5 GW ceiling batt
C29F	13mm + 16mm Firestop pbd	23.5	60/60/60 from below RISF 60min	FCO-1658	42	43	37	74	R2.5 GW ceiling batt
C32F	2x16mm Firestop pbd	26.0	90/90/90 from below RISF 60min	FCO-1658 FCO-0629	42	43	37	73	R2.5 GW ceiling batt
C48F	3x16mm Firestop pbd	39.0	120/120/120 from below RISF 90min	SI 1891 FTO-0029 FCO-1658	45	46	40	71	R2.5 GW ceiling batt
C64F	2x16mm Firestop pbd Furring 2x16mm Firestop pbd	52.0	120/120/120 from below RISF 120min	FCO-1856	47	48	42	69	R2.5 GW ceiling batt

NOTES:

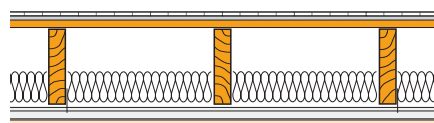
Acoustic ratings based on:

- 6mm thick ceramic tiles laid on 6mm thick cement sheet having a total mass nom 15kg/m²
- Minimum 19mm particleboard flooring
- Minimum 190mm deep joists.

• These tables should be read in conjunction with Section A • For explanation of System Reference notation refer Section B1 • Acoustic ratings by GHA, Sheet No 104 (refer Section A4)

Layout	System Ref	Description	Approx Pbd Mass (kg/m ²)	Fire Resistance		Acoustic Ratings			
				FRL	Basis	Nil Insul	With Insulation		Insulation Type
						R _w	R _w	R _w +C _{tr}	

Ceilings Under Tiled Timber Floor - Furred



System **CF10U** illustrated

CF10U	1x10mm Unispan pbd	7.2	Nil	NA	47	56	49	66	R2.5 GW ceiling batt
CF13	1x13mm Std Core pbd	8.6	Nil	NA	49	56	49	65	R2.5 GW ceiling batt
CF13F	1x13mm Firestop pbd	10.5	30/30/30 from below FPC	FCO-1658	50	57	50	63	R2.5 GW ceiling batt
CF16F	1x16mm Firestop pbd	13.0	30/30/30 from below RISF 30min	FCO-1658 FCO-0568	50	57	50	63	R2.5 GW ceiling batt
CF26F	2x13mm Firestop pbd	21.0	60/60/60 from below RISF 30min	FCO-1658	52	59	52	59	R2.5 GW ceiling batt
CF29F	13mm + 16mm Firestop pbd	23.5	60/60/60 from below RISF 60min	FCO-1658	53	60	53	58	R2.5 GW ceiling batt
CF32F	2x16mm Firestop pbd	26.0	90/90/90 from below RISF 60min	FCO-1658 FCO-0629	53	60	53	57	R2.5 GW ceiling batt
CF48F	3x16mm Firestop pbd	39.0	120/120/120 from below RISF 90min	SI 1891 FTO-0029 FCO-1658	56	63	56	55	R2.5 GW ceiling batt
CF64F	2x16mm Firestop pbd Furring 2x16mm Firestop pbd	52.0	120/120/120 from below RISF 120min	FCO-1856	58	65	58	53	R2.5 GW ceiling batt

NOTES:

Acoustic ratings based on:

- 6mm thick ceramic tiles laid on 6mm thick cement sheet having a total mass nom 15kg/m²
- Minimum 19mm particleboard flooring
- Minimum 190mm deep joists
- Furring channel housed in a direct fixing clip arrangement.

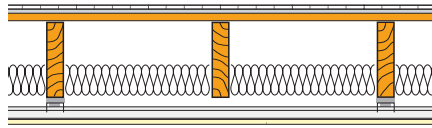
• These tables should be read in conjunction with Section A • For explanation of System Reference notation refer Section B1 • Acoustic ratings by GHA, Sheet No 104 (refer Section A4)

B | System Index

Selector+ PLASTERBOARD SYSTEMS

Layout	System Ref	Description	Approx Pbd Mass (kg/m ²)	Fire Resistance		Acoustic Ratings			
				FRL	Basis	Nil Insul	With Insulation		Insulation Type
						R _w	R _w	R _w +C _{tr}	

Ceilings Under Tiled Timber Floor - Furred on Acoustic Mounts

System **CFA13A** illustrated

CFA10A	1x10mm Soundstop pbd	8.2	Nil	NA	50	57	51	62	R2.5 GW ceiling batt
CFA13A	1x13mm Soundstop pbd	11.2	Nil	NA	51	58	52	60	R2.5 GW ceiling batt
CFA13F	1x13mm Firestop pbd	10.5	30/30/30 from below FPC	FCO-1658	51	58	52	60	R2.5 GW ceiling batt
CFA16F	1x16mm Firestop pbd	13.0	30/30/30 from below RISF 30min	FCO-1658 FCO-0568	51	58	52	59	R2.5 GW ceiling batt
CFA20A	2x10mm Soundstop pbd	16.4	Nil	NA	52	59	53	57	R2.5 GW ceiling batt
CFA26A	2x13mm Soundstop pbd	22.4	Nil	NA	54	61	55	55	R2.5 GW ceiling batt
CFA26F	2x13mm Firestop pbd	21.0	60/60/60 from below RISF 30min	FCO-1658	53	60	54	56	R2.5 GW ceiling batt
CFA29F	13mm + 16mm Firestop pbd	23.5	60/60/60 from below RISF 60min	FCO-1658	54	61	55	55	R2.5 GW ceiling batt
CFA32F	2x16mm Firestop pbd	26.0	90/90/90 from below RISF 60min	FCO-1658 FCO-0629	54	61	55	54	R2.5 GW ceiling batt
CFA48F	3x16mm Firestop pbd	39.0	120/120/120 from below RISF 90min	SI 1891 FTO-0029 FCO-1658	57	64	58	52	R2.5 GW ceiling batt
CFA64F	2x16mm Firestop pbd Furring 2x16mm Firestop pbd	52.0	120/120/120 from below RISF 120min	FCO-1856	59	66	60	50	R2.5 GW ceiling batt

NOTES:

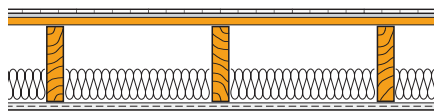
Acoustic ratings based on:

- 6mm thick ceramic tiles laid on 6mm thick cement sheet having a total mass nom 15kg/m²
- Minimum 19mm particleboard flooring
- Minimum 190mm deep joists
- Boral Acoustic Ceiling Mount.

• These tables should be read in conjunction with Section A • For explanation of System Reference notation refer Section B1 • Acoustic ratings by GHA, Sheet No 104 (refer Section A4)

Layout	System Ref	Description	Approx Pbd Mass (kg/m ²)	Fire Resistance		Acoustic Ratings			
				FRL	Basis	Nil Insul	With Insulation		Insulation Type
						R _w	R _w	R _w +C _{tr}	

Ceilings Under Tiled Timber Floor - on Resilient Channels



System **CR13A** illustrated

CR10A	1x10mm Soundstop pbd	8.2	Nil	NA	50	57	51	63	R2.5 GW ceiling batt
CR13A	1x13mm Soundstop pbd	11.2	Nil	NA	51	58	52	61	R2.5 GW ceiling batt
CR13F	1x13mm Firestop pbd	10.5	30/30/30 from below FPC	FCO-1658	51	58	52	61	R2.5 GW ceiling batt
CR16F	1x16mm Firestop pbd	13.0	30/30/30 from below RISF 30min	FCO-1658 FCO-0568	51	58	52	60	R2.5 GW ceiling batt
CR20A	2x10mm Soundstop pbd	16.4	Nil	NA	52	59	53	58	R2.5 GW ceiling batt
CR26F	2x13mm Firestop pbd	21.0	60/60/60 from below RISF 30min	FCO-1658	53	60	54	57	R2.5 GW ceiling batt
CR29F	13mm + 16mm Firestop pbd	23.5	60/60/60 from below RISF 60min	FCO-1658	54	61	55	56	R2.5 GW ceiling batt
CR32F	2x16mm Firestop pbd	26.0	90/90/90 from below RISF 60min	FCO-1658 FCO-0629	54	61	55	55	R2.5 GW ceiling batt

NOTES:

Acoustic ratings based on:

- 6mm thick ceramic tiles laid on 6mm thick cement sheet having a total mass nom 15kg/m²
- Minimum 19mm particleboard flooring
- Minimum 190mm deep joists.

• These tables should be read in conjunction with Section A • For explanation of System Reference notation refer Section B1 • Acoustic ratings by GHA, Sheet No 104 (refer Section A4)

B | System Index

Selector+ PLASTERBOARD SYSTEMS

Layout	System Ref	Description	Approx Pbd Mass (kg/m ²)	Fire Resistance		Acoustic Ratings				
				FRL	Basis	Nil Insul	With Insulation			Insulation Type
						R _w	R _w	R _w +C _{tr}	L _{n,w} +C _l	

Ceilings Under Bare Concrete Floor - Furred

System **CF10U** illustrated

CF10U	1x10mm Unispan pbd	7.2	Floor only	NA	53	58	48	64	25G20, 25P20
CF13	1x13mm Std Core pbd	8.6	Floor only	NA	53	58	48	62	25G20, 25P20
CF13F	1x13mm Firestop pbd	10.5	Min 30/30/30 from below	FCO-1658	53	58	49	62	25G20, 25P20
CF16F	1x16mm Firestop pbd	13.0	Min 30/30/30 from below RISF 30min	FCO-1658	54	59	49	61	25G20, 25P20
CF26F	2x13mm Firestop pbd	21.0	Min 60/60/60 from below RISF 30min	FCO-1658	56	62	51	59	25G20, 25P20
CF29F	13mm+16mm Firestop pbd	23.5	Min 60/60/60 from below RISF 60min	FCO-1658	56	62	52	59	25G20, 25P20
CF32F	2x16mm Firestop pbd	26.0	Min 90/90/90 from below RISF 60min	FCO-1658	57	63	53	58	25G20, 25P20
CF48F	3x16mm Firestop pbd	39.0	Min 120/120/120 from below	FCO-1658	58	63	54	58	25G20, 25P20

NOTES:

Acoustic ratings based on:

- Nom 150mm thick concrete slab
- Furring channel housed in furring channel clip.

• These tables should be read in conjunction with Section A • For explanation of System Reference notation refer Section B1 • Acoustic ratings by GHA, Sheet No 104 (refer Section A4)

Layout	System Ref	Description	Approx Pbd Mass (kg/m ²)	Fire Resistance		Acoustic Ratings				
				FRL	Basis	Nil Insul	With Insulation			Insulation Type
						R _w	R _w	R _w +C _{tr}	L _{n,w} +C _l	

Ceilings Under Bare Concrete Floor - Furred on Acoustic Mounts



System **CFA10U** illustrated

CFA10U	1x10mm Unispan pbd	7.2	Floor only	NA	53	55	51	59	50G11, 50P14
CFA13	1x13mm Std Core pbd	8.6	Floor only	NA	54	59	53	51	65P8
CFA13F	1x13mm Firestop pbd	10.5	Min 30/30/30 from below	FCO-1658	54	60	54	52	50G11, 50P14
CFA16F	1x16mm Firestop pbd	13.0	Min 30/30/30 from below RISF 30min	FCO-1658	55	60	55	51	50G11, 50P14
CFA26F	2x13mm Firestop pbd	21.0	Min 60/60/60 from below RISF 30min	FCO-1658	57	60	55	49	50G11, 50P14
CFA29F	13mm+16mm Firestop pbd	23.5	Min 60/60/60 from below RISF 60min	FCO-1658	57	60	55	49	50G11, 50P14
CFA32F	2x16mm Firestop pbd	26.0	Min 90/90/90 from below RISF 60min	FCO-1658	58	60	55	49	50G11, 50P14
CFA48F	3x16mm Firestop pbd	39.0	Min 120/120/120 from below RISF 90min	FCO-1658	59	60	55	49	50G11, 50P14

NOTES:

Acoustic ratings based on:

- Nom 150mm thick concrete slab
- Furring channel housed in Boral Acoustic Ceiling Mount/Rondo Sound Isolation Mount STWC
- Nom 50mm ceiling cavity.

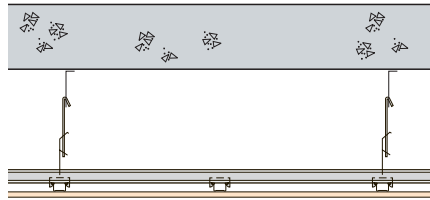
• These tables should be read in conjunction with Section A • For explanation of System Reference notation refer Section B1 • Acoustic ratings by GHA, Sheet No 104 (refer Section A4) • Bold acoustic ratings indicate a tested system

B | System Index

Selector+ PLASTERBOARD SYSTEMS

Layout	System Ref	Description	Approx Pbd Mass (kg/m ²)	Fire Resistance		Acoustic Ratings				
				FRL	Basis	Nil Insul	With Insulation			Insulation Type
						R _w	R _w	R _w +C _{tr}	L _{n,w} +C _l	

Ceilings Under Bare Concrete Floor - Suspended



System CS10U illustrated

CS10U	1x10mm Unispan pbd	7.2	Floor only	NA	54	59	52	51	70G11, 75P9
CS13	1x13mm Std Core pbd	8.6	Floor only	NA	55	59	54	50	70G11, 75P9
CS13A	1x13mm Soundstop pbd	11.2	Floor only	NA	55	60	55	49	70G11, 75P9
CS13F	1x13mm Firestop pbd	10.5	Min 30/30/30 from below	FCO-1658	55	59	54	49	70G11, 75P9
CS16F	1x16mm Firestop pbd	13.0	Min 30/30/30 from below RISF 30min	FCO-1658	55	60	55	49	70G11, 75P9
CS20U	2x10mm Unispan pbd	14.4	Floor only	NA	55	60	55	49	70G11, 75P9
CS26	2x13mm Std Core pbd	17.2	Floor only	NA	56	60	55	49	75P9
CS26F	2x13mm Firestop pbd	21.0	Min 60/60/60 from below RISF 30min	FCO-1658	57	60	55	49	70G11, 75P9
CS29F	13mm+16mm Firestop pbd	23.5	Min 60/60/60 from below RISF 60min	FCO-1658	58	60	55	49	70G11, 75P9
CS32F	2x16mm Firestop pbd	26.0	Min 90/90/90 from below RISF 60min	FCO-1658	59	60	55	49	70G11, 75P9
CS48F	3x16mm Firestop pbd	39.0	Min 120/120/120 from below RISF 90min	FCO-1658	60	60	55	49	70G11, 75P9

NOTES:

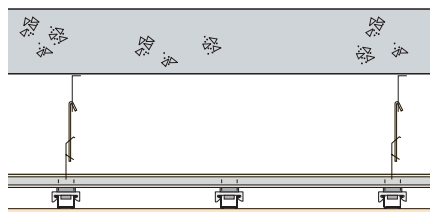
Acoustic ratings based on:

- Nom 150mm thick concrete slab
- Min 100mm ceiling cavity.

• These tables should be read in conjunction with Section A • For explanation of System Reference notation refer Section B1 • Acoustic ratings by GHA, Sheet No 104 (refer Section A4) • Bold acoustic ratings indicate a tested system

Layout	System Ref	Description	Approx Pbd Mass (kg/m ²)	Fire Resistance		Acoustic Ratings				
				FRL	Basis	Nil Insul	With Insulation			Insulation Type
						R _w	R _w	R _w +C _{tr}	L _{n,w} +C _l	

Ceilings Under Bare Concrete Floor - Suspended on Acoustic Mounts



System **CSA13** illustrated

CSA13	1x13mm Std Core pbd	8.6	Floor only	NA	55	59	54	49	75P9
CSA13F	1x13mm Firestop pbd	10.5	Min 30/30/30 from below	FCO-1658	56	59	54	49	70G11, 75P9
CSA16F	1x16mm Firestop pbd	13.0	Min 30/30/30 from below RISF 30min	FCO-1658	57	60	55	49	70G11, 75P9
CSA26A	2x13mm Soundstop pbd	22.4	Floor only	NA	60	60	55	49	75P9
CSA26F	2x13mm Firestop pbd	21.0	Min 60/60/60 from below RISF 30min	FCO-1658	60	60	55	49	70G11, 75P9
CSA29F	13mm+16mm Firestop pbd	23.5	Min 60/60/60 from below RISF 60min	FCO-1658	60	60	55	49	70G11, 75P9
CSA32F	2x16mm Firestop pbd	26.0	Min 90/90/90 from below RISF 60min	FCO-1658	60	60	55	49	70G11, 75P9
CSA48F	3x16mm Firestop pbd	39.0	Min 120/120/120 from below RISF 90min	FCO-1658	60	60	55	49	70G11, 75P9

NOTES:

Acoustic ratings based on:

- Nom 150mm thick concrete slab
- Boral Acoustic Ceiling Mount / Rondo Sound Isolation Mount STWC
- Min 100mm ceiling cavity.

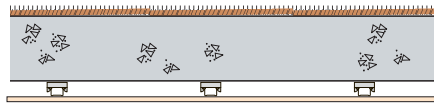
• These tables should be read in conjunction with Section A • For explanation of System Reference notation refer Section B1 • Acoustic ratings by GHA, Sheet No 104 (refer Section A4) • Bold acoustic ratings indicate a tested system

B | System Index

Selector+ PLASTERBOARD SYSTEMS

Layout	System Ref	Description	Approx Pbd Mass (kg/m ²)	Fire Resistance		Acoustic Ratings				
				FRL	Basis	Nil Insul	With Insulation			Insulation Type
						R _w	R _w	R _w +C _{tr}	L _{n,w} +C _l	

Ceilings Under Carpeted Concrete Floor - Furred



System **CF10U** illustrated

CF10U	1x10mm Unispan pbd	7.2	Floor only	NA	53	58	48	<45	25G20
CF13	1x13mm Std Core pbd	8.6	Floor only	NA	53	58	48	<45	25G20, 25P20
CF13F	1x13mm Firestop pbd	10.5	Min 30/30/30 from below	FCO-1658	53	58	49	<45	25G20, 25P20
CF16F	1x16mm Firestop pbd	13.0	Min 30/30/30 from below RISF 30min	FCO-1658	54	59	49	<45	25G20, 25P20
CF26F	2x13mm Firestop pbd	21.0	Min 60/60/60 from below RISF 30min	FCO-1658	56	60	51	<45	25G20, 25P20
CF29F	13mm+16mm Firestop pbd	23.5	Min 60/60/60 from below RISF 60min	FCO-1658	56	60	52	<45	25G20, 25P20
CF32F	2x16mm Firestop pbd	26.0	Min 90/90/90 from below RISF 60min	FCO-1658	57	60	53	<45	25G20, 25P20
CF48F	3x16mm Firestop pbd	39.0	Min 120/120/120 from below RISF 90min	FCO-1658	58	60	54	<45	25G20, 25P20

NOTES:

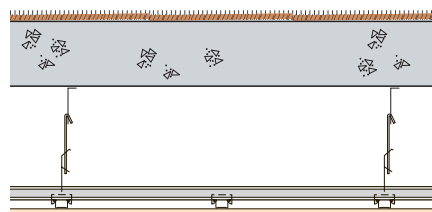
Acoustic ratings based on:

- Nom 150mm thick concrete slab
- Furring channel housed in furring channel clip.

• These tables should be read in conjunction with Section A • For explanation of System Reference notation refer Section B1 • Acoustic ratings by GHA, Sheet No 104 (refer Section A4)

Layout	System Ref	Description	Approx Pbd Mass (kg/m ²)	Fire Resistance		Acoustic Ratings			
				FRL	Basis	Nil Insul	With Insulation		Insulation Type
						R _w	R _w	R _w +C _{tr}	

Ceilings Under Carpeted Concrete Floor - Suspended



System **CS10U** illustrated

CS10U	1x10mm Unispan pbd	7.2	Floor only	NA	53	58	52	<45	70G11, 75P9
CS13	1x13mm Std Core pbd	8.6	Floor only	NA	55	59	54	<45	70G11, 75P9
CS13F	1x13mm Firestop pbd	10.5	Min 30/30/30 from below	FCO-1658	55	59	54	<45	70G11, 75P9
CS16F	1x16mm Firestop pbd	13.0	Min 30/30/30 from below RISF 30min	FCO-1658	55	60	55	<45	70G11, 75P9
CS20U	2x10mm Unispan pbd	14.4	Floor only	NA	55	60	55	<45	70G11, 75P9
CS26	2x13mm Std Core pbd	17.2	Floor only	NA	56	60	55	<45	70G11, 75P9
CS26F	2x13mm Firestop pbd	21.0	Min 60/60/60 from below RISF 30min	FCO-1658	57	60	55	<45	70G11, 75P9
CS29F	13mm+16mm Firestop pbd	23.5	Min 60/60/60 from below RISF 60min	FCO-1658	58	60	55	<45	70G11, 75P9
CS32F	2x16mm Firestop pbd	26.0	Min 90/90/90 from below RISF 60min	FCO-1658	59	60	55	<45	70G11, 75P9
CS48F	3x16mm Firestop pbd	39.0	Min 120/120/120 from below RISF 90min	FCO-1658	60	60	55	<45	70G11, 75P9

NOTES:

Acoustic ratings based on:

- Nom 150mm thick concrete slab
- Min 100mm ceiling cavity.

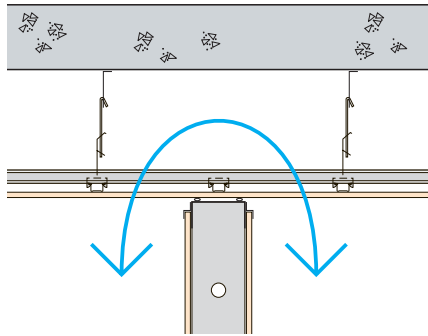
• These tables should be read in conjunction with Section A • For explanation of System Reference notation refer Section B1 • Acoustic ratings by GHA, Sheet No 104 (refer Section A4)

B | System Index

Selector+ PLASTERBOARD SYSTEMS

Layout	System Ref	Description	Approx Pbd Mass (kg/m ²)	Acoustic Ratings		
				Nil Insulation	With Insulation	Insulation Type
				D _{n,c,w}	D _{n,c,w}	

Over Partition, Room-to-Room Via Ceiling



Ceiling continuous over partition wall
System **COCT10U** illustrated

COCT10U	1x10mm Boral lay-in infill ceiling panel in Rondo DUO two-way exposed suspended ceiling grid system	7.2	35	40	90G14, 100P14
COC10U	1x10mm Boral Unispan pbd fixed to Rondo KEY-LOCK concealed ceiling grid system	7.2	37	43	90G14, 100P14
COC13	1x13mm Boral Std. Core plasterboard fixed to Rondo KEY-LOCK concealed ceiling grid system	8.6	38	45	90G14, 100P14
COC16F	1x16mm Boral Firestop plasterboard fixed to Rondo KEY-LOCK concealed ceiling grid system	13.0	42	46	90G14, 100P14
COC26F	2x13mm Boral Firestop plasterboard fixed to Rondo KEY-LOCK concealed ceiling grid system	21.0	45	47	90G14, 100P14
COC32F	2x16mm Boral Firestop plasterboard fixed to Rondo KEY-LOCK concealed ceiling grid system	26.0	46	48	90G14, 100P14

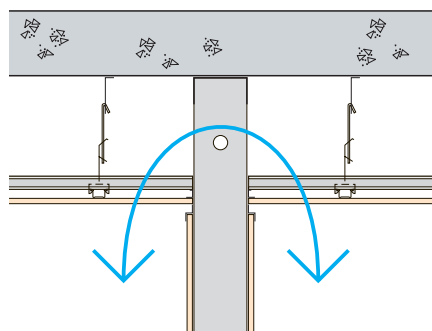
NOTES:

- Acoustic ratings based on nom 650mm plenum depth
- Junction of wall to suspended ceiling acoustically sealed
- Insulation to extend min 1200mm from each side of the wall
- To ensure that the acoustic performance of the wall is not degraded significantly by the flanking through the ceiling path, the D_{n,c,w} of the ceiling should be min 3dB higher than the R_w of the wall
- Penetrations such as return air grilles and recessed light fittings may degrade the stated acoustic performance.

• These tables should be read in conjunction with Section A • For explanation of System Reference notation refer Section B1 • Acoustic ratings by GHA, Sheet No 104 (refer Section A4)

Layout	System Ref	Description	Approx Pbd Mass (kg/m ²)	Acoustic Ratings		
				Nil Insulation	With Insulation	Insulation Type
				<i>D</i> _{n,c,w}	<i>D</i> _{n,c,w}	

» Over Partition, Room-to-Room Via Ceiling



Ceiling discontinuous over partition wall
System **COD10U** illustrated

NOTES:

- Acoustic ratings based on nom 650mm plenum depth
- Junction of wall to suspended ceiling acoustically sealed
- Insulation to extend min 1200mm from each side of the wall
- To ensure that the acoustic performance of the wall is not degraded significantly by the flanking through the ceiling path, the *D*_{n,c,w} of the ceiling should be min 3dB higher than the *R*_w of the wall
- Shadowline stopping angle (P50) at head of wall to be acoustically sealed
- Penetrations such as return air grilles and recessed light fittings may degrade the stated acoustic performance.

CODT10U	1x10mm Boral lay-in infill ceiling panel in Rondo DUO two-way exposed suspended ceiling grid system	7.2	37	42	90G14, 100P14
COD10U	1x10mm Boral Unispan plasterboard fixed to Rondo KEY-LOCK concealed ceiling grid system	7.2	40	46	90G14, 100P14
COD13	1x13mm Boral Std. Core plasterboard fixed to Rondo KEY-LOCK concealed ceiling grid system	8.6	41	47	90G14, 100P14
COD16F	1x16mm Boral Firestop plasterboard fixed to Rondo KEY-LOCK concealed ceiling grid system	13.0	43	48	90G14, 100P14
COD26F	2x13mm Boral Firestop plasterboard fixed to Rondo KEY-LOCK concealed ceiling grid system	21.0	47	50	90G14, 100P14
COD32F	2x16mm Boral Firestop plasterboard fixed to Rondo KEY-LOCK concealed ceiling grid system	26.0	49	51	90G14, 100P14

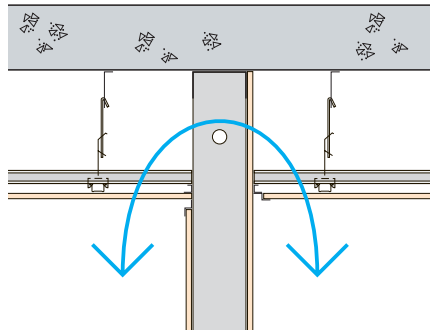
• These tables should be read in conjunction with Section A • For explanation of System Reference notation refer Section B1 • Acoustic ratings by GHA, Sheet No 104 (refer Section A4)

B | System Index

Selector+ PLASTERBOARD SYSTEMS

Layout	System Ref	Description	Approx Pbd Mass (kg/m ²)	Acoustic Ratings		
				Nil Insulation	With Insulation	Insulation Type
				D _{n,c,w}	D _{n,c,w}	

» Over Partition, Room-to-Room Via Ceiling



Plasterboard barrier in ceiling space
Ceiling discontinuous over partition wall
System **COB10U** illustrated

COBT10U	1x10mm Boral lay-in infill ceiling panel in Rondo DUO two-way exposed suspended ceiling grid system	7.2	50	NA	NA
COB10U	1x10mm Boral Unispan plasterboard fixed to Rondo KEY-LOCK concealed ceiling grid system	7.2	50	NA	NA
COB13	1x13mm Boral Std. Core plasterboard fixed to Rondo KEY-LOCK concealed ceiling grid system	8.6	50	NA	NA
COB16F	1x16mm Boral Firestop plasterboard fixed to Rondo KEY-LOCK concealed ceiling grid system	13.0	50	NA	NA
COB26F	2x13mm Boral Firestop plasterboard fixed to Rondo KEY-LOCK concealed ceiling grid system	21.0	50	NA	NA
COB32F	2x16mm Boral Firestop plasterboard fixed to Rondo KEY-LOCK concealed ceiling grid system	26.0	50	NA	NA

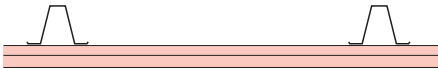
NOTES:

- Acoustic ratings based on nom 650mm plenum depth
- Junction of wall to suspended ceiling acoustically sealed
- To ensure that the acoustic performance of the wall is not degraded significantly by the flanking through the ceiling path, the D_{n,c,w} of the ceiling should be min 3dB higher than the Rw of the wall
- Other ceiling space barriers may include barium-loaded vinyl material eg Soundguard Wavebar.

• These tables should be read in conjunction with Section A • For explanation of System Reference notation refer Section B1 • Acoustic ratings by GHA, Sheet No 104 (refer Section A4)

Layout	System Ref	Description	Approx Pbd Mass (kg/m ²)	Fire Resistance		Acoustic Ratings				
				FRL	Basis	Nil Insul		With Insulation		Insulation Type
						R _w		R _w	R _w +C _{tr}	

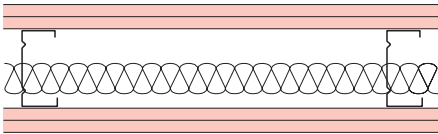
Spanning Ceiling Systems - D-Span™



System **CD29F** illustrated

CD26F	2x13mm Firestop pbd	21.0	60/30/30 from below RISF 30min	FSH 0753	34	NA	NA	Nil
CD29F	1x13mm + 1x16mm Firestop pbd	23.5	60/60/60 from below RISF 60min	WFRA C91571	35	NA	NA	Nil
CD48F	3x16mm Firestop pbd	39.0	120/90/90 from below RISF 90min	WFRA C91571	38	NA	NA	Nil

Spanning Ceiling Systems - C Sections



System **CSP3232F** illustrated

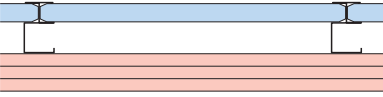
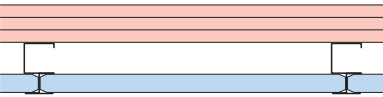
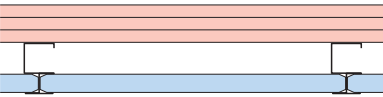
CSP1616F	1x16mm Firestop pbd above 150CS75 @ 600 centres 1x16mm Firestop pbd below	26.0	60/60/60 from above only	FCO-1160	39	44	36	90G11, 90P14
CSP2613F	2x13mm Firestop pbd above 150CS75 @ 600 centres 1x13mm Firestop pbd below	31.5	90/90/90 from above only	FCO-1161	42	50	38	90G11, 90P14
CSP3216F10	2x16mm Firestop pbd above 150CS75 @ 600 centres 1x16mm Firestop pbd below plus 1x10mm Std Core pbd	45.8	120/120/120 from above only	FCO-1162	46	51	44	90G11, 90P14
CSP5016F	2 x Shaft liner above 150CS75 @ 600 centres 1x16mm Firestop pbd below	54.0	180/180/180 from above only	FCO-1213	47	52	45	90G11, 90P14
CSP3232F	2x16mm Firestop pbd above 150CS75 @ 600 centres 2x16mm Firestop pbd below	52.0	60/60/60	FCO-0411	48	51	43	90G11, 90P14
CSP3248F	2x16mm Firestop pbd above 150CS75 @ 600 centres 3x16mm Firestop pbd below	65.0	120/120/120	FCO-0411	47	52	45	90G11, 90P14

• These tables should be read in conjunction with Section A • For explanation of System Reference notation refer Section B1 • For Limiting Spans refer Section C • Acoustic ratings by GHA, Sheet No 104 (refer Section A4)

B | System Index **Selector+ PLASTERBOARD SYSTEMS**

Layout	System Ref	Description	Approx Pbd Mass (kg/m ²)	Fire Resistance		Acoustic Ratings			
				FRL	Basis	Nil Insul	With Insulation		Insulation Type
						R _w	R _w	R _w +C _{tr}	

Spanning Ceiling Systems - Horizontal Shaft Wall

 <p>System CHS48F illustrated</p>	CHS32F	1x25mm Shaftliner within 64CH55 sections @ 600mm ctrs 2x16mm Firestop pbd underneath	46.5	60/60/60	FCO-0672	43	50	38	50G10
		As prev except that 64CH90 used				42	49	38	50G11, 50P14
		As prev except that 102CH55 used				46	52	42	50G11, 50P14
		As prev except that 102CH90 used				45	51	41	50G11, 50P14
 <p>System CHSI48F</p>	CHS48F	1x25mm Shaftliner within 64CH55 sections @ 600mm ctrs 3x16mm Firestop pbd underneath	59.5	120/120/120	FCO-0410 FCO-1658	46	52	40	50G11, 50P14
		As prev except that 64CH90 used				46	51	39	50G11, 50P14
		As prev except that 102CH55 used				49	54	42	50G11, 50P14
		As prev except that 102CH90 used				48	53	41	50G11, 50P14
 <p>System CHSI48F</p>	CHSI48F	1x25mm Shaftliner within inverted 64CH55 sections @ 600mm ctrs 3x16mm Firestop pbd above	59.5	120/120/120	FCO-2212	46	52	40	50G11, 50P14
		As prev except that 64CH90 used				46	51	39	50G11, 50P14
		As prev except that 102CH55 used				49	54	42	50G11, 50P14
		As prev except that 102CH90 used				48	53	41	50G11, 50P14

• These tables should be read in conjunction with Section A • For explanation of System Reference notation refer Section B1 • For Limiting Spans refer Section C • Acoustic ratings by GHA, Sheet No 104 (refer Section A4)

Layout	System Ref	Description	Approx Pbd Mass (kg/m ²)	Fire Resistance		Acoustic Ratings				
				FRL	Basis	Nil Insul	With Insulation		Insulation Type	
						R _w	R _w	R _w +C _{tr}		
Special Ceiling Systems										
 <p>System C105F</p>	C105F	Shaft liner + 16mm Firestop pbd furring 2x16mm Firestop pbd furring 2x16mm Firestop pbd	85.5	180/180/180 from below RISF 180min	FCO-1856	NA	NA	NA	NA	
 <p>System PCS25F</p>	PCS25F	Shaft liner screw fixed to RC soffit	20.5	240/240/240 from below	FCO-1856, FCO-0659R	NA	NA	NA	NA	

• These tables should be read in conjunction with Section A • For explanation of System Reference notation refer Section B1

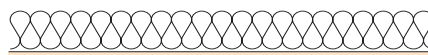
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Layout	System Ref	Description	Approx Pbd Mass (kg/m ²)	Acoustic Ratings				
				Nil Insul		With Insulation		Insulation Type
				R _w	R _w +C _{tr}	R _w	R _w +C _{tr}	

Soil and Waste Pipe Systems

Ceiling or Wall Partition of either;

- Concrete
- Masonry
- Drywall



System **WP13A** illustrated

NOTES:

- Cavity insulation to extend min 1200mm each side of pipe
- Penetrations such as down lights and return air grilles will downgrade the stated acoustic performance (refer Section A4 for estimated acoustic ratings)

WP10	100mm dia unlagged soil/waste pipe adjacent to concrete wall/soffit 1x10mm Std Core pbd	6.8	28	25	30	27	150G14, 150P14
WP10A	100mm dia unlagged soil/waste pipe adjacent to concrete wall/soffit 1x10mm Soundstop pbd	8.2	28	26	30	28	50G14, 50P14
WP13	100mm dia unlagged soil/waste pipe adjacent to concrete wall/soffit 1x13mm Std Core pbd	8.6	28	26	30	28	75G14, 75P14
WP13A	100mm dia unlagged soil/waste pipe adjacent to concrete wall/soffit 1x13mm Soundstop pbd	11.2	30	28	32	30	50G14, 50P14
WP20	100mm dia unlagged soil/waste pipe adjacent to concrete wall/soffit 2x10mm Std Core pbd	13.6	31	28	33	30	50G14, 50P14
WP20A	100mm dia unlagged soil/waste pipe adjacent to concrete wall/soffit 2x10mm Soundstop pbd	16.4	32	29	35	32	75G14, 75P14
WP26	100mm dia unlagged soil/waste pipe adjacent to concrete wall/soffit 2x13mm Std Core pbd	17.2	32	29	35	32	75G14, 75P14
WP26A	100mm dia unlagged soil/waste pipe adjacent to concrete wall/soffit 2x13mm Soundstop pbd	22.4	33	30	36	33	75G14, 75P14
WP39F	100mm dia unlagged soil/waste pipe adjacent to concrete wall/soffit 3x13mm Firestop pbd	31.5	37	34	40	37	75G14, 75P14
WP48F	100mm dia unlagged soil/waste pipe adjacent to concrete wall/soffit 3x16mm Firestop pbd	39.0	38	35	41	38	75G14, 75P14

• These tables should be read in conjunction with Section A • For explanation of System Reference notation refer Section B1 • Acoustic ratings by GHA, Sheet No 104 (refer Section A4)

B | System Index

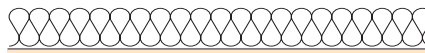
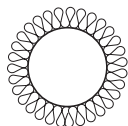
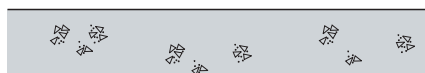
Selector+ PLASTERBOARD SYSTEMS

Layout	System Ref	Description	Approx Pbd Mass (kg/m ²)	Acoustic Ratings				
				Nil Insul		With Insulation		Insulation Type
				R _w	R _w +C _{tr}	R _w	R _w +C _{tr}	

» Soil and Waste Pipe Systems - Lagged

Ceiling or Wall Partition of either;

- Concrete
- Masonry
- Drywall



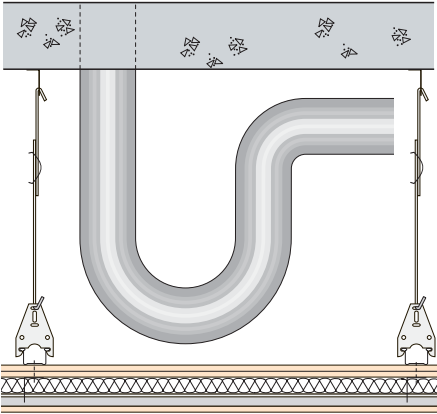
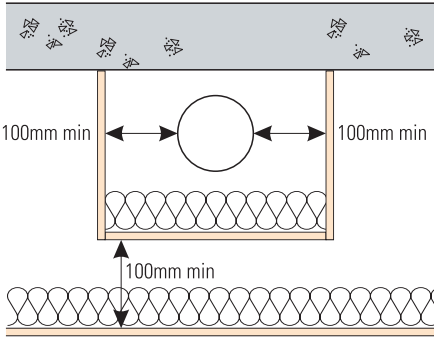
System WPL13A illustrated

NOTES:

- Cavity insulation to extend minimum 1200mm each side of pipe
- PVC pipe lagged & clad with Insulation Solutions™ QuietPipe™ system or equivalent
- Penetrations such as down lights and return air grilles will downgrade the stated acoustic performance (refer Section A4 for estimated acoustic ratings)

WPL10	100mm dia lagged PVC soil/waste pipe adjacent to concrete wall/soffit 1x10mm Std Core pbd	6.8	40	34	42	38	75G14, 75P14
WPL10A	100mm dia lagged PVC soil/waste pipe adjacent to concrete wall/soffit 1x10mm Soundstop pbd	8.2	40	35	42	38	75G14, 75P14
WPL13	100mm dia lagged PVC soil/waste pipe adjacent to concrete wall/soffit 1x13mm Std Core pbd	8.6	40	35	42	38	75G14, 75P14
WPL13A	100mm dia lagged PVC soil/waste pipe adjacent to concrete wall/soffit 1x13mm Soundstop pbd	11.2	41	36	43	40	75G14, 75P14
WPL20	100mm dia lagged PVC soil/waste pipe adjacent to concrete wall/soffit 2x10mm Std Core pbd	13.6	42	37	45	40	75G14, 75P14
WPL20A	100mm dia lagged PVC soil/waste pipe adjacent to concrete wall/soffit 2x10mm Soundstop pbd	16.4	44	39	47	42	75G14, 75P14
WPL26	100mm dia lagged PVC soil/waste pipe adjacent to concrete wall/soffit 2x13mm Std Core pbd	17.2	44	39	47	42	75G14, 75P14
WPL26A	100mm dia lagged PVC soil/waste pipe adjacent to concrete wall/soffit 2x13mm Soundstop pbd	22.4	45	40	48	43	75G14, 75P14
WPL32F	100mm dia lagged PVC soil/waste pipe adjacent to concrete wall/soffit 2x16mm Firestop pbd	26.0	45	40	48	43	75G14, 75P14
WPL39F	100mm dia lagged PVC soil/waste pipe adjacent to concrete wall/soffit 3x13mm Firestop pbd	31.5	47	42	49	44	75G14, 75P14
WPL48F	100mm dia lagged PVC soil/waste pipe adjacent to concrete wall/soffit 3x16mm Firestop pbd	39.0	48	43	51	46	75G14, 75P14

• These tables should be read in conjunction with Section A • For explanation of System Reference notation refer Section B1 • Acoustic ratings by GHA, Sheet No 104 (refer Section A4)

Layout	System Ref	Description	Approx Pbd Mass (kg/m ²)	Acoustic Ratings				
				Nil Insul		With Insulation		Insulation Type
				R _w	R _w +C _{tr}	R _w	R _w +C _{tr}	
<p>» Soil and Waste Pipe Systems</p>								
 <p>System WP2010U</p>	WP2010U	100mm dia unlagged PVC soil/waste pipe adjacent to concrete soffit Primary Ceiling - 2x10mm Unispan pbd Secondary Ceiling - 1x10mm Unispan pbd Insulation between primary and secondary ceilings	21.6	NA	NA	45	35	50G14, 50P14
 <p>System WPB1313 illustrated</p>	WPB1313	100mm dia soil/waste pipe adjacent to concrete wall/soffit boxed three sides with 1x13mm Std Core pbd with insulation within box Room ceiling or wall comprising 1x13mm Std Core pbd lining A ≥ 100mm	NA	NA	NA	45	40	50G20, 50P20
	WPB2626	100mm dia soil/waste pipe adjacent to concrete wall/soffit boxed three sides with 2x13mm Std Core pbd with insulation within box Room ceiling or wall comprising 2x13mm Std Core pbd lining A ≥ 50mm	NA	NA	NA	45	40	50G20, 50P20

• These tables should be read in conjunction with Section A • For explanation of System Reference notation refer Section B1 • Acoustic ratings by GHA, Sheet No 104 (refer Section A4)

B | System Index

Selector+ PLASTERBOARD SYSTEMS

Layout	System Ref	Description	Approx Pbd Mass (kg/m ²)	Acoustic Ratings				
				Nil Insul		With Insulation		Insulation Type
				R _w	R _w +C _{tr}	R _w	R _w +C _{tr}	

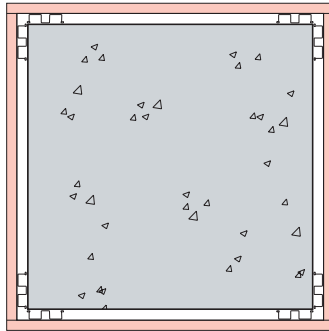
» Soil and Waste Pipe Systems

<p>System SWP1020/WP13A</p>	<p>SWP1020 (to habitable room)</p> <p>100mm dia uninsulated soil/waste pipe adjacent to concrete wall/soffit</p>	NA	NA	NA	45	40	50G14, 50P14
	<p>WP13A (bathroom ceiling)</p> <p>Pipe separated from habitable room with steel stud wall comprising:</p> <ul style="list-style-type: none"> • 1x10mm Std Core pbd lining on habitable side • 64mm steel stud • insulation within cavity wall to extend down to ceiling line • 1x10mm Wet Area Board on bathroom side + additional layer 10mm Std Core pbd on partition wall within pipe cavity • Insulation within pipe cavity 	NA	30	28	32	30	50G14, 50P14
<p>System TWP1020/WP13A</p>	<p>TWP1020 (to habitable room)</p> <p>100mm dia uninsulated soil/waste pipe adjacent to concrete wall/soffit</p>	NA	NA	NA	45	40	50G14, 50P14
	<p>WP13A (bathroom ceiling)</p> <p>Pipe separated from habitable room with timber stud wall comprising:</p> <ul style="list-style-type: none"> • 1x10mm Std Core pbd lining on habitable side • 70mm or 90mm timber stud • Insulation within cavity wall to extend down to ceiling line • 1x10mm Wet Area Board on bathroom side + additional layer 10mm Std Core pbd on partition wall within pipe cavity • Insulation within pipe cavity 	NA	30	28	32	30	50G14, 50P14

• These tables should be read in conjunction with Section A • For explanation of System Reference notation refer Section B1 • Acoustic ratings by GHA, Sheet No 104 (refer Section A4)

Layout	System Ref	Description	Fire Resistance	
			FRL	Basis

Protection - Concrete Columns

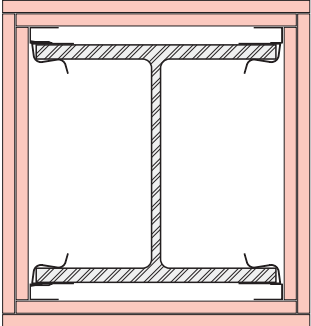
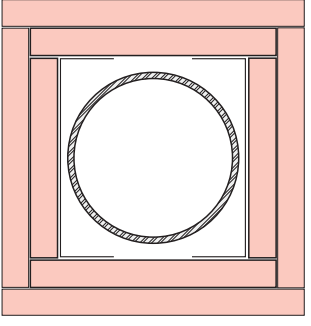
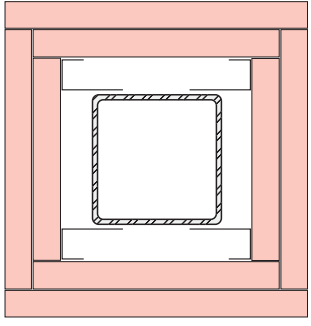
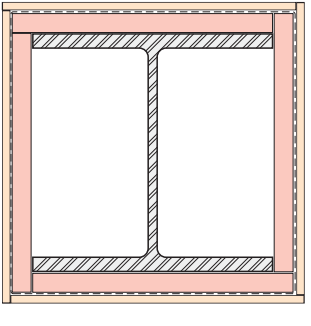


System **PCC13F** illustrated

PCC13F	1x13mm Firestop pbd applied direct or to furring fixed to concrete column	30/-/- increase	FCO-2074
PCC25F	1x25mm Shaftliner applied direct or to furring fixed to concrete column	120/-/- increase	FCO-2074

• These tables should be read in conjunction with Section A • For explanation of System Reference notation refer Section B1

Protection - Steel Columns

Description	Layout	Description	Layout
<p>Detail G</p> <p>Encasement channel or clips and angle to form gap around steel column, line with Firestop pbd as required for stated FRL</p>	 <p>System PSC25F illustrated</p>	<p>Detail I</p> <p>Rondo 32mm flange x 0.75mm BMT track to form gap around circular steel column, line with Firestop pbd as required for stated FRL</p>	 <p>System PSC25F illustrated</p>
<p>Detail H</p> <p>Rondo PN 142 track to form gap around steel SHS/RHS column, line with Firestop pbd as required for stated FRL</p>	 <p>System PSC25F illustrated</p>	<p>Detail J</p> <p>Shaftliner, corner angles and wire ligatures hard against steel column to achieve required FRL</p>	 <p>System PSC25F10 illustrated</p>

Layout	System Ref	Description	Fire Resistance	
			FRL	Basis

» Protection - Steel Columns

Refer details on page B4.6

PSC13F	To detail G With 1x13mm Firestop pbd to periphery and spaced from I section steel column	30/-/-	FCO-1972
	To detail H With 1x13mm Firestop pbd to periphery and spaced from square steel column	30/-/-	FCO-1972
	To detail I With 1x13mm Firestop pbd to periphery and spaced from circular steel column	30/-/-	FCO-1972
PSC25F	To detail G With 2x13mm Firestop pbd or 1x25mm Shaftliner to periphery and spaced from I section steel column	60/-/-	FCO-1972
	To detail H With 2x13mm Firestop pbd or 1x25mm Shaftliner to periphery and spaced from square steel column	60/-/-	FCO-1972
	To detail I With 2x13mm Firestop pbd or 1x25mm Shaftliner to periphery and spaced from circular steel column	60/-/-	FCO-1972
PSC25F10	To detail J 1x25mm Shaftliner + 1x10mm Std Core pbd to periphery and applied directly to I section steel column of ESA/M < 9.45m ² /t	120/-/- increase	FCO-1972 BHP980804 BHP980216 BHP940810

• These tables should be read in conjunction with Section A • For explanation of System Reference notation refer Section B1

B | System Index

Selector+ PLASTERBOARD SYSTEMS

Layout	System Ref	Description	Fire Resistance	
			FRL	Basis

» Protection - Steel Columns

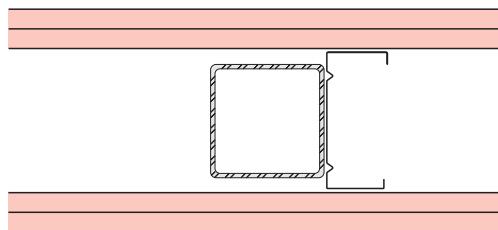
Refer details on page B4.6

Refer details on page B4.6	PSC32F	To detail G With 2x16mm Firestop pbd to periphery and spaced from I section steel column	90/-/-	FCO-1972
		To detail H With 2x16mm Firestop pbd to periphery and spaced from square steel column	90/-/-	FCO-1972
		To detail I With 2x16mm Firestop pbd to periphery and spaced from circular steel column	90/-/-	FCO-1972
	PSC38F	To detail G With 3x13mm Firestop pbd or 1x13mm + 1x25mm Shaftliner to periphery and spaced from I section steel column	120/-/-	FCO-1972
		To detail H With 3x13mm Firestop pbd or 1x13mm + 1x25mm Shaftliner to periphery and spaced from square steel column	120/-/-	FCO-1972
		To detail I With 3x13mm Firestop pbd or 1x13mm + 1x25mm Shaftliner to periphery and spaced from circular steel column	120/-/-	FCO-1972
	PSC50F	To detail J 2x25mm Shaftliner to periphery and applied directly to I section steel column of ESA/M < 45m ² /t	120/-/- increase	FCO-1972 BHP980804 BHP980216 BHP940810
	PSC75F	To detail J 3x25mm Shaftliner to periphery and applied directly to I section steel column of ESA/M < 45m ² /t	180/-/- increase	BHP950915

• These tables should be read in conjunction with Section A • For explanation of System Reference notation refer Section B1

Layout	System Ref	Description	Fire Resistance	
			FRL	Basis

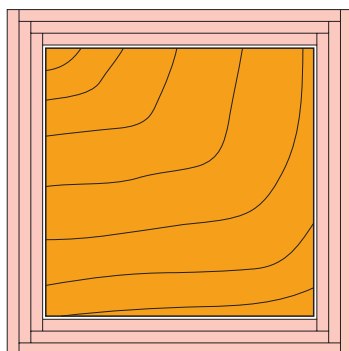
» Protection - Steel Columns



System **PSC2626F** illustrated

PSC1313F	1x13mm Firestop pbd to each side of wall within which steel column is located	30/-/-	FCO-1972
PSC2626F	2x13mm Firestop pbd to each side of wall within which steel column is located	60/-/-	FCO-1972
PSC3232F	2x16mm Firestop pbd to each side of wall within which steel column is located	90/-/-	FCO-1972
PSC3939F	3x13mm Firestop pbd to each side of wall within which steel column is located	120/-/-	FCO-1972

Protection - Timber Columns



System **PTC39** illustrated

PTC13F	1x13mm Firestop pbd directly applied to timber column	30/-/-	91/183
PTC26F	2x13mm Firestop pbd furred or directly applied to timber column	60/-/-	91/169 91/183
PTC39F	3x13mm Firestop pbd directly applied to timber column	90/-/-	91/183
PTC48F	3x16mm Firestop pbd directly applied to timber column	120/-/-	91/183

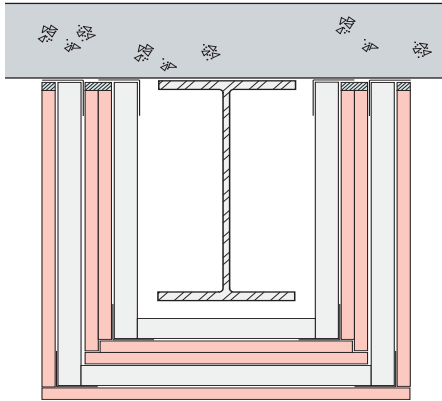
• These tables should be read in conjunction with Section A • For explanation of System Reference notation refer Section B1

B | System Index

Selector+ PLASTERBOARD SYSTEMS

Layout	System Ref	Description	Fire Resistance	
			FRL	Basis

Protection - Steel Beams

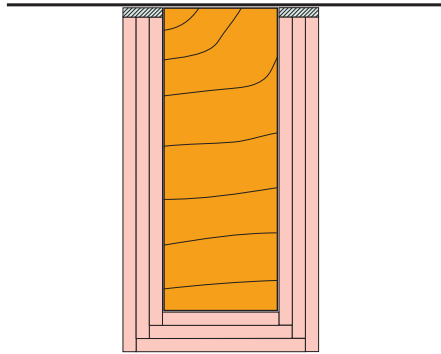
System **PSBC48F** illustrated

PSB16F	1x16mm Firestop pbd over Shaftliner packers to sides and bottom of steel beam of ESA/m < 30m ² /t	30/-/-	BHP930630
PSB38F	3x13mm Firestop pbd or 1x25mm Shaftliner + 1x13mm Firestop pbd spaced from sides and bottom of steel beam	120/-/-	FCO-1972
PSB50F	2x25mm Shaftliner cap to SHS RHS steel beam supporting horizontal Shaft Wall	120/-/-	FCO-0410
PSB3232F	PFC Steel beam within wall clad both sides in 2x16mm Firestop pbd	120/-/-	FSV 0115
PSBC48F	Furring 2x16mm Firestop pbd Furring 1x16mm Firestop pbd spaced from sides and bottom of steel beam supporting concrete floor	120/-/-	FCO-1972
PSBT48F	Ceiling bulkhead or furring 2x16mm Firestop pbd Furring 1x16mm Firestop pbd spaced from sides and bottom of steel beam supporting timber floor	120/-/-	FCO-1972

• These tables should be read in conjunction with Section A • For explanation of System Reference notation refer Section B1

Layout	System Ref	Description	Fire Resistance	
			FRL	Basis

Protection - Timber Beams



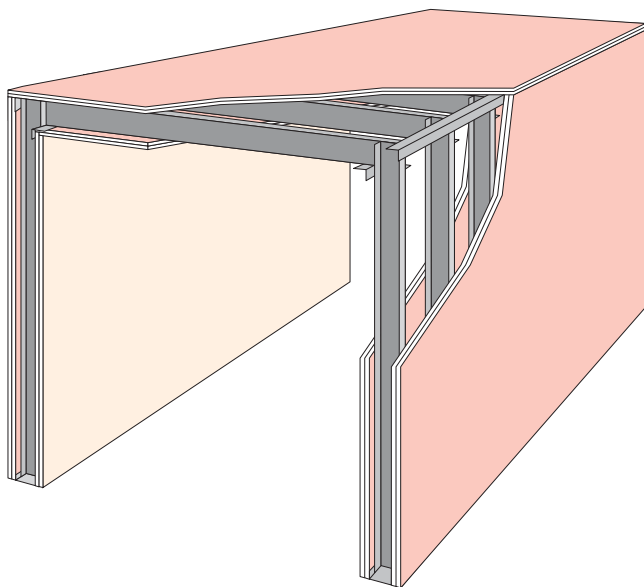
System **PTB39F** illustrated

PTB13F	1x13mm Firestop pbd directly applied to timber beam	30/-/-	93/402
PTB26F	2x13mm Firestop pbd directly applied to timber beam	60/-/-	93/402
PTB39F	3x13mm Firestop pbd directly applied to timber beam	90/-/-	93/402
PTB48F	3x16mm Firestop pbd directly applied to timber beam	120/-/-	93/402

• These tables should be read in conjunction with Section A • For explanation of System Reference notation refer Section B1

Layout	System Ref	Description	Fire Resistance	
			FRL	Basis

Fire Tunnels



System **FTB32F32F** illustrated

FTB32F32F	Welded steel frames ex 150mm Rondo studs, track and corner angles 2x16mm Firestop pbd over ceiling 2x16mm Firestop pbd under ceiling 1x16mm Firestop pbd to both sides of wall frame	-/60/60 from both sides	FCO-0645R FCO-0411R
FTO16F16F	Welded steel frames ex 150mm Rondo studs, track and corner angles 1x16mm Firestop pbd over ceiling 1x16mm Firestop pbd under ceiling 1x16mm Firestop pbd to both sides of wall frame	-/60/60 from outside	FCO-1160
FTO26F13F	Welded steel frames ex 150mm Rondo studs, track and corner angles 2x13mm Firestop pbd over ceiling and outside walls 1x13mm Firestop pbd under and to inner sides of wall frame	-/90/90 from outside	FCO-1161
FTO32F16F10	Welded steel frames ex 150mm Rondo studs, track and corner angles 2x16mm Firestop pbd over ceiling and outside walls 1x16mm Firestop pbd plus 1x10mm Std Core pbd under ceiling and to inner sides of wall frame	-/120/120 from outside	FCO-1162
FTB32F48F	Welded steel frames ex 150mm Rondo studs, track and corner angles 2x16mm Firestop pbd over ceiling 3x16mm Firestop pbd under ceiling 2x16mm Firestop pbd to both sides of wall frame	-/120/120 from both sides	FCO-0645R FCO-0411R
FTO50F16F	Structural support steel frames 2x25mm Firestop pbd over ceiling 1x16mm Firestop pbd under ceiling 2x16 Firestop to both sides of NLB wall frame	-/180/180 from outside	FCO-1213

• These tables should be read in conjunction with Section A • For explanation of System Reference notation refer Section B1

C | Design Tables

C1 | Frameless Wall Systems

C2 | Steel Stud Height Tables

C3 | Timber Stud Charfactor Tables

C4 | Ceiling Span Tables

C5 | Shelf Load Tables



C | Contents

C1 | Frameless Wall Systems

Maximum Panel Sizes - Notes and Table

C1.1

C2 | Steel Stud Height Tables

Non Load Bearing Steel C Studs

General Notes to Tables C2.1

Systems Lined Both Sides C2.1

Systems Lined One Side C2.2

Maximum Wall Heights -
Non Load Bearing Steel C Studs C2.3

Non Load Bearing Steel Shaft Walls

Notes to Tables C2.11

Maximum Wall Heights -
Non Load Bearing Steel Shaft Walls C2.12

Non Load Bearing Steel D-Stud Walls

Notes to Tables C2.13

Non Load Bearing D-Stud Cinema Walls C2.13

Maximum Wall Heights -
Non Load Bearing Steel D-Stud Walls C2.14

C3 | Timber Stud Charfactor Tables

Charfactor Numbers C3.1

Selecting Studs Using Charfactor Tables

Non Load Bearing Walls C3.1

Load Bearing Walls C3.1

General C3.1

Example 1 - Non Load Bearing Walls C3.2

Example 2 - Load Bearing Walls C3.3

Charfactor Table -
Timber Stud Non Load Bearing Walls C3.4

Charfactor Tables -
Timber Stud Load Bearing Walls

Charfactor 11 Table C3.5

Charfactor 14 Table C3.6

Charfactor 15 Table C3.7

Charfactor 18 Table C3.8

Charfactor 21 Table C3.9

Charfactor 22 Table C3.10

C4 | Ceiling Span Tables

Notes to Tables

Horizontal Shaft Wall Ceilings C4.1

Spanning C Section Ceilings C4.1

Spanning D-Span Ceilings C4.1

Horizontal Shaft Wall - Maximum Ceiling Spans C4.2

Spanning Ceilings C4.2

With 150CS75 Joists at 600mm max ctrs C4.2

Maximum Ceiling Spans - Horizontal D-Span C4.3

C5 | Shelf Load Tables

Permissible Shelf Loadings For Steel Stud Walls C5.1

C1 | Frameless Wall Systems

Static pressure testing of Ventshaft™ VS48F and resistance to impact testing to BCA C1.8 was carried out at Boral Plasterboard's NATA registered structures laboratory.

Consulting Engineers Taylor Thomson Whitting observed the static testing and maximum Ventshaft™ VS48F panel sizes were subsequently computed as listed below.

Impact resistance testing on 3000 x 3000mm Ventshaft™ VS48F panel show the panel to meet BCA criteria for bag drop heights of 100mm and 150mm.

Max Non Load Bearing Vent Shaft VS48F Panel Sizes

Maximum Wall Pressure			
0.25kPa		0.35kPa	
Width (mm)	Height (mm)	Width (mm)	Height (mm)
1200	6000	1200	6000
1800	4800	1800	2800
2400	3300	2400	2100
3000	2700	3000	1700

Notes:

- All four edges of the panel must be supported
- Plasterboard layers 1 and 3 to be aligned along long direction of panel, layer 2 across
- Deflection limit is span/240 to a maximum of 30mm
- Wall heights tabled are not for axial loads but include self weight and lateral pressures stated
- Shelf loading is not permitted
- The maximum panel sizes are based on testing performed using Boral Firestop® Plasterboard manufactured by Boral Australian Gypsum Ltd
- Construction to be as detailed in the relevant report
- Deflection heads to be designed and used as required
- Panel size of up to 3000mm x 3000mm have been fire tested at pressures of 50Pa however the panel size will in most cases be limited by cold structural considerations.

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C2 | Steel Stud Height Tables

Non Load Bearing Steel C Studs

General Notes to Tables

Symbols:

- s = permissible strength limits
- d = deflection limits
- h = head track capacity limits
- f = fire height limits
- sl = slenderness ratio limits

- Where 2d appears, deflection limits the design and 2 rows of equally spaced noggings are required. Similarly 2s means strength controls the design and 2 rows of equally spaced noggings are required
- At least one mid height row of nogging is required on all walls 3600mm and higher, additional rows of nogging may be included in the wall frame to maintain stability during construction
- Minimum yield stress of steel sections to be 270MPa
- Deflection limit is height/240 to a maximum of 30mm
- Maximum slenderness ratio $l/r = 300$
- Wall heights tabled are for single piece Rondo Australian manufactured lipped C studs at maximum centres shown
- Wall heights tabled are not for axial loads but include self weight and lateral pressures stated
- Shelf loading is not permitted for the tabulated maximum wall heights. Refer Boral Plasterboard for maximum heights with shelf loadings
- Tabulated heights are for internal walls only. Refer to Boral Plasterboard if walls are subject to external loadings
- For fire service, 50Pa pressure assumed. Where pressures are greater than 50Pa and fire loadings are likely to be coincident, Boral Plasterboard should be consulted
- All plasterboard is to be manufactured by Boral Plasterboard in Australia
- Walls are to be constructed with 13mm or 16mm Boral FireSTOP™, or, Wet Area Firestop™ or 10mm or 13mm Boral Standard Core plasterboard as required by fire rating and detailing
- Walls are to be constructed to Boral Plasterboard standard C Stud fire rated or screw-fixed non fire rated wall details as appropriate but with 300mm maximum screw centres.

Systems Lined Both Sides

- Wall heights tabled are calculated using standard head track reaction capacity as follows:

Standard Head Track Reaction Capacity (Kn)

Track BMT (mm)	Plasterboard					
	1 x 10	1 x 13	1 x 16	2 x 10	2 x 13	2 x 16
0.55	0.40	0.60	0.90	0.40	0.60	0.90
0.75	0.40	0.60	0.90	0.40	0.60	0.90
1.15	0.40	0.60	0.90	0.40	0.60	0.90

Notes:

- 10mm max clearance at top of stud, board
- Wall head to Rondo detail TDS/03-103 dated 20th May 1998.
- The tabulated heights have not been checked for a deflection head track installation and the appropriate configuration must be selected for the allowable head track reaction tabulated below
- Where greater deflection capacity is required, 20mm deflection heads may be used with allowable head track reaction capacities as follows:

Deflection Head Track Reaction Capacity (Kn)

Track BMT (mm)	Plasterboard					
	1 x 10	1 x 13	1 x 16	2 x 10	2 x 13	2 x 16
0.75	0.40	0.44	0.44	0.40	0.44	0.44
1.15	0.40	0.60	0.90	0.40	1.03	1.03

Notes:

- 20mm max clearance at top of stud, board
- Wall head to Rondo detail TDS/03-107 dated 20th May 1998
- UNO stud BMT = track BMT.
- Alternative head track installations must be checked in accordance with Rondo head track capacity tables
- The allowable head track reactions noted above, rely on the plasterboard for restraint and must be installed strictly in accordance with Rondo details

» Non Load Bearing Steel C Studs

- Alternatively - select connections from Rondo tables TDS/03-101 for standard track and TDS/03-105 for deflection head
- Plasterboard to be fixed to both sides of the wall frame to the full nominal height of the wall exclusive of any allowance for soffit deflection.
- The noggling track requirements may be omitted if the linings stop within 100mm from the soffit
- Detailed seismic analysis requires site/building specific parameters and has not been performed, however, tabulated wall heights comply with AS 1170.4 clause 5.2.1, category 3, provided that:
 - the walls have been designed for 0.25kPa pressure (minimum)
 - the walls including attachments have a total mass (Gc) not exceeding 100kg/m²
 - acceleration a ≤ 0.08
 - Site Factor S ≤ 2.0
 - ax ≤ 2.0
 - ac ≤ 1.0
 - Cc1 ≤ 0.9
 - I = 1.0

Systems Lined One Side

Wall Head/Base Design

Wall Construction	Clearance	Reaction Capacity
Twin stud, Head track	10mm max clearance at top of stud, board	Reaction capacity, refer to Rondo TDS/03-102
	20mm max clearance at top of stud, board	Reaction capacity, refer to Rondo TDS/03-106
Twin stud, Base track	(Studs hard down into track)	Reaction capacity, refer to Rondo TDS/03-108
Staggered Stud	30mm max clearance at top of stud, board	Reaction capacity at head and base: 0.47kN

Notes for staggered stud only:

- Top Hat track to Boral Plasterboard detail 209710-A
- min 13mm plasterboard.

For other reaction capacities refer Rondo or Boral Plasterboard.

Nogged wall frames with board to one side only ie, twin stud walls require one row of noggings/nogging track 100mm max below soffit and other noggling as below:

Noggings

Wall height	Rows of Noggings
Up to 3000mm	One row noggings/nogging track at mid height
3000mm to 6000mm	Two rows noggings/nogging track at third points of height
6000mm to 8000mm	Three rows noggings/nogging track at quarter points of height

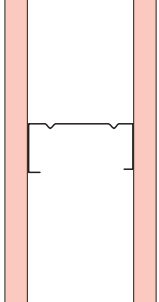
Maximum Wall Heights - Non Load Bearing Steel C Studs

Lined Both Sides

Maximum Wall Pressure: **0.25kPa**

Maximum Stud Centres: **600mm**

Noggings Optional

Lining Side 1 (no of layers x thickness in mm)	1x10	1x13		1x13		1x16			2x10	2x13		2x16					
Lining Side 2 (no of layers x thickness in mm)	1x10	1x13		2x13		1x16			2x10	2x13		2x16					
Layout	FRL	Nil	Nil	-/30/30	-/60/60	Nil	-/90/90	Nil	-/60/60	-/90/90	Nil	Nil	-/90/90	-/120/120	Nil	-/120/120	-/180/180
	Stud	Wall Heights (mm)															
 <p>Board to each side of single stud System S1616F illustrated</p>	51CS50	2770 d	3200 d	3200 d	3200 d	3200 d	2900 f	3390 d	3390 d	3390 d	2770 d	3200 d	3200 d	2600 f	3390 d	3390 d	1900 f
	64CS50	3330 d	3720 d	3720 d	3720 d	3720 d	3500 f	3910 d	3910 d	3910 d	3330 d	3720 d	3720 d	3100 f	3910 d	3910 d	2300 f
	64CS75	3930 d	4220 d	4220 d	4220 d	4220 d	3900 f	4350 d	4350 d	4350 d	3930 d	4220 d	4220 d	3500 f	4350 d	4350 d	2700 f
	64CS115	4170 d	4430 d	4430 d	4430 d	4430 d	4300 f	4520 d	4520 d	4520 d	4170 d	4430 d	4430 d	3900 f	4520 d	4520 d	3000 f
	76CS55	3700 d	4130 d	4130 d	4130 d	4130 d	4100 f	4300 d	4300 d	4300 d	3700 d	4130 d	4130 d	3700 f	4300 d	4300 d	2700 f
	76CS75	4430 d	5020 d	5020 d	5020 d	5020 d	4500 f	5260 d	5260 d	5200 f	4430 d	5020 d	5020 d	4000 f	5260 d	5260 d	3000 f
	76CS115	4650 d	5220 d	5220 d	5220 d	5220 d	5000 f	5420 d	5420 d	5420 d	4650 d	5220 d	5220 d	4500 f	5420 d	5420 d	3500 f
	92CS55	4540 d	4940 d	4940 d	4940 d	4940 d	4940 d	5180 d	5180 d	5180 d	4540 d	4940 d	4940 d	4600 f	5180 d	5180 d	3500 f
	92CS75	4830 d	5500 d	5500 d	5500 d	5500 d	5200 f	5710 d	5710 d	5710 d	4830 d	5500 d	5500 d	4700 f	5710 d	5710 d	3500 f
	92CS115	5110 d	5750 d	5750 d	5750 d	5750 d	5750 d	5930 d	5930 d	5930 d	5110 d	5750 d	5750 d	5200 f	5930 d	5930 d	4000 f
150CS75	5330 h	6990 2d	6990 2d	6990 2d	6990 2d	6990 2d	7190 2d	7190 2d	7190 2d	5330 h	6990 2d	6990 2d	6700 f	7190 2d	7190 2d	5000 f	
150CS115	5330 h	7520 2d	7520 2d	7520 2d	7520 2d	7520 2d	7630 2d	7630 2d	7630 2d	5330 h	7520 2d	7520 2d	7520 2d	7630 2d	7630 2d	5900 f	

• These tables should be read in conjunction with Sections A5, A6 & A8 & notes on pgs C2.1 & C2.2 • For stud designations refer Section A1

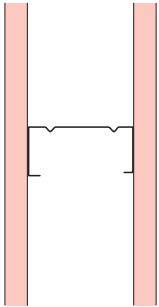
Maximum Wall Heights - Non Load Bearing Steel C Studs

Lined Both Sides

Maximum Wall Pressure: 0.25kPa

Maximum Stud Centres: 400mm

Noggings Optional

Lining Side 1 (no of layers x thickness in mm)	1x10	1x13		1x13		1x16			2x10	2x13		2x16					
Lining Side 2 (no of layers x thickness in mm)	1x10	1x13		2x13		1x16			2x10	2x13		2x16					
Layout	FRL	Nil	Nil	-/30/30	-/60/60	Nil	-/90/90	Nil	-/60/60	-/90/90	Nil	Nil	-/90/90	-/120/120	Nil	-/120/120	-/180/180
	Stud	Wall Heights (mm)															
 <p>Board to each side of single stud System S1616F illustrated</p>	51CS50	3130 d	3510 d	3510 d	3500 f	3510 d	2900 f	3620 d	3620 d	3400 f	3130 d	3510 d	3510 d	2600 f	3620 d	3620 d	1900 f
	64CS50	3690 d	4020 d	4020 d	4020 d	4020 d	3500 f	4220 d	4220 d	4100 f	3690 d	4020 d	4020 d	3100 f	4220 d	4220 d	2300 f
	64CS75	4280 d	4530 d	4530 d	4530 d	4530 d	3900 f	4710 d	4710 d	4500 f	4280 d	4530 d	4530 d	3500 f	4710 d	4710 d	2700 f
	64CS115	4590 d	4810 d	4810 d	4810 d	4810 d	4300 f	4950 d	4950 d	4950 d	4590 d	4810 d	4810 d	3900 f	4950 d	4950 d	3000 f
	76CS55	4160 d	4530 d	4530 d	4530 d	4530 d	4100 f	4700 d	4700 d	4700 d	4160 d	4530 d	4530 d	3700 f	4700 d	4700 d	2700 f
	76CS75	4930 d	5450 d	5450 d	5300 f	5450 d	4500 f	5710 d	5710 d	5200 f	4930 d	5450 d	5450 d	4000 f	5710 d	5710 d	3000 f
	76CS115	5240 d	5720 d	5720 d	5720 d	5720 d	5000 f	5950 d	5950 d	5800 f	5240 d	5720 d	5720 d	4500 f	5950 d	5950 d	3500 f
	92CS55	4990 d	5330 d	5330 d	5330 d	5330 d	5100 f	5560 d	5560 d	5560 d	4990 d	5330 d	5330 d	4600 f	5560 d	5560 d	3500 f
	92CS75	5460 d	6050 d	6050 d	6050 d	6050 d	5200 f	6280 d	6280 d	6100 f	5460 d	6050 d	6050 d	4700 f	6280 d	6280 d	3500 f
	92CS115	5840 d	6380 d	6380 d	6380 d	6380 d	5800 f	6580 d	6580 d	6580 d	5840 d	6380 d	6380 d	5200 f	6580 d	6580 d	4000 f
150CS75	7340 2d	7610 2d	7610 2d	7610 2d	7610 2d	7500 f	7750 2d	7750 2d	7750 2d	7340 2d	7610 2d	7610 2d	6700 f	7750 2d	7750 2d	5000 f	
150CS115	7970 2h	8190 2d	8190 2d	8190 2d	8190 2d	8190 2d	8190 2d	8300 2d	8300 2d	8300 2d	7970 2h	8190 2d	8190 2d	7700 f	8300 2d	8300 2d	5900 f

• These tables should be read in conjunction with Sections A5, A6 & A8 & notes on pgs C2.1 & C2.2 • For stud designations refer Section A1

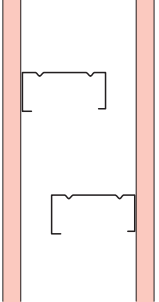
Maximum Wall Heights - Non Load Bearing Steel C Studs

Lined One Side (Includes staggered stud wall systems)

Maximum Wall Pressure: **0.25kPa**

Maximum Stud Centres: **600mm**

Not Nogged

Lining Side 1 (no of layers x thickness in mm)	1x10	1x13				1x13	1x16			2x10	2x13			2x16					
Lining Side 2 (no of layers x thickness in mm)	1x10	1x13				2x13		1x16			2x10	2x13			2x16				
Layout	FRL	Nil	Nil	-/30/30	-/60/60	Nil	-/90/90	Nil	-/60/60	-/90/90	Nil	Nil	-/90/90	-/120/120	Nil	-/120/120	-/180/180		
	Stud	Wall Heights (mm)																	
 <p>Board to single side of single stud System SS1616F illustrated</p>	51CS50	2320 d	2320 d	2320 d	2320 d	2320 d	NA	2320 d	2320 d	2320 d	2320 d	2320 d	2320 d	2320 d	2320 d	2320 d	2320 d	1900 f	
	64CS50	2375 s	2375 s	2375 s	2375 s	2375 s	NA	2375 s	2375 s	2375 s	2375 s	2375 s	2375 s	2375 s	2375 s	2375 s	2375 s	2300 f	
	64CS75	2830 s	2830 s	2830 s	2830 s	2830 s	NA	2830 s	2830 s	2830 s	2830 s	2830 s	2830 s	2830 s	2830 s	2830 s	2830 s	2700 f	
	64CS115	3510 s	3510 s	3510 s	3510 s	3510 s	NA	3510 s	3510 s	3510 s	3510 s	3510 s	3510 s	3510 s	3510 s	3510 s	3510 s	3000 f	
	76CS55	2610 s	2610 s	2610 s	2610 s	2610 s	NA	2610 s	2610 s	2610 s	2610 s	2610 s	2610 s	2610 s	2610 s	2610 s	2610 s	2610 s	2610 s
	76CS75	3000 s	3000 s	3000 s	3000 s	3000 s	NA	3000 s	3000 s	3000 s	3000 s	3000 s	3000 s	3000 s	3000 s	3000 s	3000 s	3000 s	3000 f
	76CS115	3600 s	3600 s	3600 s	3600 s	3600 s	NA	3600 s	3600 s	3600 s	3600 s	3600 s	3600 s	3600 s	3600 s	3600 s	3600 s	3600 s	3500 f
	92CS55	2740 s	2740 s	2740 s	2740 s	2740 s	NA	2740 s	2740 s	2740 s	2740 s	2740 s	2740 s	2740 s	2740 s	2740 s	2740 s	2740 s	2740 s
	92CS75	3190 s	3190 s	3190 s	3190 s	3190 s	NA	3190 s	3190 s	3190 s	3190 s	3190 s	3190 s	3190 s	3190 s	3190 s	3190 s	3190 s	3190 s
	92CS115	3750 s	3750 s	3750 s	3750 s	3750 s	NA	3750 s	3750 s	3750 s	3750 s	3750 s	3750 s	3750 s	3750 s	3750 s	3750 s	3750 s	3750 s
	150CS75	3660 s	3660 s	3660 s	3660 s	3660 s	NA	3660 s	3660 s	3660 s	3660 s	3660 s	3660 s	3660 s	3660 s	3660 s	3660 s	3660 s	3660 s
	150CS115	4150 s	4150 s	4150 s	4150 s	4150 s	NA	4150 s	4150 s	4150 s	4150 s	4150 s	4150 s	4150 s	4150 s	4150 s	4150 s	4150 s	4150 s

• These tables should be read in conjunction with Sections A5, A6 & A8 & notes on pgs C2.1 & C2.2 • For stud designations refer Section A1

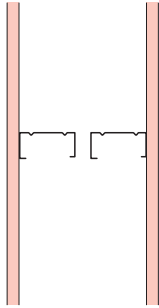
Maximum Wall Heights - Non Load Bearing Steel C Studs

Lined One Side (Includes twin stud wall systems)

Maximum Wall Pressure: 0.25kPa

Maximum Stud Centres: 600mm

Nogged

Lining Side 1 (no of layers x thickness in mm)	1x10	1x13		1x13		1x16			2x10	2x13		2x16					
Lining Side 2 (no of layers x thickness in mm)	1x10	1x13		2x13		1x16			2x10	2x13		2x16					
Layout	FRL	Nil	Nil	-/30/30	-/60/60	Nil	-/90/90	Nil	-/60/60	-/90/90	Nil	Nil	-/90/90	-/120/120	Nil	-/120/120	-/180/180
	Stud	Wall Heights (mm)															
 <p>Board to single side of single stud System ST1616F illustrated</p>	51CS50	2320 d	2320 d	2320 d	2320 d	2320 d	NA	2320 d	2320 d	2320 d	2320 d	2320 d	2320 d	2320 d	2320 d	2320 d	1900 f
	64CS50	2720 d	2720 d	2720 d	2720 d	2720 d	NA	2750 s	2750 s	2750 s	2720 d	2720 d	2720 d	2720 d	2750 d	2750 d	2300 f
	64CS75	3130 d	3250 d	3250 d	3250 d	3250 d	NA	3280 d	3280 d	3280 d	3130 d	3250 d	3250 d	3250 d	3280 d	3280 d	2700 f
	64CS115	3530 d	3580 d	3580 d	3580 d	3580 d	NA	3590 d	3590 d	3590 d	3530 d	3580 d	3580 d	3580 d	3590 d	3590 d	3000 f
	76CS55	3200 2d	3240 2d	3240 2d	3240 2d	3240 2d	NA	3250 2d	3250 2d	3250 2d	3200 2d	3240 2d	3240 2d	3240 2d	3250 2d	3250 2d	2700 f
	76CS75	3580 2d	3820 2d	3820 2d	3820 2d	3820 2d	NA	3870 2d	3870 2d	3870 2d	3580 2d	3820 2d	3820 2d	3820 2d	3870 2d	3870 2d	3000 f
	76CS115	4050 2d	4050 2d	4050 2d	4050 2d	4050 2d	NA	4050 2d	4050 2d	4050 2d	4050 2d	4050 2d	4050 2d	4050 2d	4050 2d	4050 2d	3500 f
	92CS55	3610 2s	3610 2s	3610 2s	3610 2s	3610 2s	NA	3610 2s	3610 2s	3610 2s	3610 2s	3610 2s	3610 2s	3610 2s	3610 2s	3610 2s	3500 f
	92CS75	4130 2d	4180 2d	4180 2d	4180 2d	4180 2d	NA	4200 2d	4200 2d	4200 2d	4130 2d	4180 2d	4180 2d	4180 2d	4200 2d	4200 2d	3500 f
	92CS115	4690 2d	4690 2d	4690 2d	4690 2d	4690 2d	NA	4690 2d	4690 2d	4690 2d	4690 2d	4690 2d	4690 2d	4690 2d	4690 2d	4690 2d	4000 f
150CS75	5330 2h	5370 2s	5370 2s	5370 2s	5370 2s	NA	5370 2s	5370 2s	5370 2s	5330 2h	5370 2s	5370 2s	5370 2s	5370 2s	5370 2s	5000 f	
150CS115	5330 2h	6810 3s	6810 3s	6810 3s	6810 3s	NA	6810 3s	6810 3s	6810 3s	5330 2h	6810 3s	6810 3s	6810 3s	6810 3s	6810 3s	5900 f	

• These tables should be read in conjunction with Sections A5, A6 & A8 & notes on pgs C2.1 & C2.2 • For stud designations refer Section A1

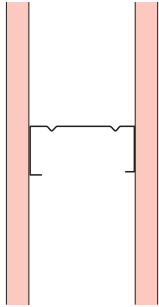
Maximum Wall Heights - Non Load Bearing Steel C Studs

Lined Both Sides

Maximum Wall Pressure: **0.35kPa**

Maximum Stud Centres: **600mm**

Noggings Optional

Lining Side 1 (no of layers x thickness in mm)		1x10	1x13		1x13		1x16			2x10	2x13		2x16				
Lining Side 2 (no of layers x thickness in mm)		1x10	1x13		2x13		1x16			2x10	2x13		2x16				
Layout	FRL	Nil	Nil	-/30/30	-/60/60	Nil	-/90/90	Nil	-/60/60	-/90/90	Nil	Nil	-/90/90	-/120/120	Nil	-/120/120	-/180/180
	Stud	Wall Heights (mm)															
 <p>Board to each side of single stud System S1616F illustrated</p>	51CS50	2420 d	2810 d	2810 d	2810 d	2810 d	2810 d	3000 d	3000 d	3000 d	2420 d	2810 d	2810 d	2600 f	3000 d	3000 d	1900 f
	64CS50	2930 d	3290 d	3290 d	3290 d	3290 d	3290 d	3450 d	3450 d	3450 d	2930 d	3290 d	3290 d	3100 f	3450 d	3450 d	2300 f
	64CS75	3490 d	3750 d	3750 d	3750 d	3750 d	3750 d	3840 d	3840 d	3840 d	3490 d	3750 d	3750 d	3500 f	3840 d	3840 d	2700 f
	64CS115	3700 d	3940 d	3940 d	3940 d	3940 d	3940 d	3990 d	3990 d	3990 d	3700 d	3940 d	3940 d	3900 f	3990 d	3990 d	3000 f
	76CS55	3250 d	3650 d	3650 d	3650 d	3650 d	3650 d	3780 d	3780 d	3780 d	3250 d	3650 d	3650 d	3650 d	3780 d	3780 d	2700 f
	76CS75	3810 h	4430 d	4430 d	4430 d	4430 d	4430 d	4620 d	4620 d	4620 d	3810 h	4430 d	4430 d	4000 f	4620 d	4620 d	3000 f
	76CS115	3810 h	4600 d	4600 d	4600 d	4600 d	4600 d	4770 d	4770 d	4770 d	3810 h	4600 d	4600 d	4500 f	4770 d	4770 d	3500 f
	92CS55	3810 h	4390 d	4390 d	4390 d	4390 d	4390 d	4600 d	4600 d	4600 d	3810 h	4390 d	4390 d	4390 d	4600 d	4600 d	3500 f
	92CS75	3810 h	4840 d	4840 d	4840 d	4840 d	4840 d	5010 d	5010 d	5010 d	3810 h	4840 d	4840 d	4700 f	5010 d	5010 d	3500 f
	92CS115	3810 h	5060 d	5060 d	5060 d	5060 d	5060 d	5200 d	5200 d	5200 d	3810 h	5060 d	5060 d	5060 d	5200 d	5200 d	4000 f
	150CS75	3810 h	5710 h	5710 h	5710 h	5710 h	5710 h	6370 d	6370 d	6370 d	3810 h	5710 h	5710 h	5710 h	6370 d	6370 d	5000 f
	150CS115	3810 h	5710 h	5710 h	5710 h	5710 h	5710 h	6890 2d	6890 2d	6890 2d	3810 h	5710 h	5710 h	5710 h	6890 2d	6890 2d	5900 f

• These tables should be read in conjunction with Sections A5, A6 & A8 & notes on pgs C2.1 & C2.2 • For stud designations refer Section A1

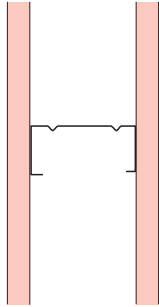
Maximum Wall Heights - Non Load Bearing Steel C Studs

Lined Both Sides

Maximum Wall Pressure: 0.35kPa

Maximum Stud Centres: 400mm

Noggings Optional

Lining Side 1 (no of layers x thickness in mm)	1x10	1x13			1x13		1x16			2x10	2x13		2x16				
Lining Side 2 (no of layers x thickness in mm)	1x10	1x13			2x13		1x16			2x10	2x13		2x16				
	FRL	Nil	Nil	-/30/30	-/60/60	Nil	-/90/90	Nil	-/60/60	-/90/90	Nil	Nil	-/90/90	-/120/120	Nil	-/120/120	-/180/180
Layout	Stud	Wall Heights (mm)															
 <p>Board to each side of single stud System S1616F illustrated</p>	51CS50	2750 d	3100 d	3100 d	3100 d	3100 d	2900 f	3210 d	3210 d	3210 d	2750 d	3100 d	3100 d	2600 f	3210 d	3210 d	1900 f
	64CS50	3260 d	3570 d	3570 d	3570 d	3570 d	3500 f	3740 d	3740 d	3740 d	3260 d	3570 d	3570 d	3100 f	3740 d	3740 d	2300 f
	64CS75	3810 d	4030 d	4030 d	4030 d	4030 d	4030 d	4170 d	4170 d	4170 d	3810 d	4030 d	4030 d	3500 f	4170 d	4170 d	2700 f
	64CS115	4090 d	4280 d	4280 d	4280 d	4280 d	4280 d	4390 d	4390 d	4390 d	4090 d	4280 d	4280 d	3900 f	4390 d	4390 d	3000 f
	76CS55	3680 d	4010 d	4010 d	4010 d	4010 d	4010 d	4160 d	4160 d	4160 d	3680 d	4010 d	4010 d	3700 f	4160 d	4160 d	2700 f
	76CS75	4350 d	4830 d	4830 d	4830 d	4830 d	4500 f	5050 d	5050 d	5050 d	4350 d	4830 d	4830 d	4000 f	5050 d	5050 d	3000 f
	76CS115	4630 d	5070 d	5070 d	5070 d	5070 d	5000 f	5260 d	5260 d	5260 d	4630 d	5070 d	5070 d	4500 f	5260 d	5260 d	3500 f
	92CS55	4430 d	4740 d	4740 d	4740 d	4740 d	4740 d	4950 d	4950 d	4950 d	4430 d	4740 d	4740 d	4600 f	4950 d	4950 d	3500 f
	92CS75	4810 d	5350 d	5350 d	5350 d	5350 d	5200 f	5540 d	5540 d	5540 d	4810 d	5350 d	5350 d	4700 f	5540 d	5540 d	3500 f
	92CS115	5150 d	5650 d	5650 d	5650 d	5650 d	5650 d	5810 d	5810 d	5810 d	5150 d	5650 d	5650 d	5200 f	5810 d	5810 d	4000 f
150CS75	5710 h	6890 2d	6890 2d	6890 2d	6890 2d	6890 2d	7050 2d	7050 2d	7050 2d	5710 h	6890 2d	6890 2d	6700 f	7050 2d	7050 2d	5000 f	
150CS115	5710 h	7500 2d	7500 2d	7500 2d	7500 2d	7500 2d	7590 2d	7590 2d	7590 2d	5710 h	7500 2d	7500 2d	7500 2d	7590 2d	7590 2d	5900 f	

• These tables should be read in conjunction with Sections A5, A6 & A8 & notes on pgs C2.1 & C2.2 • For stud designations refer Section A1

Maximum Wall Heights - Non Load Bearing Steel C Studs

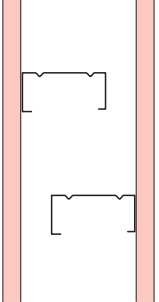
Lined One Side (Includes staggered stud wall systems)

0.35kPa Serviceability Limit State Load, 0.53kPa Ultimate Limit State Load.

Maximum Wall Pressure: **0.35kPa**

Maximum Stud Centres: **600mm**

Not Nogged

Lining Side 1 (no of layers x thickness in mm)	1x10	1x13				1x13		1x16			2x10	2x13			2x16		
Lining Side 2 (no of layers x thickness in mm)	1x10	1x13				2x13		1x16			2x10	2x13			2x16		
Layout	FRL	Nil	Nil	-/30/30	-/60/60	Nil	-/90/90	Nil	-/60/60	-/90/90	Nil	Nil	-/90/90	-/120/120	Nil	-/120/120	-/180/180
	Stud	Wall Heights (mm)															
 <p>Board to single side of single stud System SS1616F illustrated</p>	51CS50	2070 d	2070 d	2070 d	2070 d	2070 d	NA	2070 d	2070 d	2070 d	2070 d	2070 d	2070 d	2070 d	2070 d	2070 d	1900 f
	64CS50	2140 s	2140 s	2140 s	2140 s	2140 s	NA	2140 s	2140 s	2140 s	2140 s	2140 s	2140 s	2140 s	2140 s	2140 s	2140 s
	64CS75	2590 s	2590 s	2590 s	2590 s	2590 s	NA	2590 s	2590 s	2590 s	2590 s	2590 s	2590 s	2590 s	2590 s	2590 s	2590 s
	64CS115	3160 s	3160 s	3160 s	3160 s	3160 s	NA	3160 s	3160 s	3160 s	3160 s	3160 s	3160 s	3160 s	3160 s	3160 s	3000 f
	76CS55	2350 s	2350 s	2350 s	2350 s	2350 s	NA	2350 s	2350 s	2350 s	2350 s	2350 s	2350 s	2350 s	2350 s	2350 s	2350 s
	76CS75	2740 s	2740 s	2740 s	2740 s	2740 s	NA	2740 s	2740 s	2740 s	2740 s	2740 s	2740 s	2740 s	2740 s	2740 s	2740 s
	76CS115	3270 s	3270 s	3270 s	3270 s	3270 s	NA	3270 s	3270 s	3270 s	3270 s	3270 s	3270 s	3270 s	3270 s	3270 s	3270 s
	92CS55	2510 s	2510 s	2510 s	2510 s	2510 s	NA	2510 s	2510 s	2510 s	2510 s	2510 s	2510 s	2510 s	2510 s	2510 s	2510 s
	92CS75	2920 s	2920 s	2920 s	2920 s	2920 s	NA	2920 s	2920 s	2920 s	2920 s	2920 s	2920 s	2920 s	2920 s	2920 s	2920 s
	92CS115	3400 s	3400 s	3400 s	3400 s	3400 s	NA	3400 s	3400 s	3400 s	3400 s	3400 s	3400 s	3400 s	3400 s	3400 s	3400 s
150CS75	3350 s	3350 s	3350 s	3350 s	3350 s	NA	3350 s	3350 s	3350 s	3350 s	3350 s	3350 s	3350 s	3350 s	3350 s	3350 s	
150CS115	3800 s	3800 s	3800 s	3800 s	3800 s	NA	3800 s	3800 s	3800 s	3800 s	3800 s	3800 s	3800 s	3800 s	3800 s	3800 s	

• These tables should be read in conjunction with Sections A5, A6 & A8 & notes on pgs C2.1 & C2.2 • For stud designations refer Section A1

Maximum Wall Heights - Non Load Bearing Steel C Studs

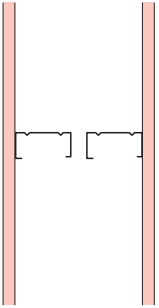
Lined One Side (Includes twin stud wall systems)

0.35kPa Serviceability Limit State Load, 0.53kPa Ultimate Limit State Load.

Maximum Wall Pressure: **0.35kPa**

Maximum Stud Centres: **600mm**

Nogged

Lining Side 1 (no of layers x thickness in mm)	1x10		1x13		1x13		1x16			2x10		2x13		2x16			
	1x10		1x13		2x13		1x16			2x10		2x13		2x16			
Lining Side 2 (no of layers x thickness in mm)	FRL	Nil	Nil	-/30/30	-/60/60	Nil	-/90/90	Nil	-/60/60	-/90/90	Nil	Nil	-/90/90	-/120/120	Nil	-/120/120	-/180/180
Layout	Stud	Wall Heights (mm)															
 <p>Board to single side of single stud System ST1616F illustrated</p>	51CS50	2070 d	2070 d	2070 d	2070 d	2070 d	NA	2070 d	2070 d	2070 d	2070 d	2070 d	2070 d	2070 d	2070 d	2070 d	1900 f
	64CS50	2340 s	2340 s	2340 s	2340 s	2340 s	NA	2340 s	2340 s	2340 s	2340 s	2340 s	2340 s	2340 s	2340 s	2340 s	2300 f
	64CS75	2800 d	2800 d	2800 d	2800 d	2800 d	NA	2900 d	2900 d	2900 d	2800 d	2800 d	2800 d	2800 d	2900 d	2900 d	2700 f
	64CS115	3150 d	3170 d	3170 d	3170 d	3170 d	NA	3180 d	3180 d	3180 d	3150 d	3170 d	3170 d	3170 d	3180 d	3180 d	3000 f
	76CS55	2760 s	2760 s	2760 s	2760 s	2760 s	NA	2760 s	2760 s	2760 s	2760 s	2760 s	2760 s	2760 s	2760 s	2760 s	2700 f
	76CS75	3200 d	3370 2d	3370 2d	3370 2d	3370 2d	NA	3410 2d	3410 2d	3410 2d	3200 d	3370 2d	3370 2d	3370 2d	3410 2d	3410 2d	3000 f
	76CS115	3620 2d	3620 2d	3620 2d	3620 2d	3620 2d	NA	3620 2d	3620 2d	3620 2d	3620 2d	3620 2d	3620 2d	3620 2d	3620 2d	3620 2d	3500 f
	92CS55	3060 2s	3060 2s	3060 2s	3060 2s	3060 2s	NA	3060 2s	3060 2s	3060 2s	3060 2s	3060 2s	3060 2s	3060 2s	3060 2s	3060 2s	3060 2s
	92CS75	3700 2d	3700 2d	3700 2d	3700 2d	3700 2d	NA	3700 2d	3700 2d	3700 2d	3700 2d	3700 2d	3700 2d	3700 2d	3700 2d	3700 2d	3500 f
	92CS115	3810 2h	4200 2d	4200 2d	4200 2d	4200 2d	NA	4200 2d	4200 2d	4200 2d	3810 2h	4200 2d	4200 2d	4200 2d	4200 2d	4200 2d	4000 f
	150CS75	3810 2h	4830 2s	4830 2s	4830 2s	4830 2s	NA	4830 2s	4830 2s	4830 2s	3810 2h	4830 2s	4830 2s	4830 2s	4830 2s	4830 2s	4830 2s
	150CS115	3810 2h	5530 2s	5530 2s	5530 2s	5530 2s	NA	5530 2s	5530 2s	5530 2s	3810 2h	5530 2s	5530 2s	5530 2s	5530 2s	5530 2s	5530 2s

• These tables should be read in conjunction with Sections A5, A6 & A8 & notes on pgs C2.1 & C2.2 • For stud designations refer Section A1

Non Load Bearing Steel Shaft Walls

Notes to Tables

Symbols:

d = deflection limits

h = head track capacity limits

f = fire height limits

- Minimum yield stress of steel sections to be 270MPa
- Deflection limit is height/240 to a maximum of 20mm for CH studs
- Wall heights tabled are for single length studs at maximum centres shown
- The tabulated heights need to be checked against head track reaction capacity as listed below
- Wall heights tabled are not for axial loads but include self weight and lateral pressures stated
- Wall heights tabled are not applicable to steel lipped C section wall studs
- Shelf loading is not permitted for tabulated maximum wall heights. Refer Boral Plasterboard for maximum heights with shelf loadings
- Tabulated heights are for internal walls only. Refer to Boral Plasterboard if walls are subjected to external loadings
- All plasterboard is to be manufactured by Boral Plasterboard in Australia
- Walls are to be constructed with Boral Firestop® plasterboard to Boral Plasterboard standard Shaft Wall fire rated wall details as appropriate
- For fire service 50Pa pressure assumed where pressures are >50Pa and fire loadings are likely to be coincident, Boral Plasterboard should be consulted
- Detailed seismic analysis requires site/building specific parameters and has not been performed, however tabulated wall heights comply with AS 1170.4 clause 5.2.1, category 3, provided that:
 - the walls have been designed for 0.25kPa pressure (minimum)
 - the walls, including attachments, have a total mass (Gc) not exceeding 100kg/m²

- acceleration a ≤ 0.08
- Site Factor S ≤ 2.0
- ax ≤ 2.0
- ac ≤ 1.0
- Cc1 ≤ 0.9
- I = 1.0

- Wall heights for systems tabled for CH studs are calculated with head runner min 50mm flange x 0.80mm BMT 20mm max clearance at top of stud and using head track reaction capacities as follows:

Head Track Reaction Capacities

Stud	Head track reaction capacity (kN)
64CH55, 102CH55	0.28
64CH90, 102CH90	0.44

- Refer to Boral Plasterboard where reactions and/or required clearance at top of stud exceeds the above
- Where lesser clearance is required other head track reaction capacities are as follows, with minimum 0.80mm BMT standard J runner at head and base and 10mm max clearance at top of stud:

Head Track Reaction Capacities

Stud	Head track reaction capacity (kN)
64CH55, 102CH55	0.40
64CH90, 102CH90	0.75

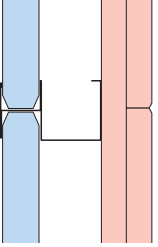
- Alternative head track installations must be checked with head track capacity tables
- The allowable head track reactions listed above rely on the plasterboard for restraint head track installation must be strictly in accordance with the appropriate details.

Maximum Wall Heights - Non Load Bearing Shaft Walls

System Ref	SH16F		SH26F			SH29F		SH32F		
Side 1 (no of layers x thickness in mm)	1x25		1x25			1x25		1x25		
Side 2 (no of layers x thickness in mm)	1x16		2x13			1x13 + 1x16		2x16		
Layout	FRL Direction From	Nil	-/60/60 Both	Nil	-/120/90 Occupancy	-/120/120 Shaft	Nil	-/120/120 Both	Nil	-/120/120 Both
	Stud	Wall Heights (mm)								

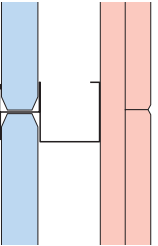
Maximum Wall Pressure: 0.25kPa

Maximum Stud Centres: 600mm

 <p>Board to standard Shaft Wall details System SH32F illustrated</p>	64CH55	2950 d	2950 d	2950 d	2950 d	2950 d	2950 d	2950 d	3730 h	3730 h
	64CH90	3460 d	3460 d	3460 d	3460 d	3460 d	3460 d	3460 d	4380 d	4380 d
	102CH55	3730 h	3730 h	3730 h	3730 h	3730 h	3730 h	3730 h	3730 h	3730 h
	102CH90	4980 d	4980 d	4980 d	4980 d	4980 d	4980 d	4980 d	5510 d	5510 d

Maximum Wall Pressure: 0.35kPa

Maximum Stud Centres: 600mm

 <p>Board to standard Shaft Wall details System SH32F illustrated</p>	64CH55	2640 d	2640 d	2640 d	2640 d	2640 d	2640 d	2640 d	2660 h	2660 h
	64CH90	3090 d	3090 d	3090 d	3090 d	3090 d	3090 d	3090 d	3890 d	3890 d
	102CH55	2660 h	2660 h	2660 h	2660 h	2660 h	2660 h	2660 h	2660 h	2660 h
	102CH90	4190 h	4190 h	4190 h	4190 h	4190 h	4190 h	4190 h	4190 h	4190 h

• These tables should be read in conjunction with Sections A5, A6 & A8 & notes on pg C2.11 • For stud designations refer Section A1

Non Load Bearing Steel D-Stud™ Walls

General Notes to Tables

- Deflection limit is height/240 to a maximum of 30mm
- Wall heights tabled are for non load bearing walls and not for axial loads, but include self weight and lateral pressures stated
- Shelf loading is not permitted for the tabulated maximum wall heights. Refer Boral Plasterboard for maximum heights with shelf loadings
- The maximum heights tabulated are based on testing performed using Boral Firestop® plasterboard manufactured by Boral Australian Gypsum Ltd
- Minimum yield stress of steel sections to be 550MPa UNO
- Walls to be constructed with 13mm or 16mm Boral Firestop® or Wet Area Firestop® or 10mm Boral Standard Core plasterboard to standard Boral Plasterboard fire rated D-Stud wall details

Head Track Reaction Capacities

Plasterboard	1x13	1x16	2x16 or more
Head Track Reaction Capacity (kN)	0.35	0.38	0.73

Note:

Heights shaded in D-Stud wall tables on the following pages exceed these reaction capacities and should be referred to Boral Plasterboard for appropriate detailing and approval

- Deflection heads to be designed and used as required.
- 50Pa pressure assumed for fire design. Where greater pressures and fire loadings are likely to be coincident Boral should be consulted
- Taller walls than those listed are possible with other sections. Refer Boral Plasterboard sales offices
- For construction details refer Boral Plasterboard publication 'D-Stud High Performance Wall Systems'.

Non Load Bearing D-Stud Cinema Walls

Max Wall Heights (mm) - Max Wall Pressure: 0.25kPa

Stud Size	Stud ctrs (mm)		
	900	1000	1200
2xZ15012	8500	8300	8000
2xZ15015	9000	8800	8400
2xZ15019	9500	9300	8900
2xZ20015	11000	10700	10200
2xZ20019	11700	11400	10900
2xZ25019	13400	13000	12500

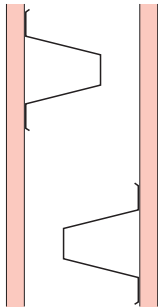
- Limiting heights indicated are calculated structural heights
- Minimum yield stress of steel sections to be 450MPa.

Maximum Wall Heights - Non Load Bearing Steel D-Stud™ Walls

Lined Both Sides (Includes staggered and twin stud wall systems)

Maximum Wall Pressure: 0.25kPa

Maximum Stud Centres: 600mm

Lining Side 1 (no of layers x thickness in mm)	1x13		1x13		1x16			1x16		2x13			2x16			4x16			
Lining Side 2 (no of layers x thickness in mm)	1x13		1x16		1x16			1x16 + 1x10		2x13			2x16			4x16			
Layout	FRL	Nil	-/30/30	Nil	-/60/60	Nil	-/30/30	-/60/60	Nil	-/90/90	Nil	-/60/60	-/90/90	Nil	-/90/90	-/120/120	Nil	-/120/120	
	Stud	Wall Heights (mm) Refer page C2.13 re shaded wall height cells																	
 <p>Board to single side of single stud System D1616F illustrated</p>	40DS55	2182	2182	2182	2182	2219	2219	2219	2219	2219	2219	2219	2219	2219	2219	2219	2219	2219	
	40DS60	2234	2234	2234	2234	2268	2268	2268	2268	2268	2268	2268	2268	2268	2268	2268	2268	2268	
	40DS75	2373	2373	2373	2373	2401	2401	2401	2401	2401	2401	2401	2401	2401	2401	2401	2401	2401	
	50DS60	2569	2569	2569	2569	2590	2590	2590	2590	2590	2590	2590	2590	2590	2590	2590	2590	2590	
	50DS75	2741	2741	2741	2741	2755	2755	2755	2755	2755	2755	2755	2755	2755	2755	2755	2755	2755	
	61DS75	3279	3279	3279	3279	3309	3309	3309	3309	3309	3309	3309	3309	3309	3651	3651	3651	4113	3651
	61DS100	3565	3565	3565	3565	3587	3587	3587	3587	3587	3587	3587	3587	3587	3866	3866	3866	4269	3866
	64DS75	3358	3358	3358	3358	3384	3384	3384	3384	3384	3384	3384	3384	3384	3692	3692	3692	4132	3692
	64DS100	3746	3746	3746	3746	3762	3762	3762	3762	3762	3762	3762	3762	3762	3998	3998	3998	4361	3998
	64DS120	3999	3999	3999	3999	4010	4010	4010	4010	4010	4010	4010	4010	4010	4200	4200	4200	4512	4200
	96DS75	4795	4795	4795	4795	4854	4854	4854	4854	4854	4854	4854	4854	4854	4854	4854	4854	4854	4854
	96DS100	5304	5304	5304	5304	5349	5349	5349	5349	5349	5349	5349	5349	5349	5349	5349	5349	5349	5349
96DS120	5646	5646	5646	5646	5683	5683	5683	5683	5683	5683	5683	5683	5683	5683	5683	5683	5683	5683	
120DS70	6100	6100	6100	6100	6136	6136	6136	6136	6136	6136	6136	6136	6136	6136	6136	6136	6136	6136	
120DS90	6578	6578	6578	6578	6604	6604	6604	6604	6604	6604	6604	6604	6604	6604	6604	6604	6604	6604	

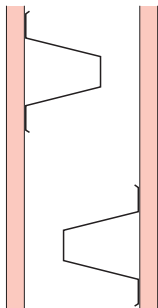
• These tables should be read in conjunction with Sections A5, A6 & A8 & notes on pg C2.13 • For stud designations refer Section A1

Maximum Wall Heights - Non Load Bearing Steel D-Stud™ Walls

Lined Both Sides (Includes staggered & twin stud wall systems)

Maximum Wall Pressure: 0.25kPa

Maximum Stud Centres: 400mm

Lining Side 1 (no of layers x thickness in mm)		1x13		1x13		1x16			1x16		2x13			2x16			4x16		
Lining Side 2 (no of layers x thickness in mm)		1x13		1x16		1x16			1x16 + 1x10		2x13			2x16			4x16		
Layout	FRL	Nil	-/30/30	Nil	-/60/60	Nil	-/30/30	-/60/60	Nil	-/90/90	Nil	-/60/60	-/90/90	Nil	-/90/90	-/120/120	Nil	-/120/120	
	Stud	Wall Heights (mm) <small>Refer page C2.13 re shaded wall height cells. Symbol 'f' indicates fire height limit.</small>																	
 <p>Board to single side of single stud System D1616F illustrated</p>	40DS55	2467	2467	2467	2467	2502	2502	2502	2502	2500 f	2502	2502	2502	2502	2502	2502	2502	2502	
	40DS60	2529	2529	2529	2529	2561	2561	2561	2561	2561	2561	2561	2561	2561	2561	2561	2561	2561	
	40DS75	2696	2696	2696	2696	2723	2723	2723	2723	2700 f	2723	2723	2723	2723	2723	2723	2723	2723	
	50DS60	2928	2928	2928	2928	2949	2949	2949	2949	2900 f	2949	2949	2949	2949	2949	2949	2949	2949	
	50DS75	3132	3132	3132	3132	3147	3147	3147	3147	3100 f	3147	3147	3147	3147	3147	3147	3147	3147	
	61DS75	3726	3726	3726	3726	3754	3754	3754	3754	3754	3754	3754	3754	3754	4083	4083	4083	4569	4083
	61DS100	4065	4065	4065	4065	4086	4086	4086	4086	4086	4086	4086	4086	4086	4353	4353	4353	4776	4353
	64DS75	3822	3822	3822	3822	3846	3846	3846	3846	3800 f	3846	3846	3846	3846	4140	4140	4140	4600	4140
	64DS100	4279	4279	4279	4279	4295	4295	4295	4295	4200 f	4295	4295	4295	4295	4522	4522	4522	4900	4522
	64DS120	4575	4575	4575	4575	4587	4587	4587	4587	4500 f	4587	4587	4587	4587	4774	4774	4774	5101	4774
	96DS75	5423	5423	5423	5423	5476	5476	5476	5476	5400 f	5476	5476	5476	5476	5476	5476	5476	5476	5476
	96DS100	6025	6025	6025	6025	6066	6066	6066	6066	5900 f	6066	6066	6066	6066	6066	6066	6066	6066	6066
	96DS120	6428	6428	6428	6428	6462	6462	6462	6462	6300 f	6462	6462	6462	6462	6462	6462	6462	6462	6462
	120DS70	6946	6946	6946	6946	6980	6980	6980	6980	6980	6980	6980	6980	6980	6980	6980	6980	6980	6980
120DS90	7430	7430	7430	7430	7450	7450	7450	7450	7450	7450	7450	7450	7450	7450	7450	7450	7450	7450	

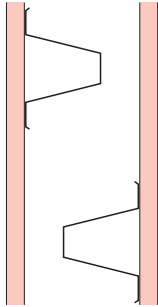
• These tables should be read in conjunction with Sections A5, A6 & A8 & notes on pg C2.13 • For stud designations refer Section A1

Maximum Wall Heights - Non Load Bearing Steel D-Stud™ Walls

Lined Both Sides (Includes staggered & twin stud wall systems)

Maximum Wall Pressure: 0.35kPa

Maximum Stud Centres: 600mm

Lining Side 1 (no of layers x thickness in mm)	1x13		1x13		1x16			1x16		2x13			2x16			4x16			
Lining Side 2 (no of layers x thickness in mm)	1x13		1x16		1x16			1x16 + 1x10		2x13			2x16			4x16			
Layout	FRL	Nil	-/30/30	Nil	-/60/60	Nil	-/30/30	-/60/60	Nil	-/90/90	Nil	-/60/60	-/90/90	Nil	-/90/90	-/120/120	Nil	-/120/120	
	Stud	Wall Heights (mm) Refer page C2.13 re shaded wall height cells																	
 <p>Board to single side of single stud System D1616F illustrated</p>	40DS55	1942	1942	1942	1942	1972	1972	1972	1972	1972	1972	1972	1972	1972	1972	1972	1972	1972	
	40DS60	1988	1988	1988	1988	2015	2015	2015	2015	2015	2015	2015	2015	2015	2015	2015	2015	2015	
	40DS75	2112	2112	2112	2112	2134	2134	2134	2134	2134	2134	2134	2134	2134	2134	2134	2134	2134	
	50DS60	2286	2286	2286	2286	2301	2301	2301	2301	2301	2301	2301	2301	2301	2301	2301	2301	2301	
	50DS75	2439	2439	2439	2439	2448	2448	2448	2448	2448	2448	2448	2448	2448	2448	2448	2448	2448	
	61DS75	2920	2920	2920	2920	2945	2945	2945	2945	2945	2945	2945	2945	2945	3230	3230	3230	3230	3230
	61DS100	3176	3176	3176	3176	3192	3192	3192	3192	3192	3192	3192	3192	3192	3419	3419	3419	3419	3419
	64DS75	2992	2992	2992	2992	3013	3013	3013	3013	3013	3013	3013	3013	3013	3268	3268	3268	3268	3268
	64DS100	3338	3338	3338	3338	3350	3350	3350	3350	3350	3350	3350	3350	3350	3537	3537	3537	3537	3537
	64DS120	3564	3564	3564	3564	3570	3570	3570	3570	3570	3570	3570	3570	3570	3716	3716	3716	3716	3716
	96DS75	4274	4274	4274	4274	4323	4323	4323	4323	4323	4323	4323	4323	4323	4323	4323	4323	4323	4323
	96DS100	4728	4728	4728	4728	4765	4765	4765	4765	4765	4765	4765	4765	4765	4765	4765	4765	4765	4765
	96DS120	5033	5033	5033	5033	5062	5062	5062	5062	5062	5062	5062	5062	5062	5062	5062	5062	5062	5062
	120DS70	5438	5438	5438	5438	5467	5467	5467	5467	5467	5467	5467	5467	5467	5467	5467	5467	5467	5467
120DS90	5866	5866	5866	5866	5885	5885	5885	5885	5885	5885	5885	5885	5885	5885	5885	5885	5885	5885	

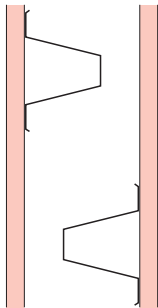
• These tables should be read in conjunction with Sections A5, A6 & A8 & notes on pg C2.13 • For stud designations refer Section A1

Maximum Wall Heights - Non Load Bearing Steel D-Stud™ Walls

Lined Both Sides (Includes staggered & twin stud wall systems)

Maximum Wall Pressure: **0.35kPa**

Maximum Stud Centres: **400mm**

Lining Side 1 (no of layers x thickness in mm)		1x13		1x13		1x16			1x16		2x13			2x16			4x16		
Lining Side 2 (no of layers x thickness in mm)		1x13		1x16		1x16			1x16 + 1x10		2x13			2x16			4x16		
Layout	FRL	Nil	-/30/30	Nil	-/60/60	Nil	-/30/30	-/60/60	Nil	-/90/90	Nil	-/60/60	-/90/90	Nil	-/90/90	-/120/120	Nil	-/120/120	
	Stud	Wall Heights (mm) <small>Refer page C2.13 re shaded wall height cells</small>																	
 <p>Board to single side of single stud System D1616F illustrated</p>	40DS55	2199	2199	2199	2199	2228	2228	2228	2228	2228	2228	2228	2228	2228	2228	2228	2228	2228	
	40DS60	2254	2254	2254	2254	2281	2281	2281	2281	2281	2281	2281	2281	2281	2281	2281	2281	2281	
	40DS75	2404	2404	2404	2404	2425	2425	2425	2425	2425	2425	2425	2425	2425	2425	2425	2425	2425	
	50DS60	2610	2610	2610	2610	2626	2626	2626	2626	2626	2626	2626	2626	2626	2626	2626	2626	2626	
	50DS75	2792	2792	2792	2792	2804	2804	2804	2804	2804	2804	2804	2804	2804	2804	2804	2804	2804	
	61DS75	3323	3323	3323	3323	3347	3347	3347	3347	3347	3347	3347	3347	3347	3624	3624	3624	3624	3624
	61DS100	3626	3626	3626	3626	3643	3643	3643	3643	3643	3643	3643	3643	3643	3864	3864	3864	3864	3864
	64DS75	3410	3410	3410	3410	3430	3430	3430	3430	3430	3430	3430	3430	3430	3676	3676	3676	3676	3676
	64DS100	3818	3818	3818	3818	3830	3830	3830	3830	3830	3830	3830	3830	3830	4015	4015	4015	4015	4015
	64DS120	4082	4082	4082	4082	4090	4090	4090	4090	4090	4090	4090	4090	4090	4239	4239	4239	4239	4239
	96DS75	4839	4839	4839	4839	4884	4884	4884	4884	4884	4884	4884	4884	4884	4884	4884	4884	4884	4884
	96DS100	5376	5376	5376	5376	5410	5410	5410	5410	5410	5410	5410	5410	5410	5410	5410	5410	5410	5410
	96DS120	5737	5737	5737	5737	5764	5764	5764	5764	5764	5764	5764	5764	5764	5764	5764	5764	5764	5764
	120DS70	6199	6199	6199	6199	6226	6226	6226	6226	6226	6226	6226	6226	6226	6226	6226	6226	6226	6226
120DS90	6702	6702	6702	6702	6722	6722	6722	6722	6722	6722	6722	6722	6722	6722	6722	6722	6722	6722	

• These tables should be read in conjunction with Sections A5, A6 & A8 & notes on pg C2.13 • For stud designations refer Section A1

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C3 | Timber Stud Charfactor Tables

Charfactor Numbers

- Charfactor numbers apply only to timber stud wall systems listed in System Index Section of this manual
- A Charfactor number is defined as follows:

A dimensionless factor relating the amount of permissible char area of the studs, when in a timber framed partition under fire test at the time of its structural collapse, for a given height and loading.

Selecting Studs Using Charfactor Tables

Non Load Bearing Walls

- First establish the Charfactor number of the non load bearing timber stud partition system. This number is found in the "Fire Resistance" column of the System Index, in the system selection pages of this manual
- Enter the "Non Load Bearing Walls" table from the left at the wall height required
- Move horizontally across the columns till the value shown in the body of the table matches or just exceeds the chosen system's charfactor. The Stud size of this column is the least section that may be used in the given fire conditions but must also be checked against other structural requirements
- Larger sizes can of course be used instead
- Refer also to the following pages for an example of non load bearing stud selection using charfactors.

Load Bearing Walls

- For load bearing walls first establish the Charfactor Number of the timber partition system as before (see Non Load Bearing Walls)
- You need also to know the height and stress grade of the studs proposed and their imposed axial load
- Select the page with the appropriate 'Load bearing Walls' Charfactor number from those presented (11, 14, 15, 18, 21 or 22)
- Select the appropriate Timber Stress Grade table
- Enter the table from the left at the wall height required
- Move horizontally across the columns till the value shown in the body of the table matches or just exceeds the chosen system's axial load capacity
- The Stud size of this column is the least section that may be used in the given fire conditions but must also be checked against other structural requirements
- Larger sizes can, of course, be used instead
- Refer also to the following pages for an example of load bearing stud selection using charfactors.

General

- Where a required timber size is not listed, use the next smallest section (in both dimensions) that is listed for selection within the tables. This applies to tables for both load bearing and non load bearing walls
- In instances where a Charfactor number is not represented by a set of tables, make selections using tables for a higher available Charfactor number
- The values shown on the tables for each Charfactor are the maximum load and heights achievable for that stud size
- Where a timber partition system calls for a stud size with a stress grade which is not represented on any of the tables for the Charfactor number, make your selection by using a table for a lower stress grade eg, if F7 stress grade is called for, use a F5 stress grade table.

» Selecting Studs Using Charfactor Tables

Example 1 - Non Load Bearing Walls

I have a non load bearing wall 4000mm high for which I seek to use a -/60/60 FRL T1616F system (formally TS7 system).

From the System Index I find that this system/FRL has a Charfactor of 11. I know I can use a stud size or height that gives me an equal or greater charfactor. Entering the "Non Load Bearing Walls" table at 4 metres height I move across to the 70x45 column which I find is the smallest size I can use with a Charfactor equal or greater than the Charfactor 11 of the T1616F system. Having checked the stud section for fire service I must now check it against normal structural requirements.

Charfactor Numbers - Timber Stud Non Load Bearing

Wall Height (m)	Stud size (mm x mm)							
	140x45	140x35	120x45	120x35	90x45	90x35	70x45	70x35
3.0	30	28	30	26	26	20	17	14
3.1	30	28	30	26	26	20	17	14
3.2	30	28	30	26	25	20	17	13
3.3	30	28	30	26	25	20	16	13
3.4	30	28	30	26	24	19	16	12
3.5	30	28	30	25	24	19	15	12
3.6	30	28	30	25	23	18	15	11
3.7	30	27	30	25	23	18	14	11
3.8	30	27	30	25	22	18	14	10
3.9	30	27	30	24	22	17	13	10
4.0	30	27	30	24	21	17	12	9
4.1	30	26	30	24	21	16	12	9
4.2	30	26	30	23	20	16	11	8
4.3	30	26	29	23	20	15	11	8

C3 Charfactors

» Selecting Studs Using Charfactor Tables

Example 2 - Load Bearing Walls

I have a load bearing 3 metre high timber framed wall for which I seek to use a 120/120/120 FRL TT3232F system (formally TS22 system). This wall is carrying an imposed load of 20kN on each of the F8 studs.

From the System Index I find that this system has a Charfactor of 14. Entering the left side of the "Load Bearing Walls" Charfactor 14 table at 3 metres height I move right, across to the F8 area and to the column that shows a load capacity equal to or greater than the 20kN load required. Reading up the table I find that a 120x45 stud is the smallest of the F8 stud sizes I can use. Having checked the stud section for fire service I must now check it against normal structural requirements.

C3.6

C3

Charfactors

C | Design Tables

Load Bearing Walls - Axial Load Capacity in kN/Stud

Wall Height (m)	Timber Stress Grade F5								Timber Stress Grade F8								Tim	
	Stud size (mmxmm)								Stud size (mmxmm)								140x45	140x35
	140x45	140x35	120x45	120x35	90x45	90x35	70x45	70x35	140x45	140x35	120x45	120x35	90x45	90x35	70x45	70x35	140x45	140x35
2.0	24.0	16.1	18.4	12.3	10.3	6.9	5.5	3.6	42.8	30.0	33.1	23.2	18.9	13.1	10.3	7.1	76.4	55.1
2.1	23.6	15.9	18.0	12.1	9.9	6.6	5.2	3.4	42.1	29.5	32.4	22.6	18.1	12.6	9.7	6.7	74.8	53.9
2.2	23.2	15.6	17.6	11.8	9.6	6.4	4.9	3.3	41.4	29.0	31.6	22.1	17.4	12.1	9.2	6.4	73.1	52.7
2.3	22.8	15.3	17.2	11.5	9.2	6.1	4.7	3.1	40.6	28.4	30.8	21.5	16.7	11.7	8.7	6.0	71.4	51.4
2.4	22.4	15.0	16.8	11.2	8.9	5.9	4.4	2.9	39.8	27.9	30.0	21.0	16.1	11.2	8.2	5.7	69.7	50.2
2.5	22.0	14.7	16.4	11.0	8.5	5.6	4.2	2.7	39.0	27.3	29.2	20.4	15.4	10.7	7.8	5.4	67.9	48.9
2.6	21.6	14.4	16.0	10.7	8.2	5.4	3.9	2.6	38.2	26.8	28.4	19.9	14.7	10.2	7.3	5.1	66.2	47.6
2.7	21.1	14.2	15.6	10.4	7.8	5.2	3.7	2.4	37.4	26.2	27.6	19.3	14.1	9.8	6.9	4.8	64.4	46.3
2.8	20.7	13.8	15.1	10.1	7.5	5.0	3.5	2.3	36.6	25.6	26.8	18.7	13.5	9.4	6.5	4.5	62.6	45.0
2.9	20.3	13.5	14.7	9.8	7.2	4.7	3.3	2.2	35.8	25.0	26.0	18.2	12.9	9.0	6.2	4.3	60.9	43.8
3.0	19.8	13.2	14.3	9.5	6.9	4.5	3.1	2.0	34.9	24.4	25.3	17.6	12.4	8.6	5.8	4.0	59.1	42.5
3.1	19.4	12.9	13.9	9.2	6.6	4.3	2.9		34.1	23.8	24.5	17.1	11.8	8.2	5.5	3.8	57.4	41.2
3.2	18.9	12.6	13.5	8.9	6.3	4.1	2.8		33.2	23.2	23.7	16.5	11.3	7.8	5.2	3.6	55.7	40.0
3.3	18.5	12.3	13.1	8.7	6.0	3.9	2.6		32.4	22.6	23.0	16.0	10.8	7.5	4.9	3.4	54.0	38.8
3.4	18.0	12.0	12.7	8.4	5.7	3.8	2.4		31.6	22.0	22.2	15.5	10.3	7.1	4.7	3.2	52.3	37.6
3.5	17.6	11.7	12.3	8.1	5.5	3.6	2.3		30.7	21.4	21.5	15.0	9.9	6.8	4.4	3.0	50.7	36.4
3.6	17.1	11.4	11.9	7.9	5.2	3.4	2.2		29.9	20.9	20.8	14.5	9.4	6.5	4.2	2.8	49.1	35.2
3.7	16.7	11.1	11.5	7.6	5.0	3.3	2.0		29.1	20.3	20.1	14.0	9.0	6.2	3.9	2.7	47.5	34.1
3.8	16.3	10.8	11.1	7.3	4.8	3.1			28.3	19.7	19.4	13.5	8.6	5.9	3.7	2.5	46.0	33.0
3.9	15.8	10.5	10.7	7.1	4.5	2.9			27.5	19.2	18.8	13.0	8.2	5.7	3.5	2.4	44.5	32.0
4.0	15.4	10.2	10.4	6.8	4.3	2.8			26.8	18.6	18.2	12.6	7.9	5.4	3.3	2.3	43.1	30.9
4.1	15.0	9.9	10.0	6.6	4.1	2.7			26.0	18.1	17.5	12.2	7.5	5.2	3.2	2.1	41.7	29.9
4.2	14.6	9.6	9.7	6.4	3.9	2.5			25.3	17.6	16.9	11.7	7.2	4.9	3.0	2.0	40.4	29.0
4.3	14.2	9.3	9.4	6.1	3.7	2.4			24.5	17.1	16.4	11.3	6.9	4.7	2.8		39.1	28.0
4.4	13.8	9.1	9.0	5.9	3.6	2.3			23.8	16.5	15.8	10.9	6.6	4.5	2.7		37.8	27.1

C3 Charfactors

Charfactor Numbers - Timber Stud Non Load Bearing Walls

Wall Height (m)	Stud size (mm x mm)							
	140x45	140x35	120x45	120x35	90x45	90x35	70x45	70x35
3.0	30	28	30	26	26	20	17	14
3.1	30	28	30	26	26	20	17	14
3.2	30	28	30	26	25	20	17	13
3.3	30	28	30	26	25	20	16	13
3.4	30	28	30	26	24	19	16	12
3.5	30	28	30	25	24	19	15	12
3.6	30	28	30	25	23	18	15	11
3.7	30	27	30	25	23	18	14	11
3.8	30	27	30	25	22	18	14	10
3.9	30	27	30	24	22	17	13	10
4.0	30	27	30	24	21	17	12	9
4.1	30	26	30	24	21	16	12	9
4.2	30	26	30	23	20	16	11	8
4.3	30	26	29	23	20	15	11	8
4.4	30	26	29	23	19	15	10	7
4.5	30	26	28	22	19	15	10	7
4.6	30	25	28	22	18	14	9	6
4.7	30	25	28	22	18	14	9	6
4.8	30	25	27	21	17	13	8	5
4.9	30	25	27	21	17	13	8	5
5.0	30	24	27	21	16	12	7	4
5.1	30	24	26	21	16	12	6	4
5.2	30	24	26	20	15	11	6	3
5.3	30	23	25	20	15	11	5	3
5.4	30	23	25	19	14	11	5	2
5.5	29	23	24	19	14	10	4	2
5.6	29	23	24	19	13	10	4	1
5.7	28	22	24	18	13	9	3	1
5.8	28	22	23	18	12	9	3	0
5.9	28	22	23	18	12	8	2	0
6.0	27	21	22	17	11	8	2	0

Note:

Where design requirements are for the following sizes:

100x50 - build in this size using 90x45 height/load data

100x38 - build in this size using 90x35 height/load data

75x50 - build in this size using 70x45 height/load data.

Load Bearing Walls - Axial Load Capacity in kN/Stud

Timber Stud - Charfactor 11

Wall Height (m)	Timber Stress Grade F5								Timber Stress Grade F8								Timber Stress Grade F14								Timber Stress Grade F22							
	Stud size (mmxmm)								Stud size (mmxmm)								Stud size (mmxmm)								Stud size (mmxmm)							
	140x45	140x35	120x45	120x35	90x45	90x35	70x45	70x35	140x45	140x35	120x45	120x35	90x45	90x35	70x45	70x35	140x45	140x35	120x45	120x35	90x45	90x35	70x45	70x35	140x45	140x35	120x45	120x35	90x45	90x35	70x45	70x35
2.0	28.5	20.0	22.2	15.6	12.9	9.0	7.2	5.0	48.8	35.2	38.2	27.5	22.4	16.1	12.6	9.0	84.4	62.0	65.5	48.0	37.5	27.4	20.7	15.0	134.0	99.4	102.2	75.7	56.3	41.5	30.1	22.1
2.1	28.1	19.7	21.8	15.2	12.5	8.7	6.9	4.8	48.0	34.6	37.4	26.9	21.6	15.5	12.0	8.5	82.7	60.7	63.6	46.6	35.8	26.1	19.4	14.1	130.4	96.7	98.5	73.0	53.2	39.2	28.0	20.6
2.2	27.6	19.4	21.3	14.9	12.1	8.4	6.5	4.5	47.2	34.0	36.5	26.3	20.7	14.9	11.3	8.1	80.8	59.3	61.7	45.3	34.1	24.9	18.2	13.2	126.6	93.9	94.9	70.2	50.3	37.1	26.1	19.2
2.3	27.2	19.0	20.8	14.6	11.6	8.1	6.2	4.3	46.4	33.4	35.6	25.6	19.9	14.3	10.7	7.6	79.0	58.0	59.9	43.9	32.5	23.7	17.1	12.4	122.9	91.1	91.2	67.5	47.5	35.0	24.4	17.9
2.4	26.7	18.7	20.4	14.2	11.2	7.8	5.8	4.0	45.5	32.8	34.7	25.0	19.1	13.7	10.1	7.2	77.1	56.6	58.0	42.5	30.9	22.6	16.1	11.7	119.1	88.3	87.6	64.9	44.9	33.1	22.7	16.7
2.5	26.2	18.4	19.9	13.9	10.7	7.5	5.5	3.8	44.6	32.1	33.8	24.3	18.3	13.1	9.6	6.8	75.2	55.1	56.1	41.1	29.4	21.5	15.1	11.0	115.4	85.5	84.1	62.2	42.4	31.3	21.2	15.6
2.6	25.8	18.0	19.4	13.5	10.3	7.2	5.2	3.6	43.7	31.5	32.9	23.6	17.6	12.6	9.0	6.4	73.2	53.7	54.2	39.7	28.0	20.4	14.2	10.3	111.6	82.7	80.7	59.7	40.1	29.5	19.9	14.6
2.7	25.3	17.7	18.9	13.2	9.9	6.9	5.0	3.4	42.8	30.8	32.0	23.0	16.8	12.0	8.5	6.1	71.3	52.3	52.4	38.3	26.7	19.4	13.3	9.7	107.9	79.9	77.4	57.2	37.9	27.9	18.6	13.7
2.8	24.8	17.3	18.4	12.8	9.5	6.6	4.7	3.2	41.9	30.1	31.1	22.3	16.1	11.5	8.1	5.7	69.4	50.8	50.6	37.0	25.4	18.5	12.6	9.1	104.2	77.2	74.2	54.8	35.8	26.4	17.5	12.8
2.9	24.3	17.0	17.9	12.5	9.1	6.3	4.4	3.0	40.9	29.4	30.2	21.7	15.4	11.0	7.6	5.4	67.4	49.4	48.8	35.7	24.1	17.6	11.8	8.6	100.6	74.5	71.0	52.5	33.9	25.0	16.4	12.1
3.0	23.7	16.6	17.4	12.1	8.7	6.1	4.2	2.9	40.0	28.7	29.3	21.0	14.7	10.5	7.2	5.1	65.5	48.0	47.0	34.4	23.0	16.7	11.1	8.1	97.1	71.9	68.1	50.3	32.1	23.7	15.4	11.3
3.1	23.2	16.2	16.9	11.8	8.4	5.8	4.0	2.7	39.0	28.1	28.4	20.4	14.1	10.1	6.8	4.9	63.6	46.6	45.3	33.1	21.8	15.9	10.5	7.6	93.7	69.3	65.2	48.2	30.4	22.4	14.5	10.7
3.2	22.7	15.8	16.4	11.4	8.0	5.5	3.7	2.6	38.1	27.4	27.5	19.7	13.5	9.6	6.5	4.6	61.7	45.2	43.7	31.9	20.8	15.2	9.9	7.2	90.3	66.8	62.4	46.1	28.8	21.3	13.7	10.0
3.3	22.2	15.5	16.0	11.1	7.7	5.3	3.5	2.4	37.2	26.7	26.7	19.1	12.9	9.2	6.1	4.3	59.8	43.8	42.1	30.7	19.8	14.4	9.4	6.8	87.0	64.4	59.8	44.2	27.4	20.2	12.9	9.5
3.4	21.7	15.1	15.5	10.8	7.3	5.1	3.3	2.3	36.2	26.0	25.8	18.5	12.3	8.8	5.8	4.1	58.0	42.5	40.5	29.6	18.9	13.8	8.9	6.4	83.9	62.1	57.3	42.3	26.0	19.2	12.2	8.9
3.5	21.2	14.7	15.0	10.4	7.0	4.8	3.1	2.1	35.3	25.3	25.0	17.9	11.8	8.4	5.5	3.9	56.2	41.1	39.0	28.5	18.0	13.1	8.4	6.1	80.8	59.8	54.9	40.6	24.7	18.2	11.5	8.5
3.6	20.6	14.4	14.5	10.1	6.7	4.6	3.0	2.0	34.4	24.6	24.2	17.3	11.3	8.0	5.2	3.7	54.4	39.8	37.5	27.4	17.2	12.5	7.9	5.8	77.9	57.6	52.6	38.9	23.5	17.3	10.9	8.0
3.7	20.1	14.0	14.1	9.8	6.4	4.4	2.8		33.4	24.0	23.4	16.7	10.8	7.7	4.9	3.5	52.7	38.6	36.1	26.4	16.4	11.9	7.5	5.5	75.0	55.5	50.4	37.3	22.3	16.5	10.3	7.6
3.8	19.6	13.6	13.6	9.5	6.1	4.2	2.6		32.5	23.3	22.6	16.2	10.3	7.4	4.7	3.3	51.0	37.3	34.8	25.4	15.6	11.4	7.1	5.2	72.3	53.5	48.3	35.7	21.3	15.7	9.7	7.2
3.9	19.1	13.3	13.2	9.2	5.9	4.0	2.5		31.6	22.7	21.9	15.6	9.9	7.0	4.4	3.1	49.4	36.1	33.5	24.5	14.9	10.9	6.8	4.9	69.7	51.5	46.4	34.3	20.3	14.9	9.2	6.8
4.0	18.6	12.9	12.8	8.8	5.6	3.8	2.3		30.8	22.0	21.1	15.1	9.4	6.7	4.2	3.0	47.8	35.0	32.3	23.6	14.2	10.4	6.4	4.7	67.1	49.7	44.5	32.9	19.3	14.3	8.8	6.5
4.1	18.1	12.6	12.4	8.5	5.4	3.7	2.2		29.9	21.4	20.4	14.6	9.0	6.4	4.0	2.8	46.3	33.8	31.1	22.7	13.6	9.9	6.1	4.4	64.7	47.9	42.7	31.6	18.4	13.6	8.3	6.1
4.2	17.6	12.2	12.0	8.3	5.1	3.5	2.1		29.1	20.8	19.7	14.1	8.7	6.1	3.8	2.7	44.8	32.8	29.9	21.9	13.0	9.5	5.8	4.2	62.4	46.2	41.0	30.3	17.6	13.0	7.9	5.8
4.3	17.1	11.9	11.6	8.0	4.9	3.3			28.2	20.2	19.1	13.6	8.3	5.9	3.6	2.5	43.3	31.7	28.8	21.0	12.4	9.0	5.5	4.0	60.1	44.5	39.4	29.1	16.8	12.4	7.5	5.5
4.4	16.7	11.5	11.2	7.7	4.7	3.2			27.4	19.6	18.4	13.2	7.9	5.6	3.4	2.4	41.9	30.7	27.8	20.3	11.9	8.7	5.2	3.8	58.0	42.9	37.9	28.0	16.1	11.9	7.2	5.3
4.5	16.2	11.2	10.8	7.4	4.5	3.0			26.6	19.1	17.8	12.7	7.6	5.4	3.2	2.3	40.6	29.7	26.8	19.5	11.4	8.3	5.0	3.6	55.9	41.4	36.4	26.9	15.4	11.3	6.8	5.0
4.6	15.7	10.9	10.4	7.2	4.2	2.9			25.9	18.5	17.2	12.3	7.3	5.1	3.0	2.1	39.3	28.7	25.8	18.8	10.9	7.9	4.7	3.4	54.0	39.9	35.0	25.9	14.7	10.8	6.5	4.8
4.7	15.3	10.6	10.1	6.9	4.1	2.7			25.1	18.0	16.6	11.9	7.0	4.9	2.9	2.0	38.0	27.8	24.9	18.1	10.4	7.6	4.5	3.3	52.1	38.5	33.7	24.9	14.1	10.4	6.2	4.5
4.8	14.8	10.2	9.7	6.7	3.9	2.6			24.4	17.4	16.1	11.4	6.7	4.7	2.7		36.8	26.9	24.0	17.5	10.0	7.3	4.3	3.1	50.3	37.2	32.4	24.0	13.5	9.9	5.9	4.3
4.9	14.4	9.9	9.4	6.4	3.7	2.5			23.7	16.9	15.5	11.1	6.4	4.5	2.6		35.6	26.0	23.1	16.9	9.6	7.0	4.1	2.9	48.6	35.9	31.2	23.1	12.9	9.5	5.6	4.1
5.0	14.0	9.6	9.1	6.2	3.5	2.4			23.0	16.4	15.0	10.7	6.1	4.3	2.4		34.5	25.2	22.3	16.3	9.2	6.7	3.9	2.8	46.9	34.7	30.1	22.2	12.4	9.1	5.4	3.9
5.1	13.6	9.4	8.7	6.0	3.3	2.2			22.3	15.9	14.5	10.3	5.8	4.1	2.3		33.4	24.4	21.5	15.7	8.8	6.4	3.7	2.7	45.3	33.5	29.0	21.4	11.9	8.8	5.1	3.8
5.2	13.2	9.1	8.4	5.8	3.2	2.1			21.6	15.4	14.0	10.0	5.6	3.9	2.2		32.3	23.6	20.8	15.1	8.4	6.1	3.5	2.5	43.8	32.4	27.9	20.6	11.4	8.4	4.9	3.6
5.3	12.8	8.8	8.1	5.6	3.0	2.0			21.0	15.0	13.5	9.6	5.4	3.8	2.1		31.3	22.9	20.0	14.6	8.1	5.9	3.3	2.4	42.3	31.3	26.9	19.9	10.9	8.1	4.7	3.4
5.4	12.4	8.5	7.9	5.3	2.9				20.4	14.5	13.1	9.3	5.1	3.6			30.3	22.1	19.4	14.1	7.8	5.6	3.2	2.3	40.9	30.3	26.0	19.2	10.5	7.7	4.4	3.3
5.5	12.0	8.3	7.6	5.2	2.7				19.8	14.1	12.6	9.0	4.9	3.5			29.4	21.4	18.7	13.6	7.5	5.4	3.0	2.2	39.6	29.3	25.1	18.5	10.1	7.4	4.2	3.1
5.6	11.7	8.0	7.3	5.0	2.6				19.2	13.7	12.2	8.7	4.7	3.3			28.5	20.8	18.0	13.1	7.2	5.2	2.9	2.1	38.3	28.3	24.2	17.9	9.7	7.1	4.1	3.0
5.7	11.3	7.7	7.0	4.8	2.5				18.6	13.2	11.8	8.4	4.5	3.2			27.6	20.1	17.4	12.7	6.9	5.0	2.7		37.1	27.4	23.4	17.2	9.3	6.9	3.9	2.8
5.8	11.0	7.5	6.8	4.6	2.3				18.1	12.9	11.4	8.1	4.3	3.0			26.7	19.5	16.8	12.3	6.6	4.8	2.6		35.9	26.5	22.6	16.7	9.0	6.6	3.7	2.7
5.9	10.6	7.3	6.5	4.4	2.2				17.5	12.5	11.0	7.8	4.1	2.9			25.9	18.9	16.3	11.9	6.3	4.6	2.5		34.7	25.7	21.8	16.1	8.6	6.3	3.5	2.6
6.0	10.3	7.0	6.3	4.2	2.1				17.0	12.1	10.6	7.5	3.9	2.7			25.1	18.3	15.7	11.5	6.1	4.4	2.3		33.6	24.9	21.1	15.5	8.3	6.1	3.4	2.5

* These tables should be read in conjunction with Sections A5, A6 &

C | Design Tables

Selector+ PLASTERBOARD SYSTEMS

Load Bearing Walls - Axial Load Capacity in kN/Stud

Timber Stud - Charfactor 14

Wall Height (m)	Timber Stress Grade F5								Timber Stress Grade F8								Timber Stress Grade F14								Timber Stress Grade F22							
	Stud size (mmxmm)								Stud size (mmxmm)								Stud size (mmxmm)								Stud size (mmxmm)							
	140x45	140x35	120x45	120x35	90x45	90x35	70x45	70x35	140x45	140x35	120x45	120x35	90x45	90x35	70x45	70x35	140x45	140x35	120x45	120x35	90x45	90x35	70x45	70x35	140x45	140x35	120x45	120x35	90x45	90x35	70x45	70x35
2.0	24.0	16.1	18.4	12.3	10.3	6.9	5.5	3.6	42.8	30.0	33.1	23.2	18.9	13.1	10.3	7.1	76.4	55.1	58.7	42.3	32.9	23.6	17.7	12.6	123.7	90.5	93.6	68.4	50.7	36.9	26.7	19.3
2.1	23.6	15.9	18.0	12.1	9.9	6.6	5.2	3.4	42.1	29.5	32.4	22.6	18.1	12.6	9.7	6.7	74.8	53.9	57.0	41.0	31.4	22.5	16.6	11.9	120.3	88.0	90.2	65.9	47.9	34.9	24.8	18.0
2.2	23.2	15.6	17.6	11.8	9.6	6.4	4.9	3.3	41.4	29.0	31.6	22.1	17.4	12.1	9.2	6.4	73.1	52.7	55.3	39.8	29.9	21.4	15.6	11.1	116.8	85.4	86.8	63.4	45.3	32.9	23.1	16.8
2.3	22.8	15.3	17.2	11.5	9.2	6.1	4.7	3.1	40.6	28.4	30.8	21.5	16.7	11.7	8.7	6.0	71.4	51.4	53.6	38.6	28.5	20.4	14.6	10.5	113.3	82.9	83.5	60.9	42.8	31.1	21.6	15.6
2.4	22.4	15.0	16.8	11.2	8.9	5.9	4.4	2.9	39.8	27.9	30.0	21.0	16.1	11.2	8.2	5.7	69.7	50.2	51.9	37.3	27.1	19.4	13.8	9.8	109.8	80.3	80.2	58.5	40.4	29.4	20.1	14.6
2.5	22.0	14.7	16.4	11.0	8.5	5.6	4.2	2.7	39.0	27.3	29.2	20.4	15.4	10.7	7.8	5.4	67.9	48.9	50.2	36.1	25.8	18.5	12.9	9.2	106.3	77.7	77.0	56.2	38.2	27.8	18.8	13.6
2.6	21.6	14.4	16.0	10.7	8.2	5.4	3.9	2.6	38.2	26.8	28.4	19.9	14.7	10.2	7.3	5.1	66.2	47.6	48.5	34.9	24.6	17.6	12.1	8.7	102.9	75.2	73.9	53.9	36.1	26.2	17.6	12.8
2.7	21.1	14.2	15.6	10.4	7.8	5.2	3.7	2.4	37.4	26.2	27.6	19.3	14.1	9.8	6.9	4.8	64.4	46.3	46.9	33.7	23.4	16.7	11.4	8.1	99.4	72.6	70.8	51.6	34.1	24.8	16.5	12.0
2.8	20.7	13.8	15.1	10.1	7.5	5.0	3.5	2.3	36.6	25.6	26.8	18.7	13.5	9.4	6.5	4.5	62.6	45.0	45.2	32.5	22.2	15.9	10.8	7.7	96.1	70.2	67.9	49.5	32.3	23.5	15.5	11.2
2.9	20.3	13.5	14.7	9.8	7.2	4.7	3.3	2.2	35.8	25.0	26.0	18.2	12.9	9.0	6.2	4.3	60.9	43.8	43.6	31.3	21.2	15.1	10.1	7.2	92.7	67.7	65.0	47.4	30.6	22.2	14.5	10.5
3.0	19.8	13.2	14.3	9.5	6.9	4.5	3.1	2.0	34.9	24.4	25.3	17.6	12.4	8.6	5.8	4.0	59.1	42.5	42.1	30.2	20.1	14.4	9.5	6.8	89.5	65.3	62.3	45.4	28.9	21.0	13.6	9.9
3.1	19.4	12.9	13.9	9.2	6.6	4.3	2.9		34.1	23.8	24.5	17.1	11.8	8.2	5.5	3.8	57.4	41.2	40.5	29.1	19.2	13.7	9.0	6.4	86.3	63.0	59.7	43.5	27.4	19.9	12.8	9.3
3.2	18.9	12.6	13.5	8.9	6.3	4.1	2.8		33.2	23.2	23.7	16.5	11.3	7.8	5.2	3.6	55.7	40.0	39.1	28.0	18.2	13.0	8.5	6.1	83.2	60.7	57.1	41.7	26.0	18.9	12.1	8.8
3.3	18.5	12.3	13.1	8.7	6.0	3.9	2.6		32.4	22.6	23.0	16.0	10.8	7.5	4.9	3.4	54.0	38.8	37.6	27.0	17.4	12.4	8.0	5.7	80.2	58.5	54.7	39.9	24.7	17.9	11.4	8.3
3.4	18.0	12.0	12.7	8.4	5.7	3.8	2.4		31.6	22.0	22.2	15.5	10.3	7.1	4.7	3.2	52.3	37.6	36.2	26.0	16.5	11.8	7.6	5.4	77.3	56.4	52.4	38.2	23.4	17.0	10.8	7.8
3.5	17.6	11.7	12.3	8.1	5.5	3.6	2.3		30.7	21.4	21.5	15.0	9.9	6.8	4.4	3.0	50.7	36.4	34.9	25.0	15.8	11.3	7.2	5.1	74.5	54.4	50.3	36.6	22.3	16.2	10.2	7.4
3.6	17.1	11.4	11.9	7.9	5.2	3.4	2.2		29.9	20.9	20.8	14.5	9.4	6.5	4.2	2.8	49.1	35.2	33.6	24.1	15.0	10.7	6.8	4.8	71.8	52.4	48.2	35.1	21.2	15.4	9.6	7.0
3.7	16.7	11.1	11.5	7.6	5.0	3.3	2.0		29.1	20.3	20.1	14.0	9.0	6.2	3.9	2.7	47.5	34.1	32.3	23.2	14.3	10.2	6.4	4.6	69.2	50.5	46.2	33.6	20.1	14.6	9.1	6.6
3.8	16.3	10.8	11.1	7.3	4.8	3.1			28.3	19.7	19.4	13.5	8.6	5.9	3.7	2.5	46.0	33.0	31.1	22.3	13.7	9.8	6.1	4.3	66.6	48.6	44.3	32.3	19.2	13.9	8.6	6.2
3.9	15.8	10.5	10.7	7.1	4.5	2.9			27.5	19.2	18.8	13.0	8.2	5.7	3.5	2.4	44.5	32.0	30.0	21.5	13.1	9.3	5.8	4.1	64.2	46.8	42.5	31.0	18.3	13.3	8.2	5.9
4.0	15.4	10.2	10.4	6.8	4.3	2.8			26.8	18.6	18.2	12.6	7.9	5.4	3.3	2.3	43.1	30.9	28.8	20.7	12.5	8.9	5.5	3.9	61.9	45.1	40.8	29.7	17.4	12.7	7.7	5.6
4.1	15.0	9.9	10.0	6.6	4.1	2.7			26.0	18.1	17.5	12.2	7.5	5.2	3.2	2.1	41.7	29.9	27.8	19.9	11.9	8.5	5.2	3.7	59.6	43.5	39.1	28.5	16.6	12.1	7.4	5.3
4.2	14.6	9.6	9.7	6.4	3.9	2.5			25.3	17.6	16.9	11.7	7.2	4.9	3.0	2.0	40.4	29.0	26.8	19.2	11.4	8.1	4.9	3.5	57.5	41.9	37.6	27.4	15.9	11.5	7.0	5.1
4.3	14.2	9.3	9.4	6.1	3.7	2.4			24.5	17.1	16.4	11.3	6.9	4.7	2.8		39.1	28.0	25.8	18.4	10.9	7.8	4.7	3.3	55.4	40.4	36.1	26.3	15.2	11.0	6.6	4.8
4.4	13.8	9.1	9.0	5.9	3.6	2.3			23.8	16.5	15.8	10.9	6.6	4.5	2.7		37.8	27.1	24.8	17.8	10.4	7.4	4.4	3.1	53.5	39.0	34.7	25.3	14.5	10.5	6.3	4.6
4.5	13.4	8.8	8.7	5.7	3.4	2.2			23.1	16.1	15.3	10.6	6.3	4.3	2.5		36.6	26.2	23.9	17.1	9.9	7.1	4.2	3.0	51.6	37.6	33.3	24.3	13.8	10.1	6.0	4.3
4.6	13.0	8.5	8.4	5.5	3.2	2.0			22.5	15.6	14.7	10.2	6.0	4.1	2.4		35.4	25.4	23.0	16.5	9.5	6.8	4.0	2.8	49.8	36.3	32.1	23.4	13.2	9.6	5.7	4.1
4.7	12.6	8.3	8.1	5.3	3.1				21.8	15.1	14.2	9.8	5.7	3.9	2.2		34.3	24.6	22.2	15.9	9.1	6.5	3.8	2.7	48.0	35.0	30.9	22.5	12.7	9.2	5.4	3.9
4.8	12.2	8.0	7.8	5.1	2.9				21.2	14.7	13.7	9.5	5.5	3.7	2.1		33.2	23.8	21.4	15.3	8.7	6.2	3.6	2.5	46.4	33.8	29.7	21.6	12.1	8.8	5.2	3.7
4.9	11.8	7.8	7.5	4.9	2.8				20.5	14.2	13.3	9.2	5.3	3.6			32.1	23.0	20.7	14.8	8.3	5.9	3.4	2.4	44.8	32.6	28.6	20.8	11.6	8.4	4.9	3.6
5.0	11.5	7.5	7.3	4.7	2.6				19.9	13.8	12.8	8.8	5.0	3.4			31.1	22.2	19.9	14.2	8.0	5.7	3.2	2.3	43.2	31.5	27.5	20.0	11.1	8.1	4.7	3.4
5.1	11.1	7.3	7.0	4.5	2.5				19.3	13.4	12.4	8.5	4.8	3.3			30.1	21.5	19.2	13.7	7.7	5.4	3.1	2.2	41.8	30.5	26.5	19.3	10.7	7.8	4.5	3.2
5.2	10.8	7.0	6.7	4.3	2.3				18.7	13.0	11.9	8.2	4.6	3.1			29.1	20.8	18.5	13.2	7.3	5.2	2.9	2.1	40.4	29.4	25.6	18.6	10.2	7.4	4.3	3.1
5.3	10.5	6.8	6.5	4.2	2.2				18.2	12.6	11.5	7.9	4.4	3.0			28.2	20.2	17.9	12.8	7.0	5.0	2.8		39.0	28.4	24.6	17.9	9.8	7.1	4.1	2.9
5.4	10.1	6.6	6.3	4.0	2.1				17.6	12.2	11.1	7.7	4.2	2.8			27.3	19.5	17.3	12.3	6.7	4.8	2.6		37.7	27.5	23.8	17.3	9.4	6.8	3.9	2.8
5.5	9.8	6.4	6.0	3.8					17.1	11.8	10.8	7.4	4.0	2.7			26.4	18.9	16.7	11.9	6.5	4.6	2.5		36.5	26.6	22.9	16.7	9.1	6.6	3.7	2.7
5.6	9.5	6.1	5.8	3.7					16.6	11.4	10.4	7.1	3.8	2.6			25.6	18.3	16.1	11.5	6.2	4.4	2.4		35.3	25.7	22.1	16.1	8.7	6.3	3.5	2.5
5.7	9.2	5.9	5.6	3.5					16.1	11.1	10.0	6.9	3.6	2.4			24.8	17.7	15.5	11.1	5.9	4.2	2.3		34.2	24.9	21.4	15.5	8.3	6.0	3.4	2.4
5.8	8.9	5.7	5.3	3.4					15.6	10.7	9.7	6.6	3.5	2.3			24.0	17.2	15.0	10.7	5.7	4.0	2.1		33.1	24.1	20.6	15.0	8.0	5.8	3.2	2.3
5.9	8.6	5.5	5.1	3.2					15.1	10.4	9.3	6.4	3.3	2.2			23.3	16.7	14.5	10.3	5.5	3.9	2.0		32.0	23.3	19.9	14.5	7.7	5.6	3.1	2.2
6.0	8.3	5.3	4.9	3.1					14.7	10.1	9.0	6.2	3.2	2.1			22.6	16.1	14.0	10.0	5.2	3.7			31.0	22.6	19.3	14.0	7.4	5.4	2.9	2.1

• These tables should be read in conjunction with Sections A5, A6 & A8 and notes on pages C3.1 - C3.3

Note: Where design requirements are for the following sizes:- 100x50 - build in this size using 90x45 height / load data; 100x38 - build in this size using 90x35 height / load data; 75x50 - build in this size using 70x45 height / load data.

Load Bearing Walls - Axial Load Capacity in kN/Stud

Timber Stud - Charfactor 15

Wall Height (m)	Timber Stress Grade F5								Timber Stress Grade F8								Timber Stress Grade F14								Timber Stress Grade F22							
	Stud size (mmxmm)								Stud size (mmxmm)								Stud size (mmxmm)								Stud size (mmxmm)							
	140x45	140x35	120x45	120x35	90x45	90x35	70x45	70x35	140x45	140x35	120x45	120x35	90x45	90x35	70x45	70x35	140x45	140x35	120x45	120x35	90x45	90x35	70x45	70x35	140x45	140x35	120x45	120x35	90x45	90x35	70x45	70x35
2.0	22.6	14.9	17.2	11.4	9.5	6.3	5.0	3.2	41.0	28.4	31.5	21.9	17.8	12.3	9.6	6.6	73.9	52.9	56.6	40.4	31.4	22.4	16.8	11.9	120.3	87.6	90.9	66.1	48.9	35.4	25.6	18.4
2.1	22.2	14.7	16.9	11.1	9.2	6.0	4.7	3.1	40.3	27.9	30.8	21.3	17.1	11.8	9.1	6.2	72.3	51.8	55.0	39.3	30.0	21.4	15.8	11.2	117.0	85.2	87.6	63.6	46.3	33.5	23.8	17.2
2.2	21.9	14.4	16.5	10.9	8.9	5.8	4.5	2.9	39.6	27.4	30.1	20.8	16.4	11.3	8.6	5.9	70.7	50.6	53.3	38.1	28.6	20.4	14.8	10.5	113.7	82.7	84.3	61.2	43.7	31.6	22.2	16.0
2.3	21.5	14.2	16.1	10.6	8.5	5.6	4.2	2.7	38.8	26.9	29.3	20.3	15.8	10.9	8.1	5.5	69.0	49.4	51.7	36.9	27.2	19.4	13.9	9.8	110.3	80.2	81.0	58.9	41.3	29.9	20.7	14.9
2.4	21.1	13.9	15.7	10.3	8.2	5.3	4.0	2.6	38.1	26.4	28.6	19.8	15.1	10.4	7.6	5.2	67.3	48.2	50.0	35.7	25.9	18.4	13.0	9.2	106.9	77.7	77.9	56.5	39.0	28.2	19.3	13.9
2.5	20.7	13.6	15.3	10.1	7.9	5.1	3.8	2.4	37.3	25.8	27.8	19.2	14.5	10.0	7.2	4.9	65.6	46.9	48.4	34.5	24.7	17.6	12.3	8.7	103.5	75.2	74.7	54.2	36.9	26.7	18.1	13.0
2.6	20.3	13.4	14.9	9.8	7.5	4.9	3.6	2.3	36.5	25.3	27.0	18.7	13.9	9.5	6.8	4.7	63.9	45.7	46.7	33.3	23.5	16.7	11.5	8.2	100.1	72.8	71.7	52.0	34.9	25.2	16.9	12.2
2.7	19.9	13.1	14.5	9.5	7.2	4.7	3.4	2.1	35.7	24.7	26.3	18.1	13.3	9.1	6.4	4.4	62.2	44.5	45.1	32.2	23.5	15.9	10.8	7.7	96.7	70.3	68.7	49.9	33.0	23.8	15.8	11.4
2.8	19.5	12.8	14.1	9.3	6.9	4.5	3.2	2.0	34.9	24.2	25.5	17.6	12.7	8.7	6.1	4.1	60.5	43.2	43.6	31.1	21.3	15.1	10.2	7.2	93.4	67.9	65.9	47.8	31.2	22.6	14.8	10.7
2.9	19.0	12.5	13.7	9.0	6.6	4.3	3.0		34.1	23.6	24.8	17.1	12.2	8.3	5.7	3.9	58.8	42.0	42.0	30.0	20.2	14.4	9.6	6.8	90.2	65.5	63.1	45.8	29.5	21.3	13.9	10.1
3.0	18.6	12.2	13.3	8.7	6.3	4.1	2.8		33.3	23.0	24.0	16.6	11.6	8.0	5.4	3.7	57.1	40.8	40.5	28.9	19.2	13.7	9.1	6.4	87.0	63.2	60.5	43.9	27.9	20.2	13.1	9.4
3.1	18.2	11.9	13.0	8.5	6.0	3.9	2.6		32.5	22.5	23.3	16.0	11.1	7.6	5.1	3.5	55.4	39.6	39.0	27.8	18.3	13.0	8.5	6.0	83.9	61.0	57.9	42.0	26.5	19.2	12.3	8.9
3.2	17.8	11.6	12.6	8.2	5.8	3.7	2.5		31.7	21.9	22.5	15.5	10.6	7.3	4.8	3.3	53.7	38.4	37.6	26.8	17.4	12.4	8.1	5.7	80.9	58.8	55.5	40.2	25.1	18.2	11.6	8.4
3.3	17.3	11.3	12.2	7.9	5.5	3.5	2.3		30.9	21.3	21.8	15.0	10.1	6.9	4.6	3.1	52.1	37.2	36.2	25.8	16.6	11.8	7.6	5.4	78.0	56.7	53.1	38.5	23.8	17.2	10.9	7.9
3.4	16.9	11.1	11.8	7.7	5.3	3.4	2.2		30.1	20.8	21.1	14.5	9.7	6.6	4.3	2.9	50.5	36.0	34.9	24.8	15.8	11.2	7.2	5.1	75.2	54.6	50.9	36.9	22.6	16.4	10.3	7.4
3.5	16.5	10.8	11.4	7.4	5.0	3.2	2.1		29.3	20.2	20.4	14.0	9.3	6.3	4.1	2.8	48.9	34.9	33.6	23.9	15.1	10.7	6.8	4.8	72.5	52.6	48.8	35.4	21.5	15.6	9.8	7.0
3.6	16.1	10.5	11.1	7.2	4.8	3.1			28.5	19.7	19.8	13.6	8.9	6.0	3.9	2.6	47.4	33.8	32.3	23.0	14.4	10.2	6.4	4.5	69.8	50.7	46.8	33.9	20.4	14.8	9.2	6.7
3.7	15.7	10.2	10.7	6.9	4.6	2.9			27.8	19.1	19.1	13.1	8.5	5.8	3.6	2.5	45.9	32.7	31.1	22.1	13.7	9.7	6.1	4.3	67.3	48.8	44.8	32.5	19.5	14.1	8.7	6.3
3.8	15.2	9.9	10.3	6.7	4.4	2.8			27.0	18.6	18.5	12.7	8.1	5.5	3.4	2.3	44.4	31.7	30.0	21.3	13.1	9.3	5.8	4.1	64.8	47.1	43.0	31.2	18.5	13.4	8.3	6.0
3.9	14.8	9.6	10.0	6.5	4.2	2.6			26.3	18.1	17.8	12.2	7.7	5.3	3.3	2.2	43.0	30.7	28.8	20.5	12.5	8.8	5.5	3.8	62.5	45.3	41.2	29.9	17.7	12.8	7.8	5.6
4.0	14.4	9.4	9.7	6.2	4.0	2.5			25.5	17.6	17.2	11.8	7.4	5.0	3.1	2.1	41.6	29.7	27.8	19.7	11.9	8.4	5.2	3.6	60.2	43.7	39.6	28.7	16.8	12.2	7.4	5.4
4.1	14.0	9.1	9.3	6.0	3.8	2.4			24.8	17.0	16.6	11.4	7.1	4.8	2.9		40.3	28.7	26.7	19.0	11.4	8.1	4.9	3.4	58.0	42.1	38.0	27.5	16.1	11.6	7.0	5.1
4.2	13.6	8.8	9.0	5.8	3.6	2.2			24.1	16.6	16.1	11.0	6.7	4.6	2.7		39.0	27.8	25.7	18.3	10.9	7.7	4.6	3.3	55.9	40.6	36.5	26.4	15.3	11.1	6.7	4.8
4.3	13.2	8.6	8.7	5.6	3.4	2.1			23.4	16.1	15.5	10.6	6.4	4.4	2.6		37.7	26.9	24.8	17.6	10.4	7.3	4.4	3.1	53.9	39.1	35.0	25.4	14.6	10.6	6.4	4.6
4.4	12.9	8.3	8.4	5.4	3.2	2.0			22.7	15.6	15.0	10.3	6.2	4.2	2.4		36.5	26.0	23.9	17.0	9.9	7.0	4.2	2.9	52.0	37.8	33.7	24.4	14.0	10.1	6.0	4.3
4.5	12.5	8.1	8.1	5.2	3.1				22.0	15.1	14.5	9.9	5.9	4.0	2.3		35.3	25.1	23.0	16.4	9.5	6.7	4.0	2.8	50.2	36.4	32.4	23.5	13.4	9.7	5.7	4.1
4.6	12.1	7.8	7.8	5.0	2.9				21.4	14.7	14.0	9.6	5.6	3.8	2.2		34.2	24.3	22.2	15.8	9.1	6.4	3.8	2.6	48.4	35.1	31.1	22.6	12.8	9.2	5.5	3.9
4.7	11.8	7.6	7.5	4.8	2.8				20.8	14.2	13.5	9.2	5.4	3.6	2.0		33.1	23.5	21.4	15.2	8.7	6.1	3.6	2.5	46.7	33.9	29.9	21.7	12.2	8.8	5.2	3.7
4.8	11.4	7.3	7.2	4.6	2.6				20.1	13.8	13.0	8.9	5.1	3.5			32.0	22.8	20.6	14.6	8.3	5.9	3.4	2.4	45.1	32.7	28.8	20.9	11.7	8.5	4.9	3.6
4.9	11.1	7.1	7.0	4.4	2.5				19.5	13.4	12.6	8.6	4.9	3.3			31.0	22.0	19.9	14.1	8.0	5.6	3.2	2.2	43.6	31.6	27.7	20.1	11.2	8.1	4.7	3.4
5.0	10.7	6.9	6.7	4.2	2.3				19.0	13.0	12.1	8.3	4.7	3.1			30.0	21.3	19.2	13.6	7.6	5.4	3.1	2.1	42.1	30.5	26.7	19.4	10.7	7.8	4.5	3.2
5.1	10.4	6.6	6.5	4.1	2.2				18.4	12.6	11.7	8.0	4.5	3.0			29.0	20.6	18.5	13.1	7.3	5.1	2.9	2.0	40.6	29.5	25.7	18.6	10.3	7.4	4.3	3.1
5.2	10.1	6.4	6.2	3.9	2.1				17.8	12.2	11.3	7.7	4.3	2.9			28.1	20.0	17.8	12.6	7.0	4.9	2.8		39.3	28.5	24.8	18.0	9.9	7.1	4.1	2.9
5.3	9.7	6.2	6.0	3.8					17.3	11.8	10.9	7.4	4.1	2.7			27.2	19.3	17.2	12.2	6.7	4.7	2.6		38.0	27.5	23.9	17.3	9.5	6.8	3.9	2.8
5.4	9.4	6.0	5.8	3.6					16.8	11.4	10.5	7.1	3.9	2.6			26.3	18.7	16.6	11.8	6.4	4.5	2.5		36.7	26.6	23.1	16.7	9.1	6.6	3.7	2.6
5.5	9.1	5.8	5.5	3.4					16.3	11.1	10.2	6.9	3.7	2.5			25.5	18.1	16.0	11.3	6.2	4.3	2.3		35.5	25.7	22.3	16.1	8.7	6.3	3.5	2.5
5.6	8.8	5.6	5.3	3.3					15.8	10.7	9.8	6.6	3.5	2.3			24.7	17.5	15.5	10.9	5.9	4.1	2.2		34.3	24.9	21.5	15.5	8.4	6.0	3.4	2.4
5.7	8.6	5.4	5.1	3.2					15.3	10.4	9.5	6.4	3.4	2.2			23.9	17.0	14.9	10.6	5.7	4.0	2.1		33.2	24.1	20.7	15.0	8.0	5.8	3.2	2.3
5.8	8.3	5.2	4.9	3.0					14.8	10.1	9.1	6.2	3.2	2.1			23.2	16.5	14.4	10.2	5.4	3.8			32.2	23.3	20.0	14.5	7.7	5.5	3.0	2.2
5.9	8.0	5.0	4.7	2.9					14.4	9.8	8.8	5.9	3.1	2.0			22.5	15.9	13.9	9.8	5.2	3.6			31.1	22.6	19.3	14.0	7.4	5.3	2.9	2.1
6.0	7.7	4.8	4.5	2.8					13.9	9.5	8.5	5.7	2.9				21.8	15.4	13.5	9.5	5.0	3.5			30.2	21.8	18.7	13.5	7.1	5.1	2.8	

• These tables should be read in conjunction with Sections A5, A6 & A8 and notes on pages C3.1 - C3.3

Note: Where design requirements are for the following sizes:- 100x50 - build in this size using 90x45 height / load data; 100x38 - build in this size using 90x35 height / load data; 75x50 - build in this size using 70x45 height / load data.

C | Design Tables

Selector+ PLASTERBOARD SYSTEMS

Load Bearing Walls - Axial Load Capacity in kN/Stud

Timber Stud - Charfactor 18

Wall Height (m)	Timber Stress Grade F5								Timber Stress Grade F8								Timber Stress Grade F14								Timber Stress Grade F22							
	Stud size (mmxmm)								Stud size (mmxmm)								Stud size (mmxmm)								Stud size (mmxmm)							
	140x45	140x35	120x45	120x35	90x45	90x35	70x45	70x35	140x45	140x35	120x45	120x35	90x45	90x35	70x45	70x35	140x45	140x35	120x45	120x35	90x45	90x35	70x45	70x35	140x45	140x35	120x45	120x35	90x45	90x35	70x45	70x35
2.0	18.7	11.6	14.1	8.7	7.5	4.6	3.7	2.2	35.7	23.9	27.1	18.1	14.8	9.9	7.7	5.1	66.6	46.7	50.6	35.3	27.5	19.1	14.3	9.9	110.8	79.4	83.0	59.4	44.0	31.3	22.5	16.0
2.1	18.4	11.4	13.7	8.5	7.2	4.4	3.5	2.1	35.1	23.5	26.5	17.7	14.3	9.5	7.3	4.8	65.2	45.6	49.1	34.3	26.2	18.2	13.4	9.3	107.7	77.2	80.0	57.2	41.6	29.6	21.0	14.9
2.2	18.1	11.2	13.4	8.3	6.9	4.2	3.3		34.4	23.0	25.8	17.3	13.7	9.1	6.9	4.5	63.7	44.6	47.6	33.2	25.0	17.4	12.6	8.7	104.6	74.9	77.0	55.0	39.3	28.0	19.6	13.9
2.3	17.8	11.0	13.1	8.1	6.6	4.1	3.1		33.8	22.6	25.2	16.8	13.1	8.7	6.5	4.3	62.2	43.5	46.1	32.2	23.8	16.5	11.8	8.2	101.5	72.6	74.0	52.9	37.1	26.4	18.2	13.0
2.4	17.4	10.8	12.8	7.9	6.4	3.9	2.9		33.1	22.1	24.5	16.4	12.6	8.3	6.1	4.0	60.6	42.4	44.6	31.1	22.6	15.7	11.1	7.7	98.3	70.4	71.1	50.8	35.1	25.0	17.0	12.1
2.5	17.1	10.6	12.4	7.7	6.1	3.7	2.7		32.4	21.6	23.8	15.9	12.1	8.0	5.8	3.8	59.1	41.3	43.1	30.1	21.5	15.0	10.4	7.2	95.2	68.1	68.2	48.7	33.1	23.6	15.9	11.3
2.6	16.7	10.3	12.1	7.4	5.8	3.5	2.6		31.7	21.2	23.2	15.4	11.5	7.6	5.4	3.6	57.5	40.2	41.7	29.1	20.5	14.2	9.8	6.8	92.0	65.9	65.4	46.7	31.3	22.3	14.9	10.6
2.7	16.4	10.1	11.8	7.2	5.6	3.4	2.4		31.0	20.7	22.5	15.0	11.0	7.3	5.1	3.4	56.0	39.1	40.2	28.1	19.5	13.5	9.2	6.4	88.9	63.6	62.7	44.8	29.6	21.1	14.0	9.9
2.8	16.0	9.9	11.4	7.0	5.3	3.2	2.3		30.3	20.2	21.8	14.5	10.5	7.0	4.8	3.2	54.4	38.0	38.8	27.1	18.5	12.9	8.7	6.0	85.9	61.4	60.1	42.9	28.0	19.9	13.1	9.3
2.9	15.7	9.6	11.1	6.8	5.1	3.1	2.1		29.6	19.7	21.2	14.1	10.1	6.7	4.6	3.0	52.9	36.9	37.4	26.1	17.6	12.2	8.2	5.6	82.9	59.3	57.6	41.1	26.5	18.9	12.3	8.7
3.0	15.3	9.4	10.8	6.6	4.9	2.9			28.9	19.2	20.5	13.6	9.6	6.4	4.3	2.8	51.3	35.8	36.1	25.1	16.8	11.6	7.7	5.3	80.0	57.2	55.2	39.4	25.1	17.9	11.5	8.2
3.1	14.9	9.2	10.4	6.4	4.6	2.8			28.2	18.8	19.9	13.2	9.2	6.1	4.1	2.6	49.8	34.8	34.8	24.2	16.0	11.1	7.2	5.0	77.2	55.2	52.9	37.7	23.8	16.9	10.9	7.7
3.2	14.6	8.9	10.1	6.2	4.4	2.6			27.5	18.3	19.3	12.8	8.8	5.8	3.8	2.5	48.3	33.7	33.5	23.3	15.2	10.5	6.8	4.7	74.4	53.2	50.6	36.1	22.6	16.1	10.2	7.3
3.3	14.2	8.7	9.8	5.9	4.2	2.5			26.7	17.8	18.6	12.4	8.4	5.5	3.6	2.3	46.8	32.7	32.2	22.5	14.5	10.0	6.4	4.4	71.7	51.3	48.5	34.6	21.4	15.2	9.6	6.8
3.4	13.8	8.5	9.5	5.7	4.0	2.4			26.0	17.3	18.0	11.9	8.0	5.3	3.4	2.2	45.4	31.7	31.1	21.6	13.8	9.6	6.1	4.2	69.1	49.4	46.5	33.2	20.3	14.5	9.1	6.5
3.5	13.5	8.2	9.2	5.5	3.8	2.2			25.4	16.8	17.4	11.5	7.6	5.0	3.2	2.1	44.0	30.7	29.9	20.8	13.1	9.1	5.7	4.0	66.6	47.6	44.5	31.8	19.3	13.8	8.6	6.1
3.6	13.1	8.0	8.8	5.3	3.6	2.1			24.7	16.4	16.8	11.1	7.3	4.8	3.0		42.6	29.7	28.8	20.0	12.5	8.7	5.4	3.7	64.2	45.9	42.7	30.5	18.4	13.1	8.1	5.8
3.7	12.8	7.8	8.5	5.1	3.4	2.0			24.0	15.9	16.3	10.8	7.0	4.6	2.8		41.2	28.7	27.7	19.3	11.9	8.3	5.1	3.5	61.8	44.2	40.9	29.2	17.5	12.4	7.7	5.4
3.8	12.4	7.5	8.3	5.0	3.3				23.3	15.5	15.7	10.4	6.6	4.3	2.7		39.9	27.8	26.7	18.5	11.4	7.9	4.9	3.3	59.6	42.6	39.3	28.0	16.6	11.8	7.3	5.1
3.9	12.1	7.3	8.0	4.8	3.1				22.7	15.0	15.2	10.0	6.3	4.1	2.5		38.6	26.9	25.7	17.8	10.9	7.5	4.6	3.2	57.4	41.0	37.7	26.9	15.9	11.3	6.9	4.9
4.0	11.7	7.1	7.7	4.6	2.9				22.0	14.6	14.7	9.7	6.1	3.9	2.4		37.4	26.0	24.7	17.2	10.4	7.2	4.3	3.0	55.4	39.5	36.1	25.8	15.1	10.7	6.5	4.6
4.1	11.4	6.9	7.4	4.4	2.8				21.4	14.1	14.2	9.3	5.8	3.8	2.2		36.2	25.2	23.8	16.5	9.9	6.8	4.1	2.8	53.4	38.1	34.7	24.7	14.4	10.2	6.2	4.4
4.2	11.1	6.7	7.1	4.2	2.6				20.8	13.7	13.7	9.0	5.5	3.6	2.1		35.0	24.4	22.9	15.9	9.4	6.5	3.9	2.7	51.4	36.7	33.3	23.8	13.8	9.8	5.9	4.1
4.3	10.7	6.4	6.9	4.1	2.5				20.1	13.3	13.2	8.7	5.3	3.4			33.9	23.6	22.1	15.3	9.0	6.2	3.7	2.5	49.6	35.4	32.0	22.8	13.1	9.3	5.6	3.9
4.4	10.4	6.2	6.6	3.9	2.4				19.6	12.9	12.7	8.4	5.0	3.2			32.8	22.8	21.2	14.7	8.6	5.9	3.5	2.4	47.8	34.2	30.8	21.9	12.5	8.9	5.3	3.7
4.5	10.1	6.0	6.4	3.7	2.2				19.0	12.5	12.3	8.1	4.8	3.1			31.7	22.0	20.5	14.2	8.2	5.7	3.3	2.2	46.1	32.9	29.6	21.1	12.0	8.5	5.0	3.5
4.6	9.8	5.8	6.1	3.6	2.1				18.4	12.1	11.9	7.8	4.6	2.9			30.7	21.3	19.7	13.7	7.9	5.4	3.1	2.1	44.5	31.8	28.4	20.3	11.5	8.1	4.8	3.4
4.7	9.5	5.6	5.9	3.4					17.9	11.8	11.4	7.5	4.4	2.8			29.7	20.6	19.0	13.2	7.5	5.2	3.0	2.0	43.0	30.7	27.3	19.5	11.0	7.8	4.5	3.2
4.8	9.2	5.4	5.7	3.3					17.3	11.4	11.0	7.2	4.2	2.7			28.7	19.9	18.3	12.7	7.2	4.9	2.8		41.5	29.6	26.3	18.7	10.5	7.4	4.3	3.0
4.9	8.9	5.3	5.4	3.2					16.8	11.0	10.6	6.9	4.0	2.5			27.8	19.3	17.6	12.2	6.9	4.7	2.7		40.1	28.6	25.3	18.0	10.0	7.1	4.1	2.9
5.0	8.6	5.1	5.2	3.0					16.3	10.7	10.3	6.7	3.8	2.4			26.9	18.7	17.0	11.8	6.6	4.5	2.5		38.7	27.6	24.4	17.4	9.6	6.8	3.9	2.7
5.1	8.3	4.9	5.0	2.9					15.8	10.4	9.9	6.4	3.6	2.3			26.0	18.1	16.4	11.3	6.3	4.3	2.4		37.4	26.7	23.5	16.7	9.2	6.5	3.7	2.6
5.2	8.0	4.7	4.8	2.7					15.3	10.0	9.5	6.2	3.4	2.2			25.2	17.5	15.8	10.9	6.0	4.1	2.3		36.1	25.8	22.6	16.1	8.8	6.3	3.5	2.5
5.3	7.8	4.5	4.6	2.6					14.8	9.7	9.2	6.0	3.3	2.0			24.4	16.9	15.3	10.5	5.8	3.9	2.1		34.9	24.9	21.8	15.5	8.5	6.0	3.4	2.3
5.4	7.5	4.4	4.4	2.5					14.4	9.4	8.9	5.7	3.1				23.6	16.4	14.7	10.2	5.5	3.8	2.0		33.7	24.1	21.0	15.0	8.1	5.7	3.2	2.2
5.5	7.3	4.2	4.2	2.4					13.9	9.1	8.6	5.5	2.9				22.9	15.8	14.2	9.8	5.3	3.6			32.6	23.3	20.3	14.4	7.8	5.5	3.0	2.1
5.6	7.0	4.0	4.1	2.2					13.5	8.8	8.2	5.3	2.8				22.1	15.3	13.7	9.5	5.1	3.4			31.6	22.5	19.6	13.9	7.5	5.3	2.9	2.0
5.7	6.8	3.9	3.9	2.1					13.1	8.5	7.9	5.1	2.7				21.4	14.8	13.2	9.1	4.8	3.3			30.5	21.8	18.9	13.4	7.2	5.1	2.7	
5.8	6.5	3.7	3.7	2.0					12.7	8.2	7.7	4.9	2.5				20.8	14.4	12.8	8.8	4.6	3.1			29.6	21.1	18.2	13.0	6.9	4.8	2.6	
5.9	6.3	3.6	3.5						12.3	8.0	7.4	4.7	2.4				20.1	13.9	12.3	8.5	4.4	3.0			28.6	20.4	17.6	12.5	6.6	4.6	2.5	
6.0	6.1	3.4	3.4						11.9	7.7	7.1	4.6	2.3				19.5	13.5	11.9	8.2	4.2	2.9			27.7	19.7	17.0	12.1	6.3	4.5	2.4	

• These tables should be read in conjunction with Sections A5, A6 & A8 and notes on pages C3.1 - C3.3

Note: Where design requirements are for the following sizes:- 100x50 - build in this size using 90x45 height / load data; 100x38 - build in this size using 90x35 height / load data; 75x50 - build in this size using 70x45 height / load data.

Load Bearing Walls - Axial Load Capacity in kN/Stud

Timber Stud - Charfactor 21

Wall Height (m)	Timber Stress Grade F5								Timber Stress Grade F8								Timber Stress Grade F14								Timber Stress Grade F22							
	Stud size (mmxmm)								Stud size (mmxmm)								Stud size (mmxmm)								Stud size (mmxmm)							
	140x45	140x35	120x45	120x35	90x45	90x35	70x45	70x35	140x45	140x35	120x45	120x35	90x45	90x35	70x45	70x35	140x45	140x35	120x45	120x35	90x45	90x35	70x45	70x35	140x45	140x35	120x45	120x35	90x45	90x35	70x45	70x35
2.0	15.3	8.7	11.3	6.4	5.7	3.2	2.7	30.9	19.8	23.2	14.8	12.3	7.8	6.1	3.9	59.9	40.9	45.0	30.7	23.9	16.2	12.1	8.2	101.9	71.7	75.7	53.2	39.4	27.6	19.8	13.8	
2.1	15.0	8.6	11.0	6.3	5.5	3.1	2.5	30.3	19.4	22.6	14.5	11.8	7.5	5.8	3.6	58.6	40.0	43.7	29.8	22.8	15.5	11.4	7.7	99.0	69.7	73.0	51.3	37.3	26.1	18.5	12.9	
2.2	14.7	8.4	10.8	6.1	5.3	2.9	2.4	29.7	19.0	22.0	14.1	11.3	7.2	5.5	3.4	57.2	39.0	42.3	28.8	21.7	14.7	10.7	7.2	96.1	67.6	70.2	49.3	35.2	24.6	17.2	12.0	
2.3	14.5	8.2	10.5	5.9	5.1	2.8	2.2	29.1	18.7	21.5	13.7	10.8	6.9	5.1	3.2	55.8	38.1	41.0	27.9	20.7	14.0	10.0	6.8	93.2	65.6	67.5	47.4	33.3	23.3	16.0	11.2	
2.4	14.2	8.1	10.2	5.8	4.8	2.7	2.1	28.6	18.3	20.9	13.3	10.4	6.6	4.8	3.0	54.4	37.1	39.7	27.0	19.7	13.3	9.4	6.3	90.3	63.5	64.8	45.5	31.4	22.0	15.0	10.4	
2.5	13.9	7.9	9.9	5.6	4.6	2.6		27.9	17.9	20.3	12.9	9.9	6.3	4.6	2.9	53.0	36.1	38.3	26.1	18.7	12.7	8.8	5.9	87.4	61.4	62.2	43.6	29.7	20.8	14.0	9.8	
2.6	13.6	7.7	9.6	5.4	4.4	2.4		27.3	17.5	19.7	12.6	9.5	6.0	4.3	2.7	51.6	35.2	37.0	25.2	17.8	12.1	8.3	5.6	84.5	59.4	59.6	41.9	28.1	19.6	13.1	9.1	
2.7	13.3	7.5	9.4	5.3	4.2	2.3		26.7	17.1	19.1	12.2	9.1	5.7	4.0	2.5	50.2	34.2	35.7	24.3	16.9	11.5	7.8	5.2	81.6	57.4	57.2	40.1	26.6	18.6	12.3	8.5	
2.8	13.0	7.3	9.1	5.1	4.0	2.2		26.1	16.6	18.6	11.8	8.7	5.5	3.8	2.4	48.8	33.2	34.5	23.4	16.1	10.9	7.3	4.9	78.8	55.4	54.8	38.4	25.1	17.6	11.5	8.0	
2.9	12.7	7.1	8.8	4.9	3.8	2.1		25.5	16.2	18.0	11.4	8.3	5.2	3.6	2.2	47.4	32.3	33.2	22.6	15.3	10.4	6.9	4.6	76.1	53.5	52.5	36.8	23.8	16.6	10.8	7.5	
3.0	12.4	6.9	8.5	4.7	3.6			24.8	15.8	17.4	11.1	7.9	5.0	3.4	2.1	46.0	31.3	32.0	21.7	14.6	9.8	6.5	4.4	73.4	51.6	50.3	35.3	22.5	15.7	10.1	7.1	
3.1	12.1	6.8	8.2	4.6	3.5			24.2	15.4	16.9	10.7	7.5	4.7	3.2		44.6	30.4	30.9	20.9	13.9	9.4	6.1	4.1	70.8	49.7	48.2	33.8	21.3	14.9	9.5	6.6	
3.2	11.7	6.6	8.0	4.4	3.3			23.6	15.0	16.3	10.3	7.2	4.5	3.0		43.3	29.4	29.7	20.2	13.2	8.9	5.8	3.9	68.3	47.9	46.2	32.4	20.2	14.1	9.0	6.2	
3.3	11.4	6.4	7.7	4.2	3.1			23.0	14.6	15.8	10.0	6.9	4.3	2.8		41.9	28.5	28.6	19.4	12.6	8.5	5.4	3.6	65.8	46.2	44.2	31.0	19.2	13.4	8.5	5.9	
3.4	11.1	6.2	7.4	4.1	2.9			22.4	14.2	15.3	9.6	6.5	4.1	2.6		40.6	27.6	27.5	18.7	12.0	8.1	5.1	3.4	63.4	44.5	42.4	29.7	18.2	12.7	8.0	5.5	
3.5	10.8	6.0	7.2	3.9	2.8			21.8	13.8	14.7	9.3	6.2	3.9	2.5		39.4	26.7	26.5	18.0	11.4	7.7	4.8	3.2	61.1	42.9	40.6	28.5	17.3	12.1	7.5	5.2	
3.6	10.5	5.8	6.9	3.8	2.6			21.1	13.4	14.2	9.0	5.9	3.7	2.3		38.1	25.9	25.5	17.3	10.8	7.3	4.6	3.0	58.9	41.3	38.9	27.3	16.5	11.5	7.1	4.9	
3.7	10.2	5.6	6.7	3.6	2.5			20.6	13.0	13.8	8.7	5.7	3.5	2.2		36.9	25.0	24.6	16.6	10.3	6.9	4.3	2.9	56.7	39.8	37.3	26.1	15.7	10.9	6.7	4.7	
3.8	9.9	5.5	6.4	3.5	2.4			20.0	12.6	13.3	8.4	5.4	3.3	2.0		35.7	24.2	23.6	16.0	9.8	6.6	4.1	2.7	54.7	38.4	35.8	25.1	14.9	10.4	6.4	4.4	
3.9	9.6	5.3	6.2	3.3	2.2			19.4	12.3	12.8	8.1	5.1	3.2			34.6	23.4	22.7	15.4	9.4	6.3	3.8	2.5	52.7	37.0	34.3	24.0	14.2	9.9	6.0	4.2	
4.0	9.4	5.1	6.0	3.2	2.1			18.8	11.9	12.4	7.8	4.9	3.0			33.4	22.7	21.9	14.8	9.0	6.0	3.6	2.4	50.8	35.6	32.9	23.1	13.5	9.4	5.7	3.9	
4.1	9.1	4.9	5.7	3.1				18.3	11.5	11.9	7.5	4.7	2.9			32.4	21.9	21.1	14.2	8.5	5.7	3.4	2.3	49.0	34.3	31.6	22.1	12.9	9.0	5.4	3.7	
4.2	8.8	4.8	5.5	2.9				17.7	11.2	11.5	7.2	4.4	2.7			31.3	21.2	20.3	13.7	8.2	5.5	3.2	2.1	47.2	33.1	30.4	21.2	12.3	8.6	5.1	3.5	
4.3	8.5	4.6	5.3	2.8				17.2	10.8	11.1	6.9	4.2	2.6			30.3	20.5	19.5	13.2	7.8	5.2	3.1	2.0	45.5	31.9	29.2	20.4	11.7	8.2	4.9	3.4	
4.4	8.2	4.4	5.1	2.7				16.7	10.5	10.7	6.7	4.0	2.4			29.3	19.8	18.8	12.7	7.4	5.0	2.9		43.9	30.8	28.0	19.6	11.2	7.8	4.6	3.2	
4.5	8.0	4.3	4.9	2.5				16.2	10.2	10.3	6.4	3.8	2.3			28.3	19.2	18.1	12.2	7.1	4.7	2.7		42.3	29.7	26.9	18.8	10.7	7.5	4.4	3.0	
4.6	7.7	4.1	4.7	2.4				15.7	9.8	9.9	6.2	3.6	2.2			27.4	18.5	17.4	11.8	6.8	4.5	2.6		40.8	28.6	25.9	18.1	10.2	7.1	4.1	2.9	
4.7	7.5	4.0	4.5	2.3				15.2	9.5	9.6	5.9	3.5	2.1			26.5	17.9	16.8	11.3	6.5	4.3	2.4		39.4	27.6	24.9	17.4	9.8	6.8	3.9	2.7	
4.8	7.2	3.8	4.3	2.2				14.7	9.2	9.2	5.7	3.3				25.7	17.3	16.2	10.9	6.2	4.1	2.3		38.1	26.7	24.0	16.8	9.4	6.5	3.7	2.6	
4.9	7.0	3.7	4.1	2.1				14.3	8.9	8.9	5.5	3.1				24.8	16.8	15.6	10.5	5.9	3.9	2.2		36.7	25.7	23.1	16.1	9.0	6.2	3.5	2.4	
5.0	6.7	3.5	3.9					13.8	8.6	8.6	5.3	3.0				24.0	16.2	15.0	10.1	5.6	3.7	2.0		35.5	24.8	22.2	15.5	8.6	6.0	3.4	2.3	
5.1	6.5	3.4	3.8					13.4	8.3	8.3	5.1	2.8				23.2	15.7	14.5	9.7	5.4	3.6			34.3	24.0	21.4	14.9	8.2	5.7	3.2	2.2	
5.2	6.3	3.2	3.6					13.0	8.1	8.0	4.9	2.7				22.5	15.2	14.0	9.4	5.1	3.4			33.1	23.2	20.6	14.4	7.9	5.4	3.0	2.1	
5.3	6.0	3.1	3.4					12.6	7.8	7.7	4.7	2.5				21.8	14.7	13.5	9.0	4.9	3.2			32.0	22.4	19.9	13.9	7.5	5.2	2.9		
5.4	5.8	2.9	3.3					12.2	7.5	7.4	4.5	2.4				21.1	14.2	13.0	8.7	4.7	3.1			30.9	21.6	19.1	13.4	7.2	5.0	2.7		
5.5	5.6	2.8	3.1					11.8	7.3	7.1	4.3	2.3				20.4	13.7	12.5	8.4	4.5	2.9			29.9	20.9	18.5	12.9	6.9	4.8	2.6		
5.6	5.4	2.7	3.0					11.4	7.0	6.8	4.1	2.1				19.7	13.3	12.1	8.1	4.3	2.8			28.9	20.2	17.8	12.4	6.6	4.6	2.5		
5.7	5.2	2.6	2.8					11.0	6.8	6.6	4.0	2.0				19.1	12.8	11.6	7.8	4.1	2.7			28.0	19.6	17.2	12.0	6.4	4.4	2.3		
5.8	5.0	2.4	2.7					10.7	6.6	6.3	3.8					18.5	12.4	11.2	7.5	3.9	2.5			27.1	18.9	16.6	11.5	6.1	4.2	2.2		
5.9	4.8	2.3	2.5					10.3	6.3	6.1	3.6					17.9	12.0	10.8	7.2	3.7	2.4			26.2	18.3	16.0	11.1	5.8	4.0	2.1		
6.0	4.6	2.2	2.4					10.0	6.1	5.8	3.5					17.3	11.6	10.4	7.0	3.6	2.3			25.4	17.7	15.4	10.7	5.6	3.8			

• These tables should be read in conjunction with Sections A5, A6 & A8 and notes on pages C3.1 - C3.3

Note: Where design requirements are for the following sizes:- 100x50 - build in this size using 90x45 height / load data; 100x38 - build in this size using 90x35 height / load data; 75x50 - build in this size using 70x45 height / load data.

C | Design Tables

Selector+ PLASTERBOARD SYSTEMS

Load Bearing Walls - Axial Load Capacity in kN/Stud

Timber Stud - Charfactor 22

Wall Height (m)	Timber Stress Grade F5								Timber Stress Grade F8								Timber Stress Grade F14								Timber Stress Grade F22							
	Stud size (mmxmm)								Stud size (mmxmm)								Stud size (mmxmm)								Stud size (mmxmm)							
	140x45	140x35	120x45	120x35	90x45	90x35	70x45	70x35	140x45	140x35	120x45	120x35	90x45	90x35	70x45	70x35	140x45	140x35	120x45	120x35	90x45	90x35	70x45	70x35	140x45	140x35	120x45	120x35	90x45	90x35	70x45	70x35
2.0	14.2	7.9	10.5	5.7	5.2	2.8	2.4	29.4	18.5	22.0	13.8	11.5	7.2	5.7	3.5	57.8	39.1	43.3	29.2	22.8	15.3	11.5	7.7	99.0	69.3	73.4	51.3	38.0	26.4	19.0	13.1	
2.1	14.0	7.7	10.2	5.6	5.0	2.7	2.2	28.8	18.2	21.4	13.5	11.1	6.9	5.3	3.3	56.5	38.2	42.0	28.3	21.8	14.6	10.8	7.2	96.2	67.3	70.7	49.4	35.9	25.0	17.7	12.2	
2.2	13.7	7.6	9.9	5.4	4.8	2.6	2.1	28.3	17.8	20.9	13.1	10.6	6.6	5.0	3.1	55.2	37.3	40.7	27.5	20.7	13.9	10.1	6.7	93.4	65.3	68.0	47.5	33.9	23.6	16.5	11.4	
2.3	13.4	7.4	9.7	5.3	4.6	2.5		27.7	17.4	20.3	12.8	10.2	6.3	4.7	2.9	53.8	36.4	39.4	26.6	19.7	13.2	9.5	6.3	90.5	63.3	65.4	45.6	32.1	22.3	15.4	10.6	
2.4	13.2	7.2	9.4	5.1	4.4	2.3		27.1	17.1	19.8	12.4	9.7	6.0	4.5	2.7	52.5	35.4	38.1	25.7	18.8	12.6	8.9	5.9	87.7	61.3	62.8	43.8	30.3	21.1	14.3	9.9	
2.5	12.9	7.1	9.2	5.0	4.2	2.2		26.6	16.7	19.2	12.0	9.3	5.8	4.2	2.6	51.1	34.5	36.8	24.8	17.9	12.0	8.3	5.6	84.9	59.3	60.3	42.0	28.6	19.9	13.4	9.3	
2.6	12.6	6.9	8.9	4.8	4.0	2.1		26.0	16.3	18.6	11.7	8.9	5.5	4.0	2.4	49.7	33.6	35.6	24.0	17.0	11.4	7.8	5.2	82.1	57.3	57.8	40.3	27.1	18.8	12.5	8.7	
2.7	12.3	6.7	8.6	4.7	3.8			25.4	15.9	18.1	11.3	8.5	5.3	3.7	2.3	48.4	32.6	34.3	23.1	16.1	10.8	7.4	4.9	79.3	55.4	55.4	38.6	25.6	17.8	11.7	8.1	
2.8	12.0	6.5	8.4	4.5	3.6			24.8	15.5	17.5	11.0	8.1	5.0	3.5	2.1	47.0	31.7	33.1	22.3	15.4	10.3	6.9	4.6	76.6	53.5	53.1	37.0	24.2	16.8	11.0	7.6	
2.9	11.8	6.4	8.1	4.3	3.4			24.2	15.2	17.0	10.6	7.7	4.8	3.3		45.7	30.8	31.9	21.5	14.6	9.8	6.5	4.3	73.9	51.6	50.9	35.5	22.9	15.9	10.3	7.1	
3.0	11.5	6.2	7.8	4.2	3.3			23.6	14.8	16.5	10.3	7.4	4.5	3.1		44.3	29.9	30.8	20.7	13.9	9.3	6.1	4.1	71.3	49.8	48.7	34.0	21.7	15.1	9.7	6.7	
3.1	11.2	6.0	7.6	4.0	3.1			23.0	14.4	15.9	9.9	7.0	4.3	2.9		43.0	29.0	29.6	19.9	13.2	8.8	5.8	3.8	68.8	48.0	46.7	32.5	20.6	14.3	9.1	6.3	
3.2	10.9	5.9	7.3	3.9	2.9			22.4	14.0	15.4	9.6	6.7	4.1	2.7		41.7	28.1	28.5	19.2	12.6	8.4	5.4	3.6	66.3	46.3	44.7	31.2	19.5	13.5	8.6	5.9	
3.3	10.6	5.7	7.1	3.7	2.8			21.8	13.6	14.9	9.3	6.4	3.9	2.6		40.4	27.2	27.5	18.4	12.0	8.0	5.1	3.4	63.9	44.6	42.8	29.8	18.5	12.8	8.1	5.6	
3.4	10.3	5.5	6.8	3.6	2.6			21.2	13.2	14.4	8.9	6.1	3.7	2.4		39.1	26.3	26.4	17.8	11.4	7.6	4.8	3.2	61.6	43.0	41.0	28.6	17.6	12.2	7.6	5.3	
3.5	10.0	5.3	6.6	3.4	2.5			20.6	12.9	13.9	8.6	5.8	3.5	2.3		37.9	25.5	25.5	17.1	10.8	7.2	4.5	3.0	59.4	41.4	39.3	27.4	16.7	11.6	7.2	5.0	
3.6	9.7	5.2	6.4	3.3	2.4			20.1	12.5	13.4	8.3	5.5	3.4	2.1		36.7	24.7	24.5	16.4	10.3	6.9	4.3	2.8	57.2	39.9	37.7	26.2	15.9	11.0	6.8	4.7	
3.7	9.4	5.0	6.1	3.2	2.2			19.5	12.1	13.0	8.0	5.3	3.2			35.5	23.9	23.6	15.8	9.8	6.5	4.0	2.7	55.1	38.4	36.1	25.2	15.1	10.5	6.4	4.4	
3.8	9.2	4.8	5.9	3.0	2.1			18.9	11.8	12.5	7.7	5.0	3.0			34.4	23.1	22.7	15.2	9.4	6.2	3.8	2.5	53.1	37.0	34.7	24.1	14.4	10.0	6.1	4.2	
3.9	8.9	4.7	5.7	2.9				18.4	11.4	12.1	7.4	4.8	2.9			33.3	22.3	21.8	14.6	8.9	5.9	3.6	2.4	51.2	35.7	33.3	23.1	13.7	9.5	5.7	4.0	
4.0	8.6	4.5	5.5	2.8				17.8	11.1	11.7	7.2	4.5	2.7			32.2	21.6	21.0	14.1	8.5	5.7	3.4	2.2	49.3	34.4	31.9	22.2	13.0	9.0	5.4	3.7	
4.1	8.4	4.3	5.2	2.6				17.3	10.7	11.2	6.9	4.3	2.6			31.1	20.9	20.2	13.5	8.1	5.4	3.2	2.1	47.5	33.1	30.6	21.3	12.4	8.6	5.2	3.5	
4.2	8.1	4.2	5.0	2.5				16.8	10.4	10.8	6.6	4.1	2.5			30.1	20.2	19.5	13.0	7.7	5.1	3.0		45.8	31.9	29.4	20.5	11.9	8.2	4.9	3.3	
4.3	7.8	4.0	4.8	2.4				16.3	10.1	10.4	6.4	3.9	2.3			29.1	19.5	18.7	12.5	7.4	4.9	2.9		44.2	30.8	28.2	19.6	11.3	7.8	4.6	3.2	
4.4	7.6	3.9	4.6	2.3				15.8	9.7	10.1	6.2	3.7	2.2			28.2	18.9	18.0	12.1	7.1	4.7	2.7		42.6	29.7	27.1	18.9	10.8	7.5	4.4	3.0	
4.5	7.3	3.7	4.4	2.2				15.3	9.4	9.7	5.9	3.5	2.1			27.3	18.3	17.4	11.6	6.7	4.4	2.5		41.1	28.6	26.1	18.1	10.3	7.1	4.2	2.8	
4.6	7.1	3.6	4.2	2.1				14.8	9.1	9.3	5.7	3.4				26.4	17.7	16.7	11.2	6.4	4.2	2.4		39.7	27.6	25.1	17.4	9.9	6.8	3.9	2.7	
4.7	6.8	3.4	4.1					14.4	8.8	9.0	5.5	3.2				25.5	17.1	16.1	10.7	6.1	4.0	2.3		38.3	26.6	24.1	16.8	9.4	6.5	3.7	2.6	
4.8	6.6	3.3	3.9					13.9	8.5	8.7	5.3	3.0				24.7	16.5	15.5	10.3	5.9	3.8	2.1		37.0	25.7	23.2	16.1	9.0	6.2	3.6	2.4	
4.9	6.4	3.2	3.7					13.5	8.3	8.4	5.1	2.9				23.9	16.0	15.0	10.0	5.6	3.7	2.0		35.7	24.8	22.3	15.5	8.6	5.9	3.4	2.3	
5.0	6.1	3.0	3.5					13.1	8.0	8.0	4.9	2.7				23.1	15.4	14.4	9.6	5.3	3.5			34.5	24.0	21.5	14.9	8.2	5.7	3.2	2.2	
5.1	5.9	2.9	3.4					12.7	7.7	7.7	4.7	2.6				22.4	14.9	13.9	9.2	5.1	3.3			33.3	23.1	20.7	14.4	7.9	5.4	3.0	2.1	
5.2	5.7	2.8	3.2					12.3	7.5	7.5	4.5	2.4				21.6	14.4	13.4	8.9	4.9	3.2			32.2	22.4	20.0	13.8	7.6	5.2	2.9		
5.3	5.5	2.6	3.1					11.9	7.2	7.2	4.3	2.3				20.9	14.0	12.9	8.6	4.7	3.0			31.1	21.6	19.2	13.3	7.2	5.0	2.7		
5.4	5.3	2.5	2.9					11.5	7.0	6.9	4.1	2.2				20.3	13.5	12.4	8.2	4.4	2.9			30.0	20.9	18.5	12.8	6.9	4.8	2.6		
5.5	5.1	2.4	2.8					11.1	6.7	6.6	3.9	2.1				19.6	13.1	12.0	7.9	4.2	2.7			29.0	20.2	17.9	12.4	6.6	4.6	2.5		
5.6	4.9	2.3	2.6					10.8	6.5	6.4	3.8					19.0	12.6	11.6	7.6	4.0	2.6			28.1	19.5	17.2	11.9	6.4	4.4	2.3		
5.7	4.7	2.2	2.5					10.4	6.3	6.1	3.6					18.4	12.2	11.1	7.4	3.9	2.5			27.2	18.9	16.6	11.5	6.1	4.2	2.2		
5.8	4.5	2.0	2.4					10.1	6.1	5.9	3.5					17.8	11.8	10.7	7.1	3.7	2.4			26.3	18.2	16.0	11.1	5.8	4.0	2.1		
5.9	4.3		2.2					9.7	5.8	5.7	3.3					17.2	11.4	10.4	6.8	3.5	2.2			25.4	17.6	15.5	10.7	5.6	3.8			
6.0	4.1		2.1					9.4	5.6	5.5	3.2					16.7	11.1	10.0	6.6	3.4	2.1			24.6	17.1	14.9	10.3	5.4	3.7			

• These tables should be read in conjunction with Sections A5, A6 & A8 and notes on pages C3.1 - C3.3

Note: Where design requirements are for the following sizes:- 100x50 - build in this size using 90x45 height / load data; 100x38 - build in this size using 90x35 height / load data; 75x50 - build in this size using 70x45 height / load data.

C4 | Ceiling Span Tables

Notes to Tables

Horizontal Shaft Wall Ceilings

- Maximum working stress of steel taken as 80MPa for fire service
- System assumed to have 1 layer of 25mm Shaftliner™ on top and 3 layers of 16mm Firestop® underneath
- Does not apply to the inverted Horizontal Shaft Wall system
- Spans are centre to centre and analysis assumes the section to be laterally restrained
- The studs are assumed to be simply supported and the ceiling is assumed to be non trafficable and not subject to any loading from construction or maintenance personnel.

Spanning C Section Ceilings

- Non trafficable ceiling
- All connections where spanning ceiling section abuts a wall should be Rondo web cleat SWC3.

Spanning D-Span™ Ceilings

- Spans calculated based on self weight of plasterboard and joist members.

Dead Load Only (no plenum space)

- The design pressure acting on the ceiling membrane is NIL Pa. Max deflection span/500 under design loading
- Allowance has also been made for additional incidental dead loads of 5kg/m².

250Pa Design Pressure (no plenum space)

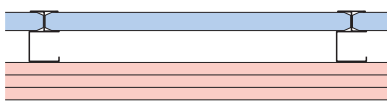
- The design pressure acting on the ceiling membrane is 250Pa
- Max deflection span/360 under design loading.

Horizontal Shaft Wall

Horizontal Shaft Wall - Maximum Ceiling Spans (mm)

Layout	FRL	Up to 120/120/120	
	Section	Maximum Frame Centres	
		300mm	600mm

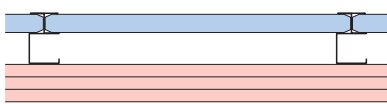
Maximum Pressure plus 600Pa self weight: 0.00kPa



System **CHS48F** illustrated

64CH55	2000	1760
64CH90	2530	2200
102CH55	2690	2360
102CH90	3410	2960

Maximum Pressure plus 600Pa self weight: 0.25kPa



System **CHS48F** illustrated

64CH55	2000	1480
64CH90	2530	1850
102CH55	2690	1980
102CH90	3410	2500

Spanning Ceilings

Spanning Ceilings With 150CS75 Joists at 600mm max ctrs - Max Ceiling Spans (mm)

Layout	System Ref	Description	Point Load at Midspan (N)	Max Span
<p>System CS3232F illustrated</p>	CSP1616F	1x16mm FireSTOP pbd above 1x16mm FireSTOP pbd below	1400	2000
			900	3000
	CSP2613F	2x13mm FireSTOP pbd above 1x13mm FireSTOP pbd below	1400	2000
			900	2900
	CSP3216F10	2x16mm FireSTOP pbd above 1x16mm FireSTOP plus 1x10mm Std Core pbd below	1400	1900
			900	2650
	CSP5016F	2x25mm ShaftLINER pbd above 1x16mm FireSTOP pbd below	1400	1900
			900	2600
	CSP3232F	2x16mm FireSTOP pbd above 2x16mm FireSTOP pbd below	1400	1900
			900	2650
	CSP3248F	2x16mm FireSTOP pbd above 3x16mm FireSTOP pbd below	1400	1850
			900	2500

C4 Ceiling Span Tables

C4

Maximum Ceiling Spans - Horizontal D-Span™

Lining (no of layers x thickness in mm)		1 x 10	1 x 13	1 x 16	13/16	2 x 13	2 x 16	3 x 16	1 x 10	1 x 13	1 x 16	13/16	2 x 13	2 x 16	3 x 16
Layout	FRL	Up to 120/90/90 from below													
	Brand Section	450mm Maximum Frame Centres							600mm Maximum Frame Centres						

Dead Load Only (no plenum space): 0.00kPa



System CD29F illustrated

Bluescope 61 Topspan	61DS75	3270	3070	2910	2550	2640	2470	2220	3010	2820	2670	2330	2420	2260	2020
	61DS100	3520	3320	3160	2780	2880	2700	2430	3270	3070	2910	2550	2640	2470	2220
Stramit 64 batten	64DS75	3360	3160	3000	2630	2720	2550	2280	3090	2900	2750	2400	2490	2330	2080
	64DS100	3710	3500	3330	2940	3030	2850	2560	3440	3230	3070	2690	2790	2610	2340
	64DS120	3920	3710	3530	3130	3230	3030	2730	3640	3430	3260	2870	2970	2790	2500
Stramit 96 batten	96DS75	4600	4340	4130	3630	3760	3530	3170	4220	4010	3800	3330	3450	3230	2900
	96DS100	5050	4780	4560	4040	4170	3920	3530	4790	4430	4220	3710	3840	3600	3240
	96DS120	5310	5040	4820	4290	4420	4170	3770	4960	4690	4470	3950	4080	3840	3460
Bluescope 120 Topspan	120DS70	5880	5560	5310	4700	4850	4560	4110	5470	5150	4900	4320	4460	4190	3760
	120DS90	6240	5920	5660	5040	5200	4900	4430	5840	5520	5260	4650	4800	4510	4070

Maximum Pressure (no plenum space): 0.25kPa



System CD29F illustrated

Bluescope 61 Topspan	61DS75	2730	2660	2590	2410	2460	2360	2200	2500	2430	2370	2200	2240	2150	2000
	61DS100	2980	2900	2830	2630	2690	2590	2410	2730	2660	2590	2410	2460	2360	2200
Stramit 64 batten	64DS75	2810	2740	2670	2480	2530	2430	2260	2570	2500	2440	2260	2310	2220	2060
	64DS100	3150	3060	2990	2780	2840	2730	2540	2890	2810	2740	2540	2600	2490	2320
	64DS120	3360	3270	3190	2970	3030	2920	2720	3080	3000	2920	2720	2780	2670	2480
Stramit 96 batten	96DS75	3900	3790	3700	3440	3510	3380	3150	3570	3470	3390	3150	3210	3090	2870
	96DS100	4330	4220	4120	3840	3920	3770	3520	3980	3870	3780	3520	3590	3450	3210
	96DS120	4610	4490	4390	4100	4180	4020	3760	4240	4130	4030	3760	3830	3690	3440
Bluescope 120 Topspan	120DS70	5040	4910	4790	4470	4560	4390	4090	4630	4510	4330	4090	4170	4010	3740
	120DS90	5420	5290	5160	4820	4910	4730	4420	4990	4860	4740	4420	4510	4340	4040

• These tables should be read in conjunction with Sections A5, A6 & A8 and notes on pg C4.1 • For steel section design refer Section A1

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C5 | Shelf Load Tables

Permissible Shelf Loadings For Steel Stud Walls

		Maximum Allowable Load in kg Per Stud Per Shelf (For fasteners designed by Structural Engineer)														
Wall Height (mm)		2400			2700			3000			3300			3600		
Rondo Stud Size		64 x 0.55 BMT			64 x 0.55 BMT			64 x 0.55 BMT			76 x 0.55 BMT			92 x 0.55 BMT		
Shelf Width (mm)		200	300	400	200	300	400	200	300	400	200	300	400	200	300	400
Number of Shelves Equally Spaced Over Full Height	1	90	77	63	75	60	49	56	44	36	72	58	48	86	78	65
	2	61	48	44	47	39	37	18	13	10	28	19	15	58	50	43
	3	45	38	30	38	30	25	12	8	6.8	17	12	10	43	39	32
	4	34	29	25	26	24	18	9	6	4.5	12	9	7	32	28	26
	5	30	25	20	25	19	15	7	5	4	10	7	5	28	24	21
	6	24	22	18	19	15	12	6	4	3	8	6	4.5	23	21	18

Load Multiplication Factor For Alternative Stud Sizes																
64 x 0.75 BMT		1.33			1.33			1.33			NA			NA		
76 x 0.55 BMT		1.09			1.09			1.09			1.00			NA		
76 x 0.75 BMT		1.46			1.46			1.46			1.34			NA		
92 x 0.55 BMT		1.19			1.19			1.19			1.10			1.00		
92 x 0.75 BMT		1.61			1.61			1.61			1.48			1.34		

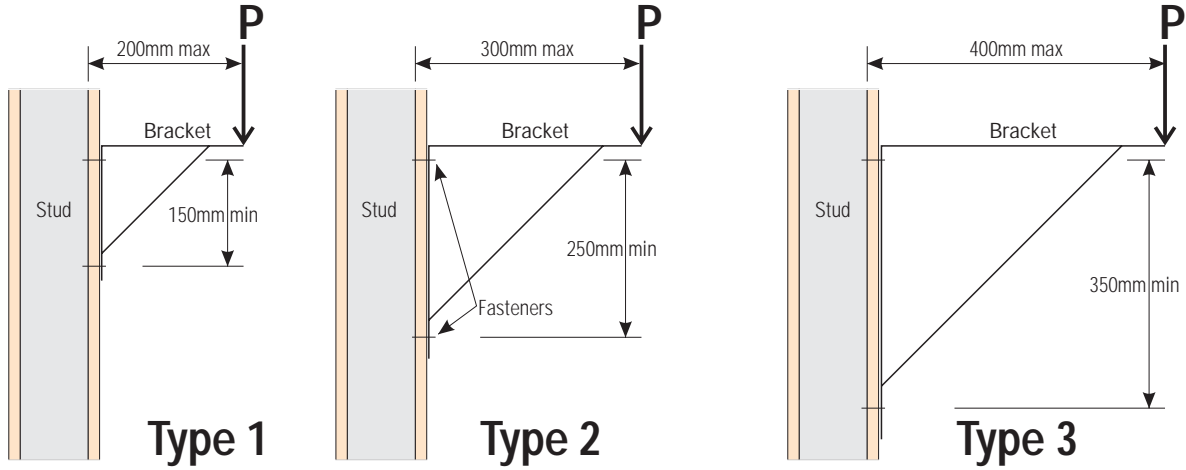
Permissible Shelf Loadings For Steel Stud Walls

		Maximum Allowable Load in kg Per Stud Per Shelf (For fasteners designed by Structural Engineer)											
Wall Height (mm)		4200			4800			5400			6000		
Rondo Stud Size		150 x 0.75 BMT			150 x 0.75 BMT			150 x 0.75 BMT			150 x 1.15 BMT		
Shelf Width (mm)		200	300	400	200	300	400	200	300	400	200	300	400
Number of Shelves Equally Spaced Over Bottom 3600mm	1	280	230	200	220	185	160	85	62	50	57	44	35
	2	165	140	120	120	100	90	46	33	27	30	23	18
	3	124	105	90	85	75	65	32	24	19	20	15	12
	4	100	78	62	70	60	50	25	18	14	16	12	9
	5	80	60	50	59	50	45	20	15	12	13	9	7
	6	70	50	40	50	43	37	17	13	10	11	8	6

Design Assumptions:

- Stud spacing = 600mm
- Deflection limit = span/480
- Walls are lined both sides with 13mm Boral Plasterboard
- Studs are continuous in length
- Lateral load = 0.25kPa
- All calculations are based on Rondo sections
- Shelving is attached to one side of the wall only
- Non fire rated wall systems only.

» Shelf Load Tables



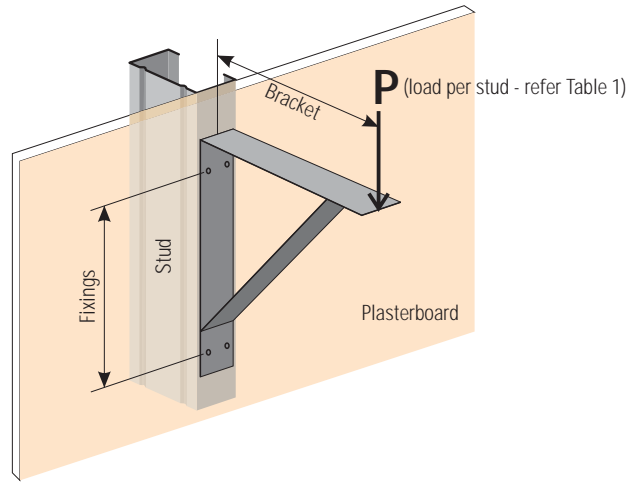
Max Loading "P" per Stud (kg)

(Where fasteners consist of 2x10 gauge fasteners at each fixing location)

Stud Thickness BMT (mm)	Type 1 Bracket (kg)	Type 2 Bracket (kg)	Type 3 Bracket (kg)
0.55	19.6	23.3	25.4
0.75	31.1	37.8	41.7
1.15	53.9	65.5	72.1

Note:

- Fixings shown in above diagrams consist of 2# 10 gauge fasteners at each fixing location
- Design is for bracket connection only, bracket and shelf design by others
- Loads greater than those listed above must be independently designed for
- Fasteners used must be 10 gauge and have the properties listed in the table below.



Properties For 10 Gauge Fasteners

Stud Gauge BMT (mm)	Pull-out Force (kN) (F of S = 3)	Shear Strength (kN) (F of S = 3)
0.55	0.18	0.84
0.75	0.32	1.15
1.15	0.56	1.76

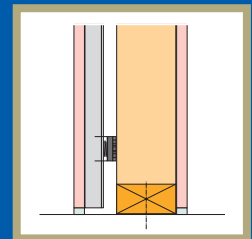
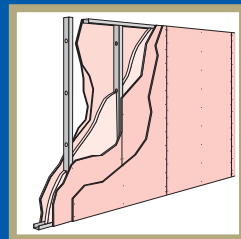
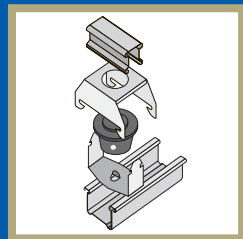
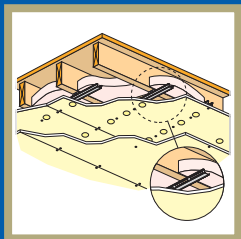
D | Installation Details

D1 | General

D2 | Walls

D3 | Ceilings

D4 | Reference



D | Contents

D1 | General

Installation and Fastening Sequence for Steel Studs	D1.1
Fastener Selection	D1.3

D2 | Walls

Wall Construction Notes	D2.1
Fire Rated Steel Framed Walls - Plasterboard Installation	D2.2
Fire Rated Steel Framed Walls - Terminals and Junctions	D2.5
Fire Rated Steel Framed Walls - Base Details	D2.8
Fire Rated Steel Framed Walls - Head Details	D2.9
Fire Rated Steel Framed Walls - Control / Movement Joints	D2.11
Fire Rated Steel Framed Walls - Door Details	D2.13
Fire Rated Steel Framed Walls - Plumbing Penetrations	D2.14
Fire Rated Steel Framed Walls - Electrical Penetrations	D2.17
Fire Rated Steel Framed Walls - HVAC Penetrations	D2.20
Fire Rated Steel Framed Walls - Access Panel	D2.22
Non Fire Rated Steel Framed Walls - Plasterboard Installation	D2.23
Non Fire Rated Steel Framed Walls - Base Details	D2.25
Non Fire Rated Steel Framed Walls - Head Details	D2.26
Non Fire Rated Steel Framed Walls - Control Joints	D2.27
Non Fire Rated Steel Framed Walls - Back-blocking	D2.28
Door Details - Non Fire Rated Steel Framed Walls	D2.28
Non Fire Rated Steel Framed Walls - Plumbing Penetrations	D2.29
Fire Rated Timber Framed Walls - Plasterboard Installation	D2.31
Fire Rated Timber Framed Walls - Wall Junctions	D2.34
Fire Rated Timber Framed Walls - Base Detail	D2.37
Fire Rated Timber Framed Walls - Head Details	D2.38
Fire Rated Timber Framed Walls - Plumbing Penetrations	D2.39
Fire Rated Timber Framed Walls - Acoustic Details	D2.40

D3 | Ceilings

Ceiling Construction Notes	D3.1
Fire Rated Ceilings - Plasterboard Installation	D3.3
Fire Rated Ceilings - Back-blocking	D3.4
Fire Rated Ceilings - Perimeter	D3.5
Fire Rated Ceilings - Bulkhead	D3.8
Fire Rated Ceilings - Movement / Control Joints	D3.9
Fire Rated Ceilings - Lights	D3.10
Fire Rated Ceilings - Electrical and Loaded Penetrations	D3.11
Fire Rated Ceilings - Beam Protection	D3.13
Non Fire Rated Ceilings - Plasterboard Installation	D3.15
Non Fire Rated Ceilings - Back-blocking	D3.17
Non Fire Rated Ceilings - Perimeter	D3.18
Non Fire Rated Ceilings - Bulkhead	D3.19
Non Fire Rated Ceilings - Acoustic Details	D3.20

D4 | Reference

Old / New Reference Guide	D4.1
Quick-Find Index	D4.2

D1 | General

Installation and Fastening Sequence for Steel Studs

The first plasterboard sheet installed at a joint should be fixed to the open side of a stud flange. Additional sheets are then installed in the direction toward the closed side of the stud web.

When installing the first side, screw-fasten the plasterboard sheets to studs at edges only, as illustrated in Figure 1 (positions 1 and 2). Then, on the second side, fasten the edge (position 3) followed by intermediate studs (position 4). Return to the first side and fasten sheets to previously unattached studs (position 5).

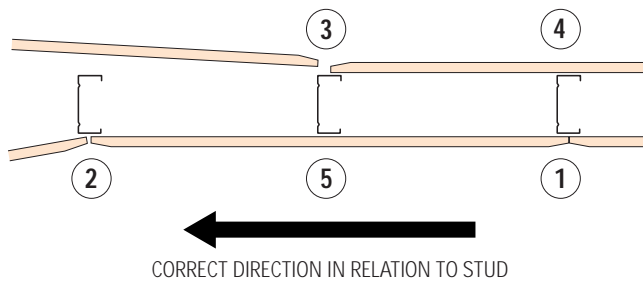


Figure 1 - Correct Fastening Sequence

Caution

Avoid fixing Boral Plasterboard sheets in the direction from the closed side of the stud to the open side of the stud web (Figure 2). This will result in the first sheet at a joint being incorrectly screwed to the flange on the closed side of the stud. The flange will then be free to deflect when the next sheet is screwed to the open side (Figure 2). This can permanently bend the flange, resulting in a lipped joint.

If the stud is not supported firmly while the screws are driven, the stud can twist from square, also resulting in a lipped joint (Figure 3).

Do not fix plasterboard sheets in the direction from the closed side of the stud to the open side of the stud web (Figure 2).

Do not screw the first sheet at a joint to the flange at the closed side of a stud web.

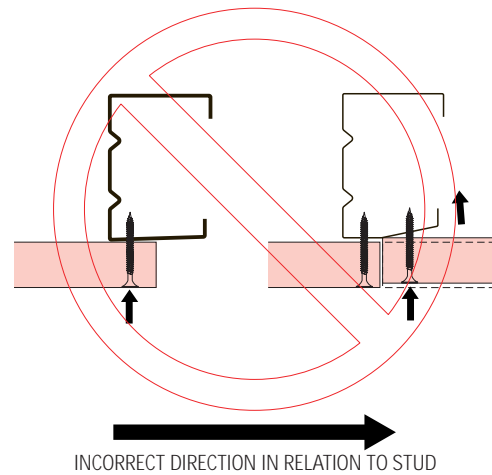


Figure 2 - Incorrect Fastening Sequence

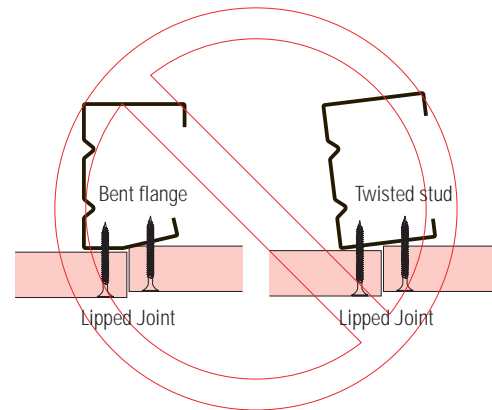


Figure 3 - Effect of Incorrect Fastening Sequence

» Installation and Fastening Sequence for Steel Studs

Correct Installation

The correct direction of sheet installation is in the direction from the open side of the stud to the closed side of the stud web (Figure 4). The first sheet installed at a joint is screwed to the flange at the open side of the stud. The flange will initially deflect then straighten as the screw pulls tight. Ensure that the stud is adequately supported to avoid twisting, and fully screw this sheet to the stud before continuing.

The next sheet is now screwed to the flange at the closed side of the stud. The deflection on this part of the flange is very small, and the previously installed sheet helps keep the assembly rigid during the installation of the second sheet.

If fixed correctly the result is a flat joint with no lipping (Figure 5). The correct installation sequence is illustrated in Figure 5 below.

Do fix plasterboard sheets in the direction from the open side of the stud to the closed side of the stud (Figure 4).

Do screw the first sheet at a joint to the flange at the open side of a stud.

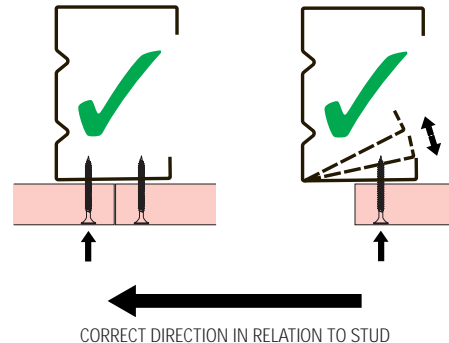


Figure 4 - Correct Fastening Sequence Detail

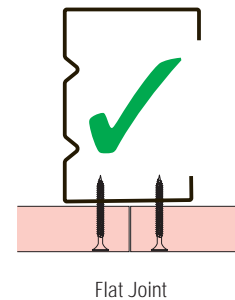


Figure 5 - Effect of Correct Fastening Sequence

Fastener Selection

Plasterboard to Frame Fasteners

Plasterboard Thickness (mm)	Timber Frame				Steel Frame
	Boral Smooth Shank Gold Passivated Nails ⁹	Boral Annular Ring Shank Nails ⁹ and Uni-nails ⁹	Galvanised Nails ⁹ (2.8 mm dia UNO)	Type W Screws ²	Types S ³ and Type D ⁴ Screws
1 x 10	40 softwood 30 hardwood	30	40 softwood 30 hardwood	6-9 x 25W wall 6-9 x 32W ceiling	6-18 x 25 ⁷ D, S
1 x 13	40 softwood 30 hardwood	30	40 softwood 30 hardwood	6-9 x 32W	6-18 x 25 ⁷ D, S
1 x 16	50	-	50 softwood 40 hardwood	6-9 x 40W	6-18 x 30 D, S
1 x 25	-	-	-	-	6-18 x 40D, S
2 x 10	50	-	50	6-9 x 40W	6-18 x 30D, S
2 x 13	65	-	50	6-9 x 50W	6-18 x 40D, S
13 + 16	65	-	50	6-9 x 50W	6-18 x 40D, S
2 x 16	65	-	65	6-9 x 60W	6-18 x 45D, S
3 x 13	-	-	75 x 3.75	8-8 x 60W	7-16 x 50S
3 x 16	-	-	75 x 3.75	8-8 x 75W	8-15 x 60S

Plasterboard to Plasterboard Fasteners

Number of Layers of Plasterboard x Thickness		Type L ¹⁰ Screws for Fixing Plasterboard A to B
Plasterboard A	Plasterboard B	
1 x 13mm	13mm	10 - 8 x 32mm
1 x 16mm	16mm	10 - 8 x 38mm
1 x 16mm	2 x 16mm	6 - 8 x 50mm

Notes:

- All screws to be to Australian Standard AS3566-1988 corrosion class 1.
- "W" is a single start, needle point, bugle head type W gypsum screw for fixing to hardwood and softwood framing. In some instances double start thread screws are permissible (refer Boral Plasterboard).
- "S" is a double start, needle point, bugle head type S gypsum screw for fixing to steel gauges of up to 0.80mm BMT.
- "D" is a double start, drill point, bugle head type D gypsum screw for fixing to steel gauges 0.80 to 2.00mm BMT.
- "L" is a single start, needle point, bugle head type L gypsum screw for fixing plasterboard to plasterboard.
- Screw designation given as (minimum screw gauge) - (threads per inch +1) x (minimum screw length).
- For ease of construction with framing steel gauges of less than 0.8mm BMT use 30mm minimum screw length.
- Correct screw length is critical when fastening to resilient furring channel to avoid acoustic bridging.
- Nail lengths are minimums, however care is needed when selecting longer nails to avoid nail bending in hardwoods or popping of plasterboard with unseasoned timber.
- For wall systems only. Tables to be read in conjunction with plasterboard installation details.

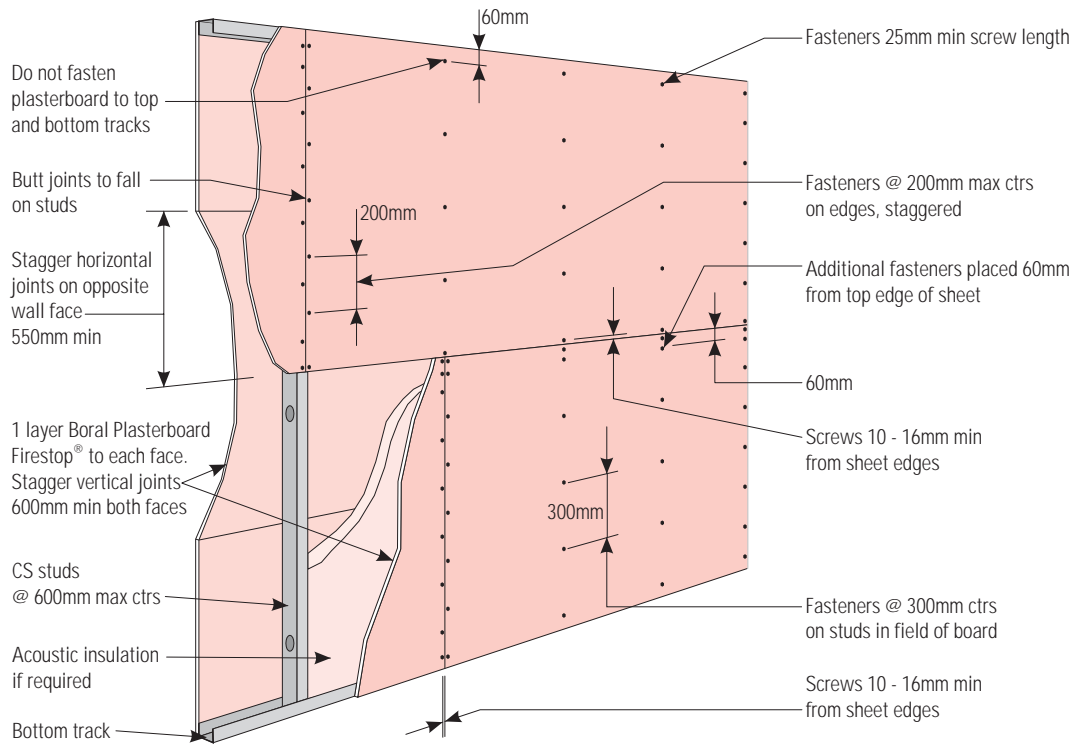
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D2 | Walls

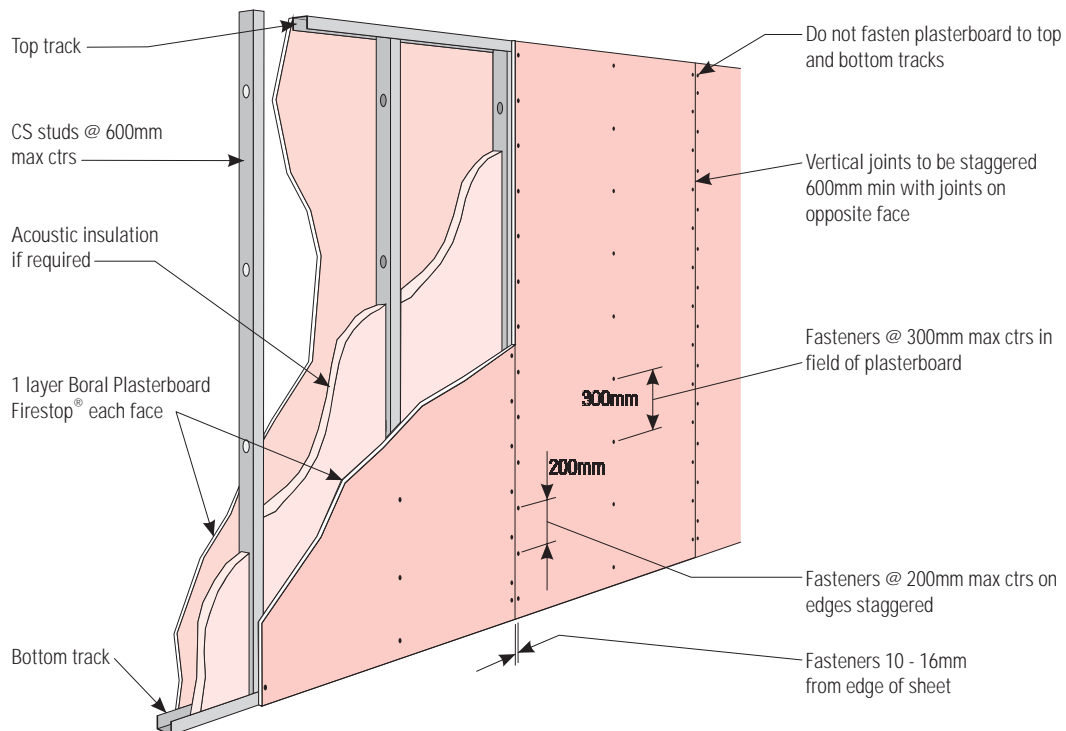
Wall Construction Notes

1. Steel stud wall systems are non load bearing unless noted otherwise.
2. Wall systems should not be used where conditions of constant excessive moisture or humidity are prevalent ie, in excess of 90% relative humidity.
3. Movement joints should be put at building construction joint locations. Control joints should be spaced at not more than 12 metre maximum centres in either direction.
4. Finish all joints with Boral Plasterboard jointing system, comprising perforated tape and jointing compound.
5. All approved fire rated penetrations must be installed and caulked in accordance with details provided in this manual.
6. Fire rated systems must be assembled strictly in accordance with relevant test reports, opinions, approved system details and specifications.
7. Steel Studs in fire rated partitions are not to be fastened to top and bottom tracks except boxed studs facing fire door openings, in which case the boxed studs are pop riveted to the tracks.
8. Steel wall framing to Rondo specifications or approved equivalent and spaced at 600mm centres maximum.
9. Components must not be used if fractured or damaged.
10. Butt joints to be backed by stud or nogging for fire rated systems.
11. Mid span nogging is recommended for erection purposes for steel stud walls greater than 3600mm.
12. Timber stud framing to AS1684, relevant Australian Standards and spaced at 600mm centres maximum.
13. Fire rated timber systems shall be read in conjunction with Timber Charfactor Tables in Section C3 of this manual.

Fire Rated Steel Framed Walls - Plasterboard Installation

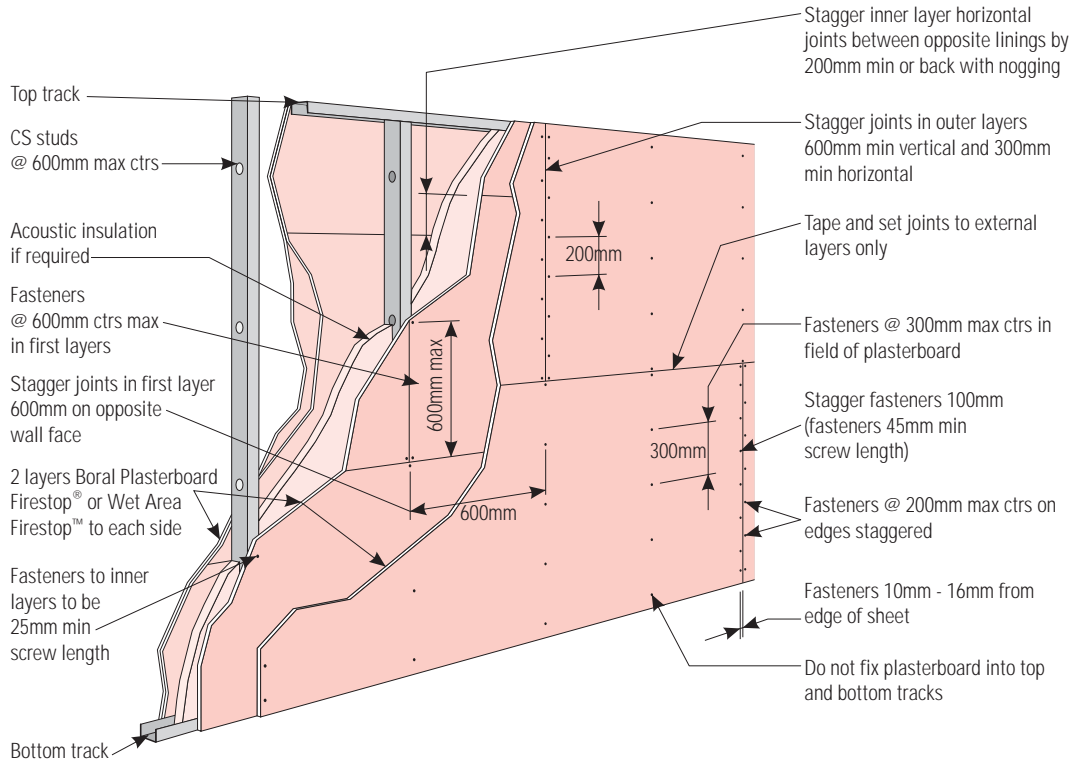


Fire Rated Steel Stud - Horizontal Fixing - Single Layer

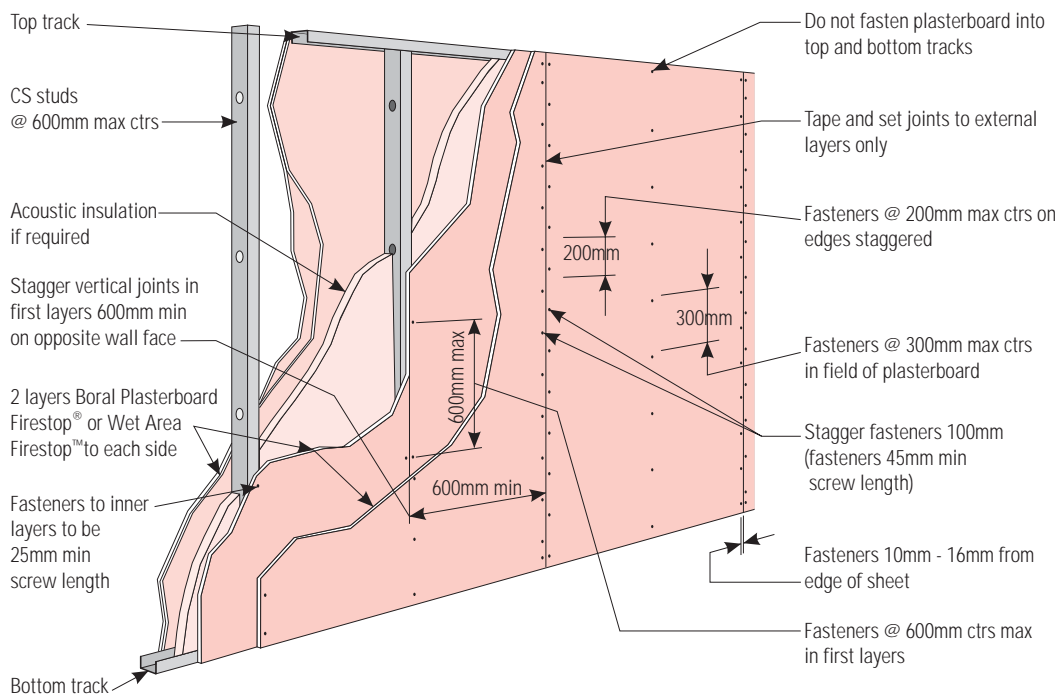


Fire Rated Steel Stud - Vertical Fixing - Single Layer

» Fire Rated Steel Framed Walls - Plasterboard Installation

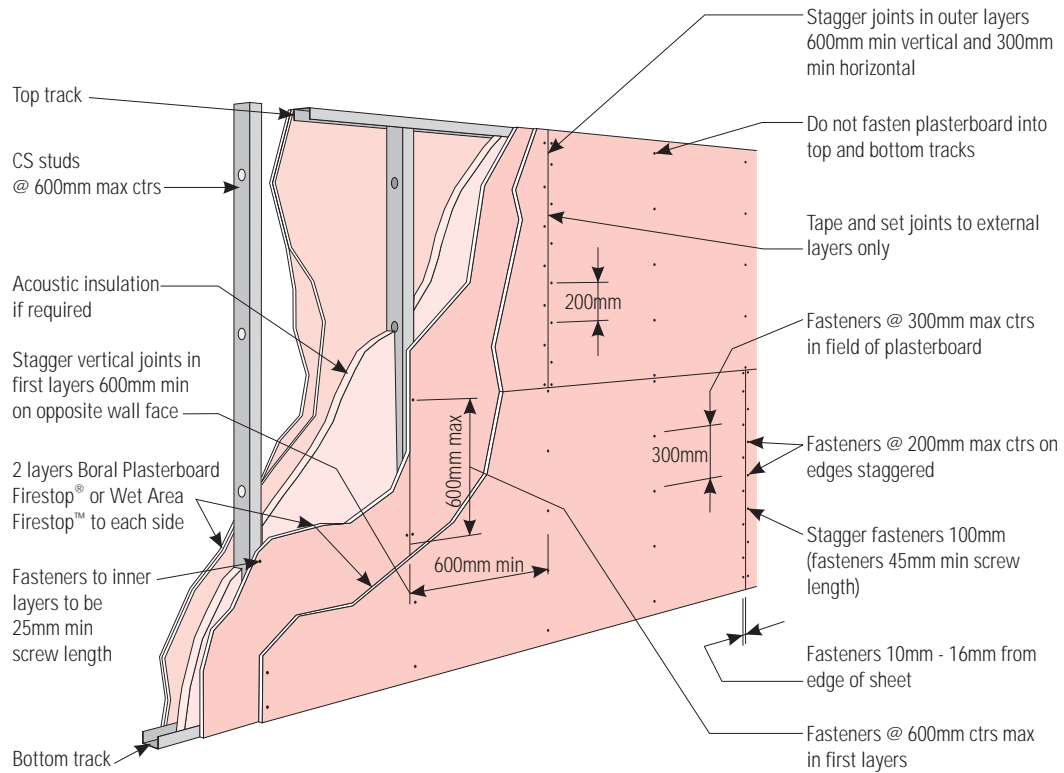


Fire Rated Steel Stud - Horizontal Fixing - Multiple Layer



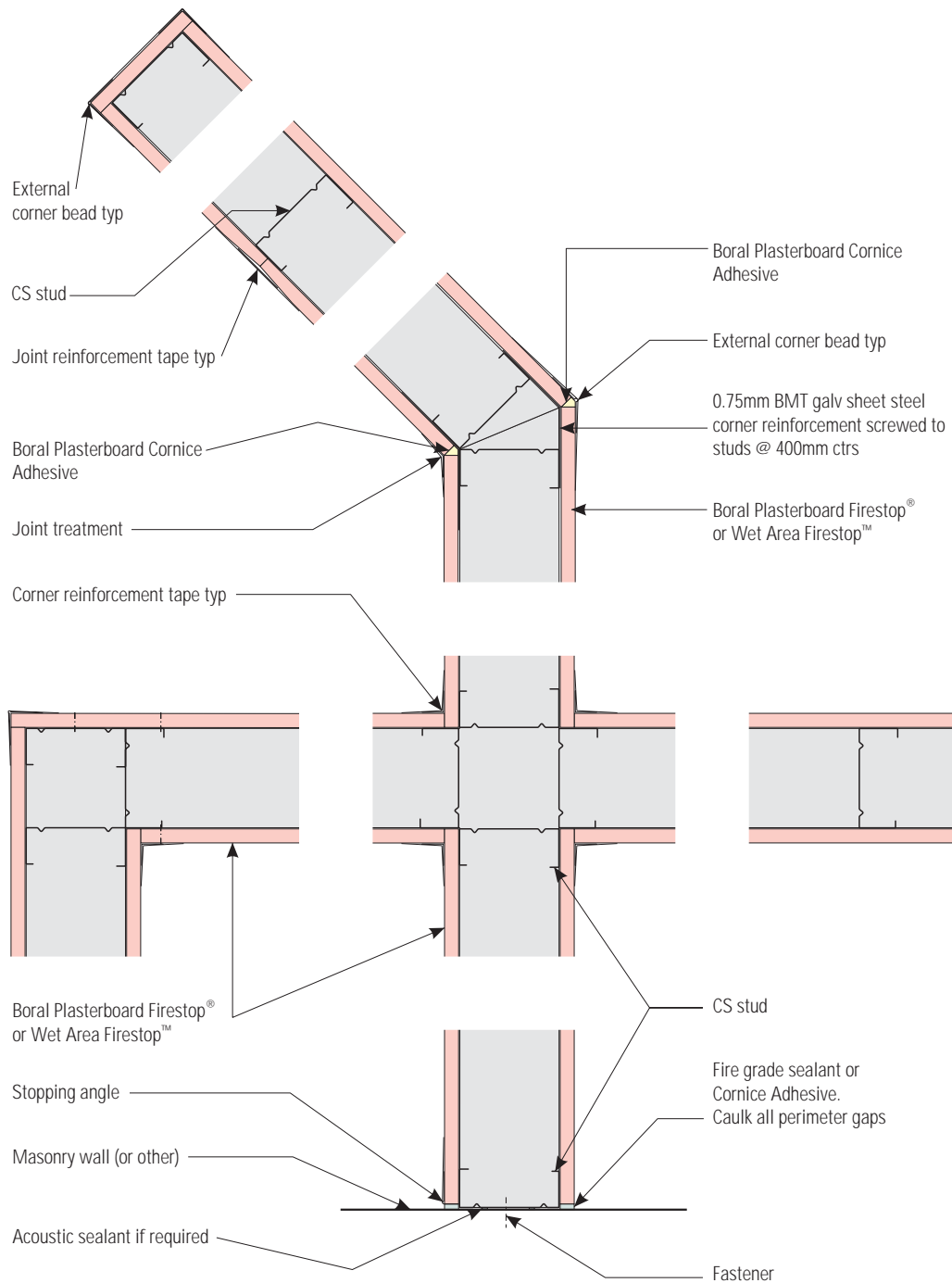
Fire Rated Steel Stud - Vertical Fixing - Multiple Layer

» Fire Rated Steel Framed Walls - Plasterboard Installation



Fire Rated Steel Stud - Mixed Orientation - Multiple Layer

Fire Rated Steel Framed Walls - Terminals and Junctions

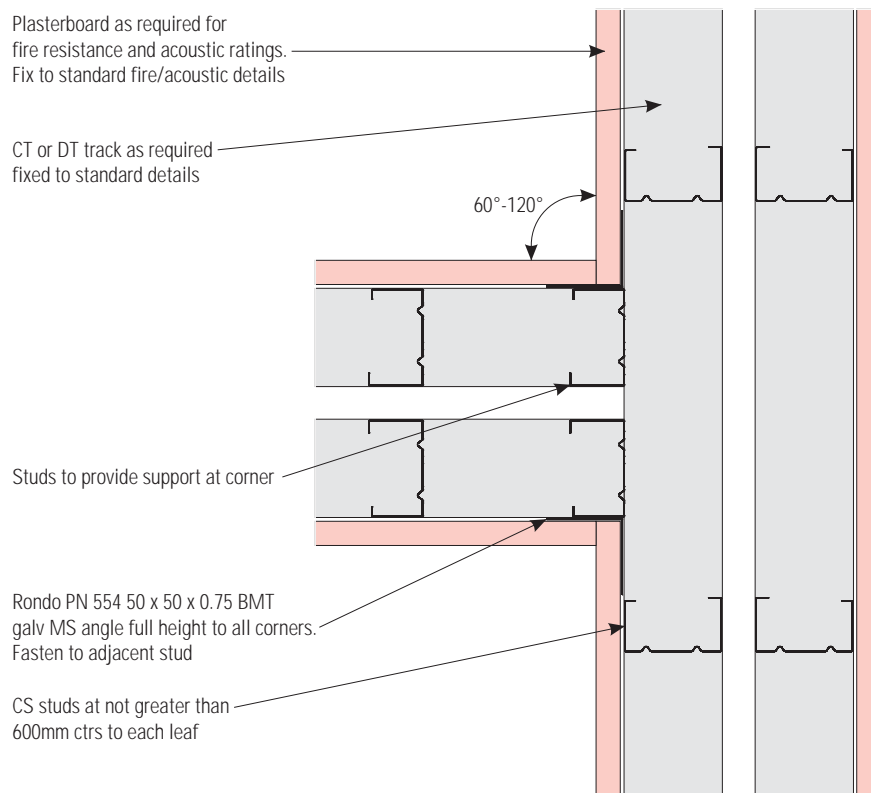


Single Stud Terminal and Junction Details (Twin stud, staggered stud layout similar)

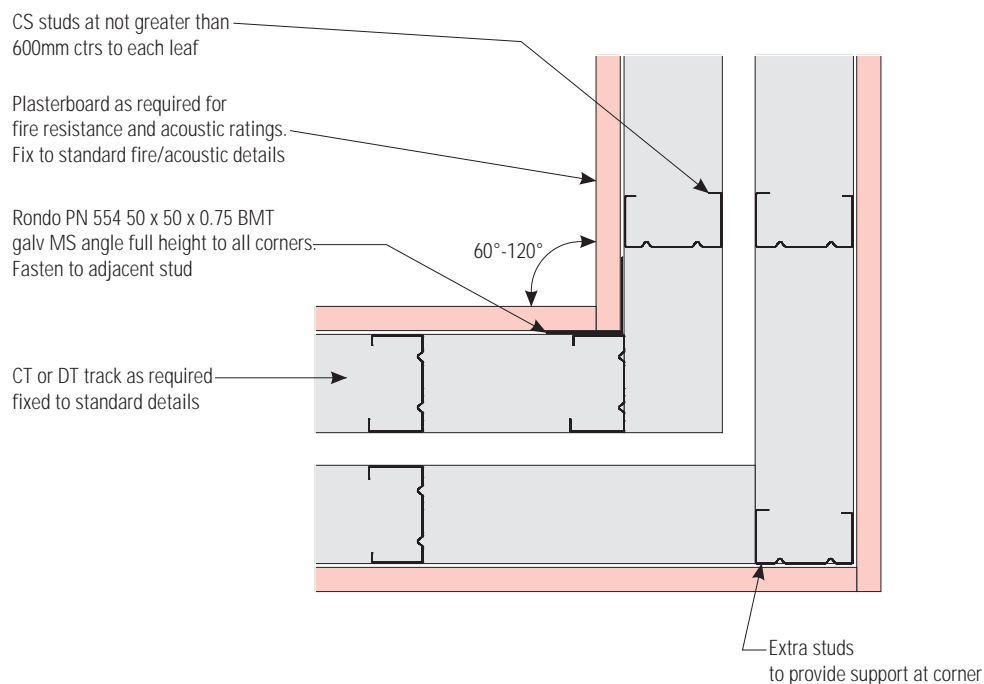
Notes:

- Control joints must coincide with those occurring in the main building structure and/or at maximum 12 metre centres.
- Location of control joints should be verified with structural engineer.

» Fire Rated Steel Framed Walls - Terminals and Junctions

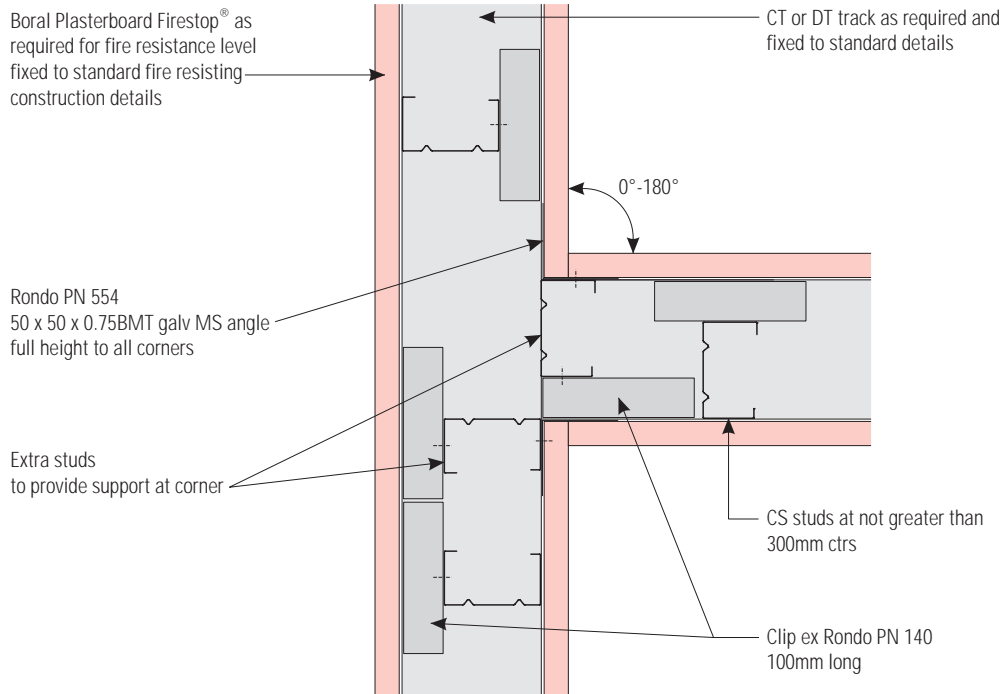


Twin Steel Stud T-Junction Detail

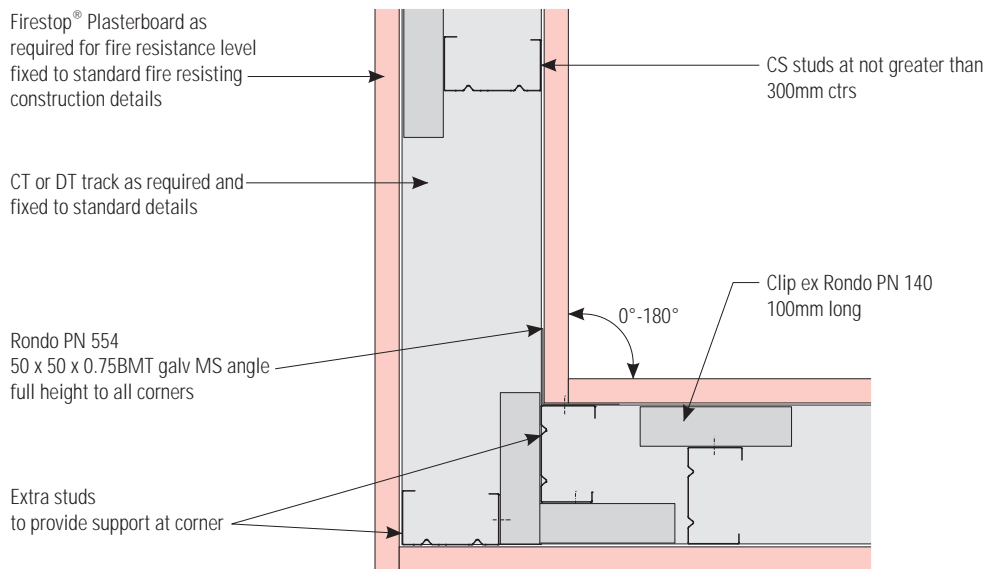


Twin Steel Stud Corner Detail

» Fire Rated Steel Framed Walls - Terminals and Junctions

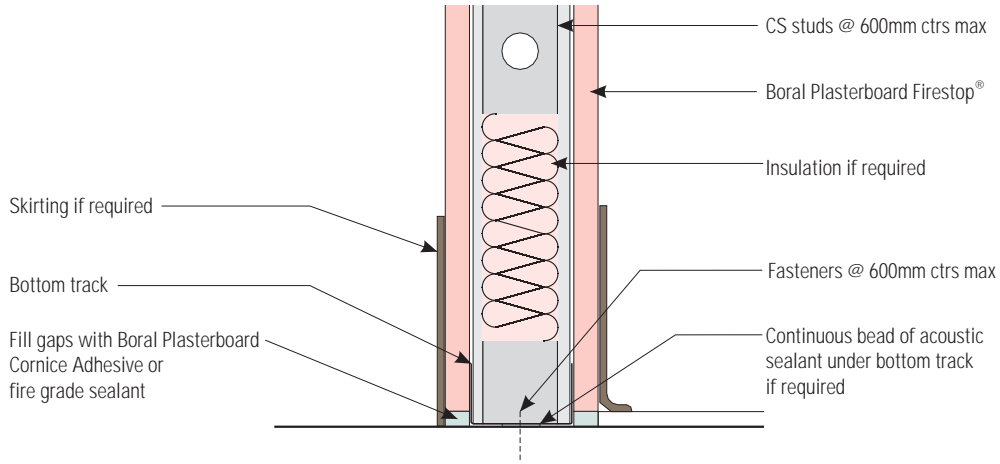


Staggered Steel Stud T-Junction Detail

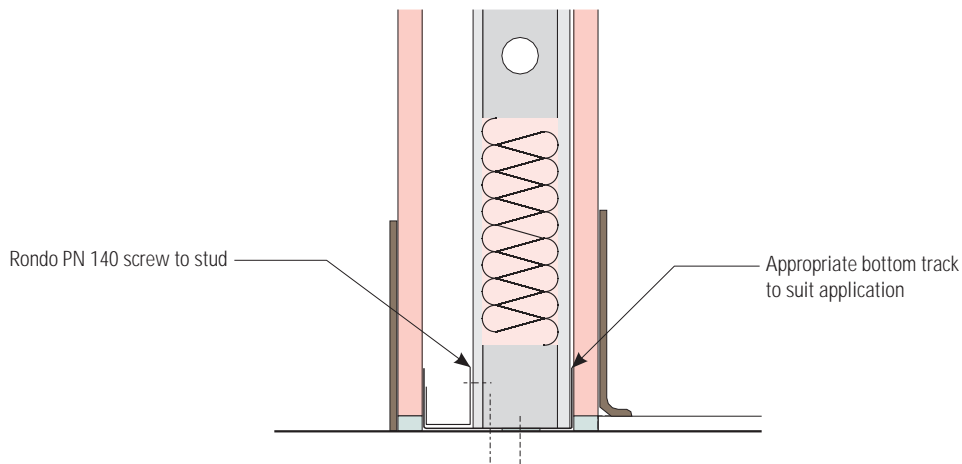


Staggered Steel Stud Corner Detail

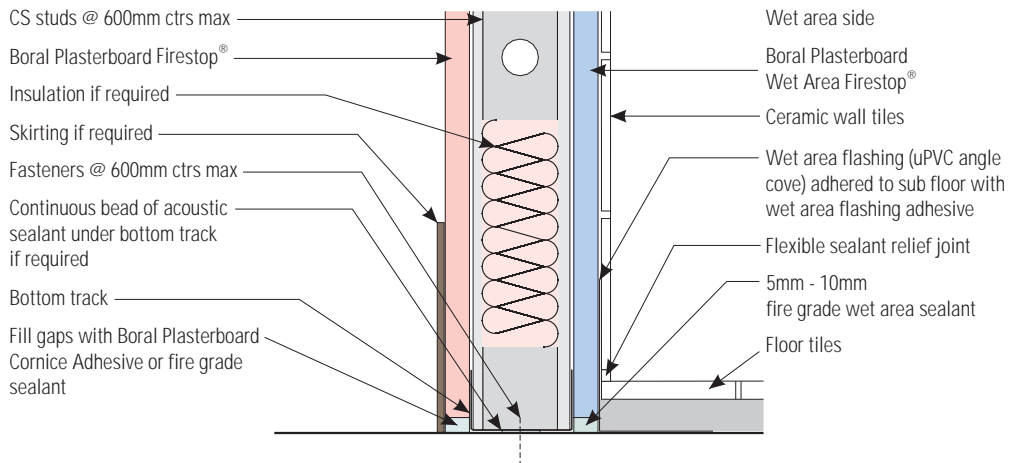
Fire Rated Steel Framed Walls - Base Details



Partition Base Detail

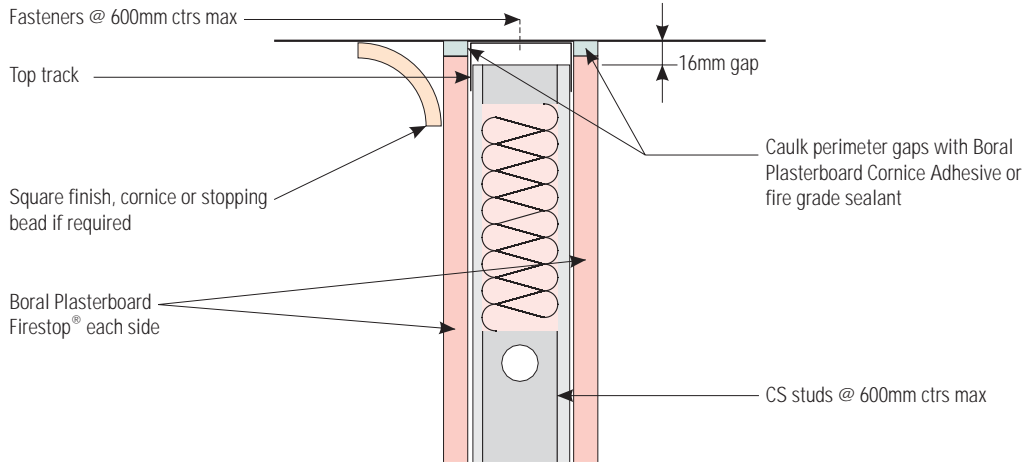


Staggered Stud Base Detail

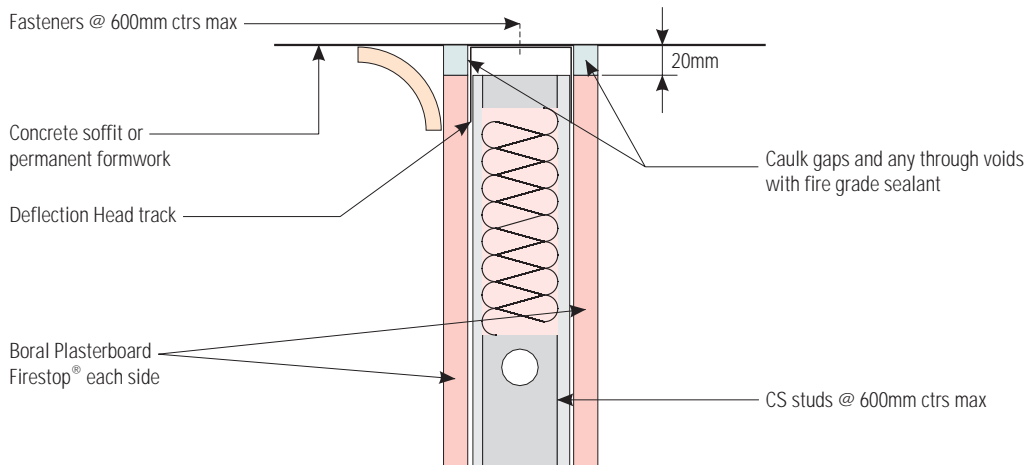


Partition Wet Area Base Detail

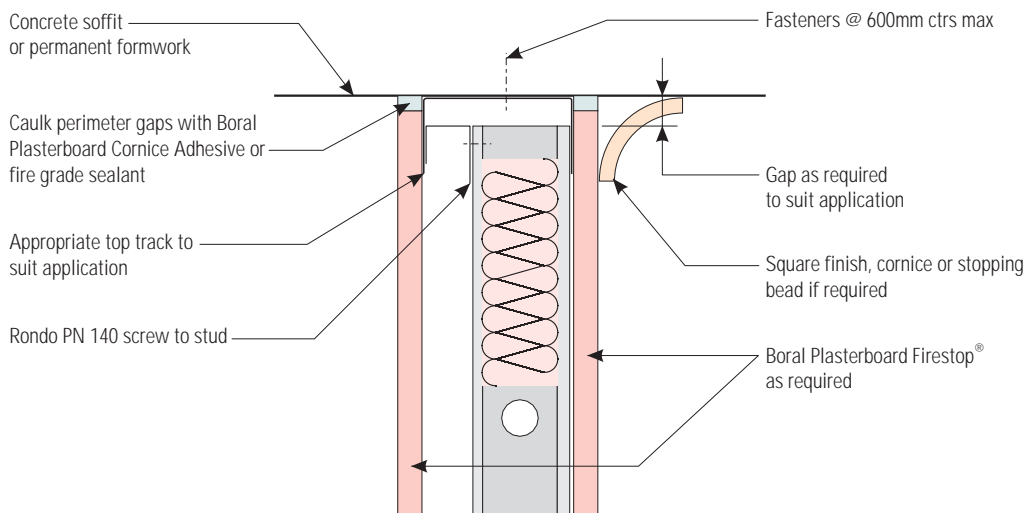
Fire Rated Steel Framed Walls - Head Details



Partition Head Detail

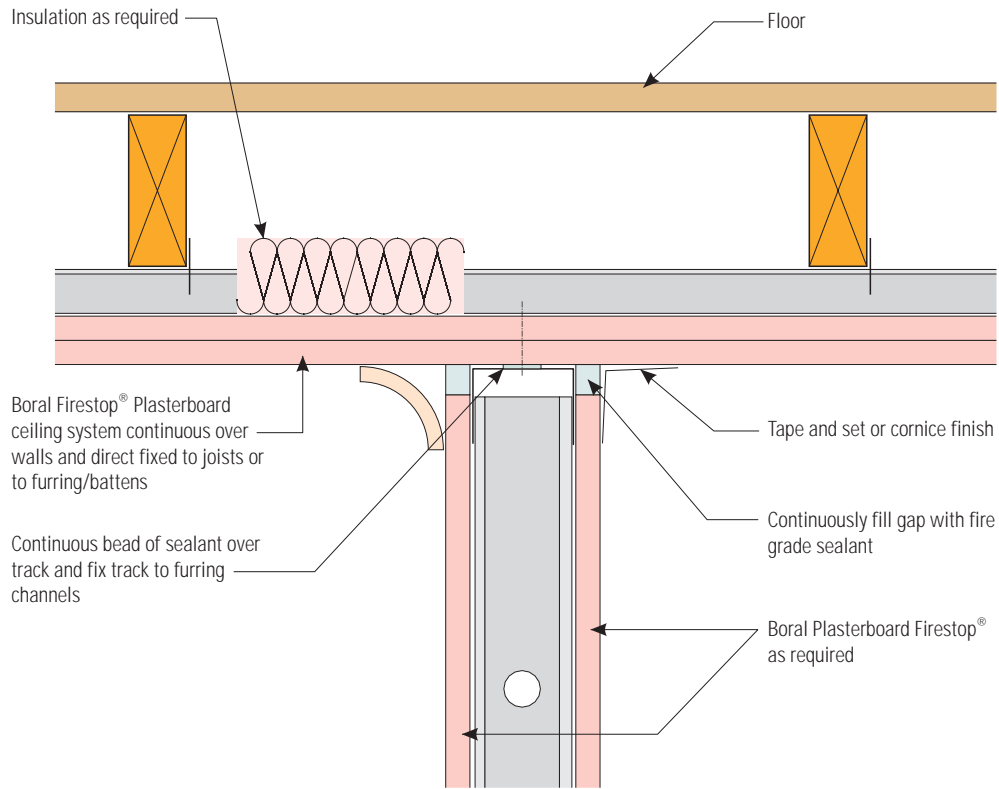


Deflection Head Detail



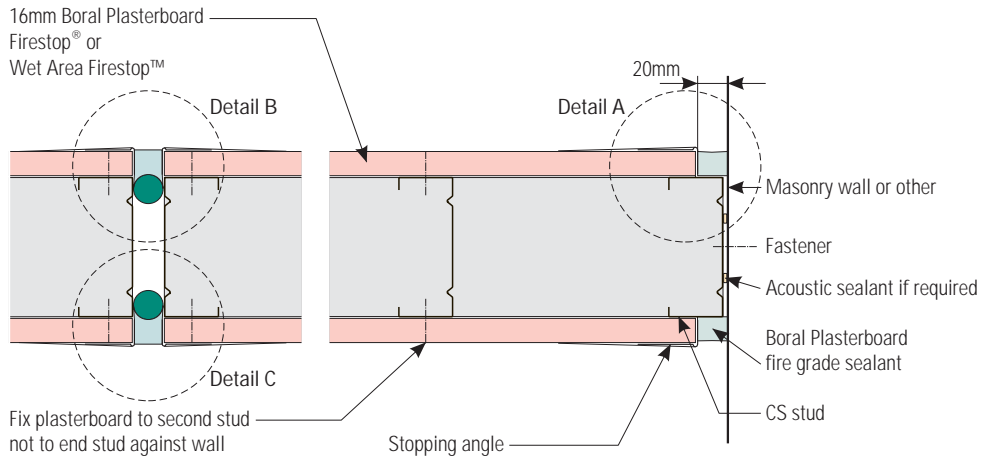
Staggered Stud Head Detail

» Fire Rated Steel Framed Walls - Head Details

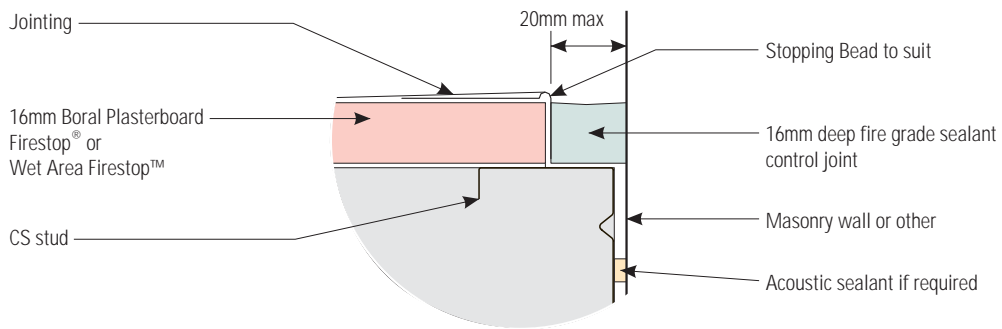


Fire Rated Wall to Fire Rated Ceiling Detail

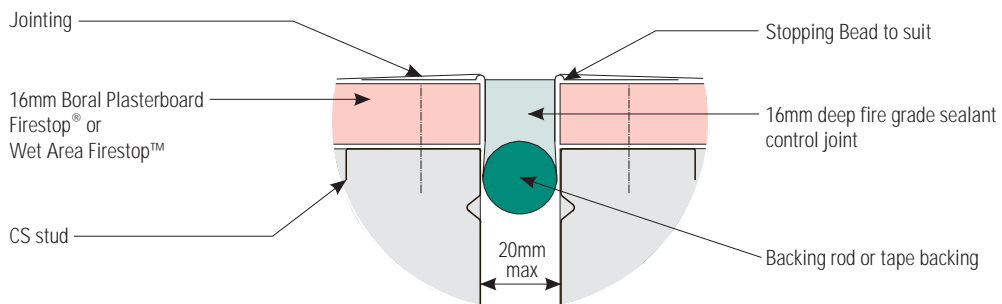
Fire Rated Steel Framed Walls - Control / Movement Joints



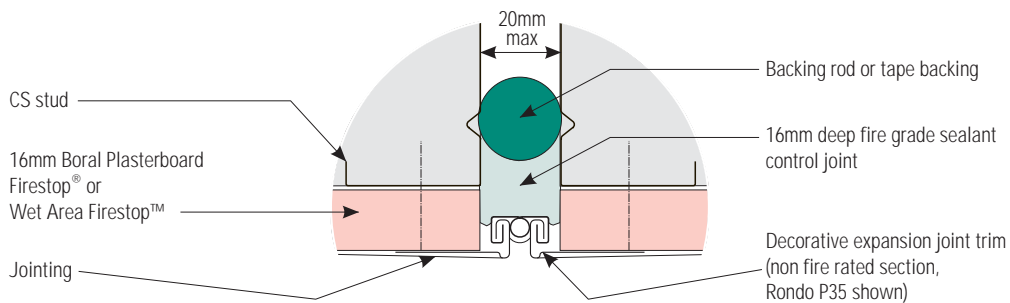
Control Joint Details FRL 60/60/60 (also available in other FRLs)



Detail A

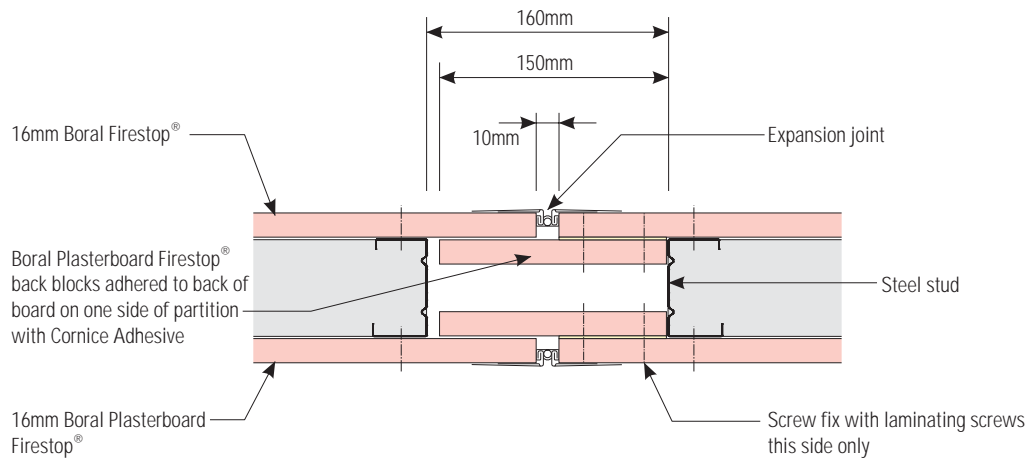


Detail B

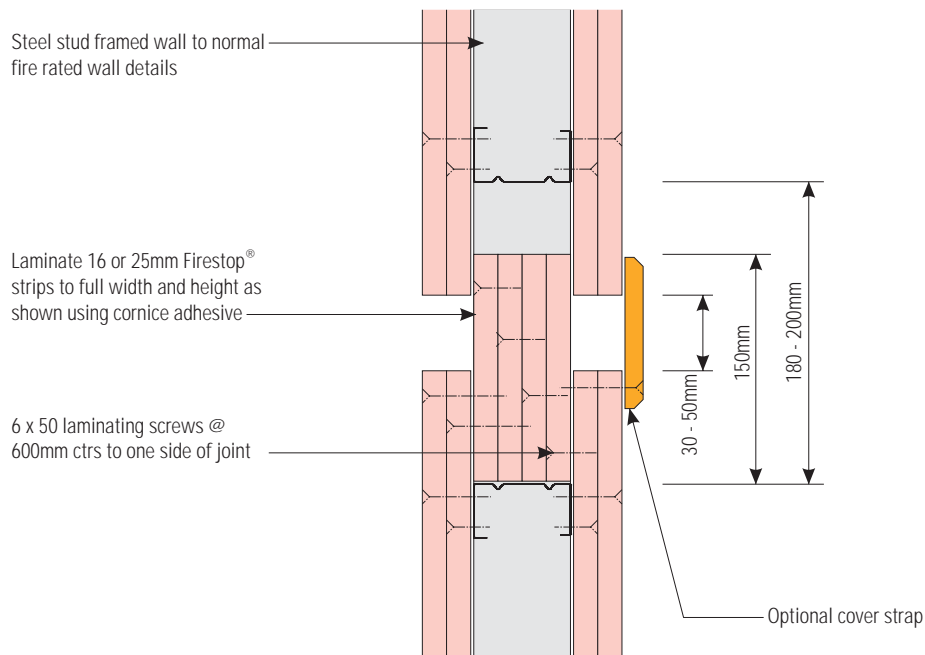


Detail C

» Fire Rated Steel Framed Walls - Control/Movement Joints



Movement Joint Detail FRL 60/60/60

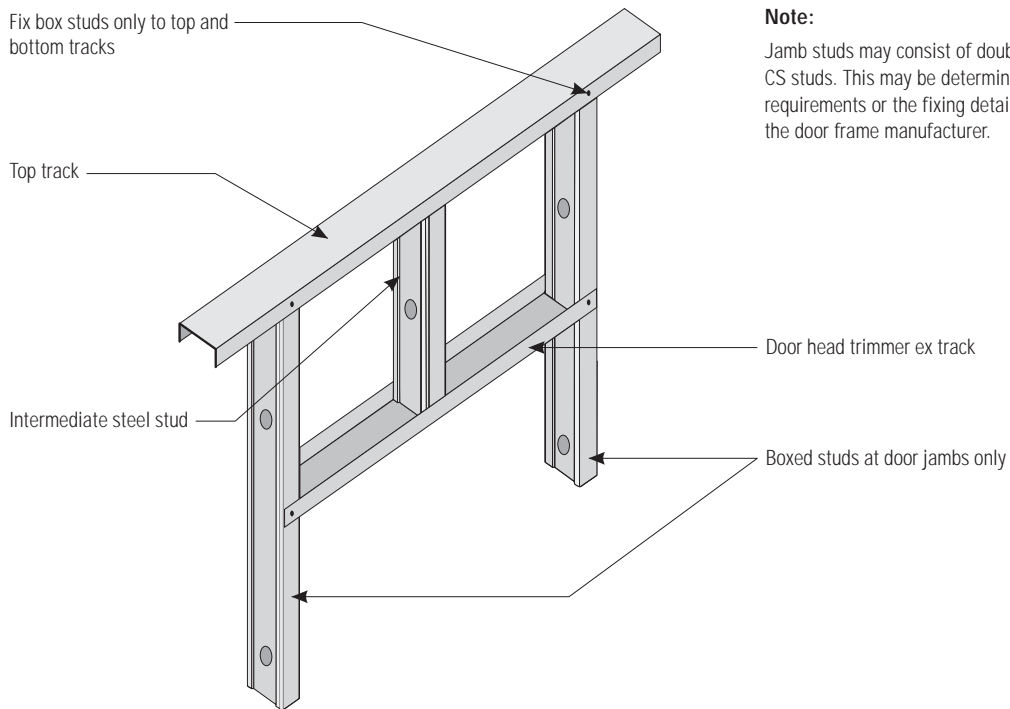


Movement Joint Detail FRL 120/120/120

Notes:

- Maximum joint movement capacity +/-20mm horizontally in plane of wall.
- FRL of wall not to exceed 120/120/120.
- Floor tracks to be cut over width of required control joint.

Fire Rated Steel Framed Walls - Door Details



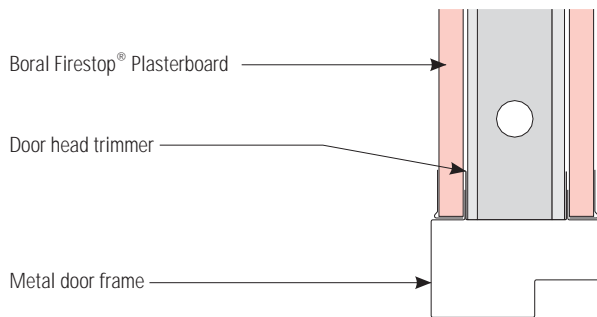
Note:

Jamb studs may consist of double CS studs or boxed CS studs. This may be determined by structural requirements or the fixing details recommended by the door frame manufacturer.

Door Head Trimmer Detail

Note:

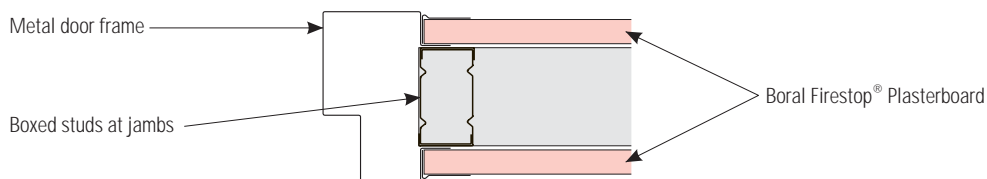
Jamb studs may consist of double CS studs or boxed CS studs. This may be determined by structural requirements or the fixing details recommended by the door frame manufacturer.



Notes:

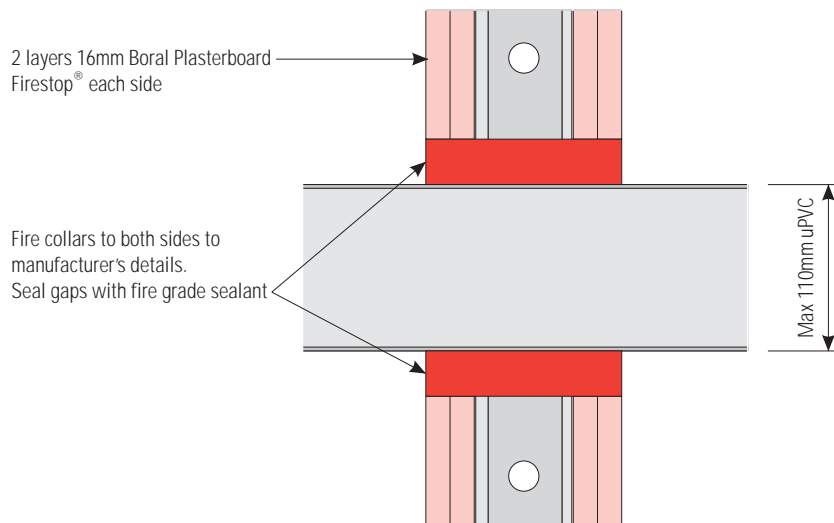
- Details shown are generic only.
- Check with specific door frame manufacturer to ensure that fire rating is maintained.

Door Head Detail

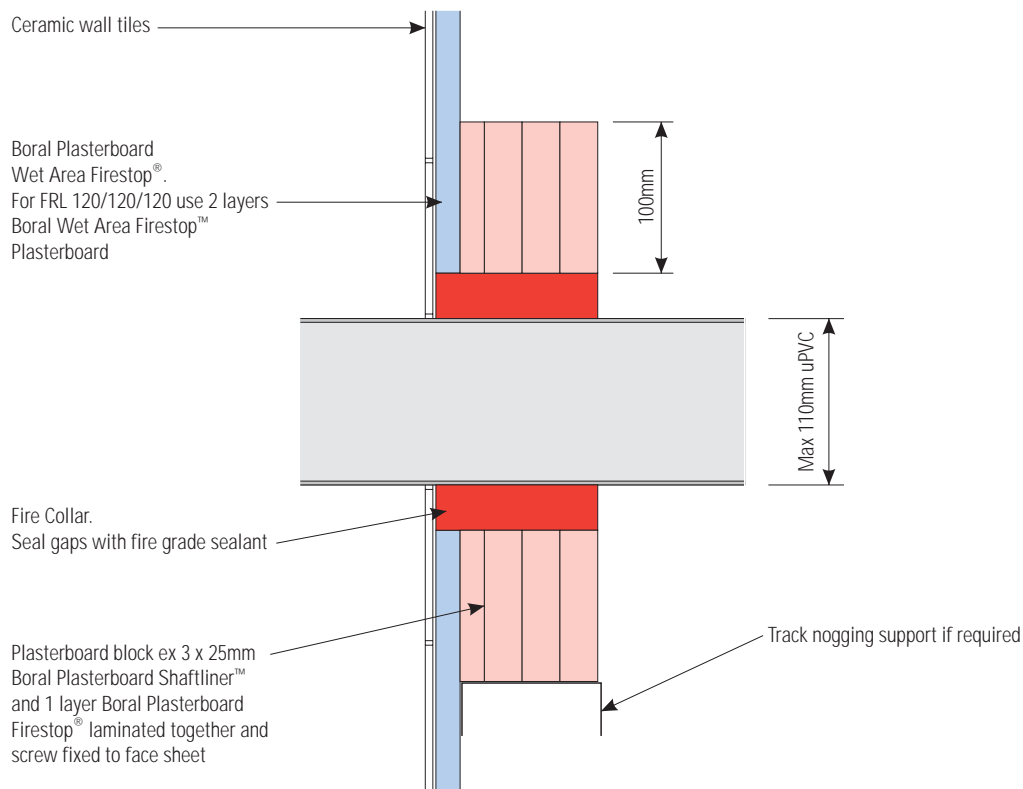


Door Jamb Detail

Fire Rated Steel Framed Walls - Plumbing Penetrations

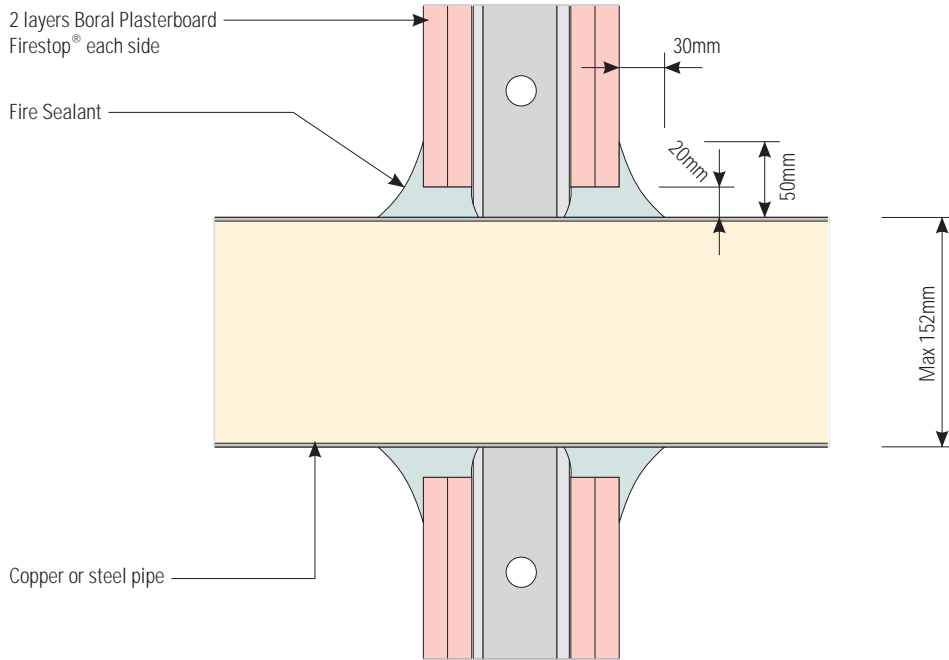


Penetration Detail - uPVC Pipe - Single Stud - FRL NA/120/NA

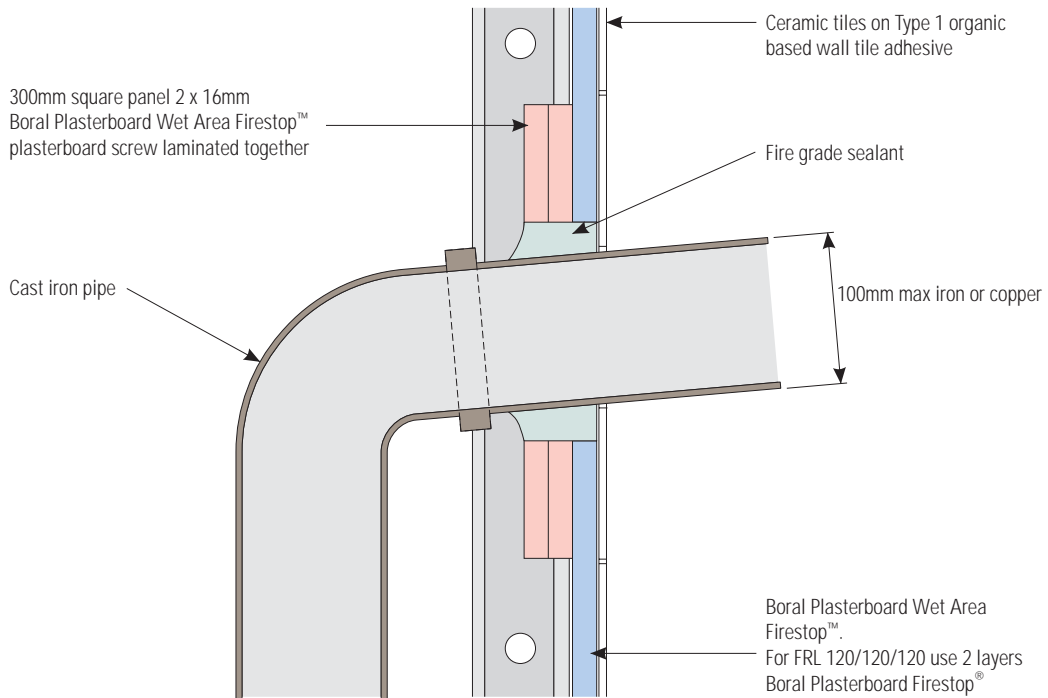


Penetration Detail - uPVC Pipe - Twin Stud - FRL 60/60/60

» Fire Rated Steel Framed Walls - Plumbing Penetrations

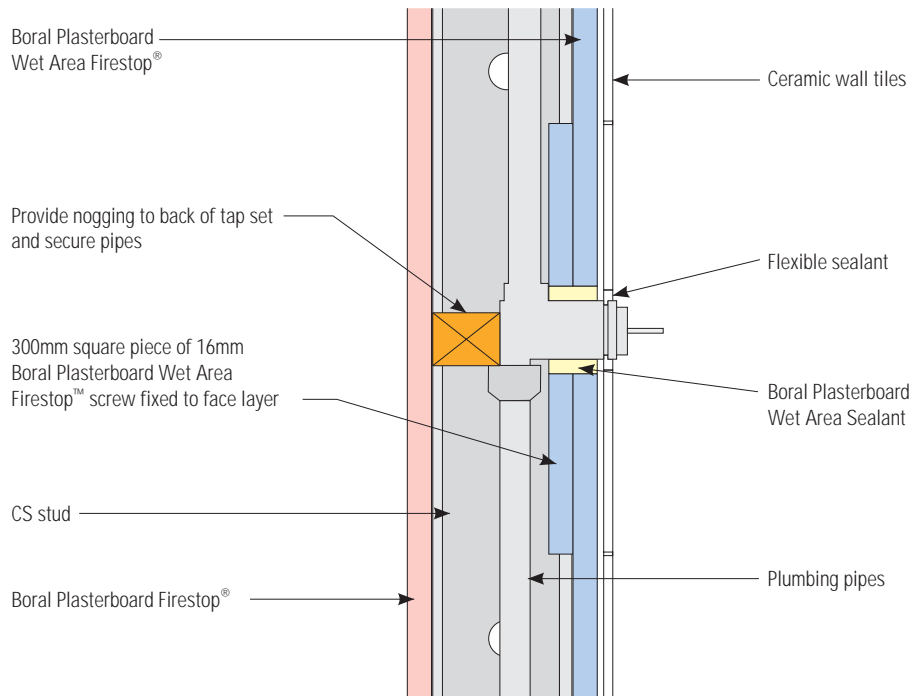


Penetration Detail - Copper/Steel Pipe - Single Stud - FRL 120/120/-

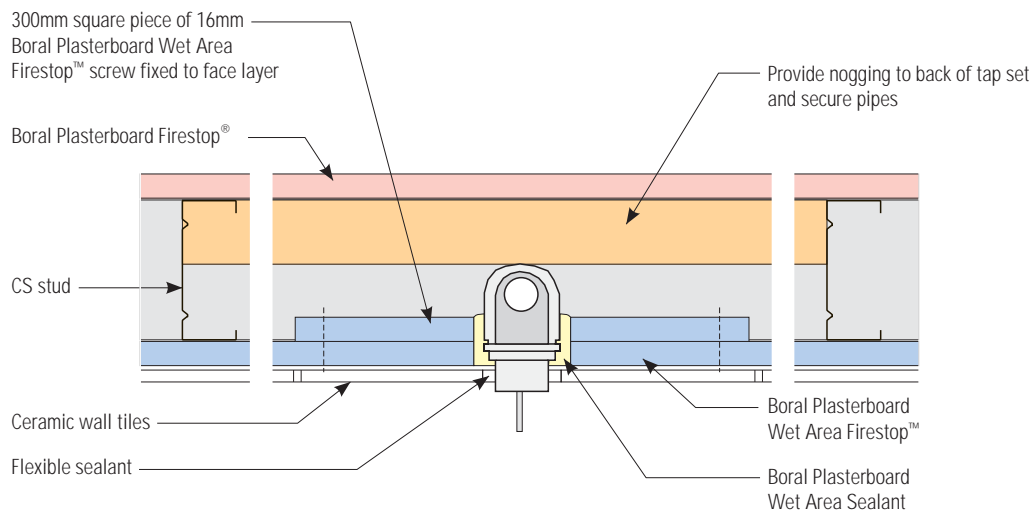


Penetration Detail - Copper/Steel Pipe - Twin Stud - FRL 60/60/60

» Fire Rated Steel Framed Walls - Plumbing Penetrations



Typical Plumbing Penetration Detail - Section



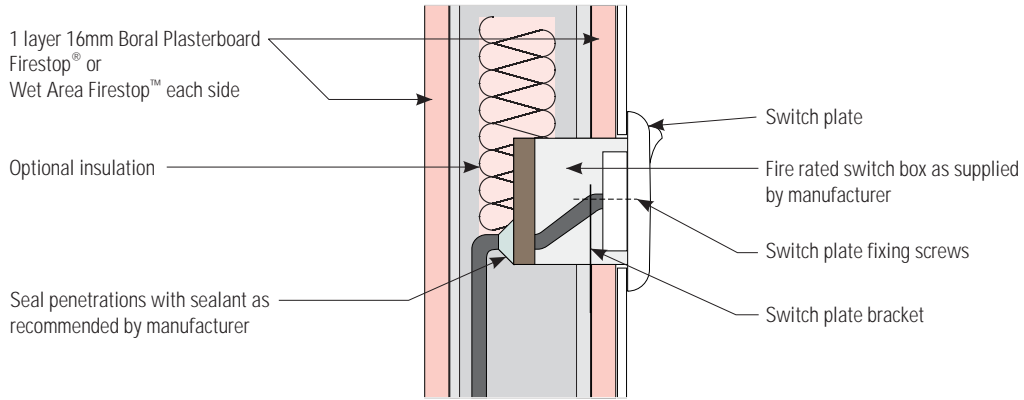
Typical Plumbing Penetration Detail - Plan

Notes:

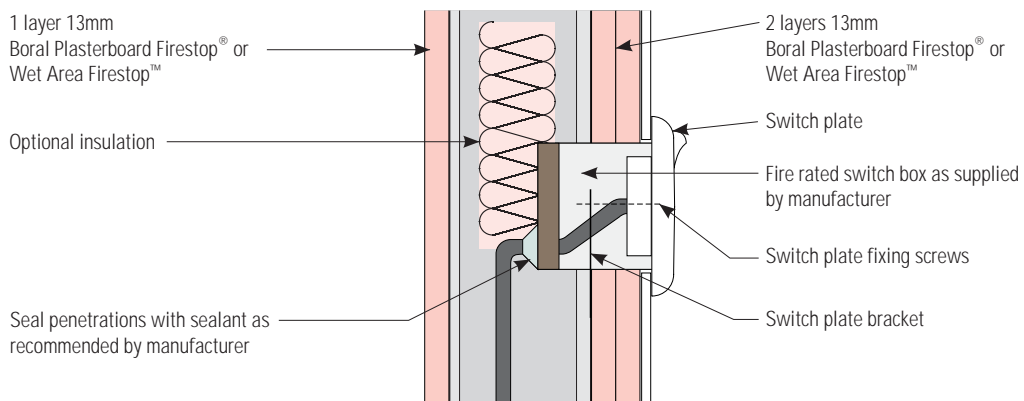
The following instructions must be followed to achieve satisfactory results:

- Care should be taken to isolate copper pipes away from contact with steel framing to avoid problems with corrosion.
- Plasterboard linings are not to act as supports for piping.
- Piping is to be kept clear of face sheets and baffles.
- Ensure that baffles protect the areas immediately behind wall penetrations.
- Pipes are to penetrate one face only of the partition between any two wall studs.
- Total area of all openings between any two wall studs must be no greater than 5000mm².

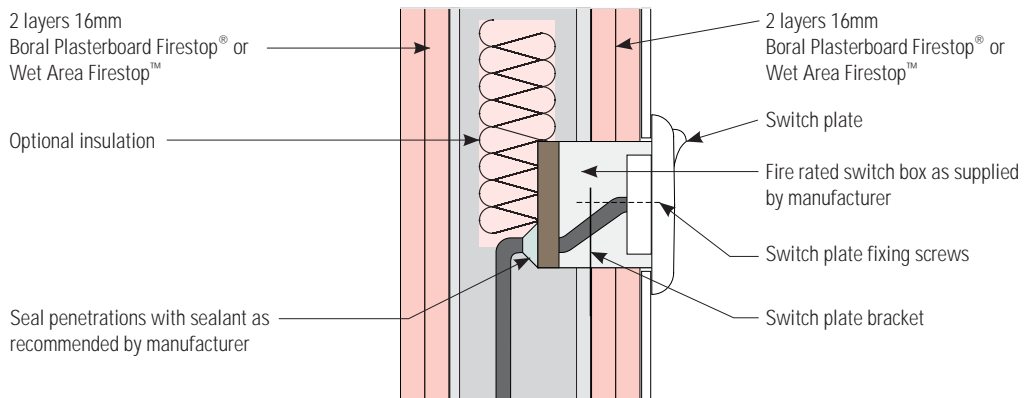
Fire Rated Steel Framed Walls - Electrical Penetrations



Fire Rated GPO Detail Only - Partition FRL 60/60/60

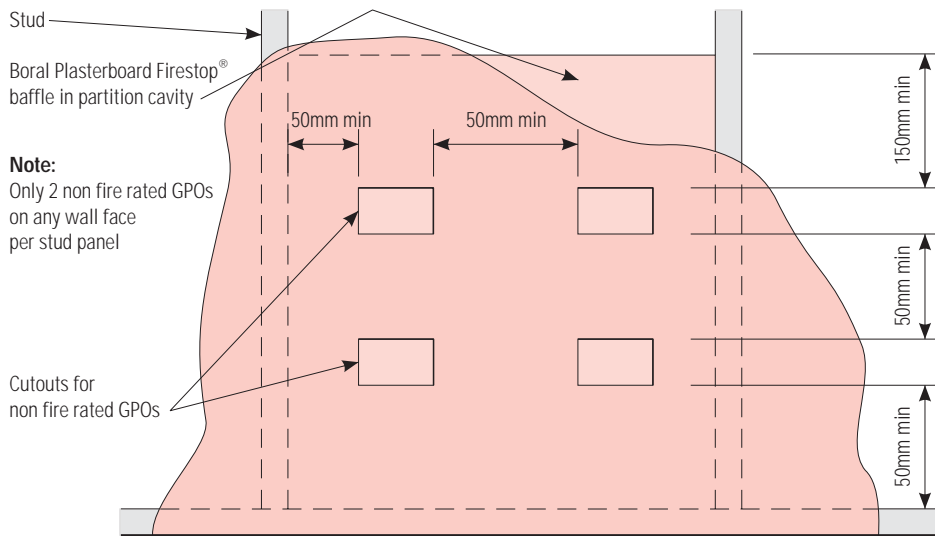


Fire Rated GPO Detail Only - Partition FRL 90/90/90

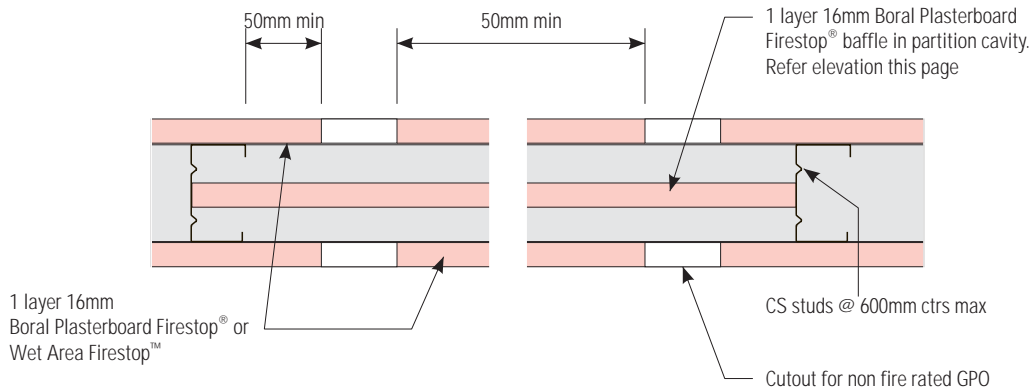


Fire Rated GPO Detail Only - Partition FRL 120/120/120

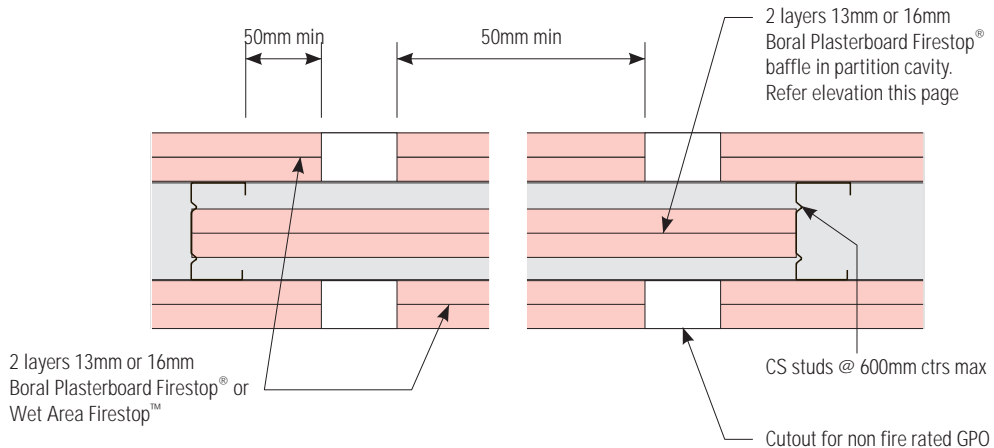
» Fire Rated Steel Framed Walls - Electrical Penetrations



Typical Layout Elevation - Non Fire Rated GPOs in Fire Rated Partition

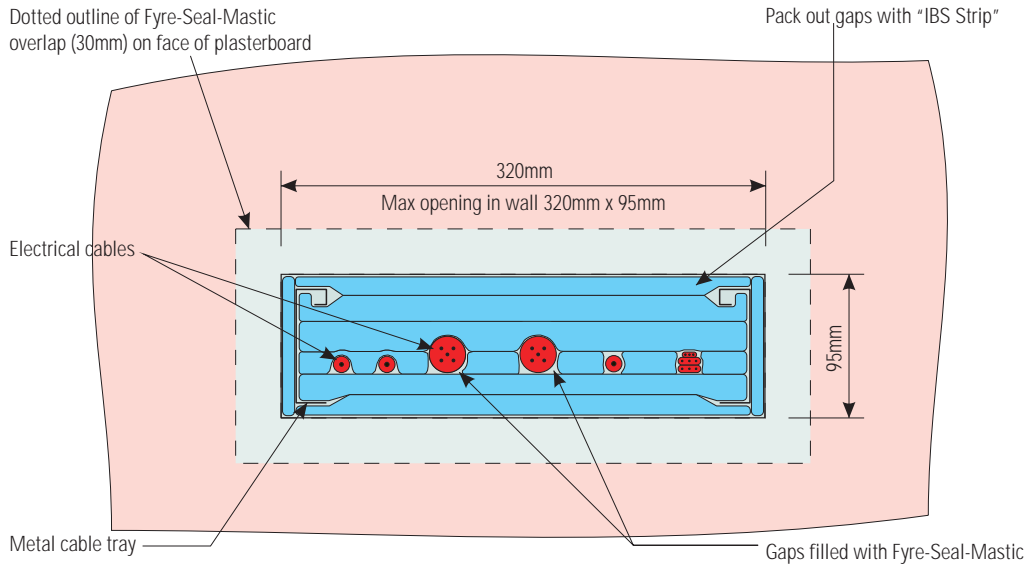


Typical Layout Plan - Non Fire Rated GPOs in FRL 60/60/60 Partition

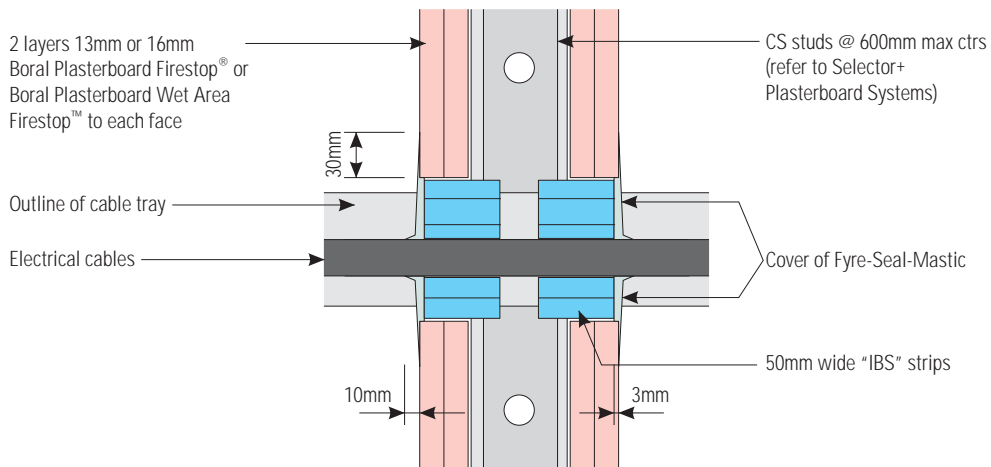


Typical Layout Plan - Non Fire Rated GPOs in FRL 90/90/90 and FRL 120/120/120 Partition

» Fire Rated Steel Framed Walls - Electrical Penetrations

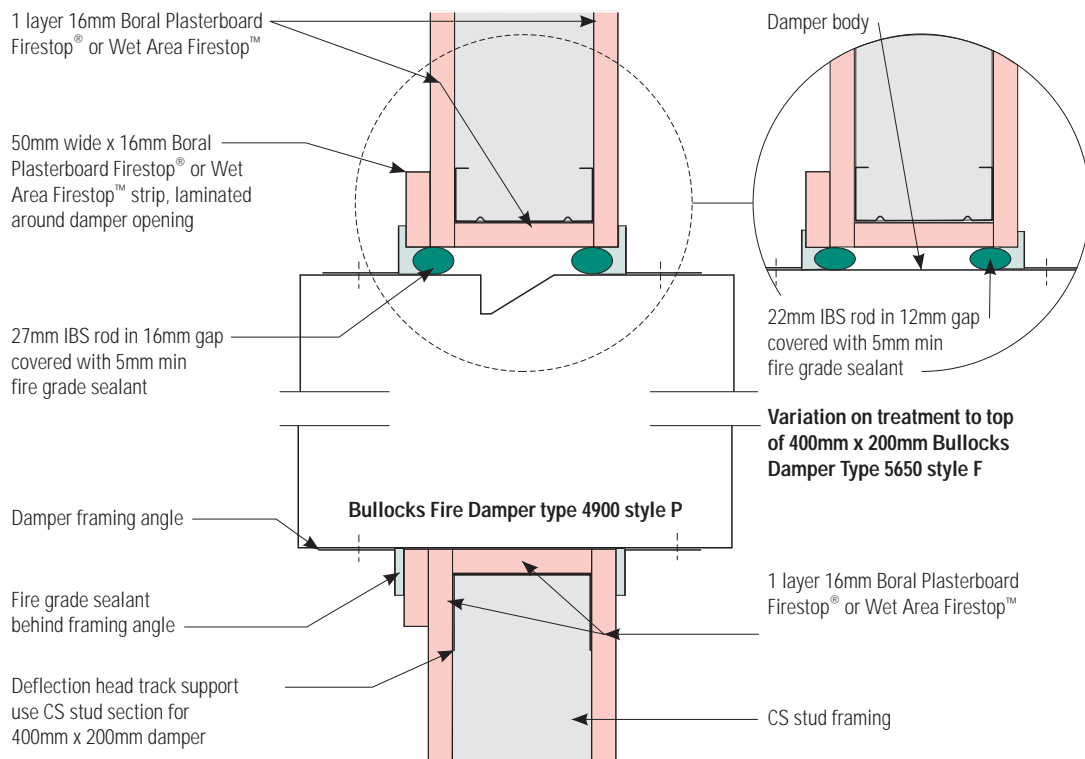


Penetration Detail - Cable Tray - Section Through Tray

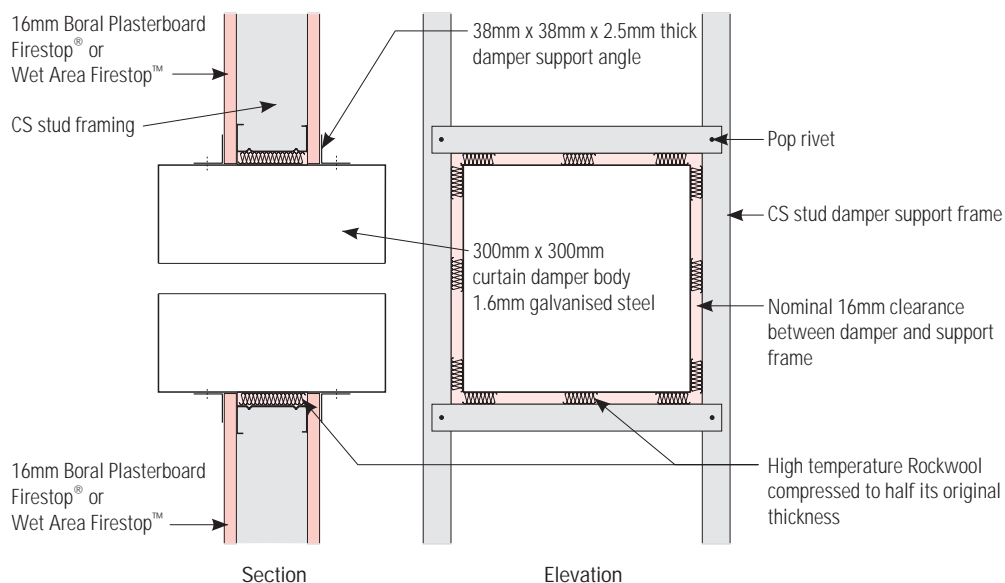


Penetration Detail - Cable Tray - Section Through Wall

Fire Rated Steel Framed Walls - HVAC Penetrations



Typical Fire Damper Detail - FRL 60/60/60 Steel Stud Wall

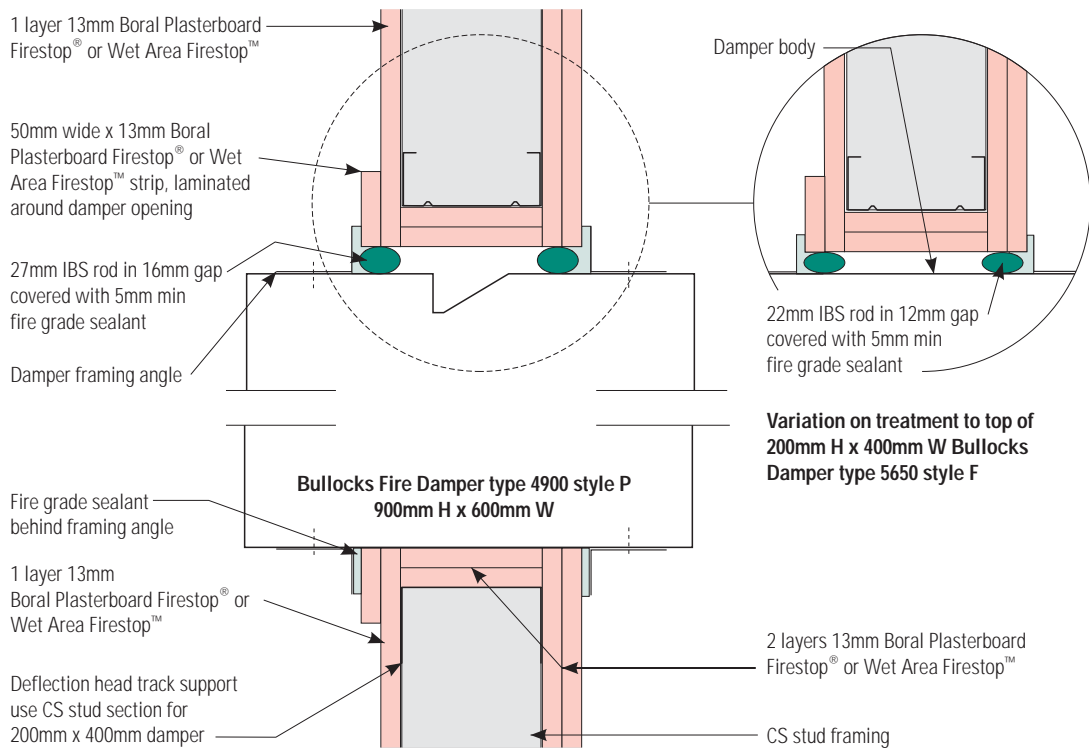


Typical Fire Damper Detail - FRL 60/60/60 Steel Stud Wall

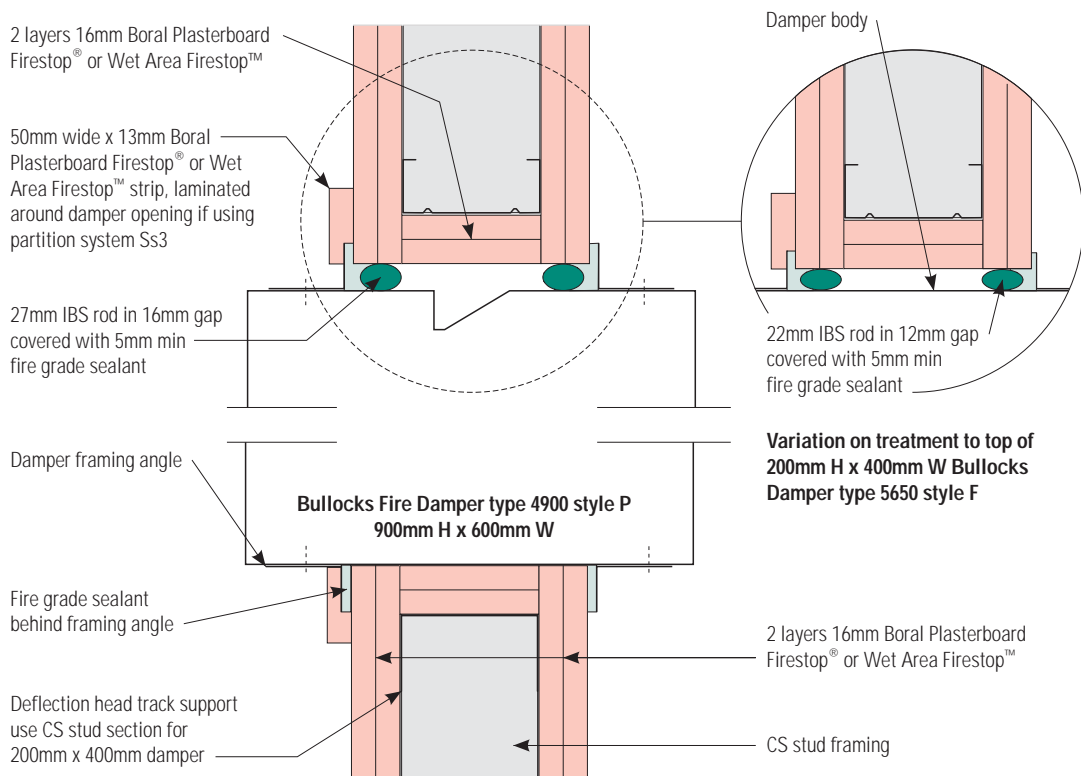
Notes:

- Consult with Mechanical and Structural Engineers for details of methods of supporting damper at wall, especially if damper opening exceeds 600mm x 900mm.
- Refer to fire damper manufacturer for alternative or additional fixing details.

» Fire Rated Steel Framed Walls - HVAC Penetrations

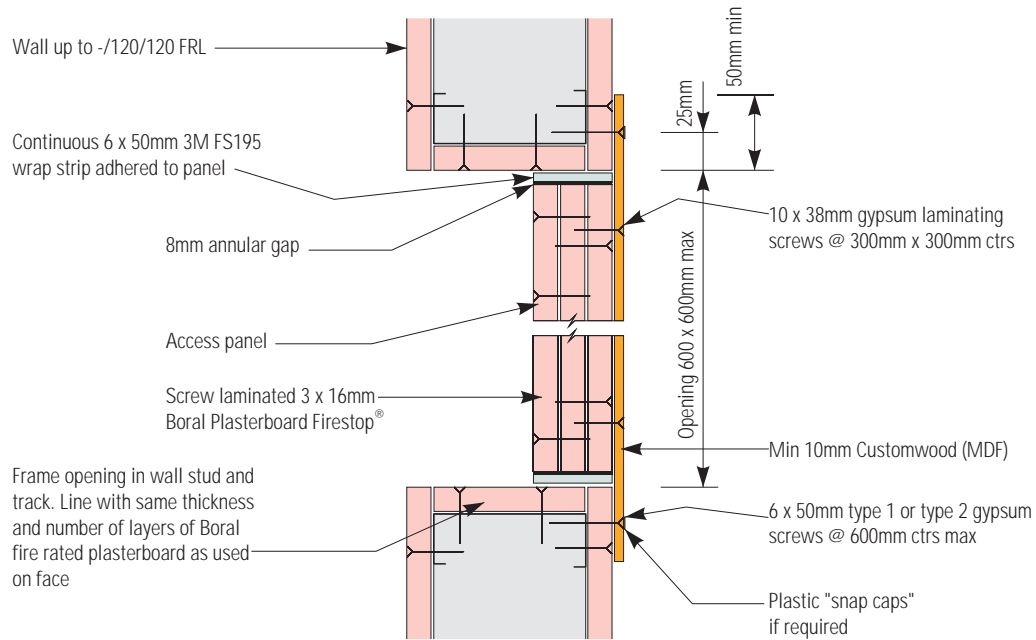


Typical Fire Damper Detail - FRL 90/90/90 Steel Stud Wall



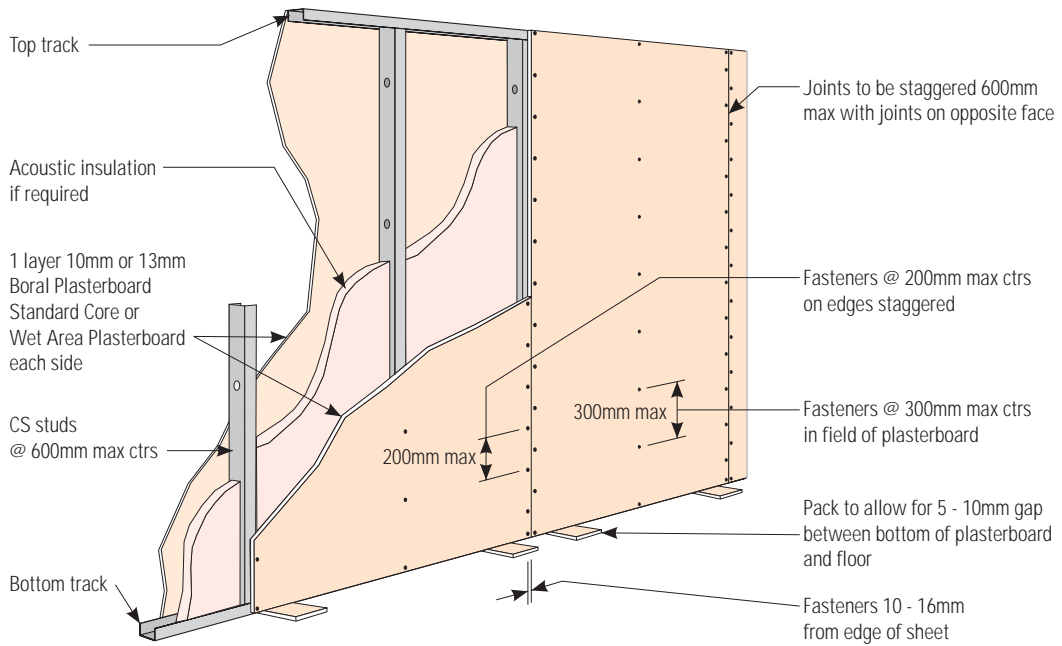
Typical Fire Damper Detail - FRL 120/120/120 Steel Stud Wall

Fire Rated Steel Framed Walls - Access Panel

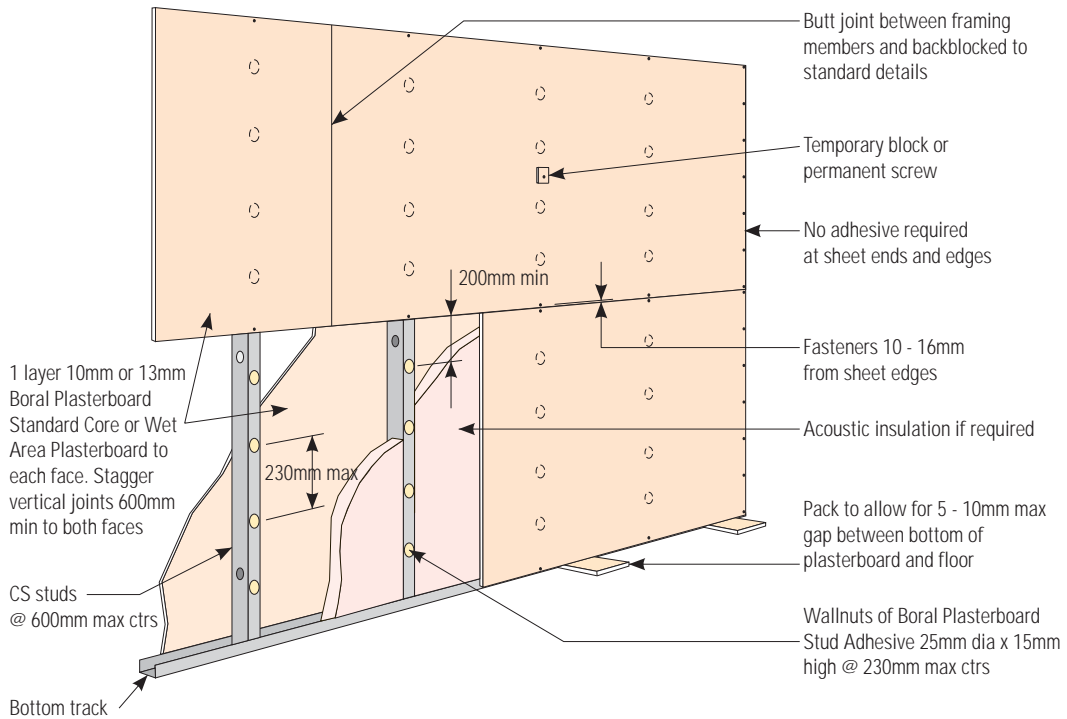


Access Panel Detail

Non Fire Rated Steel Framed Walls - Plasterboard Installation



Non Fire Rated Steel Stud - Vertical Fixing - Single Layer

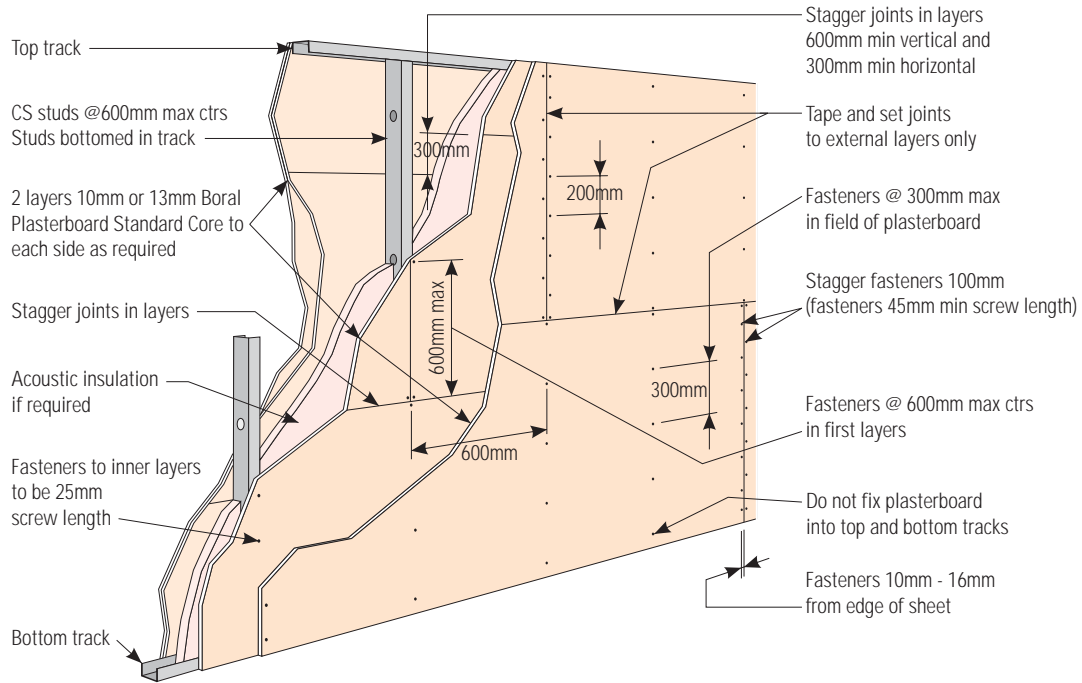


Non Fire Rated Steel Stud - Horizontal Fixing - Single Layer

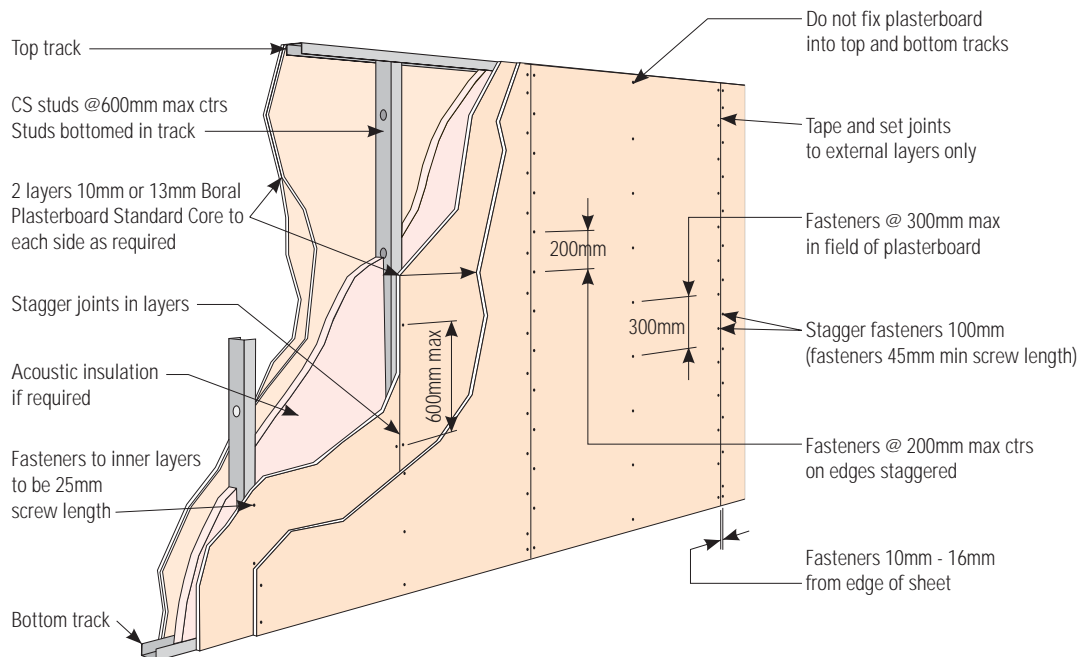
Note:

For level 4 and 5 finish, butt joints to fall between framing members, otherwise butt joints may be fixed to studs.

» Non Fire Rated Steel Framed Walls - Plasterboard Installation

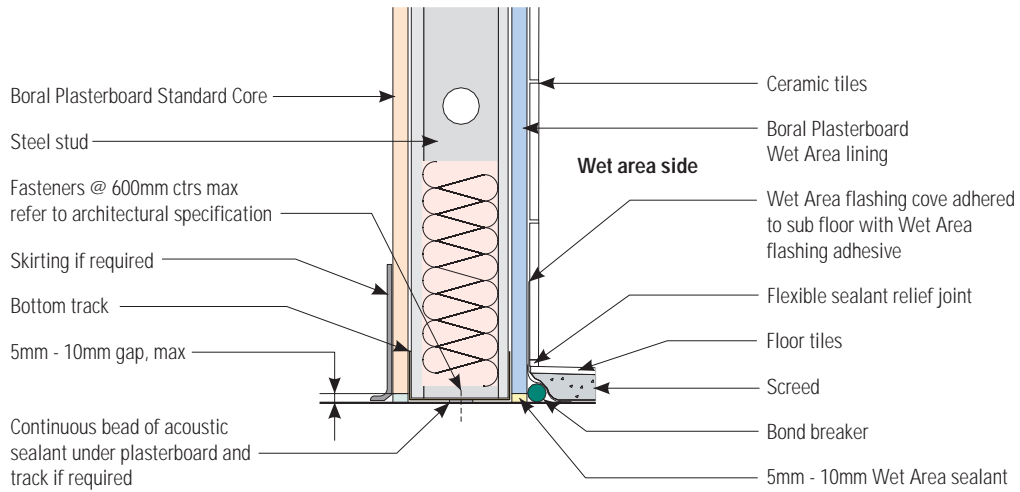


Non Fire Rated Steel Stud - Horizontal Fixing - Multiple Layer



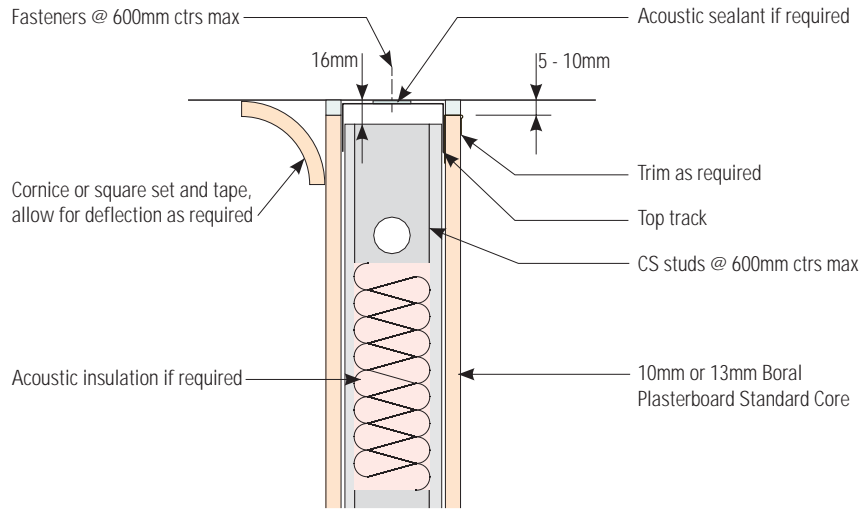
Non Fire Rated Steel Stud - Vertical Fixing - Multiple Layer

Non Fire Rated Steel Framed Walls - Base Details

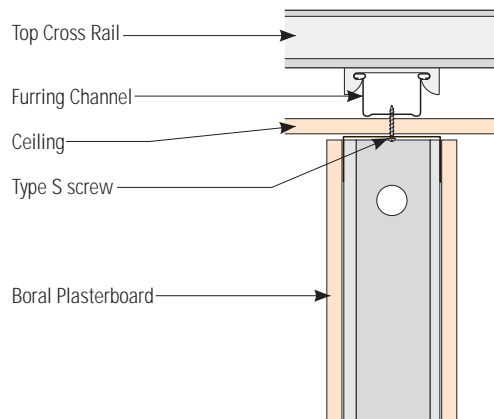


Standard Non Fire Rated Wall Base Detail

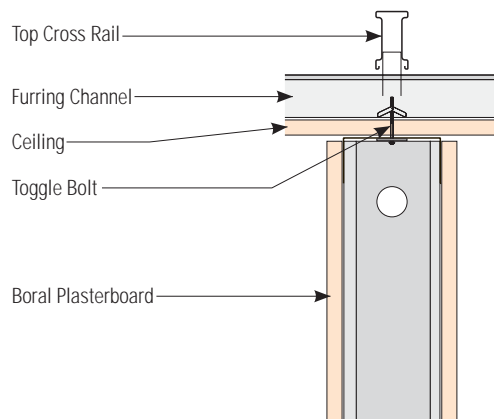
Non Fire Rated Steel Framed Walls - Head Details



Standard Non Fire Rated Wall Head Detail



Wall Head Fixing to Suspended Ceiling Detail - Parallel to Furring

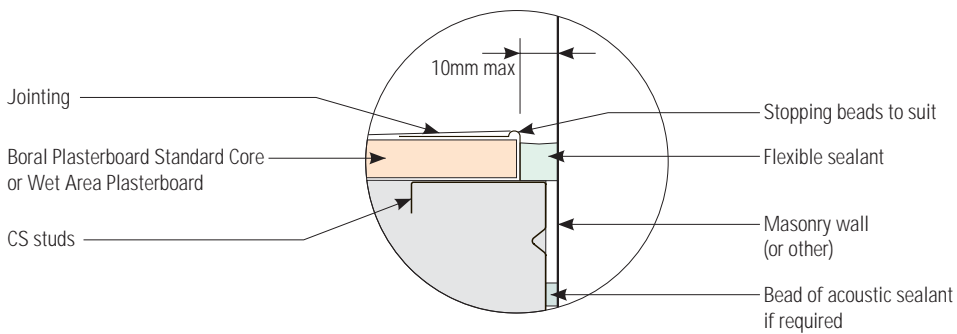
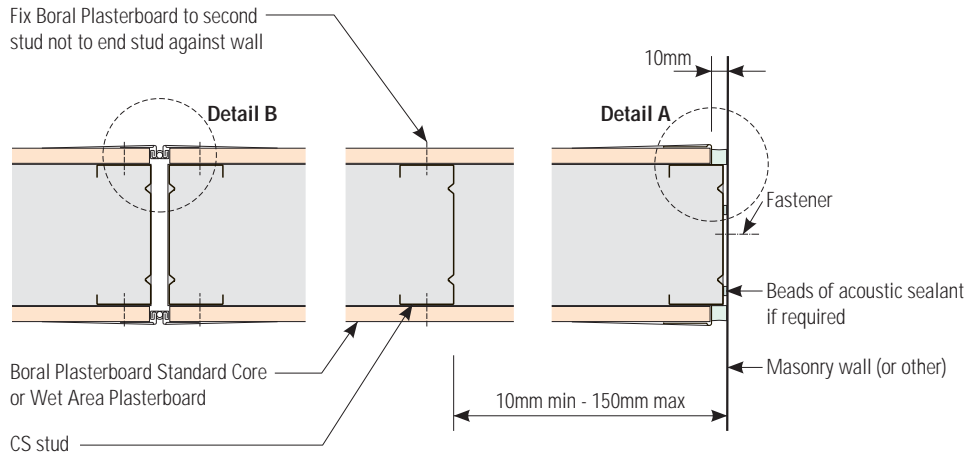


Notes:

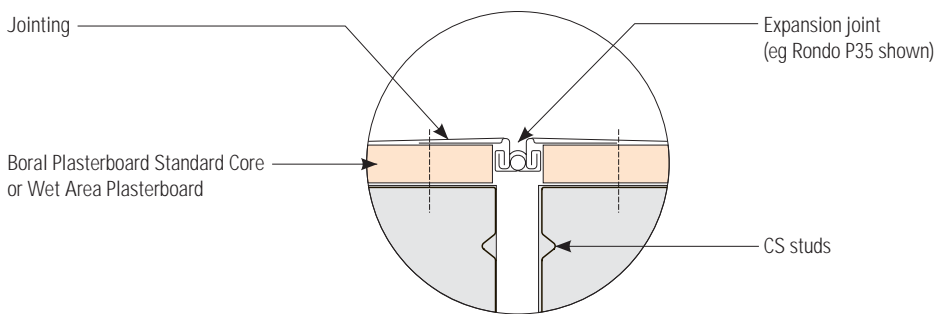
- Screw Fixed Ceiling Systems.
- Where possible, fasteners should be fixed through the plasterboard ceiling into the steel furring channel above, using type S screws of adequate length. Where furring channels cannot be located, use toggle bolts or expanding type fasteners which secure above the ceiling.

Wall Head Fixing to Suspended Ceiling Detail - Perpendicular to Furring

Non Fire Rated Steel Framed Walls - Control Joints



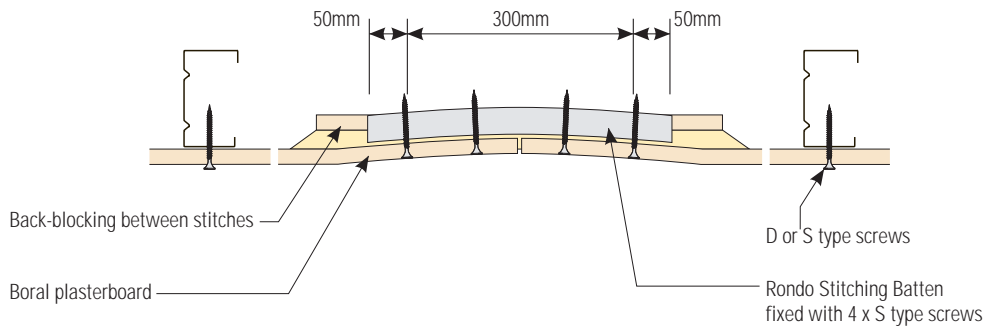
Detail A



Detail B

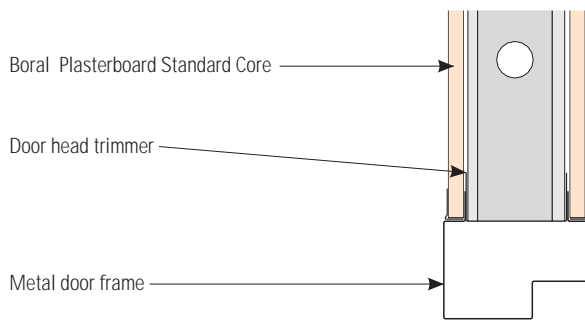
Control Joint Details

Non Fire Rated Steel Framed Walls - Back-blocking



Back-blocking Using Stitching Batten Detail

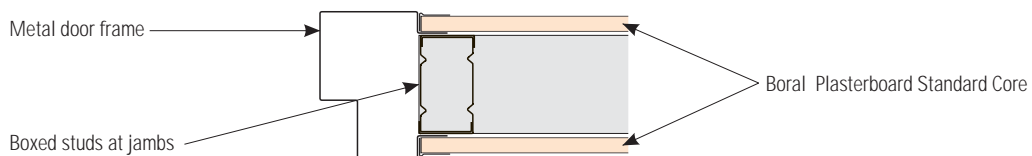
Door Details - Non Fire Rated Steel Framed Walls



Notes:

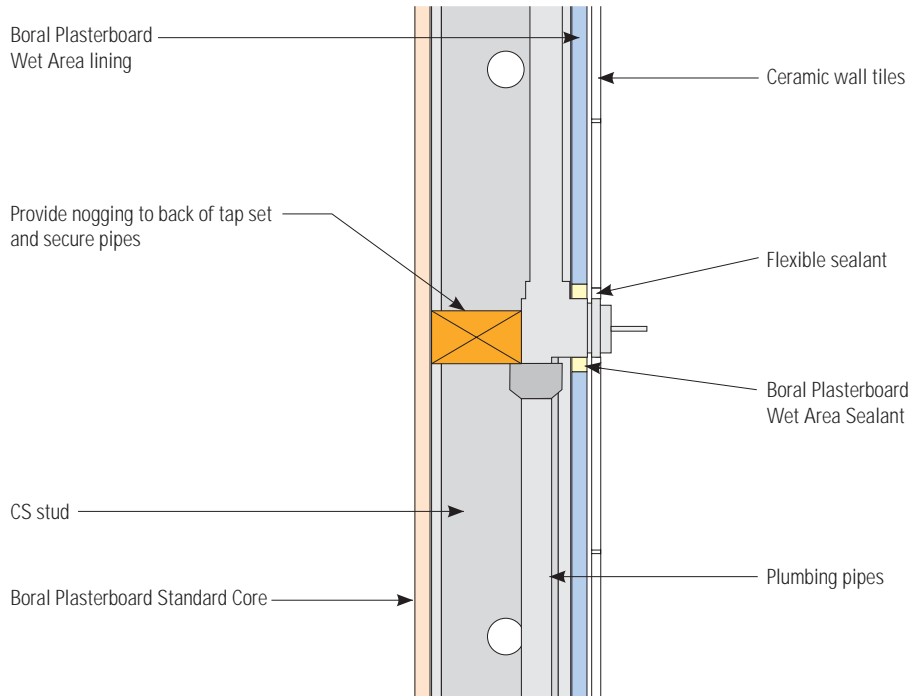
- Details shown are generic only.
- Check with specific door frame manufacturer for alternative detailing.

Door Head Detail - Non Fire Rated

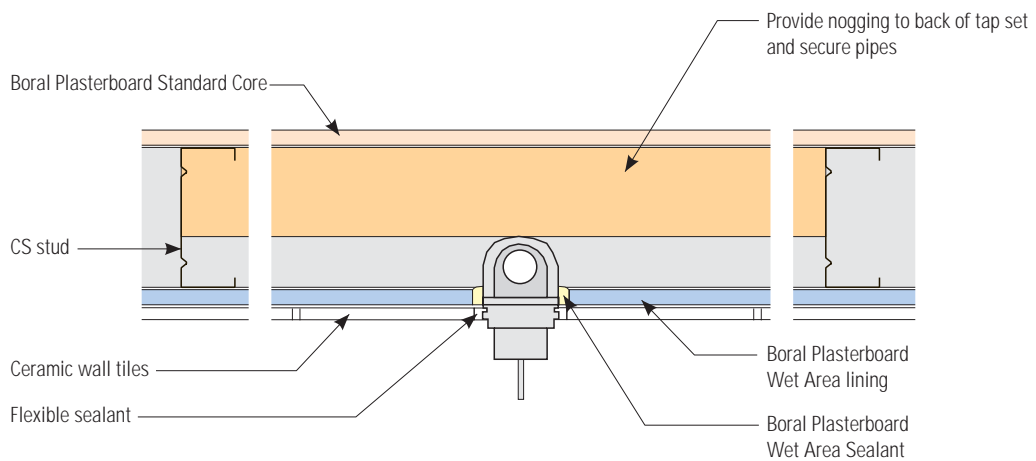


Door Jamb Detail - Non Fire Rated

Non Fire Rated Steel Framed Walls - Plumbing Penetrations



Typical Plumbing Penetration Detail - Section



Typical Plumbing Penetration Detail - Plan

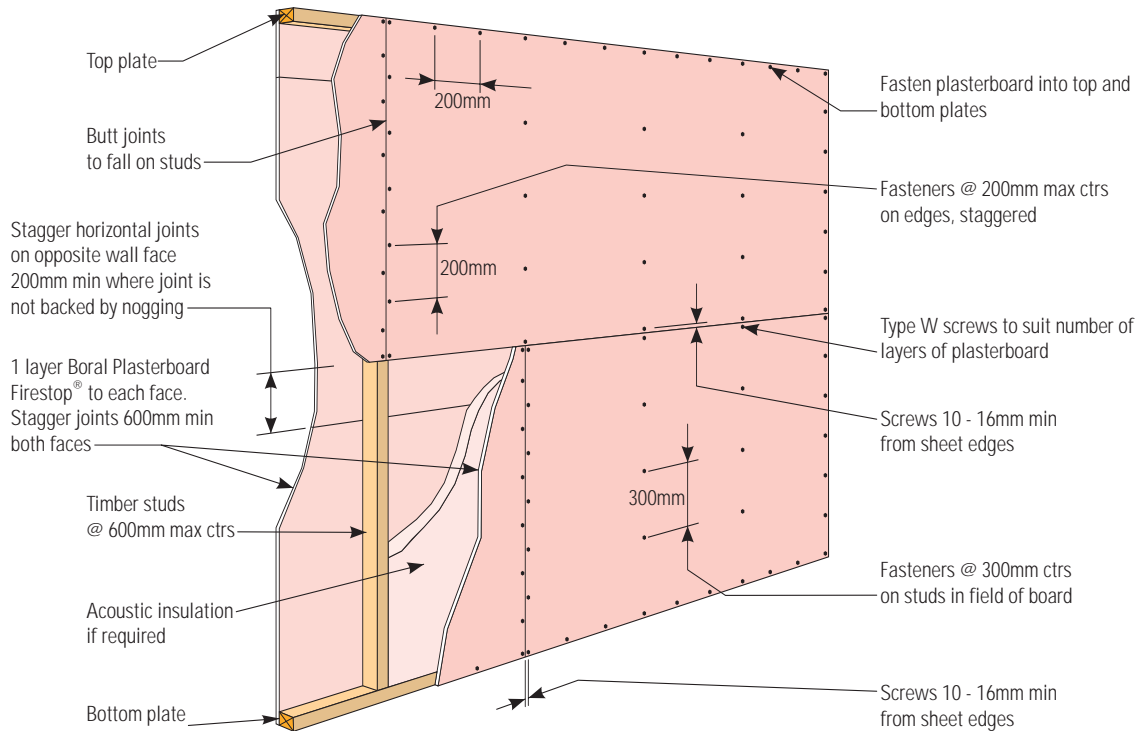
Notes:

The following instructions must be followed to achieve satisfactory results:

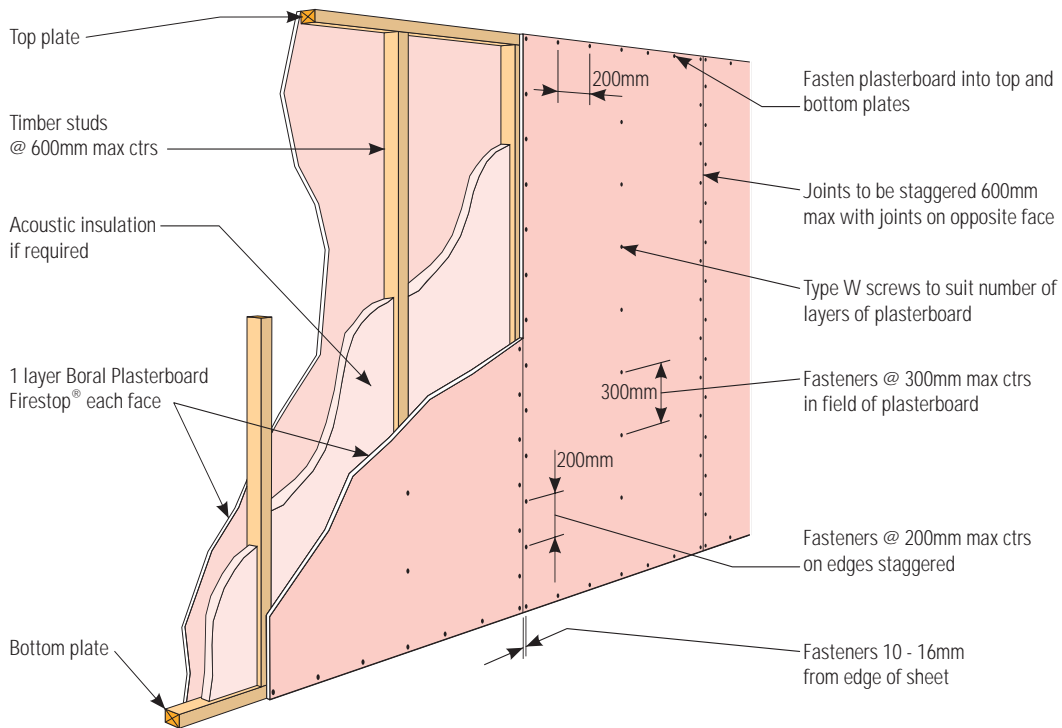
- Care should be taken to isolate copper pipes away from contact with steel framing to avoid problems with corrosion.
- Plasterboard linings are not to act as supports for piping.
- Piping is to be kept clear of face sheets.

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Fire Rated Timber Framed Walls - Plasterboard Installation

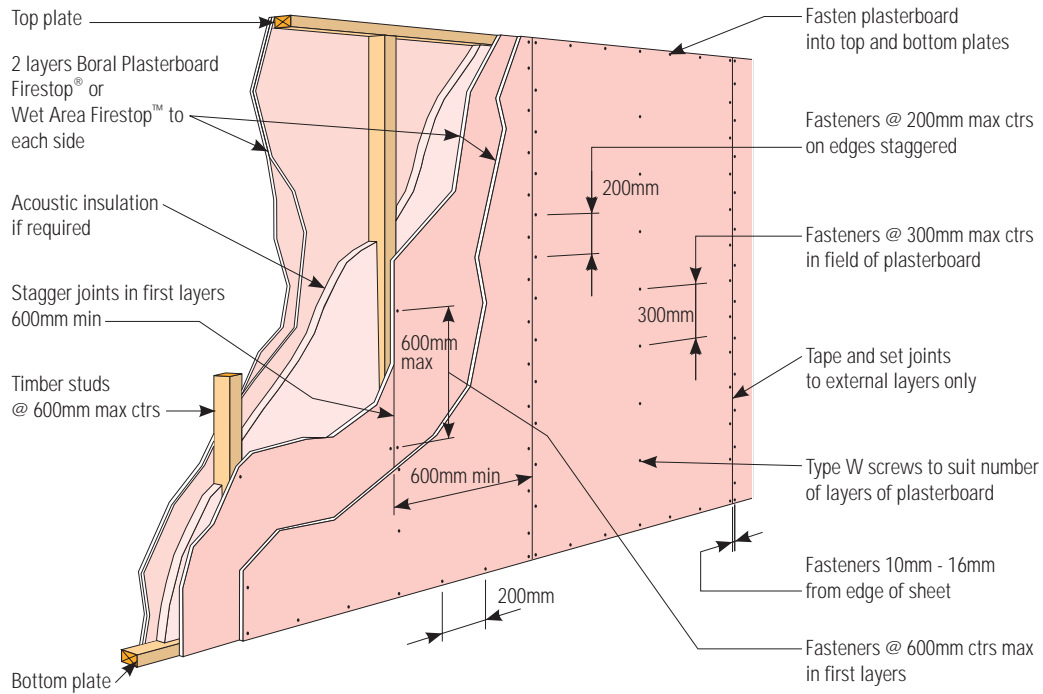


Fire Rated Timber Stud - Horizontal Fixing - Single Layer

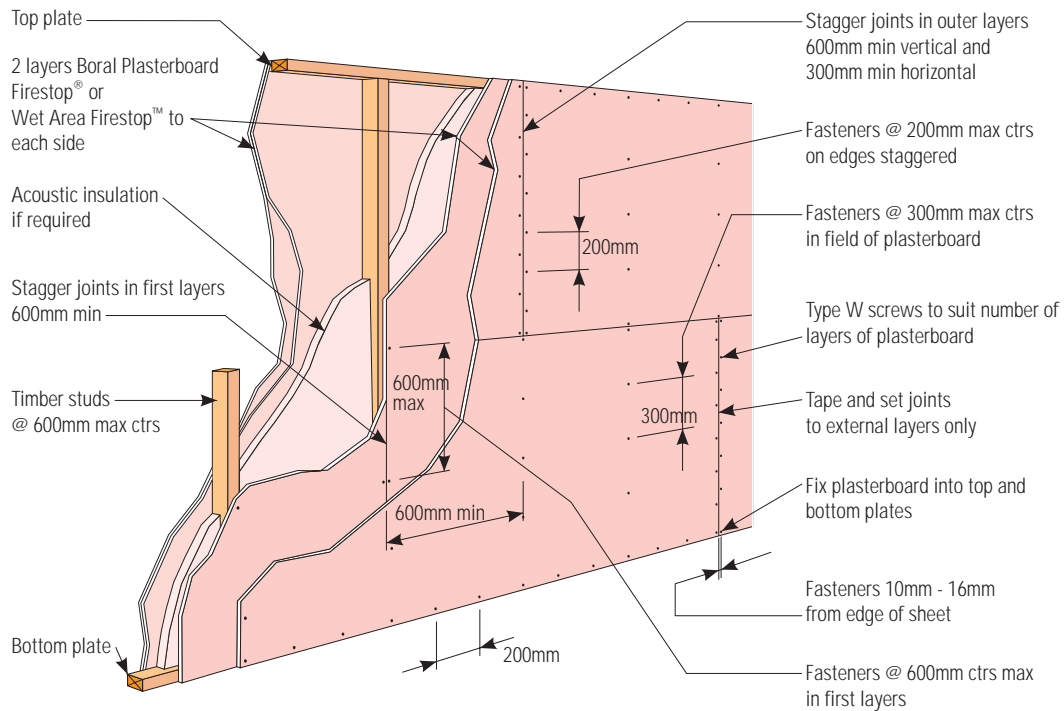


Fire Rated Timber Stud - Vertical Fixing - Single Layer

» Fire Rated Timber Framed Walls - Plasterboard Installation

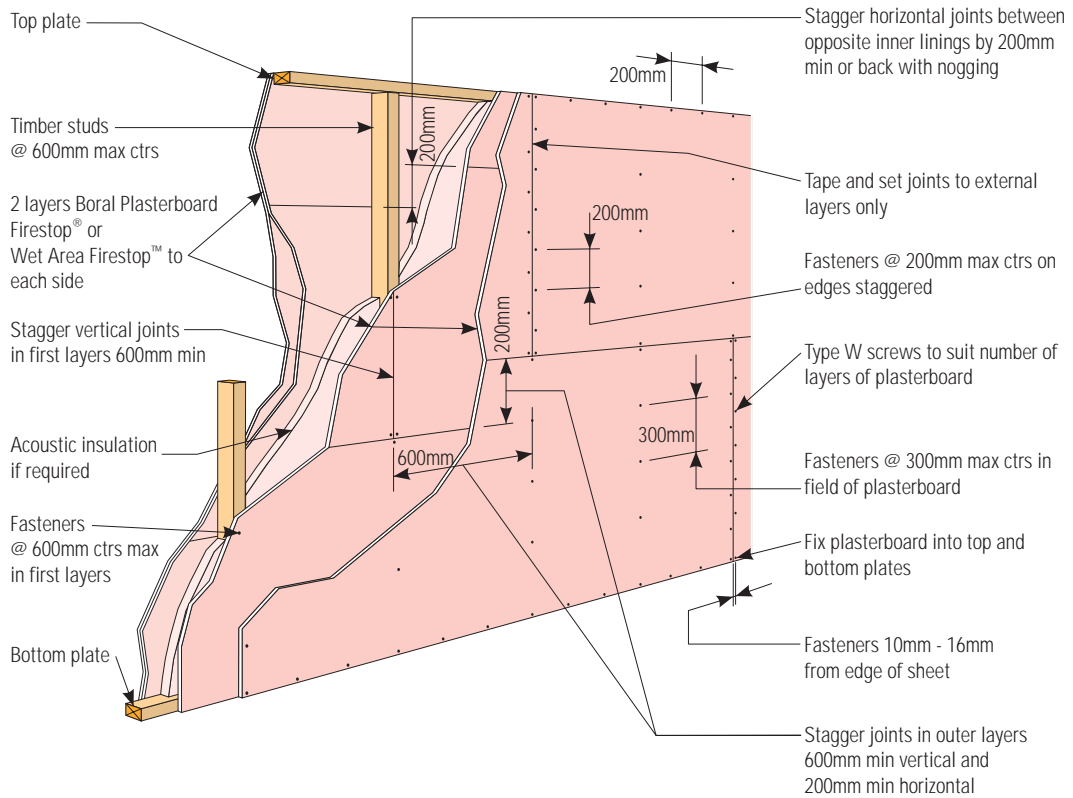


Fire Rated Timber Stud - Vertical Fixing - Multiple Layer



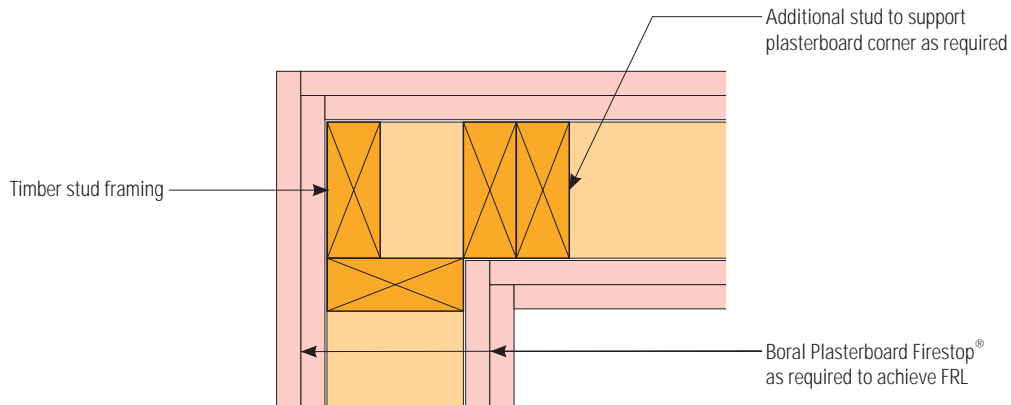
Fire Rated Timber Stud - Mixed Orientation - Multiple Layer

» Fire Rated Timber Framed Walls - Plasterboard Installation

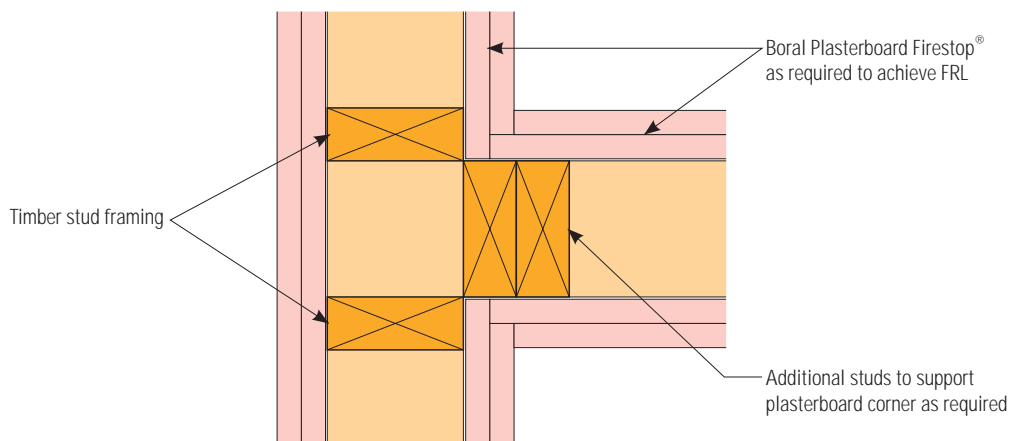


Fire Rated Timber Stud - Horizontal Fixing - Multiple Layer

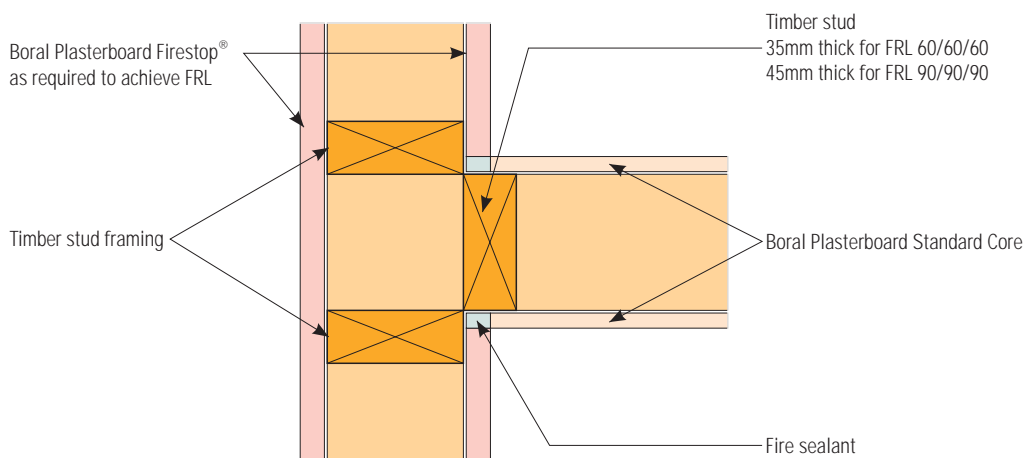
Fire Rated Timber Framed Walls - Wall Junctions



Single Timber Stud Wall Corner Junction Detail

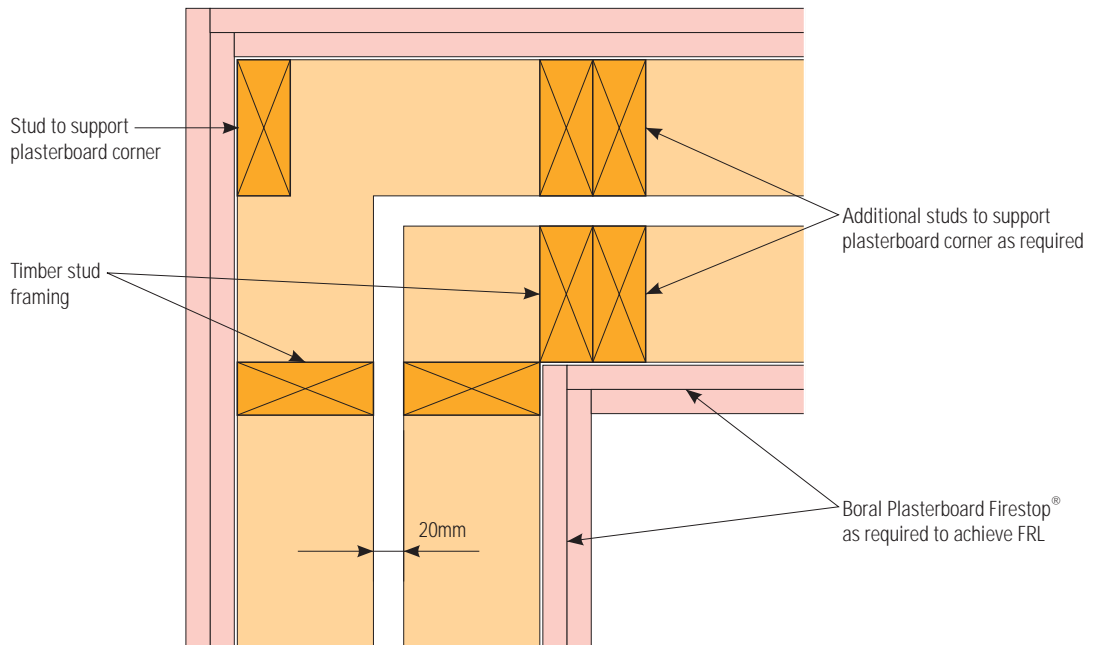


Single Timber Stud Wall T Junction Detail

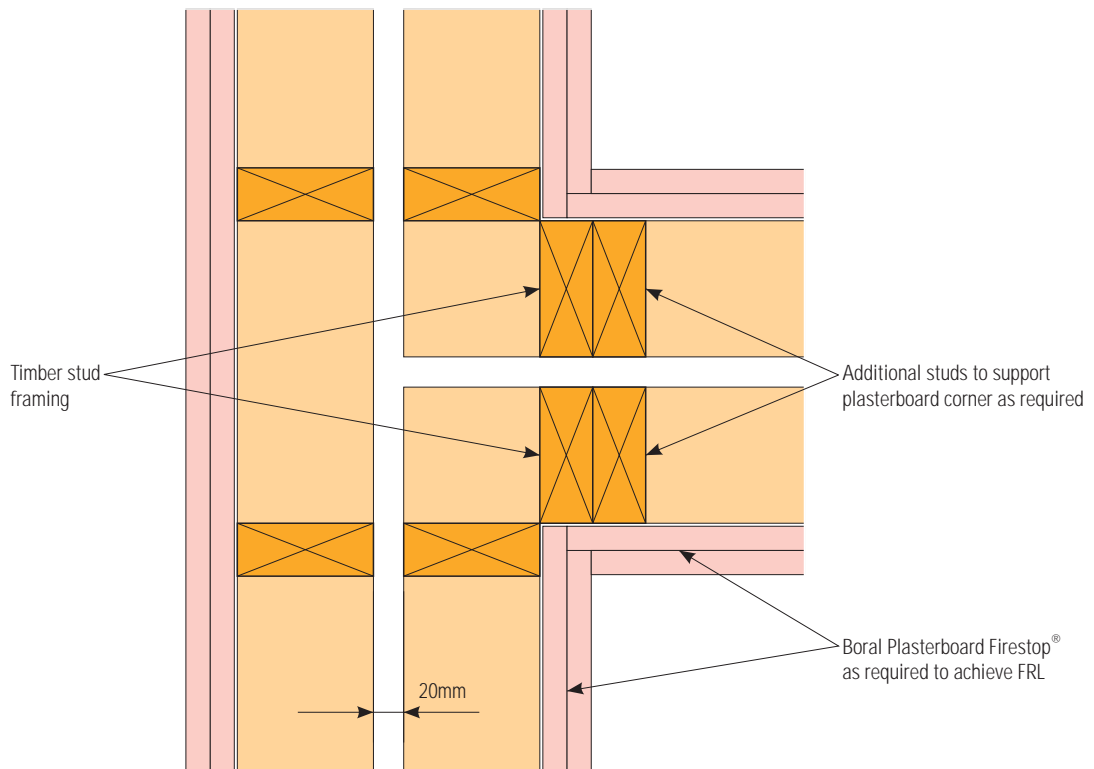


Single Timber Stud Fire Rated Wall to Non Fire Rated Wall T Junction Detail

» Fire Rated Timber Framed Walls - Wall Junctions

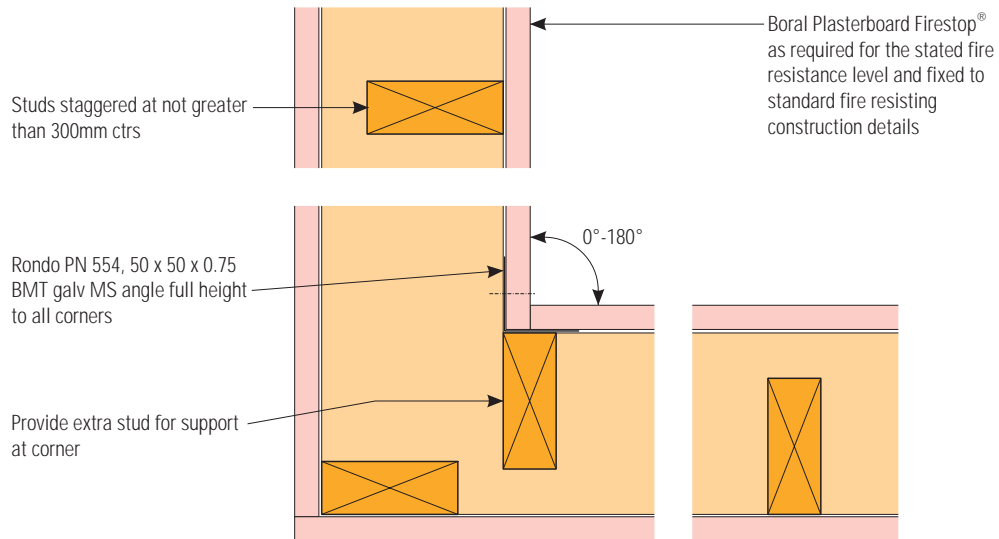


Twin Timber Stud Wall - Corner Junction Detail

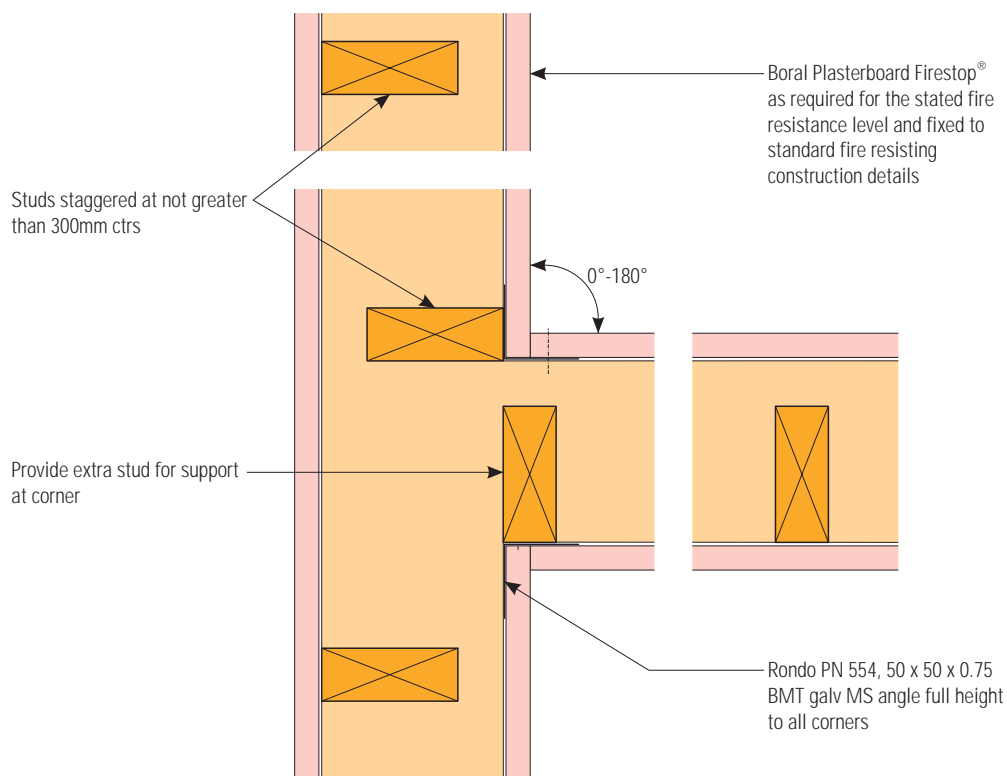


Twin Timber Stud Wall - T Junction Detail

» Fire Rated Timber Framed Walls - Wall Junctions

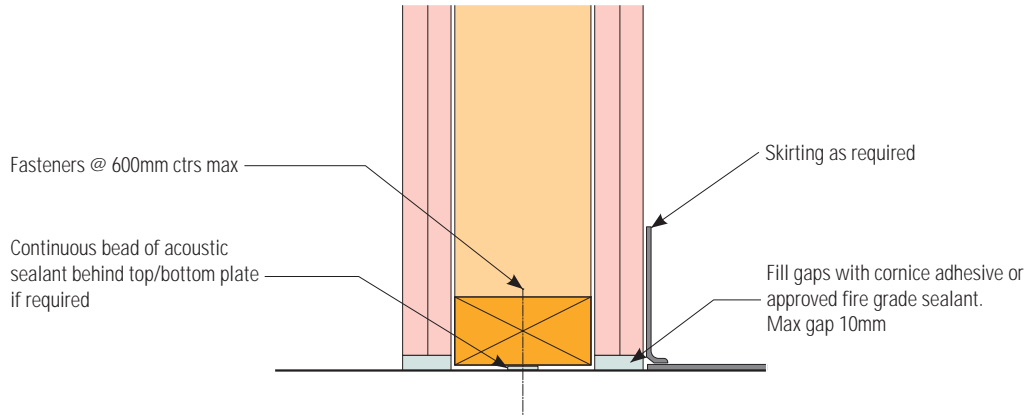


Staggered Timber Stud Wall - Corner Junction Detail



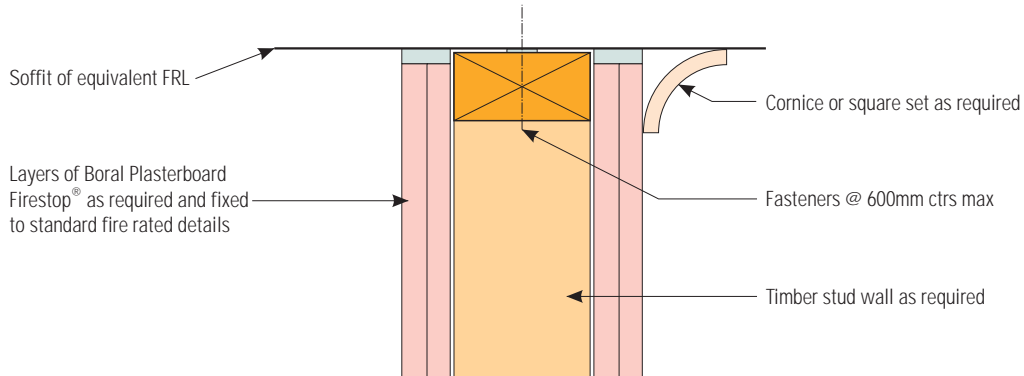
Staggered Timber Stud Wall - T Junction Detail

Fire Rated Timber Framed Walls - Base Detail

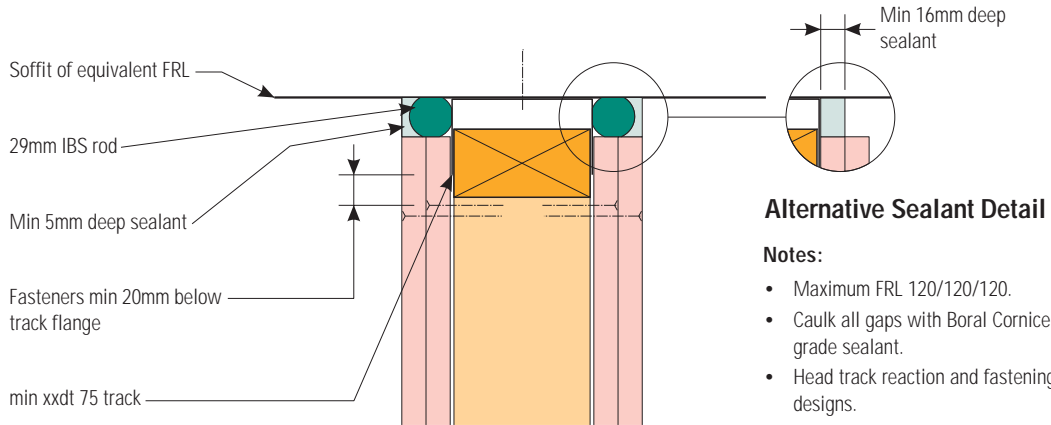


Standard Timber Stud Wall - Base Detail

Fire Rated Timber Framed Walls - Head Details



Standard Timber Stud Wall - Head Detail

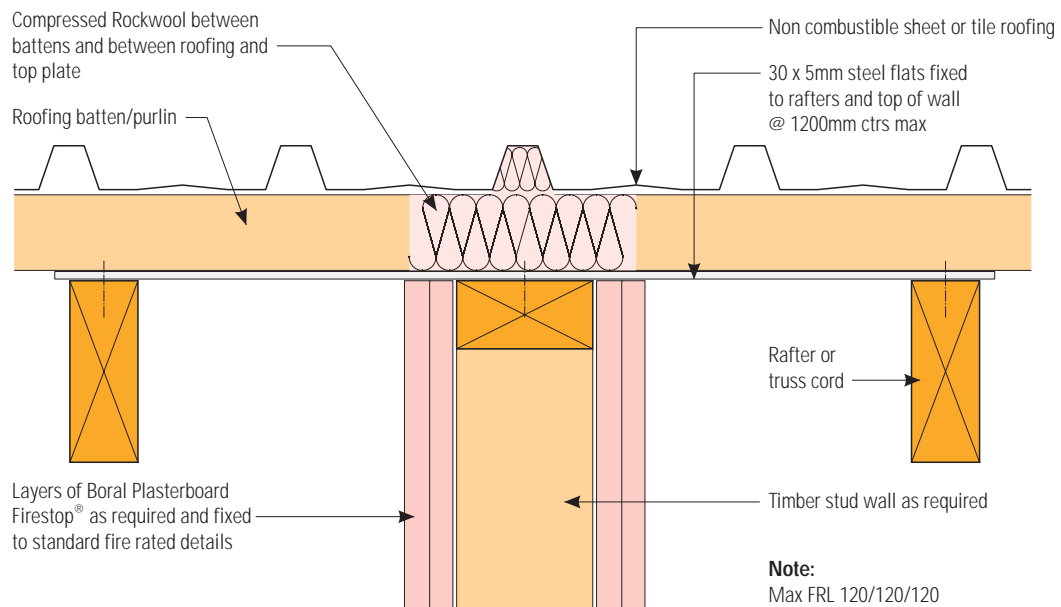


Alternative Sealant Detail

Notes:

- Maximum FRL 120/120/120.
- Caulk all gaps with Boral Cornice Adhesive or fire grade sealant.
- Head track reaction and fastenings to Engineer's designs.

Standard Timber Stud Wall - Deflection Head Detail

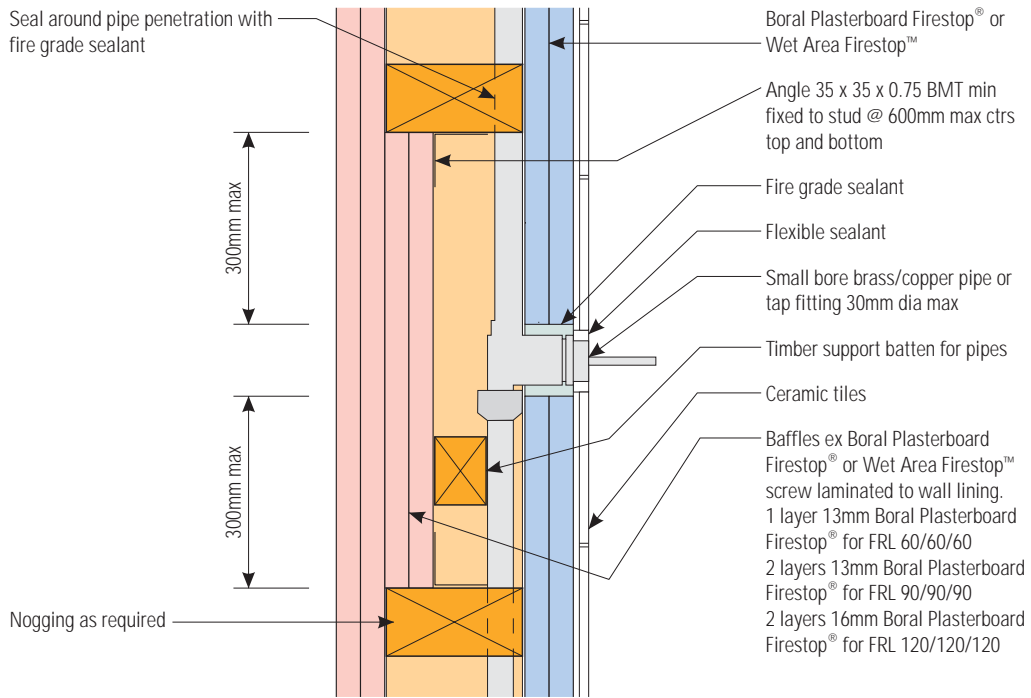


Note:

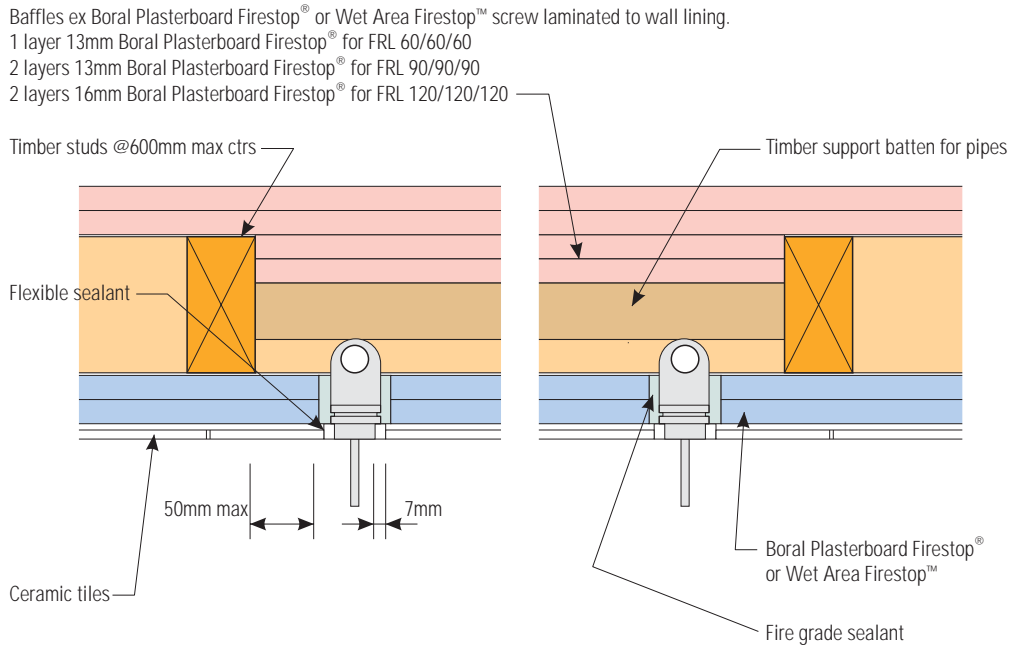
Max FRL 120/120/120

Standard Timber Stud Wall - Head to Roof Junction Detail

Fire Rated Timber Framed Walls - Plumbing Penetrations

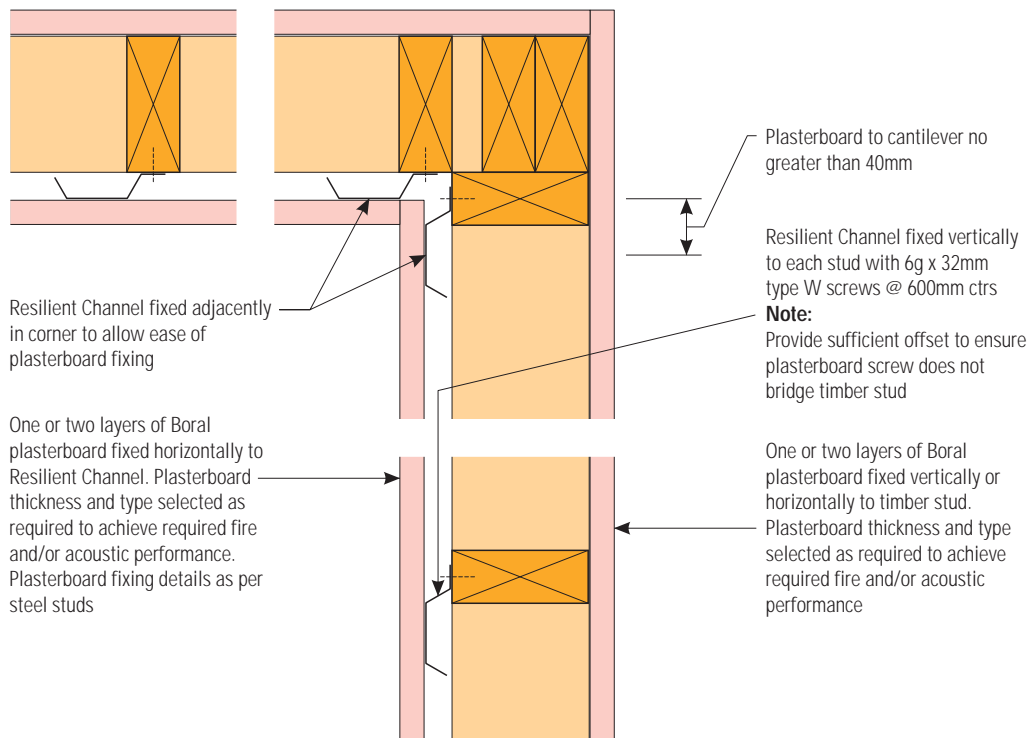


Standard Fire Rated Timber Stud Wall Plumbing Pipe Penetration - Section

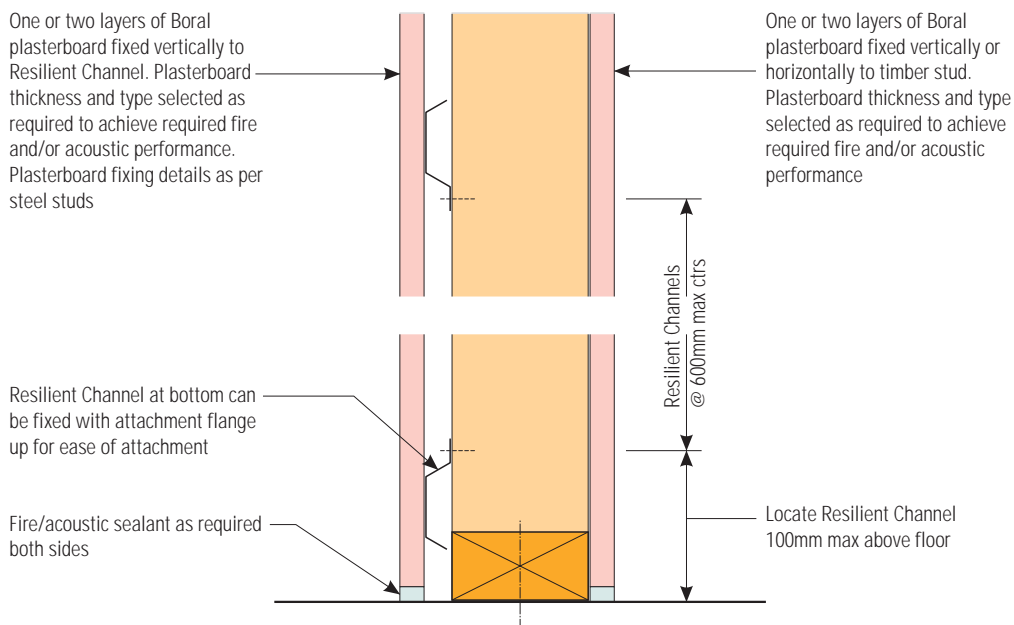


Standard Fire Rated Timber Stud Wall Plumbing Pipe Penetration - Plan

Fire Rated Timber Framed Walls - Acoustic Details



Resilient Channel Vertical Application - Corner Detail

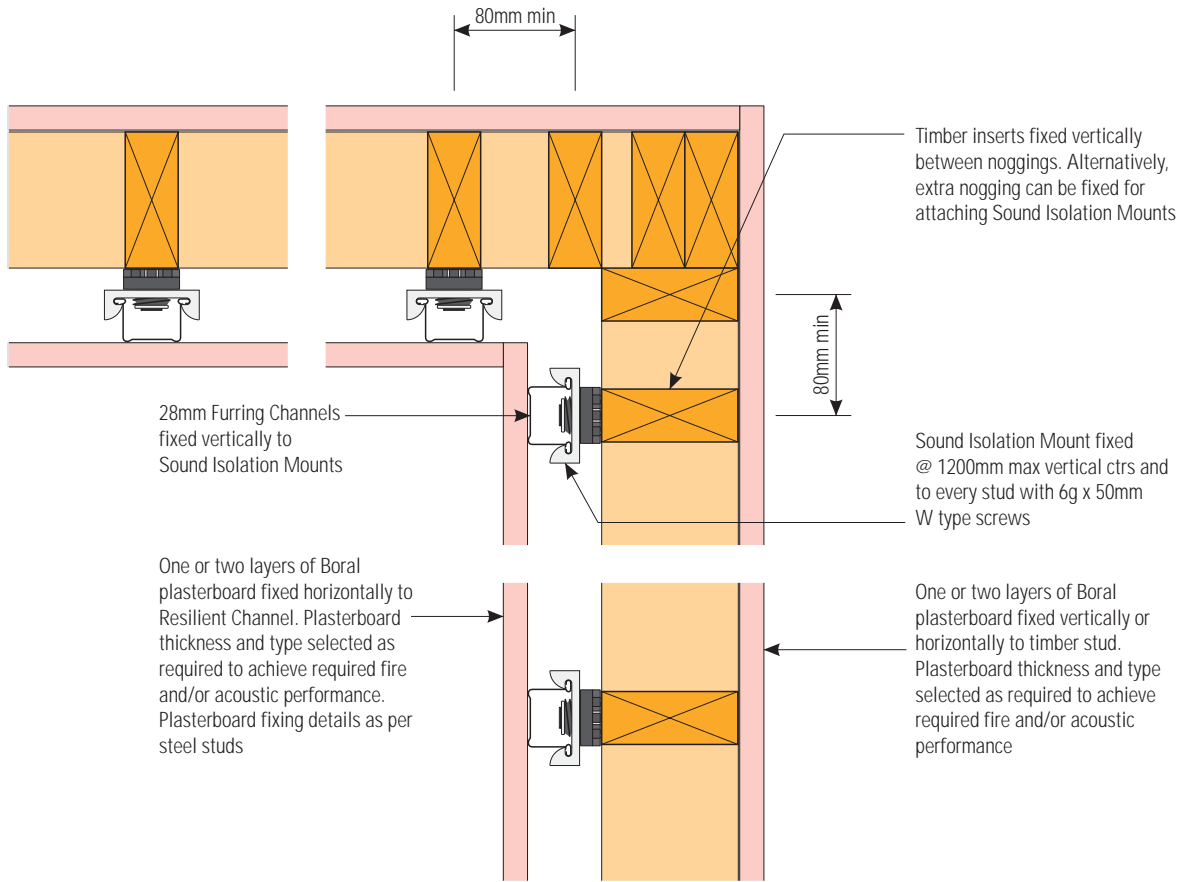


Resilient Channel Horizontal Application - Base Detail

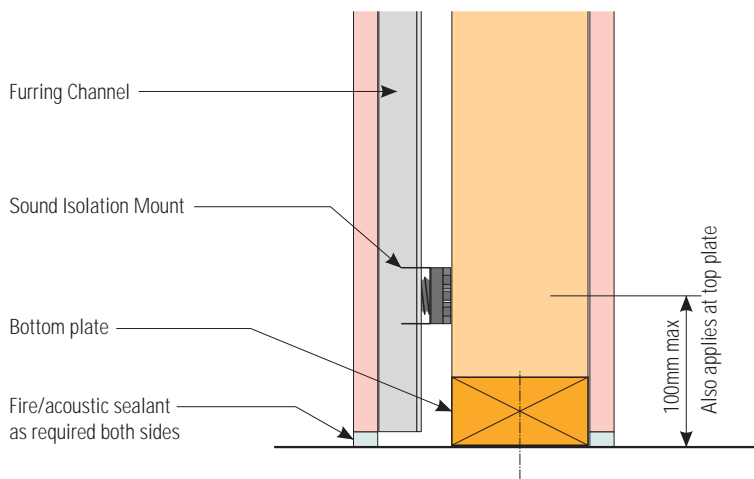
Notes:

- Resilient Channel to be located within 150mm of the ceiling.
- Extend Resilient Channel into all corners and attach to corner framing.
- Splice Resilient Channels directly over studs by inserting (not butting) the Resilient Channels and driving screw fastener through both flanges into the stud.

» Fire Rated Timber Framed Walls - Acoustic Details



Sound Isolation Mount - Corner Detail



Sound Isolation Mount - Base Detail

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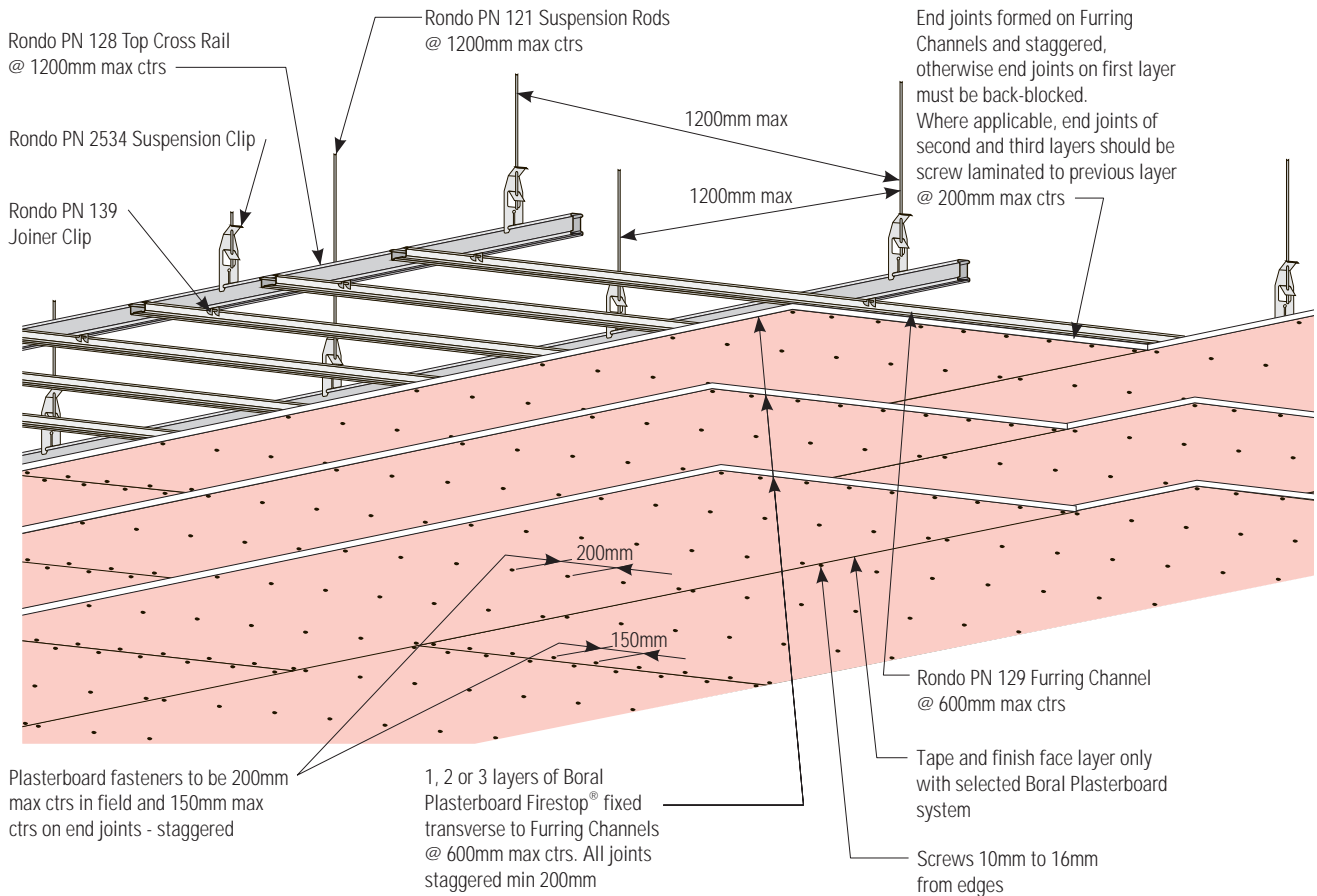
D3 | Ceilings

Ceiling Construction Notes

1. Movement joints should be put at building construction joint locations or where there is expected movement in the building structure.
2. Control joints should be spaced at not more than 12 metre maximum centres in either direction (15 metre centres where there is perimeter relief) and where there is change in substrate materials.
3. Specifiers should be aware of the likelihood of frame movement due to structural, thermal and seasoning effects on direct fixed plasterboard ceilings. Where necessary specify a furred system to minimise the risk of ceiling damage due to these effects.
4. Furring/resilient channel/framing supports to be taken/ provided within 50mm of ceiling perimeter. Minimum 15mm end clearance to walls.
5. Boral Plasterboard ceiling systems are not designed to support the weight of maintenance personnel, additional plant or storage loadings.
6. Thermal or acoustic insulation (maximum 2kg/m²) may be placed above plasterboard ceiling lining.
7. Tape and finish with preferred Boral Plasterboard jointing system.
8. Pitch of ceiling to be in the range of 0-70° from horizontal varying of minimum radius of 6000mm.
9. Ceiling framing to Rondo specifications or appropriate Australian Standards.
10. Boral plasterboard to be applied along or across supporting member. Butt or end joints not formed on framing members should be back-blocked as detailed in the manual.
11. For fire rated systems allow 20mm expansion gap (or at the rate of 3mm per 1 metre run) to furring/resilient channels and top cross rails.
12. All approved fire rated penetrations must be installed and caulked in accordance with details provided in this manual.
13. For non fire rated systems, plasterboard may be fixed with screws or a combination of adhesive and screws. A combination of adhesive and screws is the preferred method for general application.
14. Where nails are to be used to fix plasterboard in non fire rated systems, refer AS/NZ 2589.1 1997 for recommendations.

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Fire Rated Ceilings - Plasterboard Installation

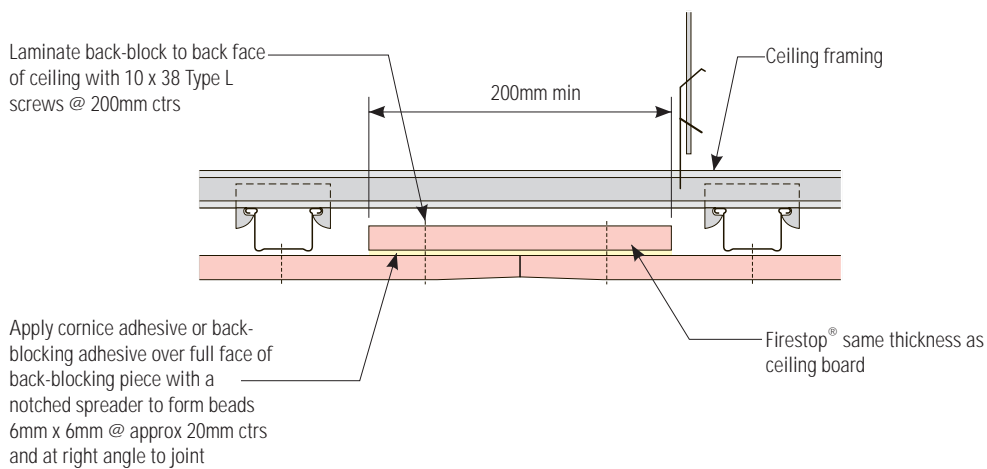


Screw Fixing Layout

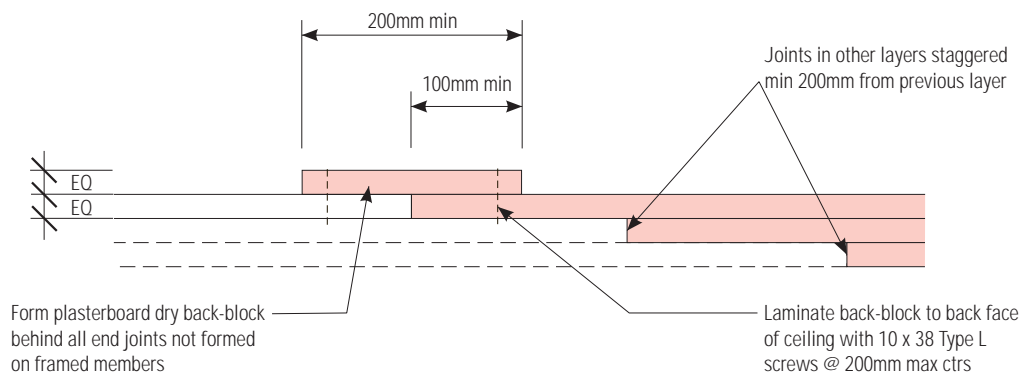
Fire Rated Ceilings - Back-blocking

Back-blocking is a mandatory fixing requirement where specified in the Australian Standard AS/NZS 2589.1:1997.

Failure to provide back-blocking installed as per AS/NZS 2589.1:1997 may result in liability for any associated costs relating to maintenance and/or rectification caused by jointing defects.

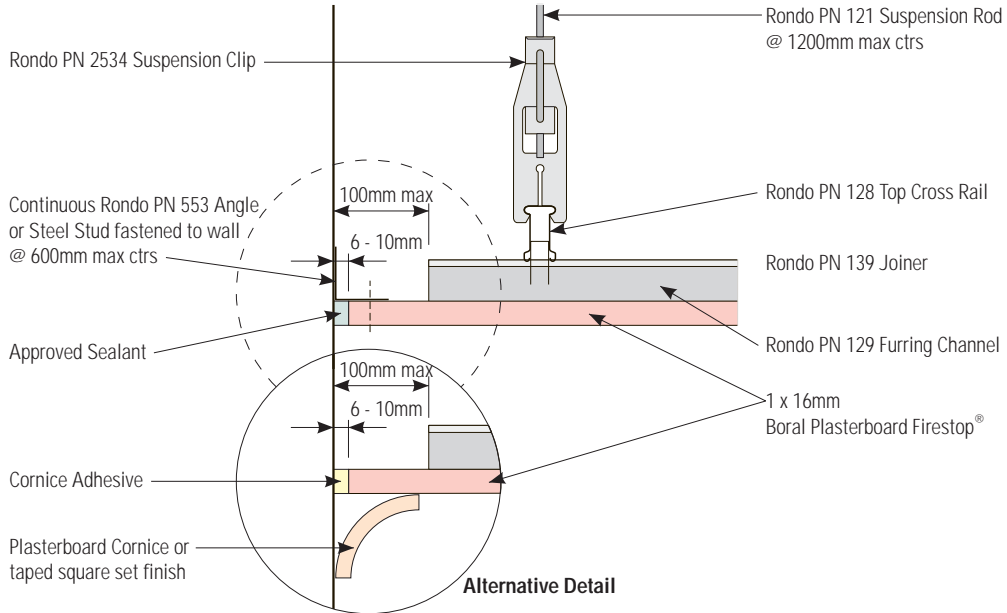


Single Layer Back-block Detail

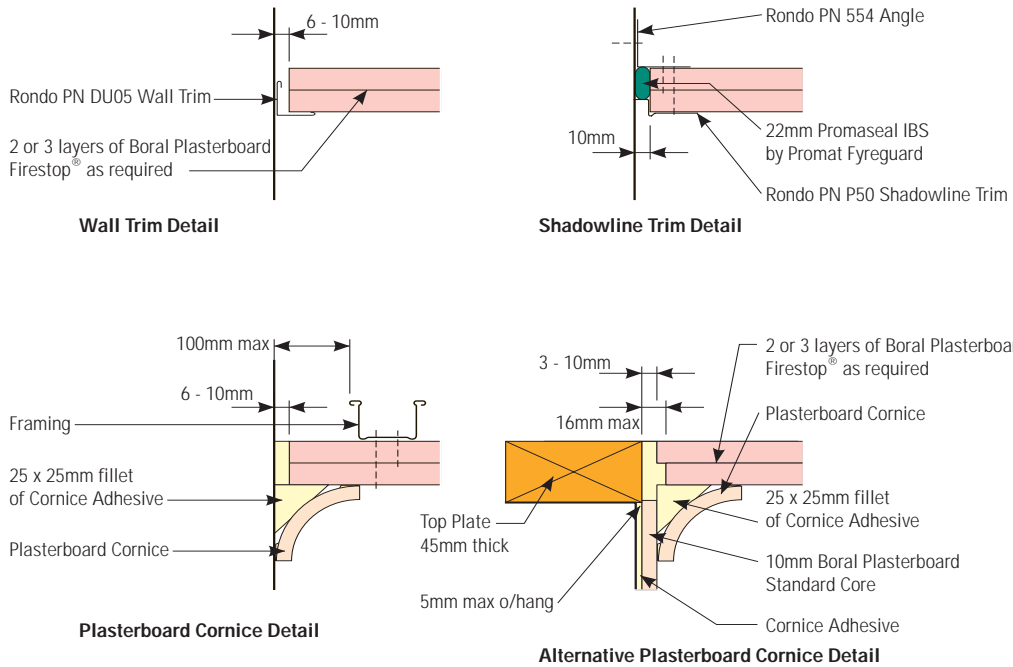


Multi Layer Back-block Detail

Fire Rated Ceilings - Perimeter

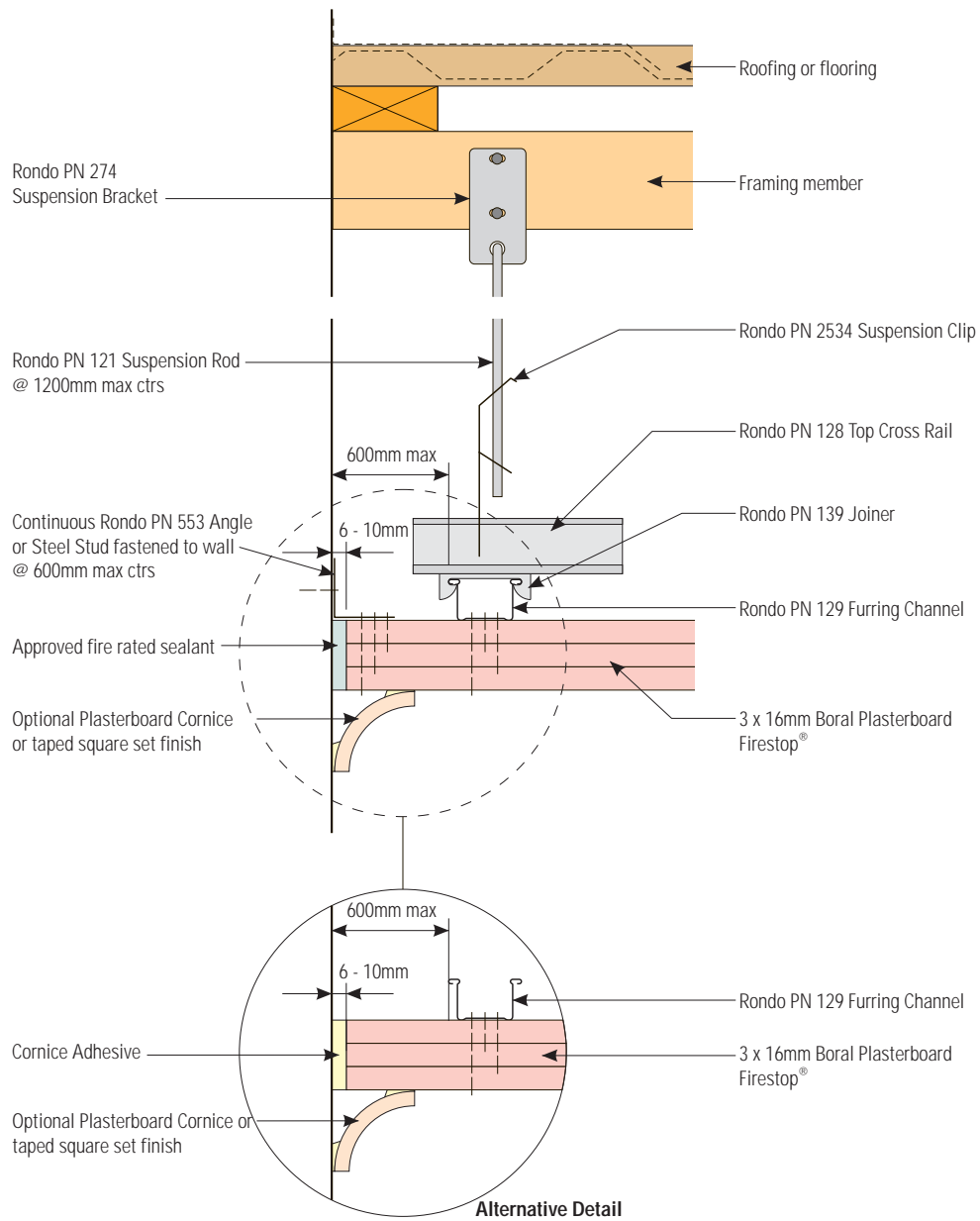


Typical Perimeter Detail - FRL 30/30/30



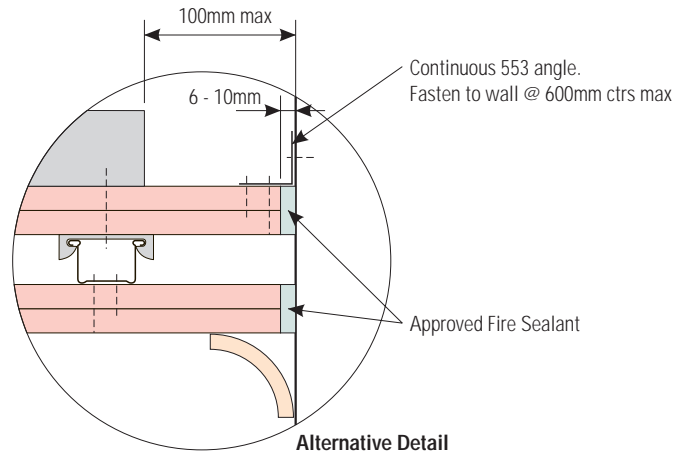
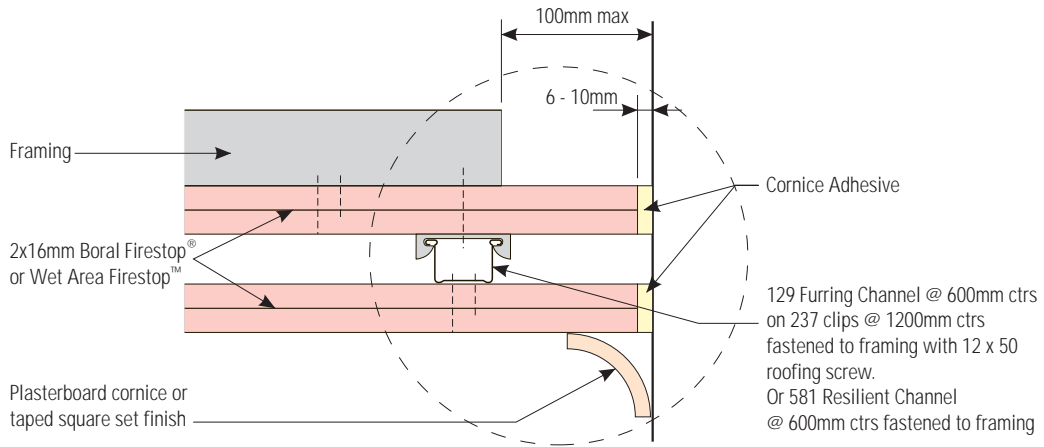
Typical Perimeter Detail - FRL 60/60/60

» Fire Rated Ceilings - Perimeter



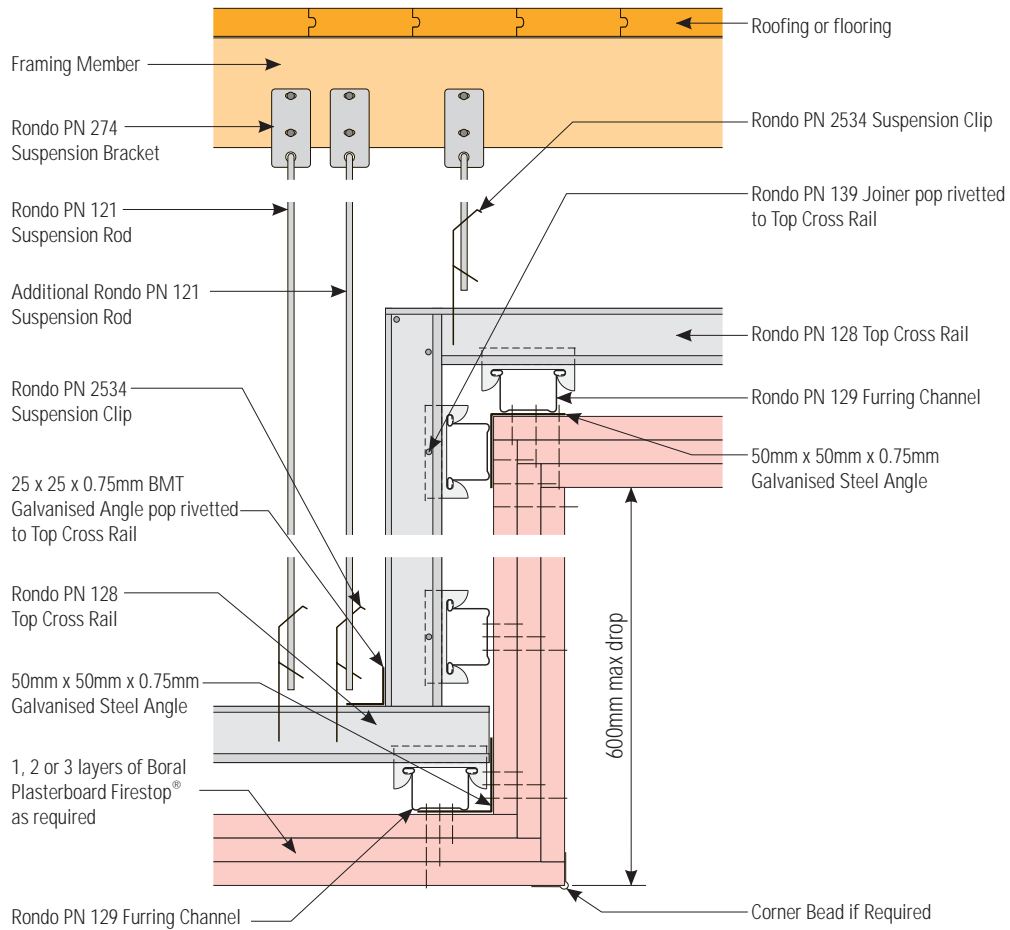
Typical Perimeter Detail - FRL 90/90/90

» Fire Rated Ceilings - Perimeter



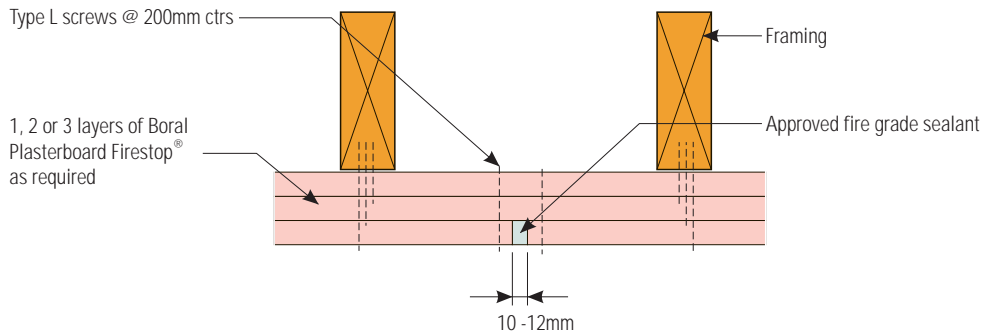
Typical Perimeter Detail - FRL 120/120/120

Fire Rated Ceilings - Bulkhead



Typical Bulkhead Detail

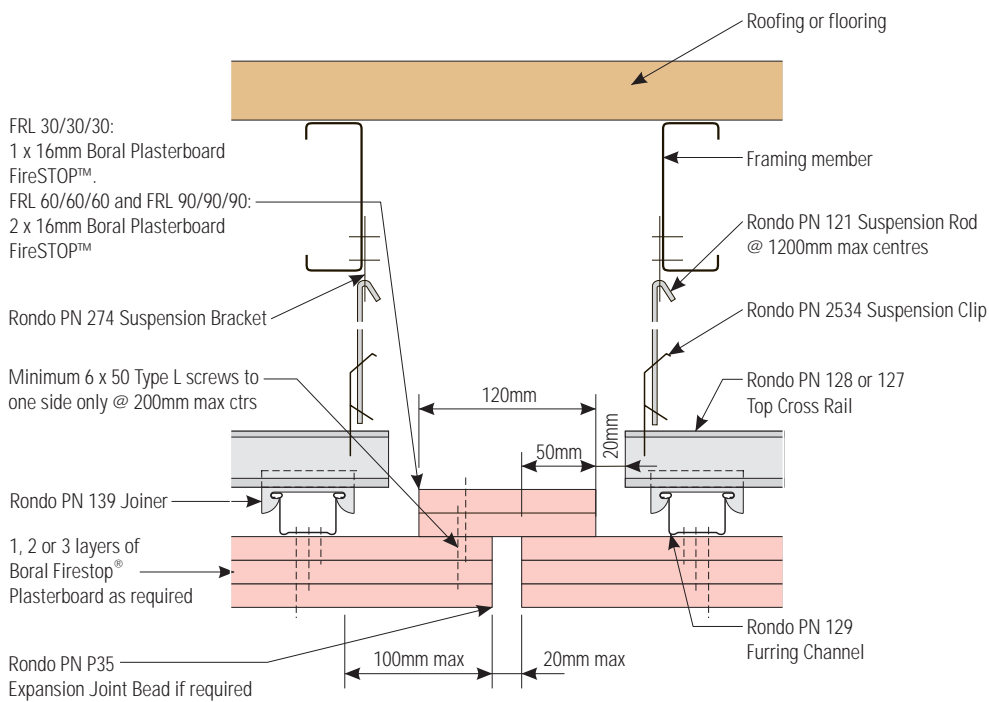
Fire Rated Ceilings - Movement/Control Joints



Typical Control Joint Detail

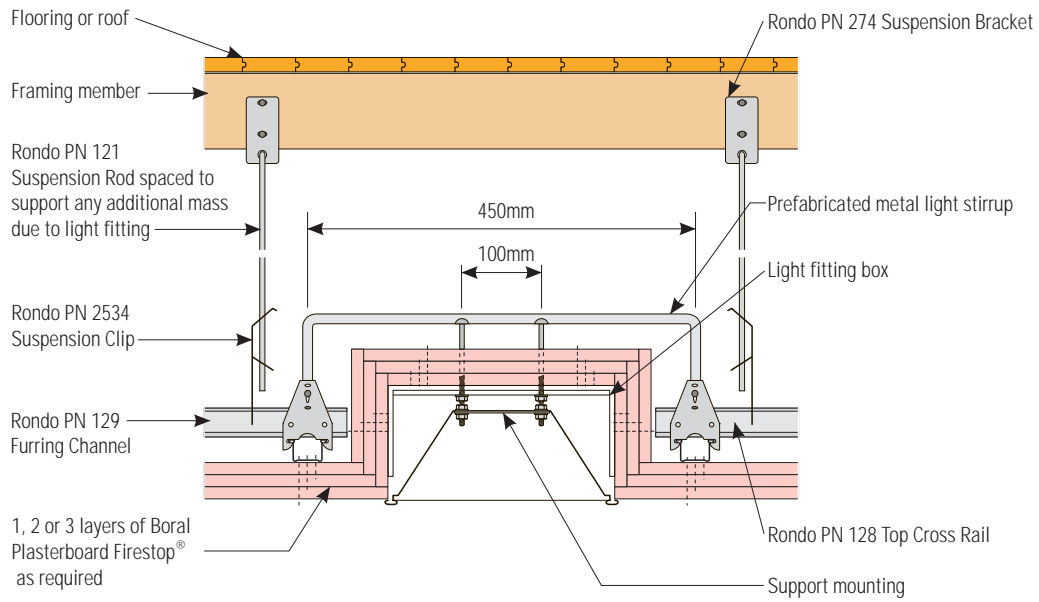
Notes:

1. Locate joint centrally between framing members when parallel to framing.
2. Minimum of one layer of Boral Firestop® Plasterboard continuous over joint.
3. Ensure single layer system is back blocked.



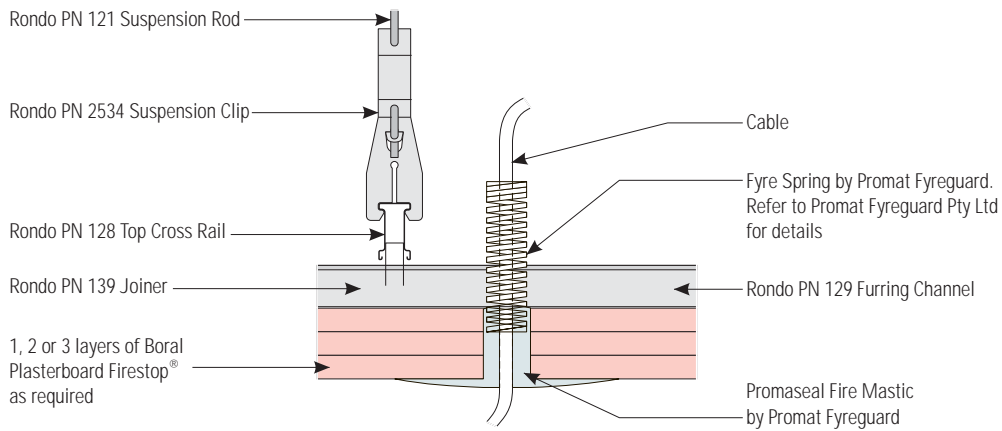
Typical Movement Joint Detail

Fire Rated Ceilings - Lights

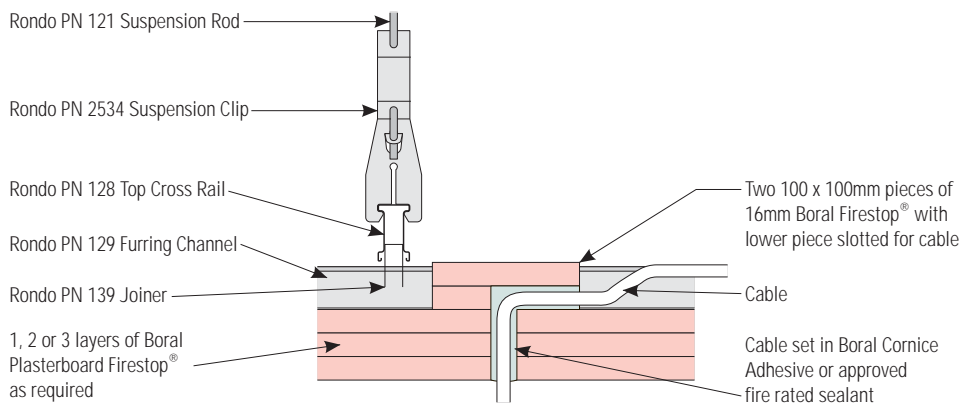


Typical Light Recess Detail

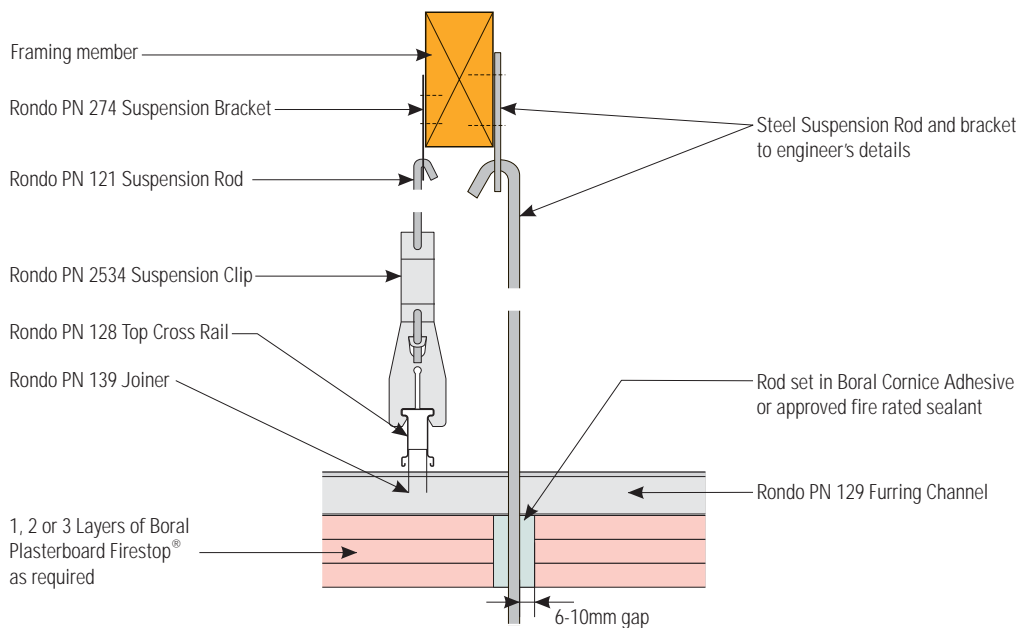
Fire Rated Ceilings - Electrical and Loaded Penetrations



Cable Penetration Detail

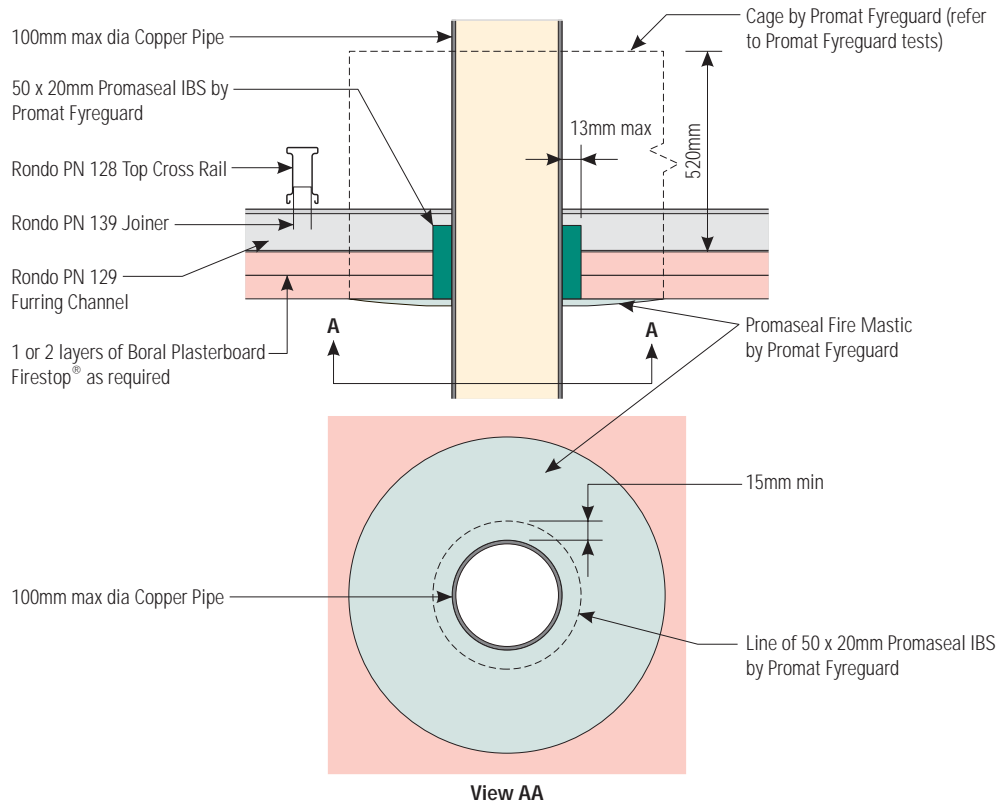


Alternative Cable Penetration Detail

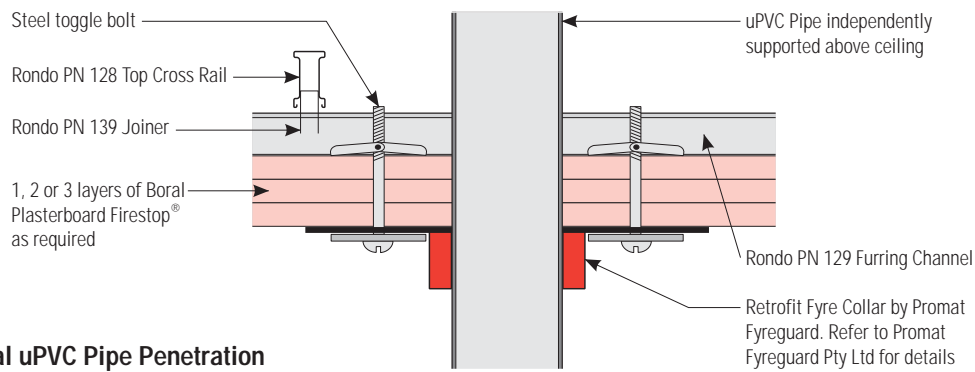


Typical Loaded Penetration Detail

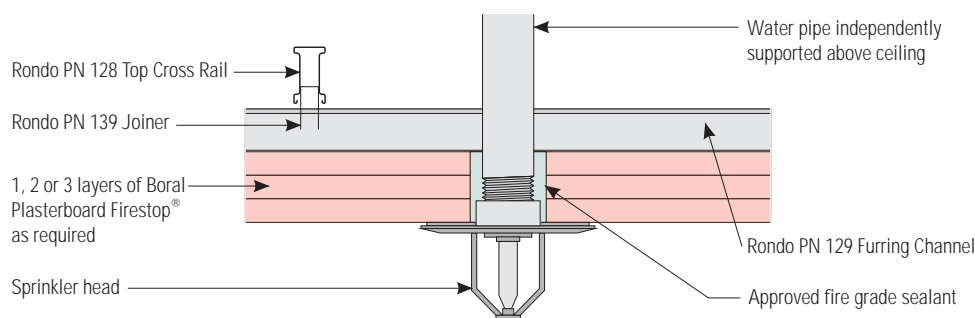
» Fire Rated Ceilings - Plumbing Penetrations



Typical Copper Pipe Penetration - FRL 30/30/30 and FRL 60/60/60



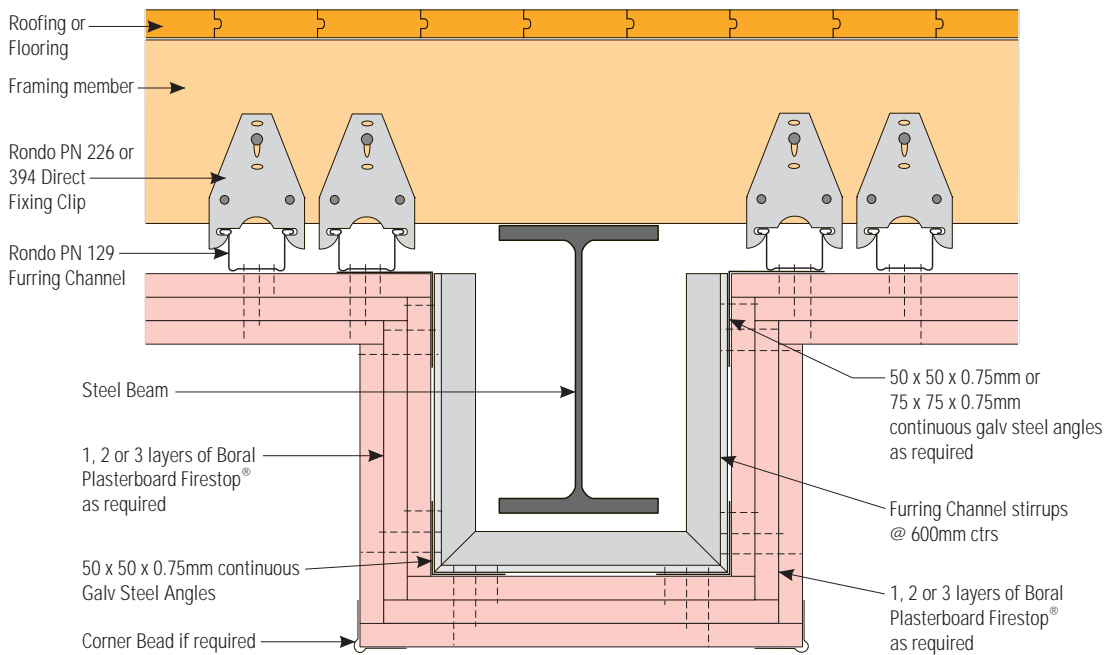
Typical uPVC Pipe Penetration



Typical Sprinkler Pipe Penetration

D3 Ceilings

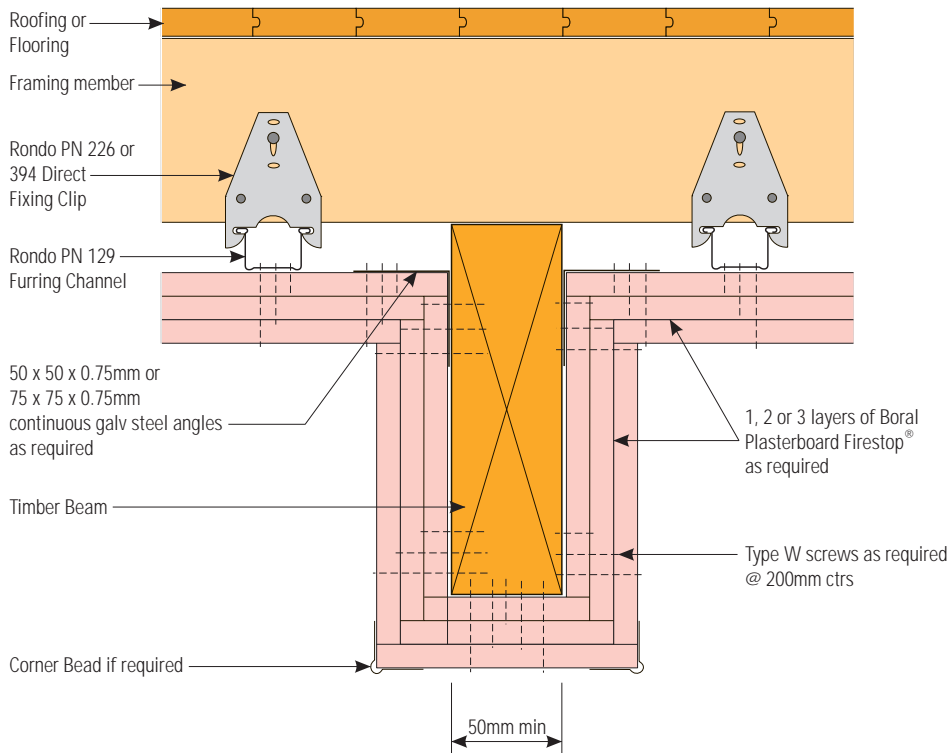
Fire Rated Ceilings - Beam Protection



Typical Steel Beam Protection Detail

Note:

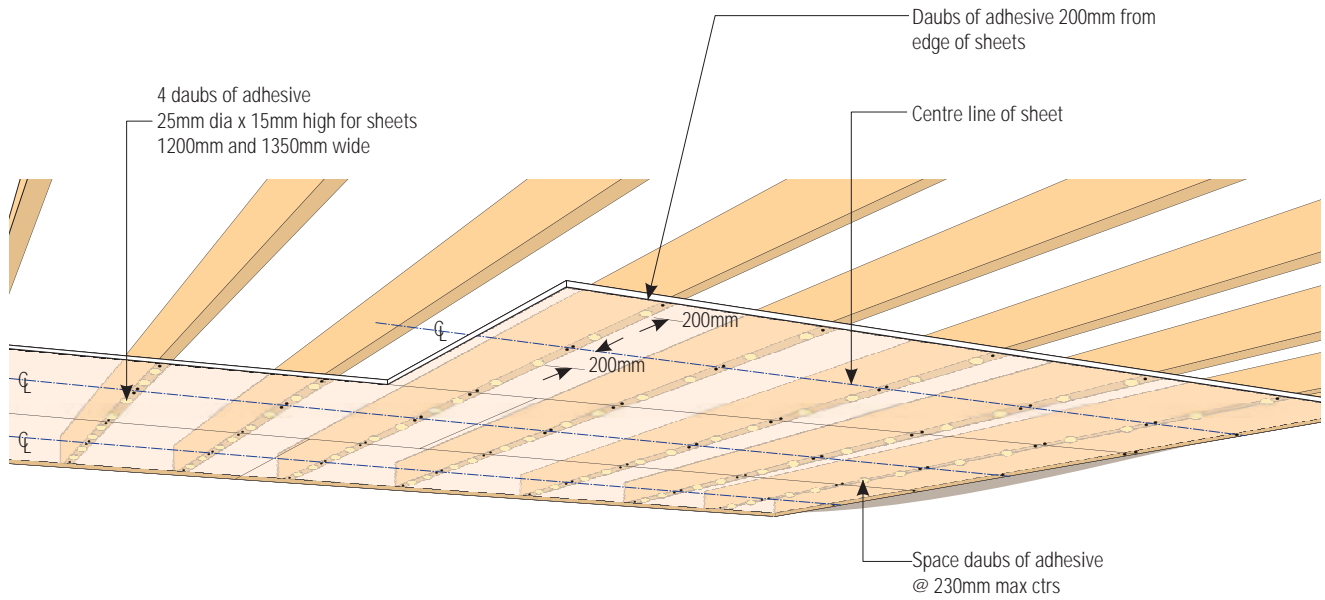
Vertical plasterboard fixed as per ceiling



Typical Timber Beam Protection Detail

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Non Fire Rated Ceilings - Plasterboard Installation



Adhesive and Mechanical Fixing Layout (conventional spacing shown)

Adhesive / Fastener Layout

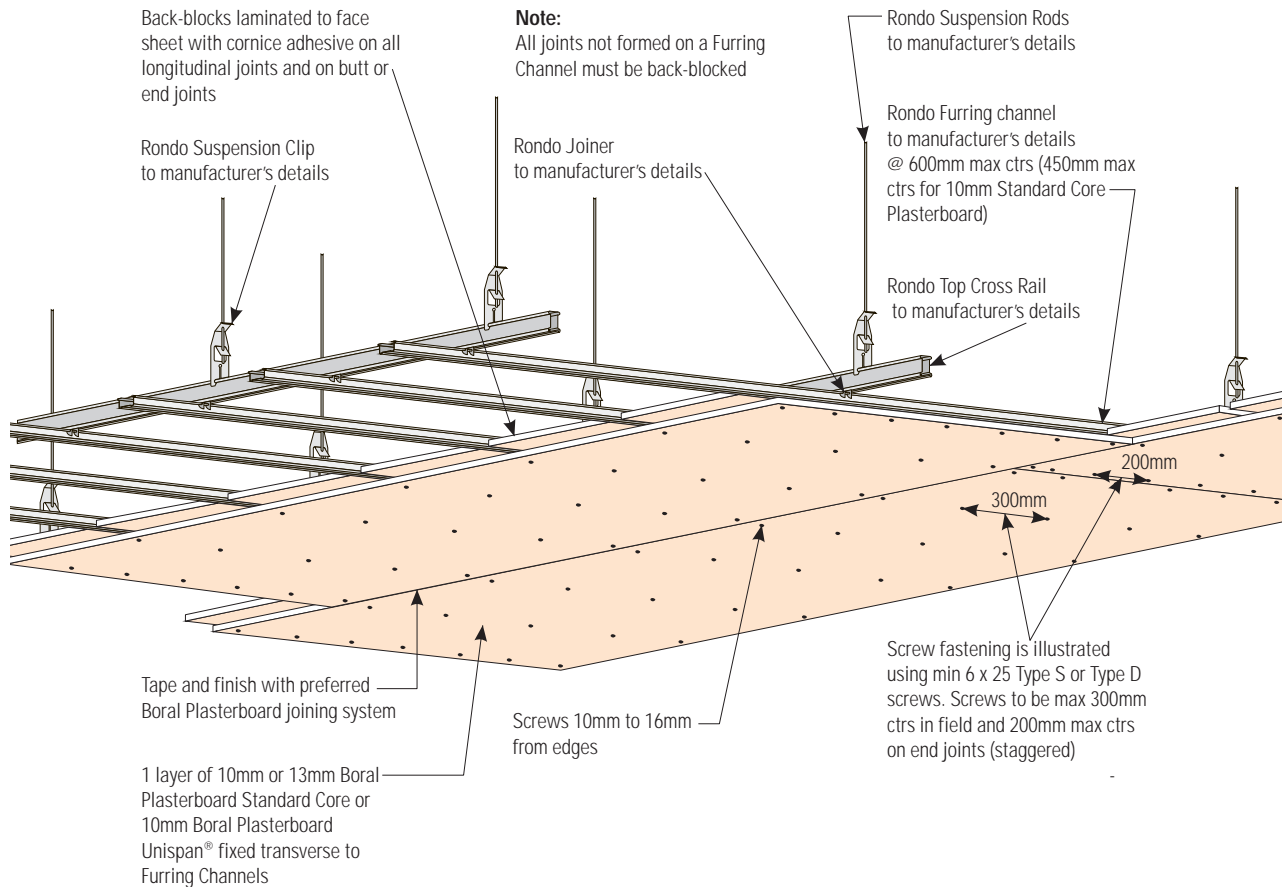
Plasterboard Width (mm)	Ceilings	
	Conventional Spacing	1/3 Spacing
900	FAFAF	FAFAF
1200	FAAF/FAAF	FAFAFAF
1350	FAAF/FAAF	FAFAFAF

F = Screw F/F = Double Screw A = Adhesive

Notes:

- Under slow-drying conditions, keep Boral Plasterboard sheets firm against the adhesive daubs for at least 48 hours. Use temporary blocks fastened through plasterboard to framing members.
- Be sure to fix Boral Plasterboard within thirty minutes of applying adhesive. This will avoid skin forming on the adhesive.

» Non Fire Rated Ceilings - Plasterboard Installation



Screw Fixing Layout

Screw Fixing Layout

Minimum Fixing Points per Sheet Width	
Plasterboard Width (mm)	Single Screws
900	4
1200	5
1350	6

Notes:

When screw-fixing single layers of Boral Plasterboard sheets:

- Hold plasterboard sheets firmly in place against the framing members while driving in the screws.
- Adjust screw gun correctly so as to drive the screw heads below the surface of the sheet without puncturing the face linerboard.
- Press tip of screw firmly into the face linerboard before driving it home.
- Always drive screws with the shank at right angles to the face of the sheets.
- Wherever possible always start from the centre of the sheet toward the outer edges.
- Position screws on adjacent edges opposite each other.

Non Fire Rated Ceilings - Back-blocking

Back-blocking

Back-blocking is a mandatory fixing requirement where specified in the Australian Standard AS/NZS 2589.1:1997.

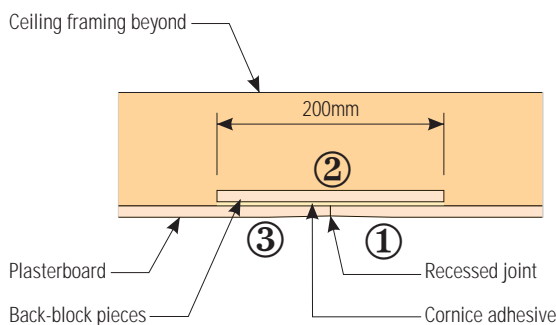
Failure to provide back-blocking installed as per AS/NZS 2589.1:1997 may result in liability for any associated costs relating to maintenance and/or rectification caused by jointing defects.

Back-blocking substantially reduces call-backs, in particular for cracking and peaking joints.

Recessed Joints in Ceilings

Any area containing three or more recessed joints must be back-blocked as follows:

- ① Fix Boral Plasterboard ceiling sheets transverse to framing members.
- ② Place back-block pieces 200mm wide along the full length of fixed sheets edge with cornice adhesive (or back-blocking adhesive). Cornice adhesive to be applied to full face of back-blocks using notched spreader to form beads of 6mm x 6mm at approx 20mm centres and at right angles to joint.
- ③ Fix the next sheet immediately after back-blocks are in place.

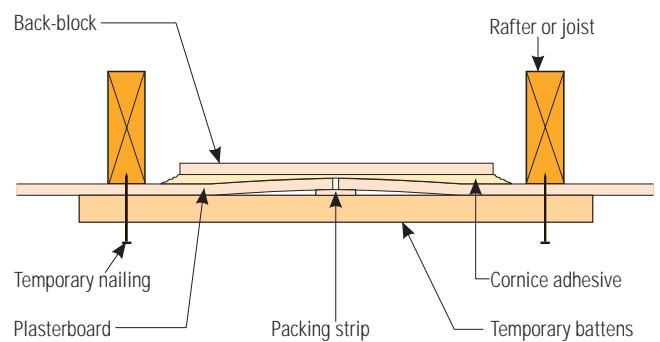


Typical Back-blocking of Recessed Joint

Back-blocking Butt Joints

Back-block butt joints as follows:

- Fix ceiling sheets with ends butted neatly together. The butt joint should fall within 50mm of the mid-span point between framing members.
- Use battens and packers to support and deflect the sheet ends upwards about 2mm.

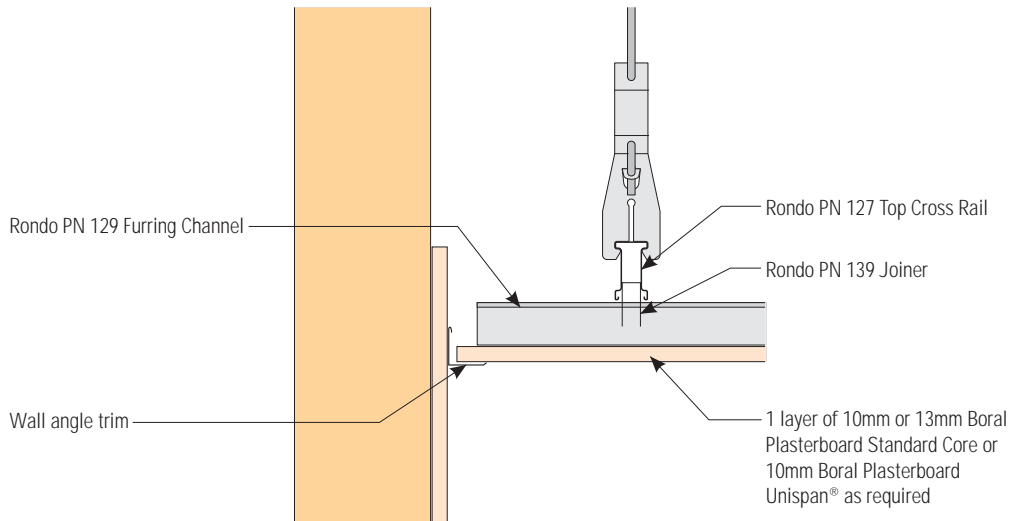


Typical Back-blocking of Butt Joint

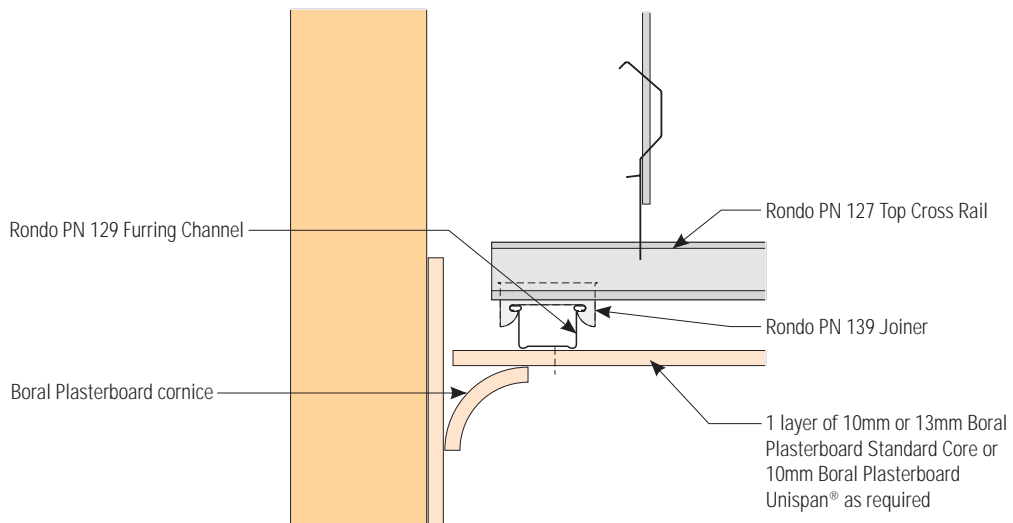
Back-blocking Dos and Don'ts

- Back-blocking must be installed at the fixing stage.
- Joints must not be set prior to back-blocking.
- Do not use plaster in its advanced setting state or any dry mix compound for back-blocking. Dry or partly dry compounds combined with ceiling temperatures may cause premature dry-out and reduced bond.
- Ensure back-blocking is completely dry prior to the taping process.
- Do not use **Stud Adhesive** for back-blocking.
- Back-blocking strips should not be tight between framing members.

Non Fire Rated Ceilings - Perimeter

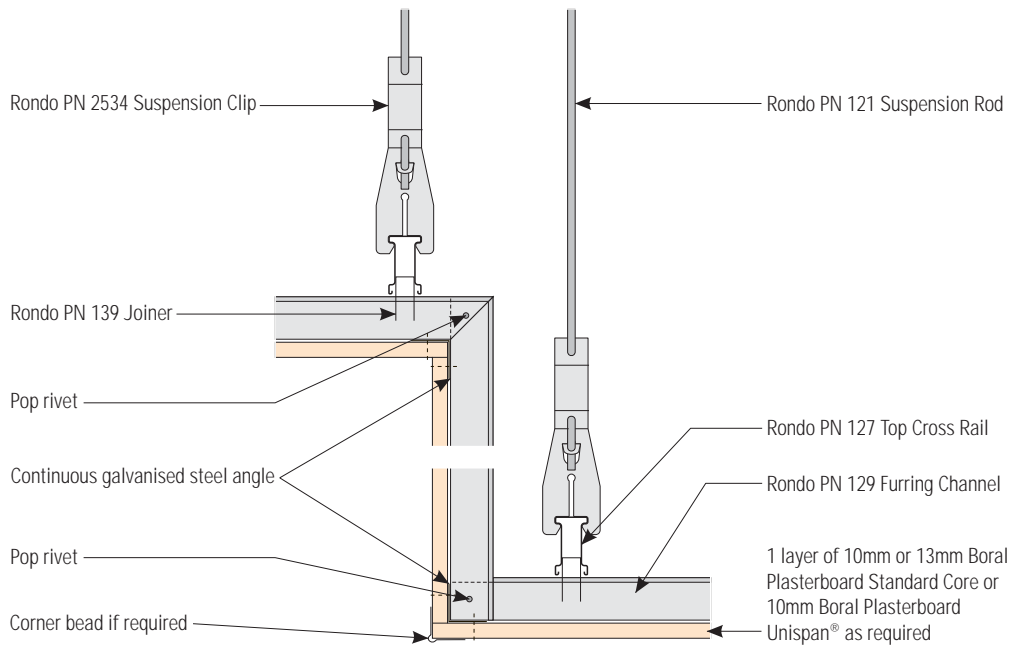


Typical Bulkhead Detail - Section Through Top Cross Rail

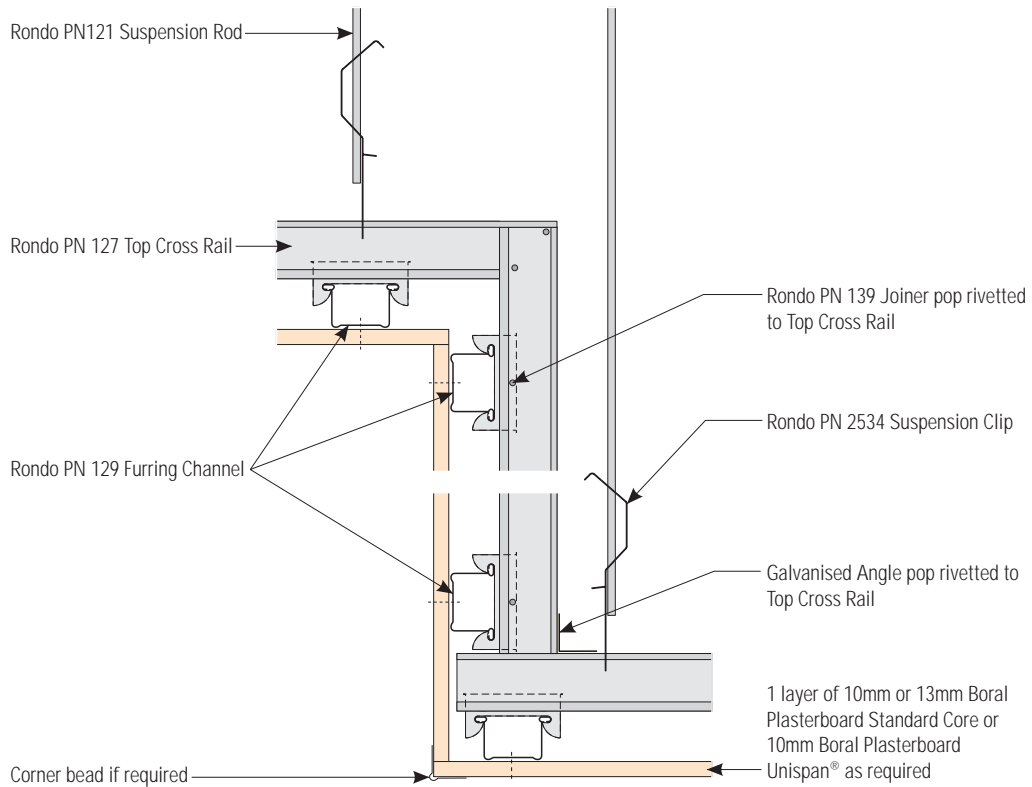


Typical Bulkhead Detail - Section Through Furring Channel

Non Fire Rated Ceilings - Bulkhead

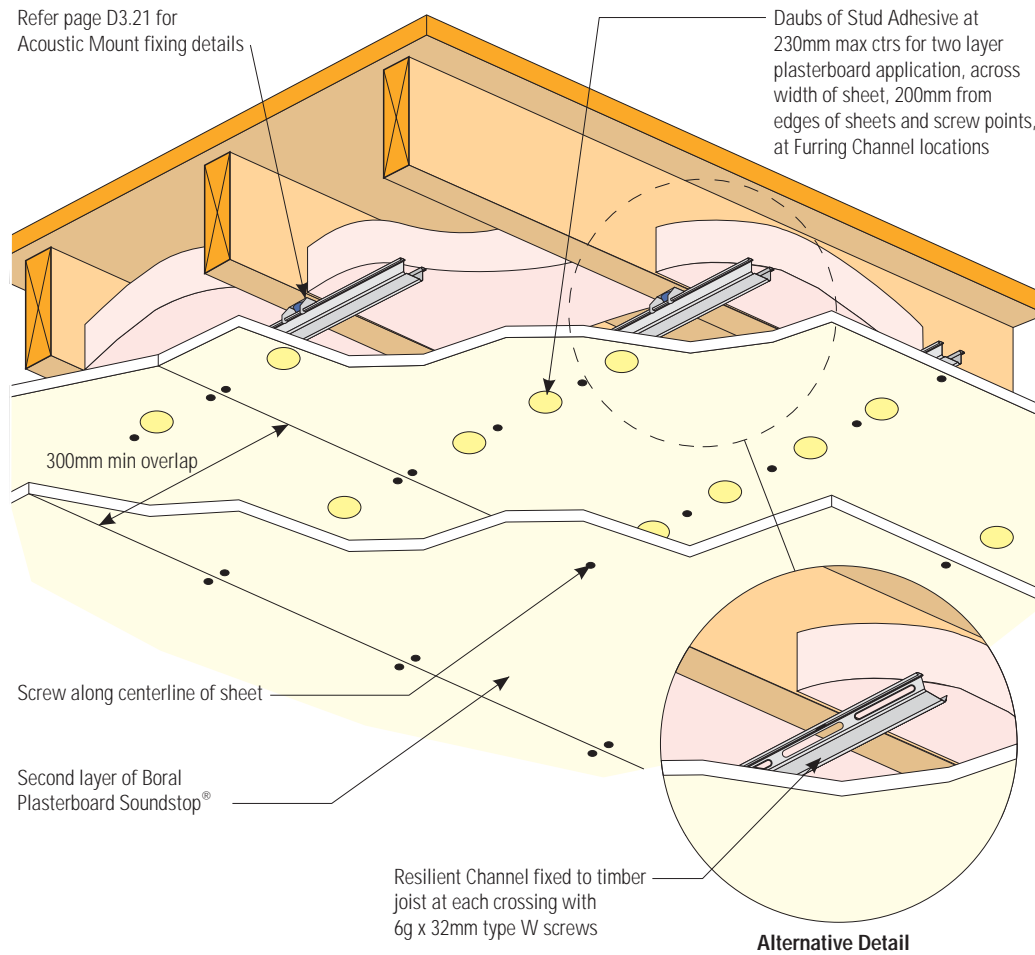


Typical Bulkhead Detail - Section Through Top Cross Rail



Typical Bulkhead Detail - Section Through Furring Channel

Non Fire Rated Ceilings - Acoustic Details



Plasterboard Fixing Layout - Acoustic Ceiling Mount and Resilient Channel

Notes:

- For fire rated ceilings refer page D3.3 for Firestop® Plasterboard details.
- Single layer application of Boral Plasterboard Soundstop® screw-fastened to Furring Channels/Resilient Channels as per standard installation details (refer page D3.16).
- First of two layer application, Boral Plasterboard Soundstop® screw-fixed to Furring Channel across sheet width at 300mm maximum centres.

» Non Fire Rated Ceilings - Acoustic Details

Boral Acoustic Ceiling Mount

Direct Fix Application

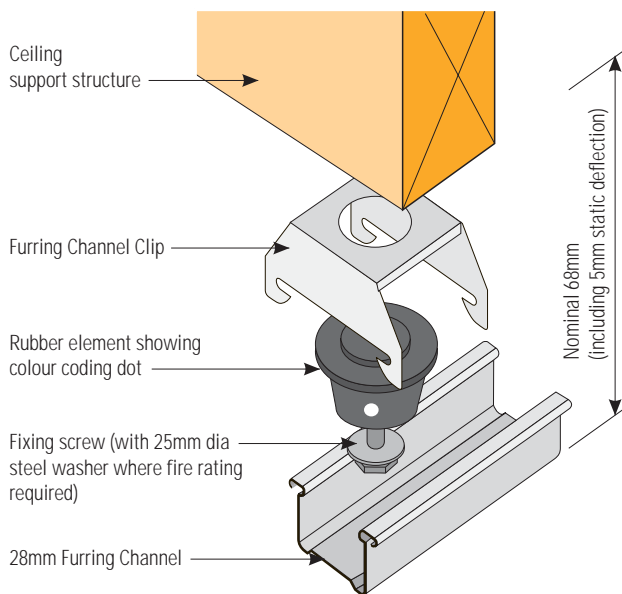
Screws (supplied by others)

- 14 - 10 x minimum 65mm Type 17 roof screw into timber
- 12 or 14 gauge x minimum 45mm drill point roofing screw into light gauge steel
- "Tapcon" screw into concrete.

Mount Assembly

Assemble the mount as shown in the following illustration.

1. Screw fix the mount via the central hole in the rubber element. For fire rated ceilings, a 25mm diameter x 2mm steel washer is required under the fastener head.
2. Use a suitable power tool with an appropriate hex driver and tighten the fastener to a point where there is no compression of the rubber element. Check the pull-out capacity of the fastener to ensure correct size is selected.
3. Clip furring channel into the Furring Channel Clip.

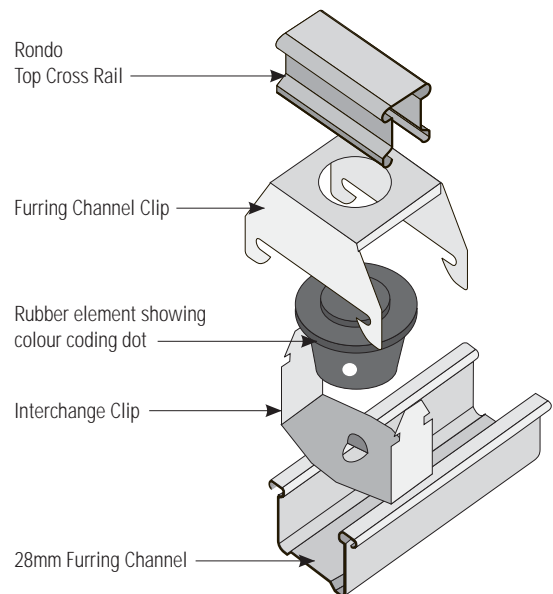


Suspended Application

Mount Assembly

Assemble the mount as shown in the following illustration.

1. Clip the Interchange Clip into the Top Cross Rail.
2. Clip Furring Channel into the Furring Channel Clip.

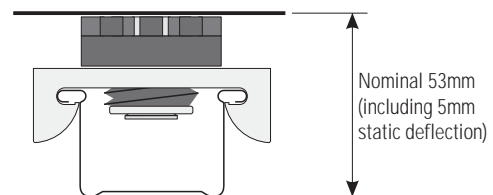


Rondo Sound Isolation Mount STWC

Direct Fix Application

Screw 6g x 60mm Type W Screw into timber

- 6g x 45mm Type S screws for steel BMT up to 0.8mm
- 6g x 45mm Type D screws for steel BMT 0.8mm - 2mm
- "Tapcon" screw into concrete.



» Non Fire Rated Ceilings - Acoustic Details

Maximum Spacing of Resilient Channel

Plasterboard Thickness	Joist Spacing	
	450mm	600mm
Single Layer Application		
10mm ¹	600	600
13mm	600	600
16mm	600	600
Double Layer Application		
10mm ¹	600	600
13mm	600	600
16mm	600	400

Note:

1. Resilient Channel spacing 450mm centres for 10mm Standard Core plasterboard.

Maximum Spacing of Boral Acoustic Ceiling Mount/Rondo Sound Isolation Mount STWC

Plasterboard Thickness	Joist Spacing	Maximum Spacing of 28mm Furring Channel	Joist Spacing	Maximum Spacing of 28mm Furring Channel
	450mm		600mm	
Single Layer Application				
10mm ^{1, 3}	1350 (B, R)	450	1200 (B, R)	450
10mm ²	1350 (B, R)	600	1200 (B, R)	600
13mm ^{1, 3, 4}	1350 (B, R)	600	1200 (B, R)	600
16mm ⁴	1350 (B, R)	600	1200 (B, R)	600
Double Layer Application				
10mm ^{1, 3}	1350 (B, R)	450	1200 (B, R)	450
10mm ²	1350 (B, R)	600	1200 (B, R)	600
13mm ¹	1350 (B, R)	600	1200 (B, R)	600
13mm ^{3, 4}	1350 (W)	600	1200 (W)	600
16mm ⁴	1350 (W)	600	1200 (W)	600
Three Layer Application				
16mm ⁴	900 (W)	600	1200 (W)	450
Four Layer Application				
16mm ⁴	900 (W)	450	600 (W)	600

Notes:

1. Boral Plasterboard Standard Core
 2. Boral Plasterboard Unispan®
 3. Boral Plasterboard Soundstop®
 4. Boral Plasterboard Firestop®, for fire rated ceilings refer page D3.2 for details
- (B). Boral Acoustic Ceiling Mount - 'Blue' dot rubber element (maximum load 17kg per mount with 5mm static deflection)
 - (W). Boral Acoustic Ceiling Mount - 'White' dot rubber element (maximum load 25kg per mount with 5mm static deflection)
 - (R). Rondo Sound Isolation Mount STWC (maximum load 16kg per mount).

D4 | Reference

Old/New Reference Guide

Old Ref	New Ref	Old Ref	New Ref	Old Ref	New Ref	Old Ref	New Ref	Old Ref	New Ref
ACWS1	ST1010	ASTS15	TS1616F	CPS10	PSC32F	CS22	C48F	SS9	S1313
ACWS10	ST3232F	ASTS16	TS1313F	CPS10	PSC38F	CS22	CF48F	SSS1	SS1313F
ACWS2	ST1313	ASTS17	TS1313F10	CPS12	PSC13F	CS22	CS48F	SSS3	SS2626F
ACWS2	ST1313F	ASTS18	TS2626F	CPS12	PSC25F	CS4	CHS48F	SSS4	SS3232F
ACWS3	ST1616F	ASTS20	TS3232F	CPS12	PSC32F	CS5	CSP3248F	STS5	TS1616F
ACWS4	ST1326F	ASW1	SH16F	CPS12	PSC38F	CS6	C64F	STS6	TS2626F
ACWS6	ST2626F	ASW2	SH32F	CPS14	PSC13F	CS6	CF64F	STS7	TS3232F
ACWS7	ST3232F	ASW3	SH1616F	CPS14	PSC25F	CS6	CS64F	SW2	SH32F
ACWS8	ST4848F	ATS1	T10	CPS14	PSC32F	DM3	MF1616F	SW3	SH1616F
ACWS9	ST3232F	ATS15	T2626F	CPS14	PSC38F	DM3	MF16F	SW4	SH16F
ADM10	M20.01	ATS16	T3232F	CPS20	PSC25F10	DM3	MF2626F	SW5	SH29F
ADM10	M20.01CF	ATS2	T13	CPS20	PSC50F	DM3	MF26F	SW6	SH26F
ADM20	M90B	ATS2	T16F	CPS20	PSC75F	DM3	MF3232F	SWP1	WP20
ADM21	M110B	ATS20	TR1616F10	CPS40	PSC1313F	DM3	MF32F	SWP10	WP13A
ADM22	M110B	ATS22	TR2626F	CPS40	PSC2626F	DSS1	D1616F	SWP2(1)	WP10
ADM23	M150B	ATS23	TR3232F	CPS40	PSC3232F	DSS3	D2626F	SWP2(2)	WP13
ADM24.	M110B	ATS24	25TP1010	CPS40	PSC3939F	DSS5	D3232F	SWP2(3)	WP10A
ADM25	M150B	ATS25	TT2626F	CPT10	PTC26F	DSS6	D6464F	SWP4	WPB1313
ADM26	M90B	ATS26	50TP1010	CPT20	PTC26F	EW1	FC32F	SWP5	WPB2626
ADM27	M90B	ATS27	TT1616F	CPT20	PTC13F	EW2	FC39F	SWP6	WPL20
ADM28	M90B	ATS28	TT1616F	CPT20	PTC39F	EW2	FC48F	SWP7	WP2010U
ADM4	M150C	ATS29	TT3232F	CPT20	PTC48F	EW13	50IW13	SWP8	SWP1020
ADM8	M10.01	ATS30	TT2929F	CS1	PCS25F	EW13F	50IW13F	SWP8	WP13A
ADM9	M15.01	ATS4	T1010	CS10	C48F	EW13S13	50IW13S13	SWP9	TWP1020
ADP3	VS57F	ATS5	T1313	CS10	CF48F	EWS13FS13F	50IWS13FS13F	SWP9	WP13A
ADP4	VS48F	ATS5	T1313F	CS11	CSP3232F	EWS13AS13A	50IWS13AS13A	TS1	T3232F
ADP5	VS48F+S10	ATS6	T1616F	CS15	C32F	EW13FS13F	50IWF13FS13F	TS10	TBV16F
ADP5	VS48F+T10	ATS9	TR1616F	CS15	CF32F	O/wall 60	OW16WF10	TS11	TBV10
ADSS1	D1616F	BPS10	PSB38F	CS15	CR32F	O/wall 90	OW32WF10	TS12	T2626F
ADSS3	D2626F	BPS11	PSBT48F	CS15	CS32F	O/wall 90A	OW32WF16F	TS13	T3232F
ADSS5	D3232F	BPS12	PSBC48F	CS16	CHS32F	O/wall 90B	OW26WF10	TS14	T3232F
ADSS6	D6464F	BPS30	PSB50F	CS17	C16F	O/wall 90C	OW16WF26F	TS15	T2626F
ARR1	COCT10U	BPS40	PSB3232F	CS17	CF16F	O/wall 90D	OW16WF16F	TS16	TBV26F
ARR3	C13	BPT20	PTB13F	CS17	CR16F	O/wall 90E	OW26WF10	TS18	TT2626F
ARR3	COC13	BPT20	PTB26F	CS17	CS16F	O/wall 90F	OW16WF26F	TS19	50TP1010
ARR4	C16F	BPT20	PTB39F	CS18	C10	PWS1	25SP1010	TS2	T2626F
ARR4	C16F	BPT20	PTB48F	CS18	C10U	PWS3	25SP1313A	TS20	TT1616F
ARR4	COC16F	CinemaZone Bronze	TR26A10	CS18	C13	PWT1	25TP1010	TS21	TT1616F
ARR4	COD16F			CS18	CF10U	PWT2	25TP1313A	TS22	TT3232F
ARR5	C32F	CinemaZone Gold	ST2626A	CS18	CF13	PWT4	50TP1010	TS23	TT2929F
ARR5	COC32F			CS18	CS10U	PWT6	50TP1313A	TS24	OW16WF10
ARR5	COD32F	CinemaZone Gold	TF39(26)A10	CS18	CS13	SR3	VS57F	TS25	OW32WF10
ASS1	S1010	CinemaZone Gold	TT2626A	CS19	C13F	SR4	VS48F	TS26	25TP1010
ASS2	S1313			CS19	C16F	SS1	S3232F	TS28	25TP1313A
ASS3	S1616F	CinemaZone Silver	TF26(13)A10	CS20	C26F	SS10	S1010	TS3	T1616F
ASS5	S1326F			CS20	CF26F	SS2	S3232F	TS4	T1616F
ASS7	S2020	CPC10	PCC13F	CS20	CR26F	SS3	S2626F	TS5	TBV16F
ASS8	S2626F	CPC10	PCC25F	CS20	CS26F	SS4	S1326F	TS6	T32F
ASS9	S3232F	CPC20	PCC13F	CS21	C29F	SS5	S1616F	TS7	T1616F
ASSS3	SS2626F	CPC20	PCC25F	CS21	CF29F	SS6	S32F	TS8	T1616F
ASSS4	SS1616F	CPS10	PSC13F	CS21	CR29F	SS7	S1313F	TS9	T2626F
ASSS6	SS3232F	CPS10	PSC25F	CS21	CS29F	SS8	S3232F		

Quick-Find Index

System Ref	Page
25SP1010	B2.21
25SP1010A	B2.21
25SP1313A	B2.21
25SP2020	B2.21
25TP1010	B2.20
25TP1010A	B2.20
25TP1313A	B2.20
25TP2020	B2.20
50SP1010	B2.23
50SP1313A	B2.23
50TP1010	B2.22
50TP1313A	B2.22
C10	B3.10,B3.14,B3.18
C105F	B3.33
C10A	B3.1,B3.10,B3.14
C10U	B3.1,B3.4,B3.10,B3.14,B3.18
C13	B3.1,B3.4,B3.10,B3.14,B3.18
C13A	B3.1,B3.14
C13F	B3.1,B3.10,B3.14,B3.18
C16F	B3.1,B3.4,B3.10,B3.14,B3.18
C20A	B3.1,B3.10,B3.14,B3.18
C26F	B3.1,B3.4,B3.10,B3.14,B3.18
C29F	B3.1,B3.4,B3.10,B3.14,B3.18
C32F	B3.1,B3.4,B3.10,B3.14,B3.18
C48F	B3.1,B3.4,B3.10,B3.14,B3.18
C64F	B3.1,B3.4,B3.10,B3.14,B3.18
CD26F	B3.31
CD29F	B3.31
CD48F	B3.31
CF10A	B3.2,B3.15
CF10U	B3.2,B3.5,B3.11,B3.15,B3.19, B3.22,B3.26
CF13	B3.2,B3.5,B3.11,B3.15,B3.19, B3.22,B3.26
CF13A	B3.2,B3.15
CF13F	B3.11,B3.15,B3.19, B3.22, B3.26
CF16F	B3.2,B3.5,B3.11,B3.15,B3.19, B3.22,B3.26
CF20A	B3.2,B3.5,B3.15
CF26A	B3.2,B3.15
CF26F	B3.2,B3.5,B3.11,B3.15,B3.19, B3.22, B3.26
CF29F	B3.2,B3.5,B3.11,B3.15,B3.19, B3.22, B3.26
CF32F	B3.2,B3.5,B3.11,B3.15,B3.19, B3.22, B3.26
CF48F	B3.2,B3.5,B3.11,B3.15,B3.19, B3.22, B3.26
CF64F	B3.2,B3.5,B3.11,B3.15,B3.19
CFA10A	B3.12,B3.16,B3.20
CFA10U	B3.23
CFA13	B3.23
CFA13A	B3.12,B3.16,B3.20
CFA13F	B3.12,B3.20, B3.23
CFA16F	B3.12,B3.20, B3.23
CFA20A	B3.3,B3.6,B3.12,B3.16,B3.20
CFA26A	B3.3,B3.6,B3.12,B3.16,B3.20
CFA26F	B3.12,B3.16,B3.20, B3.23
CFA29F	B3.12,B3.16,B3.20, B3.23
CFA32F	B3.12,B3.16,B3.20, B3.23
CFA48F	B3.12,B3.16,B3.20, B3.23
CFA64F	B3.12,B3.20
CHS32F	B3.32
CHS48F	B3.32

System Ref	Page
CHSI48F	B3.32
COB10U	B3.30
COB13	B3.30
COB16F	B3.30
COB26F	B3.30
COB32F	B3.30
COBT10U	B3.30
COC10U	B3.28
COC13	B3.28
COC16F	B3.28
COC26F	B3.28
COC32F	B3.28
COCT10U	B3.28
COD10U	B3.29
COD13	B3.29
COD16F	B3.29
COD26F	B3.29
COD32F	B3.29
CODT10U	B3.29
CR10A	B3.3,B3.7,B3.13,B3.17,B3.21
CR13A	B3.3,B3.7,B3.13,B3.17,B3.21
CR13F	B3.13,B3.17,B3.21
CR16F	B3.3,B3.7,B3.13,B3.17,B3.21
CR20A	B3.3,B3.7,B3.13,B3.17,B3.21
CR26A	B3.13
CR26F	B3.7,B3.13,B3.17,B3.21
CR29F	B3.7,B3.13,B3.17,B3.21
CR32F	B3.7,B3.13,B3.17,B3.21
CS10U	B3.8,B3.24,B3.27
CS13	B3.8,B3.24,B3.27
CS13A	B3.24
CS13F	B3.24, B3.27
CS 16F	B3.8, B3.24, B3.27
CS20A	B3.8
CS20U	B3.24,B3.27
CS26	B3.24,B3.27
CS26F	B3.8, B3.24, B3.27
CS29F	B3.8, B3.24, B3.27
CS32F	B3.8, B3.24, B3.27
CS48F	B3.8, B3.24, B3.27
CS64F	B3.8
CSA13	B3.25
CSA13F	B3.25
CSA20A	B3.9
CSA16F	B3.25
CSA26F	B3.25
CSA29F	B3.25
CSA32F	B3.25
CSA48F	B3.25
CSP1616F	B3.31
CSP2613F	B3.31
CSP3216F10	B3.31
CSP3232F	B3.31
CSP3248F	B3.31
CSP5016F	B3.31
D1010A	B2.12
D1313A	B2.12
D1313F	B2.12
D1313F13	B2.12
D1616F	B2.12
D16F1316F13	B2.12
D2020A	B2.12

System Ref	Page
D2626A	B2.12
D2626F	B2.12
D3232F	B2.13
D4848F	B2.13
D4864F	B2.13
D6464F	B2.13
25IWS13S13	B2.31
25IWS13AS13A	B2.31
25IWS13WS13W	B2.31
25IWS20S20	B2.32
50IW13	B2.24
50IW13AS13A	B2.26
50IW13F	B2.24
50IW13FS13F	B2.25
50IW13S13	B2.25
50IWF13FS13F	B2.27
50IWF13AS13A	B2.28
50IWF13S13	B2.27
50IWFR10S13A	B2.26
50IWS13	B2.24
50IWS13AS13A	B2.29
50IWS13FS13F	B2.30
50IWS13S13	B2.29
50IWS13WS13W	B2.30
FC32F	B2.48
FC39F	B2.48
FC48F	B2.48
FTB32F32F	B4.12
FTB32F48F	B4.12
FTO16F16F	B4.12
FTO26F13F	B4.12
FTO32F16F10	B4.12
FTO50F16F	B4.12
M10	B2.35
M10.01	B2.40
M1010	B2.35
M110B	B2.46
M125C	B2.38
M15.01	B2.41
M15.01CF	B2.42
M150B	B2.47
M150C	B2.39
M20.01	B2.43
M20.01CF	B2.44
M90B	B2.45
MF1616F	B2.36
MF16F	B2.36
MF2626F	B2.36
MF26F	B2.36
MF3232F	B2.36
MF32F	B2.36
OW16WF10	B2.49
OW16WF16F	B2.49
OW16WF26F	B2.49
OW16WFR10A	B2.49
OW26WF10	B2.50
OW32WF10	B2.50
OW32WF16F	B2.50
PCC13F	B4.5
PCC25F	B4.5
PCS25F	B3.33
PSB16F	B4.10

System Ref	Page	System Ref	Page	System Ref	Page
PSB3232F	B4.10	SP3245F	B2.54	TR3232F	B2.4
PSB38F	B4.10	SS1010A	B2.10	TS1010A	B2.9
PSB50F	B4.10	SS1313A	B2.10	TS1313A	B2.9
PSBC48F	B4.10	SS1313F	B2.10	TS1313F	B2.9
PSBT48F	B4.10	SS1313F13	B2.10	TS1313F10	B2.9
PSC1313F	B4.9	SS1616F	B2.10	TS1616F	B2.9
PSC13F	B4.7	SS16F1316F13	B2.10	TS2020A	B2.9
PSC25F	B4.7	SS2020A	B2.10	TS2626F	B2.9
PSC25F10	B4.7	SS2626A	B2.10	TS3232F	B2.9
PSC2626F	B4.9	SS2626F	B2.11	TT1010	B2.14
PSC3232F	B4.9	SS3232F	B2.11	TT1313	B2.14
PSC32F	B4.8	ST1010	B2.16	TT1313A	B2.14
PSC38F	B4.8	ST1313	B2.16	TT1313F	B2.14
PSC3939F	B4.9	ST1313A	B2.16	TT1326F	B2.14
PSC50F	B4.8	ST1313F	B2.17	TT13F1313F13	B2.14
PSC75F	B4.8	ST1313F13	B2.17	TT1616F	B2.14
PTB13F	B4.11	ST1326F	B2.17	TT16F1016F10	B2.14
PTB26F	B4.11	ST1616F	B2.18	TT2626A	B2.14
PTB39F	B4.11	ST1616F10	B2.18	TT2626F	B2.14
PTB48F	B4.11	ST16F1016F10	B2.18	TT2929F	B2.14
PTC13F	B4.9	ST2626A	B2.18	TT3232F	B2.15
PTC26F	B4.9	ST2626F	B2.18	TWP1020	B4.4
PTC39F	B4.9	ST3232F	B2.19	VS39F	B2.34
PTC48F	B4.9	ST4141F	B2.19	VS48F	B2.34
S10	B2.1	ST4848F	B2.19	VS48F+S10	B2.34
S1010	B2.5	ST6666F	B2.19	VS48F+T10	B2.34
S1010A	B2.5	SWP1020	B4.4	VS57F	B2.34
S13	B2.1	T10	B2.1	WP10	B4.1
S1313	B2.5	T1010	B2.2	WP10A	B4.1
S1313A	B2.5	T1010A	B2.2	WP13	B4.1
S1313F	B2.6	T13	B2.1	WP13A	B4.1
S1326F	B2.6	T1313	B2.2	WP20	B4.1
S13A	B2.1	T1313A	B2.2	WP2010U	B4.3
S1616F	B2.6	T1313F	B2.2	WP20A	B4.1
S1616F13	B2.6	T13A	B2.1	WP26	B4.1
S16F	B2.1	T1616F	B2.2	WP26A	B4.1
S2020	B2.7	TF1616F	B2.2	WP39F	B4.1
S2020A	B2.7	T16F	B2.1	WP48F	B4.1
S2626	B2.7	T2020	B2.3	WPB1313	B4.3
S2626A	B2.7	T2020A	B2.3	WPB2626	B4.3
S2626F	B2.7	T2626	B2.3	WPL10	B4.2
S3232F	B2.8	T2626F	B2.3	WPL10A	B4.2
S3232F +SH32F	B2.49	T3232F	B2.4	WPL13	B4.2
S32F	B2.1	T32F	B2.1	WPL13A	B4.2
S39F	B2.1	T39F	B2.1	WPL20	B4.2
S4141F	B2.8	T48F	B2.1	WPL20A	B4.2
S48F	B2.1	TBV10	B2.51	WPL26	B4.2
S6666F	B2.8	TBV10A	B2.51	WPL26A	B4.2
SBV10	B2.46	TBV16F	B2.51	WPL32F	B4.2
SBV10A	B2.46	TBV20A	B2.51	WPL39F	B4.2
SBV20A	B2.46	TBV26A	B2.51	WPL48F	B4.2
SBV26A	B2.46	TBV26F	B2.51		
SF32F	B2.55	TBV32F	B2.51		
SH1616F	B2.33	TF26(13)A10	B2.3		
SH16F	B2.33	TF39(26)A10	B2.4		
SH26F	B2.33	TR1010A	B2.2		
SH29F	B2.33	TR1313A	B2.2		
SH32F	B2.33	TR1616F	B2.3		
SP1326F	B2.53	TR1616F10	B2.3		
SP1616F	B2.53	TR2626A	B2.4		
SP2626F	B2.53	TR2626F	B2.4		
SP3232F	B2.54	TR26A10	B2.3		

Sustainability

Boral Plasterboard aims to minimise the environmental impact of its operations and to make a positive difference to the environment and communities in which it operates. Plasterboard is manufactured from abundant natural gypsum resources and 100% recycled paper liner.

Lightweight plasterboard construction offers the benefits of low embodied energy, ease of thermal and acoustic upgrading and ease of modifications and repair.

Plasterboard waste can be recycled back into new plasterboard or used as a soil conditioner. Please contact Boral Plasterboard regarding waste collection services available in your region.

Warranty

Boral Australian Gypsum Limited warrant that the products supplied by it adhere to certain Australian standards as specified in the Boral Plasterboard Product Manual and the relevant Boral product brochures.

Refer to the Boral Plasterboard Home Page www.boral.com.au/plasterboard - "Brochures" section under "Technical Manuals" for a copy of the Boral product warranty.

Health and Safety

For information regarding the safe use of Boral Plasterboard products and accessories please refer to instructions on the product packaging or contact your local Boral Plasterboard Sales Office or TecASSIST[®] for a current copy of the Material Safety Data Sheet.

Technical Enquiries 1800 811 222

TecASSIST[®] provides technical advice to builders, architects, contractors, engineers, regulators and home owners throughout Australia.

Our friendly team can offer both practical and design input at all levels of the plasterboard industry. Get your next project off on the right track by contacting TecASSIST[®] weekdays 8.30am - 4.30pm AEST on 1800 811 222 or www.boral.com.au/tecassist.

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