



# Promat

## Fire Pro Co.,Ltd

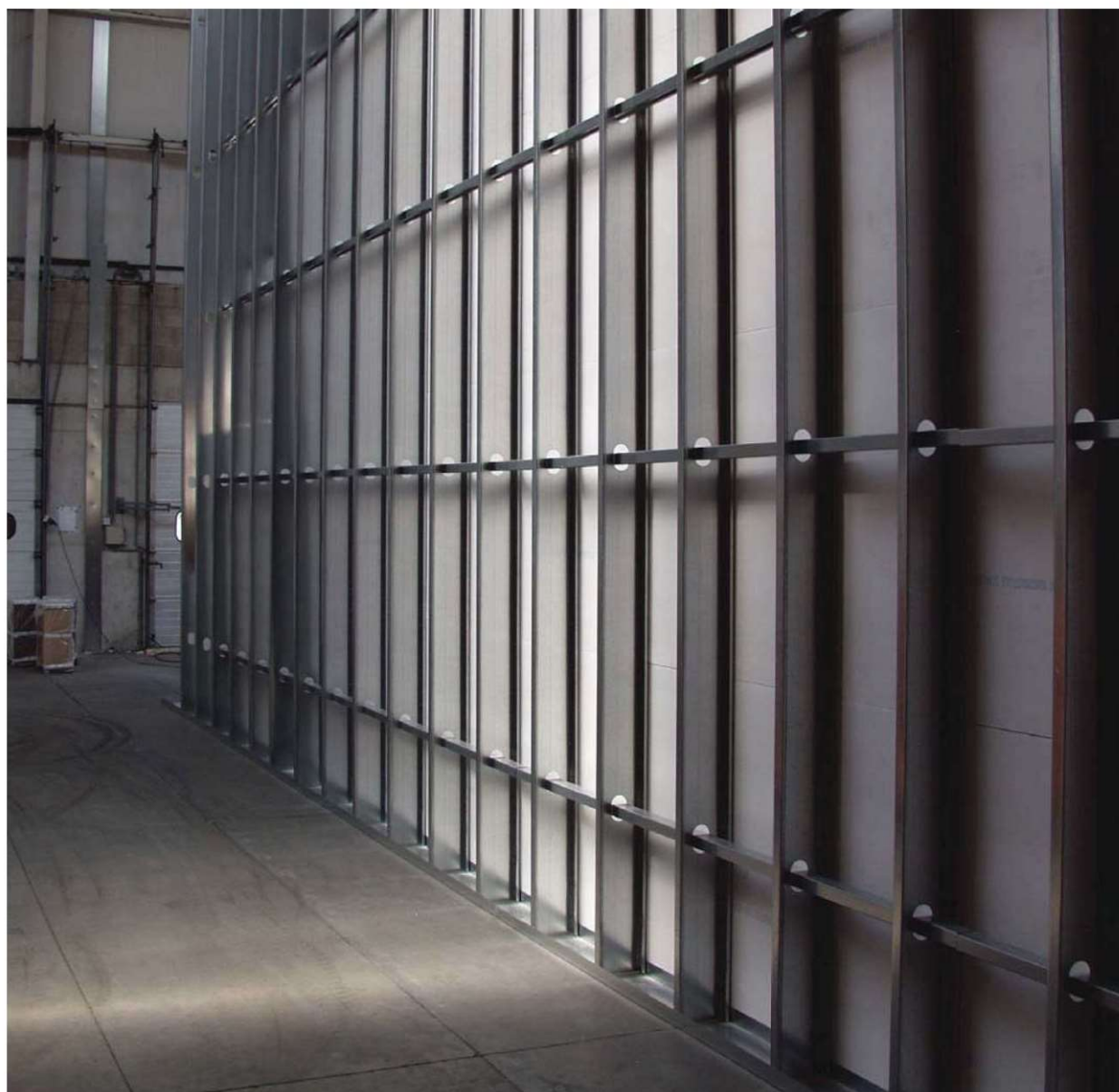
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## PASSIVE FIRE PROTECTION SYSTEMS Application & Technical Manual: Partitions & External Walls



For Promat Asia Pacific Organisation • December 2014

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Clockwise from above: PROMINA®-HD external wall claddings at Khoo Teck Puat Hospital in Yishun, PROMATECT®-H steel stud partition at New Tech Park and PROMINA® 60 external wall claddings at a warehouse in Gul Road. All projects in Singapore.

**P**artitions are used to separate buildings, enclose compartments and contain fire by providing a barrier to the passage of fire from one side or the other, or both. In doing so, they are able to satisfy each of the relevant fire resistant criteria (integrity, insulation and, if the wall is loadbearing, load bearing capacity) from either side for the prescribed period.

The application of partition and external wall systems using Promat boards covers both non loadbearing and loadbearing in commercial, industrial, institutional, residential and high rise constructions, or in the restoration of existing buildings. Promat's internal partition systems require less material to achieve similar fire resistant level when compared to industry average wallboard partition systems. The single layer board application leads to simplified construction methods over other equivalents and in turn to increased productivity and reduced overall installation cost.

These partition and external wall systems have been developed by Promat International (Asia Pacific) Ltd to satisfy standard requirements for intended applications. Such considerations include:

### Time & Cost Effectiveness

Single layer application reduces installation cost and time compared to traditional wallboard constructions.

### Slim Walls

Partitions can be as thin as 35mm.

### Lightweight

Lighter loads on structures compared to industry average wallboard partition systems for equivalent fire resistance.

### Thermal Resistance

Excellent thermal resistance performance.

### Impact Resistant

PROMATECT®-H partition systems have been tested for resistance to impact, stiffness and robustness in accordance with the criteria of BS 5234: Part 2.

### Acoustic Performance

Tested and assessed to a range of standards, including ISO 140-3: 1995, ISO 717-1: 1996, AS 1191: 2002, AS/NZS 1276: Part 1, BS 5821: 1984 and BS 2750: Part 3: 1980, to meet the needs of industry. Please refer to [pages 7 and 8](#) for details.

### Fire Resistance Performance

Promat partitions and external wall systems have been extensively tested and assessed in accordance with BS 476: Parts 21 and 22 and AS 1530: Part 4 to satisfy the integrity, insulation and where applicable loadbearing capacity (structural adequacy) criteria.



### General Design Considerations For Partitions

Following are some of the factors to take into account when determining correct specifications that ensure a partition provides required design performance under both fire and ambient conditions.

#### 1 Studwork Design

The design of studwork should be adequate for the height of the partition. The studwork details given in the following specifications are suitable up to the maximum heights stated. For greater heights the dimension of the framing members could change depending upon factors such as movement and deflection, and local approvals. Larger or more frequent frame sections will often improve fire and structural performance.

The studwork shall be appropriately designed for the applied loads, e.g. wind load, and where applicable structural load in the case of load bearing systems. The framing for the partition systems must be securely fixed back to a substrate that has an equal or greater fire performance than the designed partition. All fixings must be non combustible and must be those listed in the approval documents. The design shall be in accordance with the relevant British, Australian and/ or International Standards.

#### 2 Non Loadbearing Partitions

Non loadbearing partitions and external wall systems using Promat boards can be generally categorised as framing systems consisting of steel or timber studs and solid partitions. For steel stud systems, selection of suitable stud size shall be in accordance with the maximum partition height given in the stud selection tables. The partition systems in the following pages, where stated, are designed for lateral loads of up to 0.25kPa using the composite action of the frame and boarding.

#### 3 Loadbearing Partitions

Loadbearing capacity of featured partition systems in this handbook are calculated in accordance with BS 5950-8: 2003 and AS 4600: 1996 for load cases defined by AS 1170: 2002. The maximum load bearing capacity is given in kN for a given partition height taking into account the reduction in steel strength at elevated temperature.

Studs are located at 610mm maximum centres with noggings. Loads considered in this manual are for axial compression only. Wind and other loads have not been taken into consideration. For further information on these loads, please consult Promat.

#### 4 Deflection

Where differential movement is expected between the floor or beam above the construction and/or the floor below, it is generally advisable to incorporate a deflection head track to ensure undue stress is not placed upon the partition. This also allows for the sagging and deflection of a floor or structural beam will be subjected to under fire conditions. Even concrete floors will suffer considerable deflection under fire if exposed for any extended duration.

Some form of movement joint is also required to allow for the expansion of the studs under fire conditions. A partition will also bow at its centre. As the wall bows, it naturally becomes shorter. For this reason alone, use should be made of a top track with long side legs. This will allow the stud to bow and as a result drop down, without the studs dropping out of the head track.

#### 5 Movement Joint

Movement stress from dimensional changes due to varying temperature or moisture conditions can cause cracking and other symptoms of distress in partitions. Other external forces such as impact or vibration can directly affect the structural movement of partitions. This movement can be controlled through a variety of design

techniques such as introducing perimeter relief and slip connections to reduce the transfer of stress from the structure to other building sub elements and/or through the use of expansion joints, control joints and construction joints.

In a partition, expansion joints are needed when the partition abuts a rigid mass. A vertical movement joint should be located at maximum 10000mm centres in long runs of partition. However, introducing a control joint into a fire resistant partition creates an opening for flame and temperature transmission. Such openings must also be treated with approved fire stopping systems.

Please refer to [page 12](#) for further details on movement joints.

#### 6 Caulking & Service Penetrations

To maintain fire and where applicable acoustic performance of the partition system, gaps at the perimeter must be appropriately filled with suitable caulking material. PROMASEAL®-A Acrylic Sealant or other tested fire and acoustic resistant material of equivalent or better performance must be used.

Care needs to be taken in detailing a suitable fire stopping system around any penetration of the partition by services to ensure that the fire-stopping material remains in situ, and fire and smoke do not penetrate the partition.

Allowance should be made for thermal movement of the services in both ambient and fire conditions to ensure loads are not applied to the partition. Some examples of service penetrations include electrical cables, conduits or wires, switches and power outlets, plastic and metal pipes, air conditioning and ventilation ductwork. Further guidance on the penetration seals of these elements can be obtained on the PENETRATION SEALS section this handbook.

#### 7 Fire Doors & Glazing

Tested or assessed door and/or glazed assemblies should always be used. All and any doors or glazed elements with a fire resistant wall should be shown, by fully compliant testing to the appropriate standard, to be capable of providing at least an equal fire performance to the wall itself. This means fire doors should be tested in lightweight partition systems, not just in masonry. In most cases additional framework will be required to prevent loads being applied to the partition. Careful detailing is needed around the perimeter of any door or glazed assembly. Further guidance on the detailing at fire doors and glazing is available on [page 13](#).

#### 8 Partition Junction

Care must be taken to ensure that partition corner junctions and intersections are stable for both fire and ambient conditions. Framing at these locations must be mechanically fastened together. Further information on the detailing these junctions can be found on [page 9](#).

### General Design Considerations For External Walls

In the case of external walls, the proximity of a building to the relevant (facing) boundary determines the probability of it being a danger to other buildings on adjoining sites (if it is on fire) or it being at risk from a neighbouring building on fire. Requirements made in connection with building regulations therefore specify different performances for external walls depending upon their distance from the relevant boundary.

Where the walls are permitted to provide fire resistance only from the inside, loadbearing capacity and integrity are required to be satisfied for the full period, whereas insulation is sometimes required for only 15 minutes. This means that satisfactory constructions will be very different from those required to maintain insulation for the full period and where fire resistance is required from either side.



Following are some of the factors to take into account when determining correct specifications that ensure an external wall provides required fire performance.

### ❶ Distance From Relevant Boundary

The guidance given in appropriate building regulations does sometimes relax the requirements for those external walls which are one metre or more from the relevant property boundary. In most of these cases, the wall only needs to be tested or assessed for its performance when exposed to fire from within the building. In addition, the maximum insulation period required is often only 15 minutes.

Due to differences in various national regulatory requirements, local building codes should be checked before applying the following systems.

### ❷ External Cladding

The external cladding can significantly affect the overall fire performance of an external wall. For example, some composite external cladding panels with expanded polyurathane cores may perform much worse than a single skin steel sheet due to the low melting point and toxicity of the core.

### ❸ Structural Steel

All structural steel within a fire protected external wall may also need to be protected. This includes walls which may only require to be partially protected. If the steel frame of a single storey building has not been designed in accordance with the document, "Fire and Steel Construction: The Behaviour of Steel Portal Frames in Boundary Conditions, 1990 (2nd edition)" published by British Steel Construction Institute, or equivalent regulatory advice, the rafters of the roof may also need protection as their failure could lead to collapse of the external wall.

Generally, any steelwork located on the non-fire side of a PROMATECT®-H or PROMINA® 60 wall lining will be adequately fire protected.

### ❹ Single Storey Buildings

The external walls of single storey buildings which may otherwise not require to be fire protected, may still require protection if they are too close to the relevant boundary.

### ❺ Cavity Barriers

Local building regulations guidance documents will specify where provision of cavity barriers is required.

### ❻ Thermal Insulation

U-values will depend on the complete wall design. These U-values can be improved by the addition of more insulation materials.

### ❼ Impact Resistance

PROMATECT®-H is robust and reasonably impact resistant. Where there is risk of heavy impact however, and in most cases below a height of 2000mm above floor level, it is advisable to introduce additional framing members as stiffening components. Protection barriers or masonry walls 2000mm high are often advisable.

### ❽ Wind Loading

Both PROMATECT®-H and PROMINA® 60 external walls offer good resistance to wind induced internal pressures. Please consult Promat if there are predominant openings in the external envelope of the building.

## Steel Frame Components

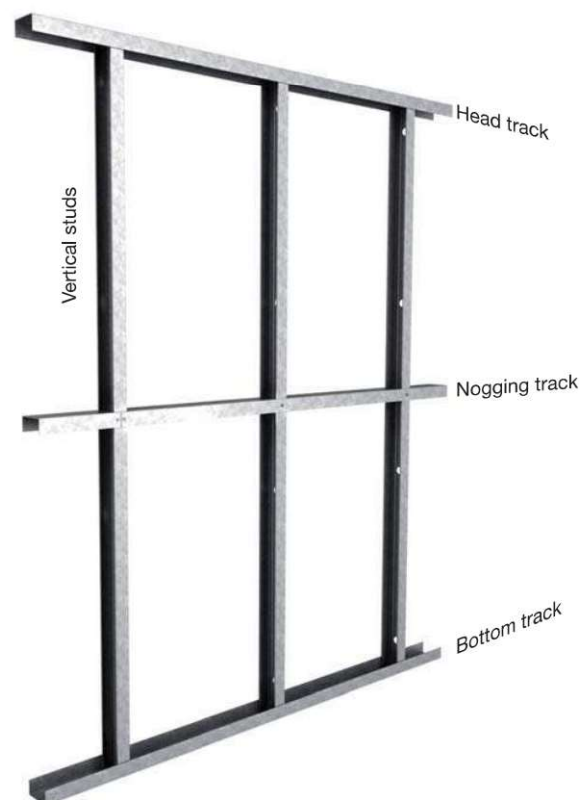
### Board Fixing

Promat boards can be installed horizontally or vertically.

For steel stud partition system, joints in the boards must be staggered between either side of the framing with all the joints located at a framing member. The boards may be fixed to the studs using No.8 bugle head self-drilling and self-tapping screws of a length appropriate for the board thickness. Needle point screws are normally used to fix boards to light gauge steel frames up to 0.8mm. Drill point screws are generally appropriate for heavy gauge steel frames from 0.8mm to 2.0mm.

When a timber frame is used, Promat boards are fixed to the framework using wire nails of a length appropriate for the board thickness and the required fire resistance performance at nominal 300mm centres and minimum 12mm from the board edge. Minimum edge distance to fasteners and the maximum spacing between nails must be maintained.

Internal and external corners may be set using a perforated metal corner bead fixed to the board linings at not more than 500mm centres.



### Components Selection

Construction of Promat fire resistant steel stud partitions can be achieved using Rondo stud and track components. Other steel components of equivalent performance can of course be used but it is the responsibility of the manufacturer of the component to substantiate equivalent performance with the recommended component.

*Continued on next page*



### Steel Frame Components Continued from previous page

#### Deflection Head & Bottom Tracks

The main function of the ceiling and floor tracks is to hold the studs in position until the board is fitted. They provide a friction fit for the studs and also act as a slip joint to allow for any movement in the structure.

The track sections come in two basic profiles. A standard track has a nominal 32mm flange whilst the deflection head track has a nominal 50mm flange. However, head tracks with wider flange are available but they have to be specially designed for instances where clearance for expansion at the head track exceeds 20mm.



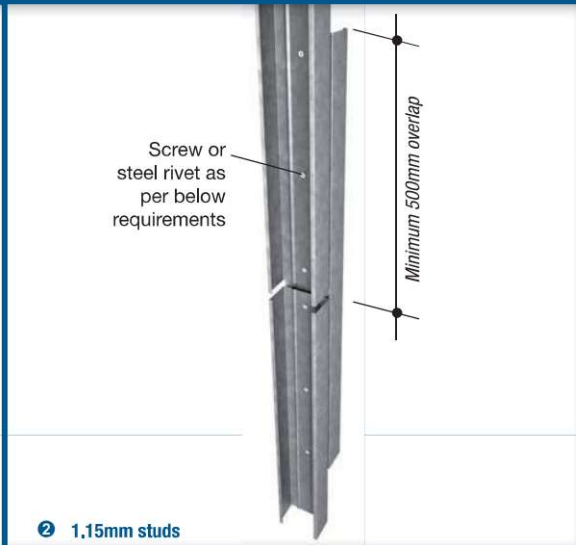
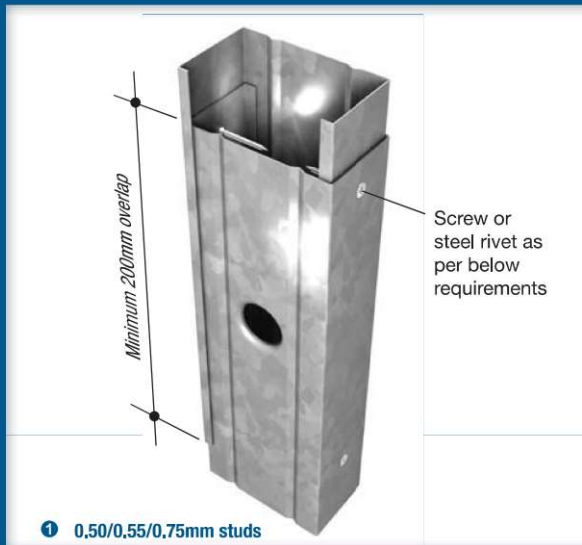
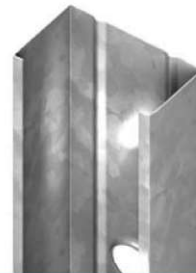
No clearance for expansion is applicable at the head track for a loadbearing partition. Track sections should be fixed at maximum 610mm intervals to the supporting structure. Fixings should be located not more than 100mm from either end of the track section.

#### Vertical Studs

The recommended Rondo studs come in 0.50mm, 0.55mm, 0.75mm and 1.15mm. The 0.50mm to 0.75mm studs have standard 25mm bell-mouthed service holes for electrical cabling. For the 1.15mm stud, round holes are punched at designated centres along the stud.

Spliced extensions are possible in situations where the overall height of the partition is more than the stud length. The 0.50mm to 0.75mm studs may be boxed and the 1.15mm studs may be spliced back to back.

For greater rigidity at fire resistant glazing and door openings, and also at locations where extra load carrying capacity is required, studs of 0.50mm to 0.75mm may be boxed and studs of 1.15mm may be fixed back to back. See guide below on spliced studs and stiffening framing.



#### Fixing of spliced vertical studs for partition heights up to 7000mm

##### ① 0.50/0.55/0.75mm studs

Splice location in wall	Minimum required fasteners on both sides of studs over the splice
Up to 10%	2 pieces
10% to 25%	3 pieces

##### ② 1.15mm studs

Splice location in wall	Minimum required fasteners on both sides of studs over the splice
Up to 10%	3 pieces
10% to 25%	5 pieces

**NOTE:** The splice location percentage refers to the height of the partition. For example, taking a partition 10000mm high, a 10% splice location would be located within 1,000mm of the top or bottom of the wall. A 25% splice location would be within 2000-5000mm of the top or bottom of a 10000mm high wall.

- Splices should be alternate subsequently at top and bottom of wall
- Do not splice studs between 25% and 75% of wall height
- Splicing of studs is recommended for non loadbearing partitions only
- Where splicing is not possible due to the height, use fully boxed sections

### Nogging Track

Noggings are necessary to provide bracing to the partition studs and preventing the studs from twisting when fitting the lining boards. The noggings are to be screwed, rivetted or crimped to both flanges of the studs. Continuous nogging tracks 0.55mm and 0.75mm are available from Rondo. This nogging track can be fitted to the stud framing in one length. Alternatively, individual noggings may be cut from the track. Noggings of 0.75mm can be used with 1.15mm studs.

#### TOP TRACK FIXING

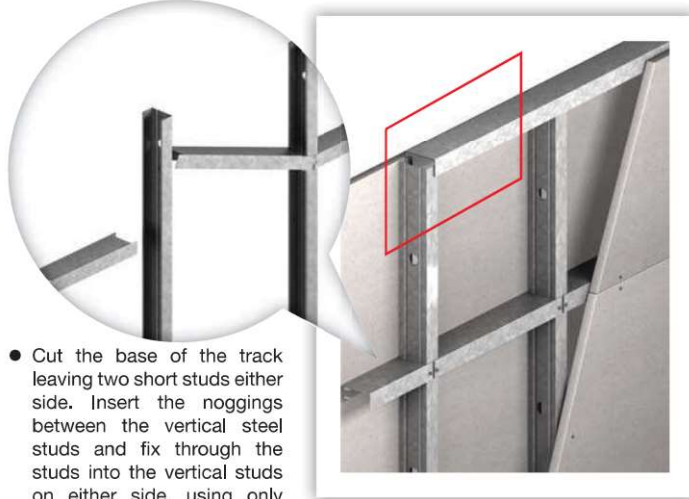
Track to be structurally designed in accordance with BS 5950 or AS 4600, for the given opening dimensions.

#### BOTTOM TRACK FIXING

Track to be fastened to substrate floor and ceiling with M6 anchor bolts 40mm long at maximum 600mm centres. Studs can be installed vertically at 600-610mm centres depending on the board size used.

#### HORIZONTAL TRACK USING STEEL STUDS

- Studs to be cut to a short length and screwed in between each of the vertical studs.

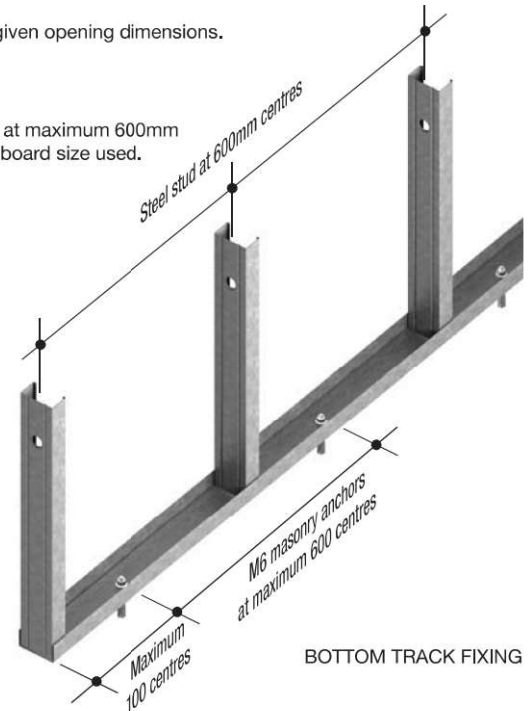
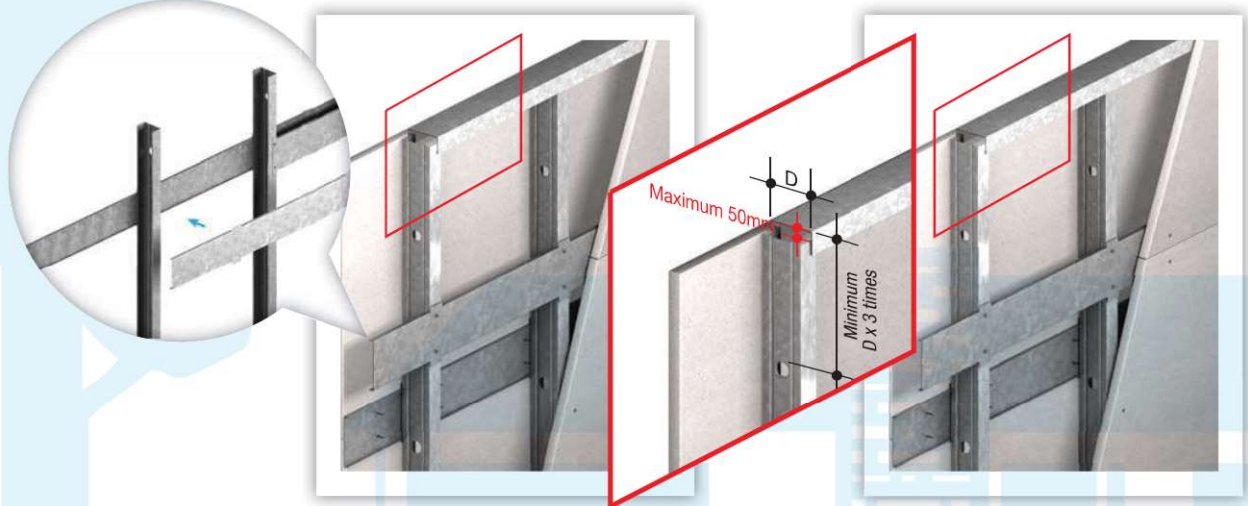


- Cut the base of the track leaving two short studs either side. Insert the noggings between the vertical steel studs and fix through the studs into the vertical studs on either side, using only steel rivets or screws.

- All horizontal joints of the boards are to be fixed to the noggings.

#### HORIZONTAL TRACK USING STEEL CHANNELS

- Steel channel cut to length and screw fixed to the both sides of the vertical studs.
- All horizontal joints of the boards are fixed to the nogging.



BOTTOM TRACK FIXING

#### HORIZONTAL JOINTS WITH BOARD STRIPS

- Cover fillets minimum 75mm wide cut from main lining boards. Fix board to board using stitching screws of a length appropriate to the board thickness, at maximum nominal 200mm centres.
- All horizontal joints of the boards to be covered and fixed by board strips.



### Timber Frame Components

#### Timber Frame

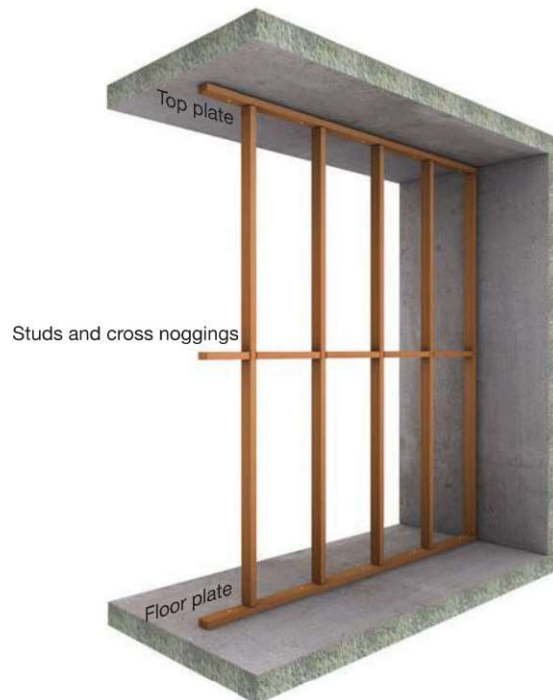
Timber has very good performance in fire. It does burn but at a relatively slow and to a predictable depth known as the charring rate. This is one major advantage of using timber over steel because the fire resistance of timber elements of construction may be calculated based on a predictable charring rate.

Timber also has a very low thermal conductivity value and hence does not heat uniformly. Therefore, timber material a few millimetres inside the burning zone is just warm. The formation of a self insulating char provides some resistance to further heat penetration.

Unlike materials with a high thermal conductivity such as steel, there are less problems associated with expansion or loss of strength due to increases in temperature over the whole section in timber. This means that in some instances timber retains its structural integrity better than steel.

There are many different types of timbers and they all char at varying rates. Higher density timbers char generally (but not always) more slowly than those of lower density. Denser hardwoods used for structural purposes, such as jarrah, teak, keruing and greenheart, char at a rate of approximately 15mm in 30 minutes. Lower density (<650kg/m<sup>3</sup>) softwood timbers such as Western red cedar have an estimated charring rate of 25mm in 30 minutes.

Tables are available which can provide a definitive charring rate for a specific timber species, and can be based on the use of heartwood or sapwood of the given species.



#### Studs & Cross Noggings

The frame used in timber stud partitions generally consists of 90mm deep x 45mm wide softwood timber. The fire performance of the partition system accounts for the loss of the timber section due to charring effect without compromising the fire performance of the partition.

Where the boards are to be installed with their long edges vertical, the studs are located at maximum 600mm or 610mm centres (depending on the board width) with cross noggings at 1200mm or 1220mm centres. Where the boards are to be installed with their long edges horizontal, the studs are located at 600mm or 610mm centres with cross noggings at 1200mm or 1220mm centres.

The cross noggings may be fixed to the studs using nails or woodscrews of at least 100mm long. See fixing methods at left. Either method can be adopted to fix the cross noggings.

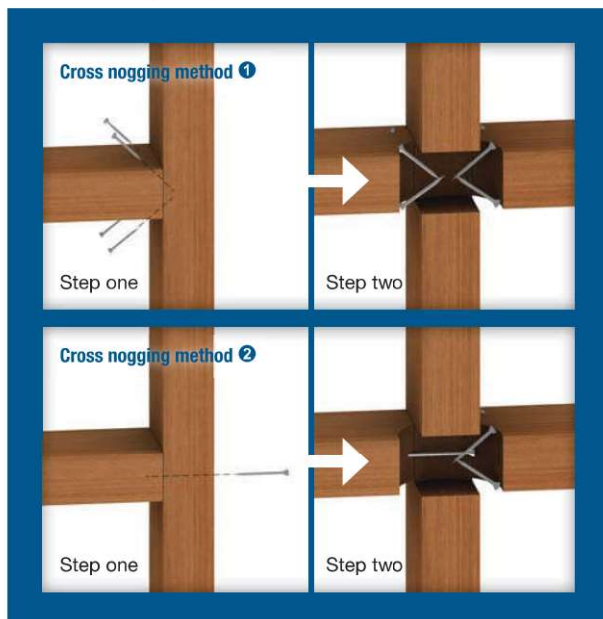
#### Top & Floor Plates

The top and floor plates are to be of the same material and dimensions as the studs. They are to be secured to the surrounding structure with minimum 100mm long M6 masonry anchors at nominal 600mm centres with the drilled depth into the concrete structure of at least 40mm. Polyamide nylon anchor sleeves may be allowed for use with timber framing.

The vertical studs are fixed to the top and floor plates using either nails or woodscrews of at least 100mm long in the manner shown in the left picture.

#### Loadbearing Partition

Where a partition is loadbearing, the required size of the stud shall be calculated by a suitably qualified structural engineer. Care should be taken to ensure that the loadbearing partition has been designed to resist all applied loads and in accordance with BS 5268: Part 4, AS 1720: Part 1 or AS 1684. Generally, the fire performance and the load carrying capacity will improve by increasing the cross-sectional dimensions of the timber elements and/or decreasing the stud spacing.







### Acoustics In Building

Sound is a form of energy generated by a source, transmitted through a medium and collected by a receiver. It can be pleasant to be heard, such as music and speeches etc, while some, such as scratching a glass surface with a sharp object, are irritating. This offensive sound is commonly termed noise. The acoustic design of buildings can be divided into two basic requirements, noise control and room acoustics.

Noise control relates to the quantity of sound with an objective to ensure the sound level does not adversely affect the comfort of building occupants. This involves control of sound produced in a room, such as telephones ringing, as well as limiting the noise entering from other rooms or outside the building. A common solution targeting this problem is the introduction of sound absorption systems.

Room acoustics relate to the quality of sound with an objective to enhance the quality of desired sound within a room. This involves factors such as speech intelligibility and perception of musical clarity. The most widely applied solution employed by building designers is the use of a sound insulating system.

A point worth noting is that although both noise control and room acoustics have independent objectives, they are however inter-related in practice. As this section of technical handbook covers partition and ceiling systems, the following concentrates only on issues related to sound insulation which involves transmission loss (TL) of airborne sound.

### Sound Transmission & Classification

The sound transmission loss of a building element, such as a partition, is a measure of how much sound is reduced as it passes through the barrier, expressed in dB or decibels, the unit used to quantify sound. The generally accepted term for the single number ratings for sound transmission loss is the Sound Transmission Class or STC (ASTM E413-87). This is determined by comparing the TL value to the reference curve in ASTM E413-87. Generally the higher the STC value, the better the performance of the system. The following table provides a rough idea of what various STC levels mean in terms of privacy afforded.

STC	Privacy afforded
25	Normal speech easily understood
30	Normal speech audible, but unintelligible
35	Loud speech understood
40	Loud speech audible, but unintelligible
45	Loud speech barely audible
50	Shouting barely audible
55	Shouting not audible

Source: U.S. Dept of Commerce/National Bureau of Standards Handbook, "Quieting: A Practical Guide to Noise Control".

Another widely accepted equivalent term is the Weighted Sound Reduction Index or  $R_w$  (ISO 717: Part 1: 1996 or BS 5821: Part 1: 1984). It is determined in a similar manner but instead of TL values, an equivalent Sound Reduction Index ( $R$  or  $R_w$ ), is used.

Note should be taken that results obtained in STC and  $R_w$  may have a  $\pm 3$ dB deviation from one another.

Most building structures are not built like laboratories and it is very common that the sound insulation rating measured in ideal test conditions will not be achieved in a building. In order to meet the desired level of performance, building designers should therefore carefully consider the compatibility of the selected system with the supporting structure. Note that field performance is typically lower than laboratory performance by approximately 10%.

### General Design Considerations

With modern design concepts and technology in building construction, acoustic performance within buildings has become an important element for consideration by building designers. There are many factors involved in establishing an ideal noise level for any particular building space, some of which are as follows:

- To avoid fatigue induced by noise;
- To prevent distraction or disturbance;
- To maintain a good communication and listening environment.

Heavy walls such as concrete have good transmission loss. However, there are some drawbacks which limit their performance. Mass law dictates that a wall will increase its transmission loss by only 5dB for every doubling of mass. Therefore, a single 100mm thick concrete wall of 2300kg/m<sup>3</sup> density might have an STC 45 rating whereas a 200mm thick concrete wall would only achieve STC 50 for a doubling in mass.

For most owners and builders, a wall of this size and weight is not desirable. Cost may more than double and the decibel-per-dollar achieved is clearly not acceptable. This limitation can be easily overcome by using a lightweight system, i.e. the partition system, where it is more practical to utilise principals such as air cavity, resilient mountings, sound absorbing core materials or a combination of these principals without the large increase in mass required for solid walls.

Following are some common practices that are effective for noise control and room acoustics.

#### ① Double Studding & Air Cavity

With typical dry wall partitions, sound striking at the wall surface is transmitted through the first surface material into the wall cavity. It then strikes the opposite wall surface, causing it to vibrate and transmit the sound into the air of the adjoining room. This is termed airborne sound. When the sound strikes the wall at the stud, sound is transmitted direct through the stud and is termed structure borne sound.

The principal of double studding basically means separation of two panels of a drywall partition into a double-leaf wall, integrated with appropriate air spacing (cavity) between the leaves. The introduction of an air-space provides some form of separation or discontinuity between the two wall faces in a double-leaves wall.

As an example, a double stud partition creating an air cavity eliminates direct mechanical connection between the surfaces. The sound transmission is reduced by breaking the sound path. In addition, the air cavity provides vibration isolation between the two sides. Sound in one room striking the one side of the wall causes it to vibrate but because of the mechanical separation and the cushioning effect of the cavity, the vibration of the other side is greatly reduced.

#### ② Sound Absorbing Core Material

Sound absorption is the effectiveness of a material at preventing the reflection of sound. Generally, the more sound absorption, the fewer echoes will exist. The sound absorbing core used in the Promat partition designs can be mineral or rock wool, glass wool or polyester, depending upon fire resistance requirements.

This core will further improve the sound isolation performance of the wall by absorbing sound energy in the cavity before the sound can set the opposite wall surface in motion. They will also provide some damping of the vibrating wall surface.





### General Design Considerations

#### ③ Treatment To Flanking Paths

When working with acoustic systems, it is critical that strict attention be paid to construction and detailing. The acoustic integrity of a system can be influenced by the combination of elements that make up the system. Single leaf and uninsulated systems are particularly dependent on high quality of installation. For example, if there is a gap of 5mm wide around the perimeter of an STC 45 rated wall of 3m x 3m, the actual performance would degrade to about STC 30. Therefore, to make acoustically rated partitions effective, they must be airtight. Any path for air also means there is a path for sound. In order to achieve the designed STC rating closely, the following factors must also be taken into account:

- Sound paths, e.g. windows, doors, floors and ceilings;
- Penetrations through walls, even above ceilings or below floorings, must be sealed;
- Stagger the joints between multiple layers of wall boards or ceiling linings;
- Do not install electrical points back to back on either side of a wall;
- Openings for return air in ceiling plenum systems must be strictly controlled.

#### ④ Wall & Floor Intersections

A good acoustic partition is only as good as its joint or intersection at wall and floor, like a chain and its weakest link. If this joint or intersection is not treated properly, the acoustic value may be lost. Many joint defects from flanking paths allow sound to travel via air gaps through the structure.

Acoustic sealants are the simplest means to provide a permanent air tight seal. They are made from materials that are permanently elastic which will allow floor or wall materials to move, as they are prone to do because of expansion and contraction or outside forces such as structural movement. A permanent airtight seal is the most effective way to maintain the acoustic integrity of the wall. Regardless of which system is employed, all openings, cracks and material joints should be made air tight with a permanently elastic acoustical sealant.

### System Selection Guide

As sound insulation requirements may vary from country to country, the table below suggests acoustic values for some typical partition installations, unless otherwise specified by the architects. Please consult Promat for more information.



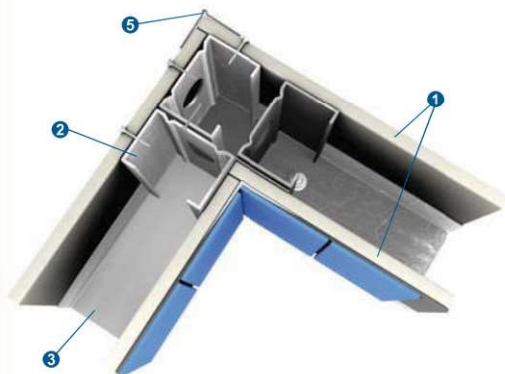
#### Some sources of sound leakage

- ① Air leaks through gaps or cracks
- ② Doors
- ③ Lightweight panels above doors
- ④ Electrical outlets and service pipes
- ⑤ Partition performance
- ⑥ Sound transmission via suspended ceilings or partitions
- ⑦ Common floor heating duct
- ⑧ Common ventilation system without sound absorbents treatment
- ⑨ Lightweight mullion or partition closer
- ⑩ Appliances

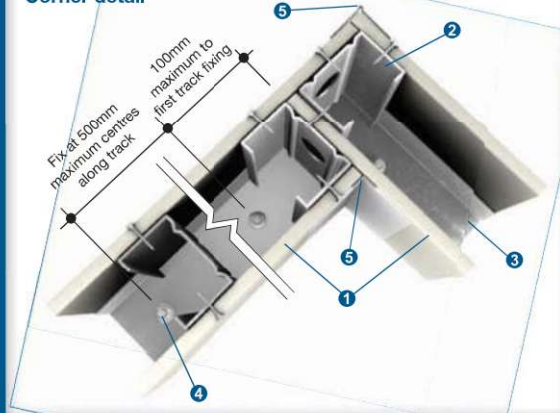
STC rating			Applications for separating
Minimum	Average	Luxury	
45dB	50dB	55dB	Bedroom to bedroom
50dB	55dB	60dB	Bedroom to living room
50dB	55dB	60dB	Bedroom to lobby
45dB	50dB	55dB	Office to office
40dB	45dB	50dB	Office to general area
45dB	50dB	55dB	Office to conference room
45dB	50dB	55dB	Office to washroom
40dB	45dB	50dB	Conference room to general area
40dB	45dB	50dB	Conference room to conference room
45dB	—	—	Classroom to classroom
55dB	—	—	Classroom to shop
45dB	—	—	Classroom to recreation area
60dB	—	—	Classroom to music room



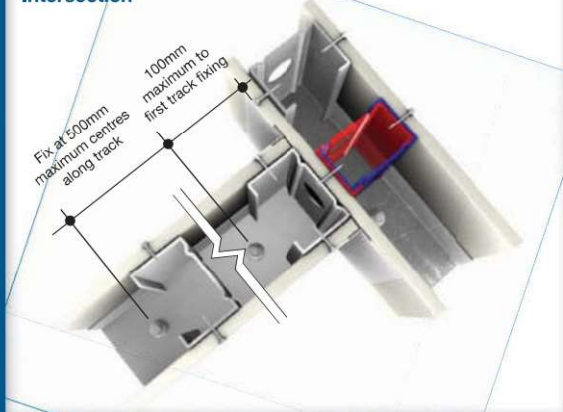
Corner detail (with decorative lining)



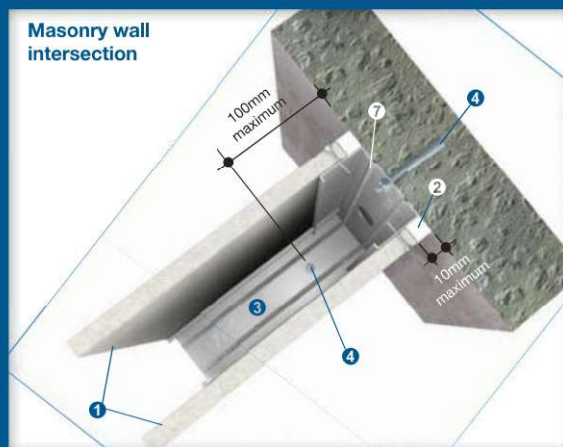
Corner detail



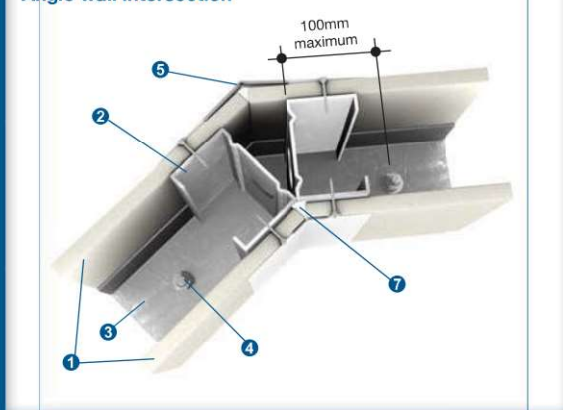
Intersection



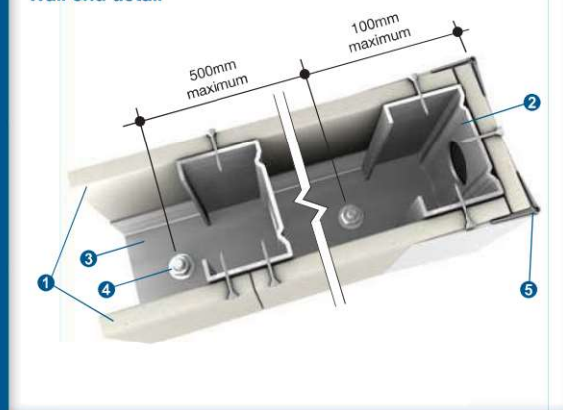
Masonry wall intersection



Angle wall intersection



Wall end detail



❶ PROMATECT® or PROMINA® board

❷ Steel stud at 610mm centres

❸ Floor track

❹ 40mm long M6 expansion bolts at 500mm centres

❺ Set corner with tape and jointing compound

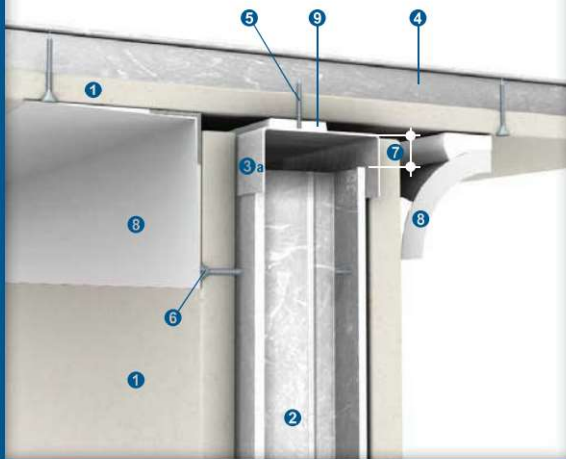
❻ Boxed stud at wall intersection

❼ Caulk all perimeter gaps with PROMASEAL®-A Acrylic Sealant to achieve the required fire resistance and/or acoustic performance

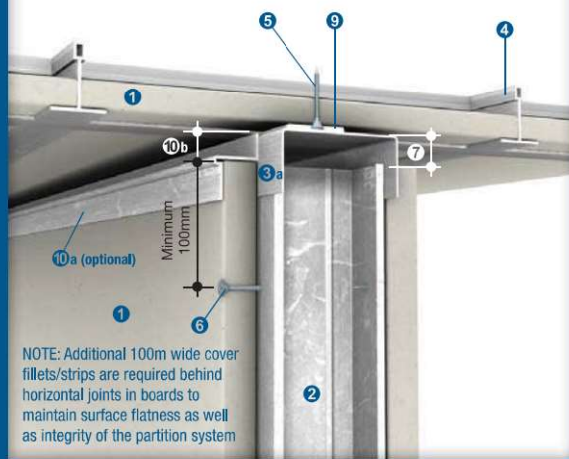




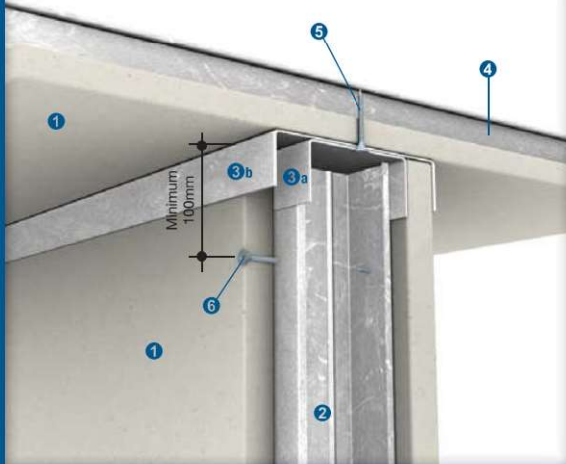
Wall/ceiling junction



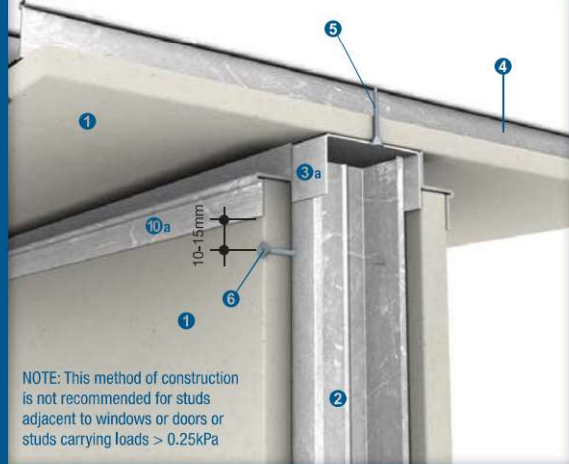
Wall/ceiling junction



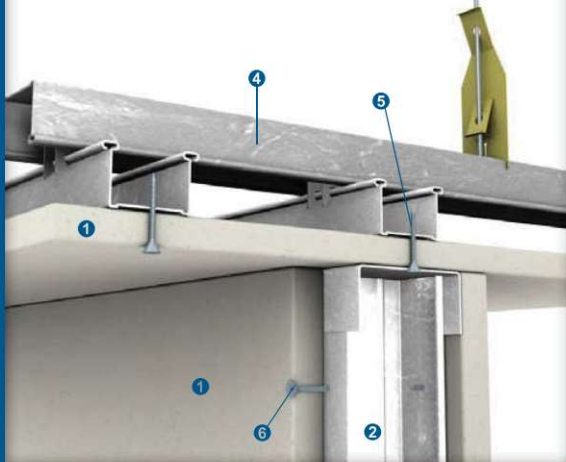
Head using aluminium head track (non-fire resistance)



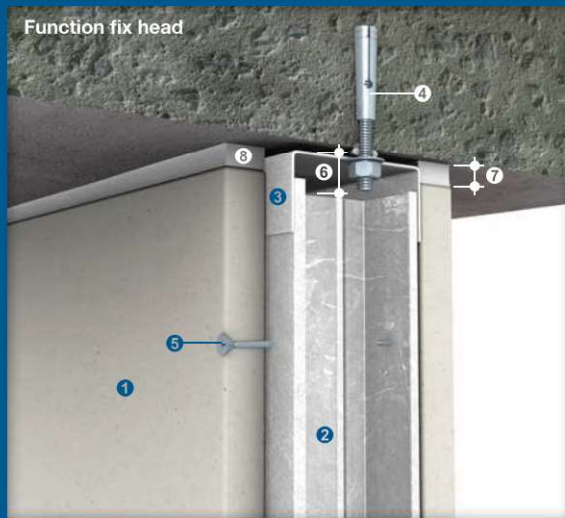
Head for suspended tie-locking ceiling



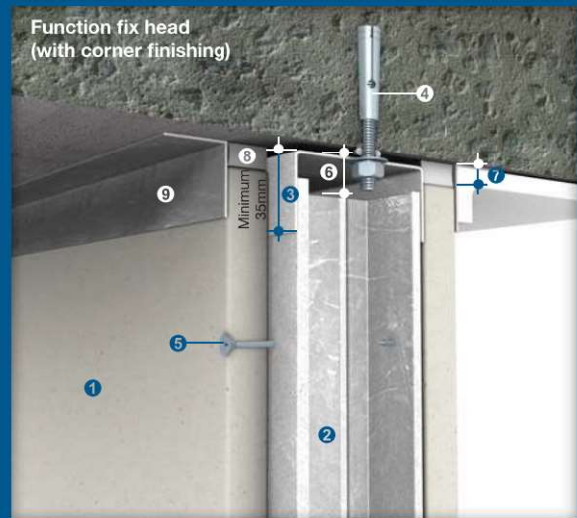
Head for suspended ceiling



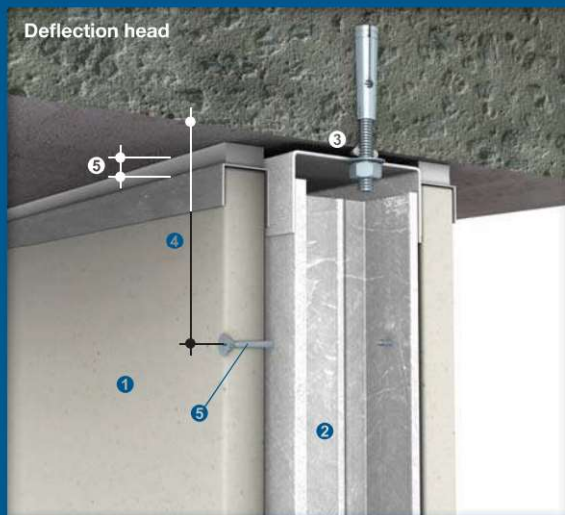
- 1 PROMATECT® or PROMINA® board
- 2 Steel stud at 610mm centres
- 3a Top track with leg length minimum 35mm to act as deflection head to accommodate vertical movement
- 3b Extruded aluminium track for 64, 76 or 92mm studs
- 4 Concealed ceiling framing
- 5 Fix top track to channel at maximum 610mm centres to ceiling framing
- 6 No. 6 drywall screws at nominal 200mm centres
- 7 Clearance minimum 8mm (for 3000mm high partition) to allow for expansion under fire conditions
- 8 Tape or cornice finishing based on requirement for aesthetic appearance
- 9 Apply sealant, e.g. PROMASEAL® AN Sealant, above track and fix wall track to ceiling framing
- 10a Finishing bead to protect board edge from damage due to construction of ceiling and fixing of accessories such as lighting, etc
- 10b (Optional) Allow minimum 8mm clearance to accommodate adjustment. Fixing should start at minimum 100mm from corner edge to prevent unnecessary breakage



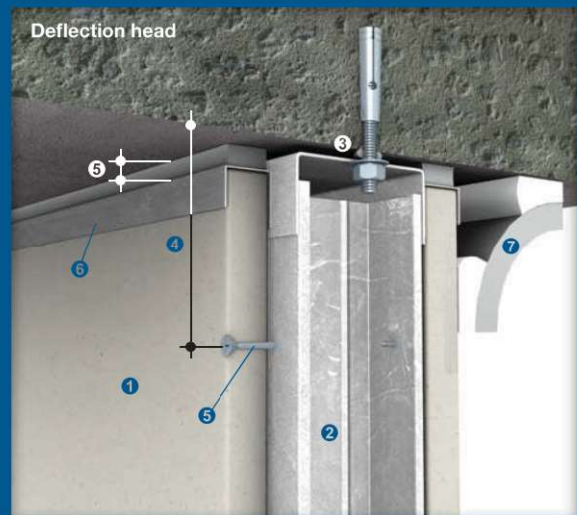
- ❶ PROMATECT® or PROMINA® board
- ❷ Steel stud at 610mm centres
- ❸ Top track with minimum leg length 35mm is fixed in place by anchor bolts, Depth of track dependant upon performance requirement and partition height
- ❹ Anchor bolts with minimum 40mm penetration to concrete substrate at maximum 500mm centres
- ❺ No. 6 drywall screws at nominal 200mm centres



- ❻ Minimum 6 - 8mm clearance at wall head to allow vertical expansion of steel studs
- ❼ Allow maximum 5mm clearance between board edge and concrete soffit to accomodate structural movement, if any gap is to be sealed with PROMASEAL®-A Acrylic Sealant
- ❽ PROMASEAL®-A Acrylic Sealant to fill gap and act as an isolator to limit sound transmission in acoustical wall construction
- ❾ Corner finishing, e.g. tape, cornice, angle etc. dependant upon requirement of aesthetic appearance



- ❶ PROMATECT® or PROMINA® board
- ❷ Steel stud at 610mm centres
- ❸ Anchor bolts with minimum 40mm penetration into concrete substrate at maximum 500mm centres. For acoustic wall installation if concrete surface is uneven, apply a bead of PROMASEAL®-A Acrylic Sealant between the top track and concrete substrate to seal possible gaps
- ❹ Fixing start 100mm from corner edge to avoid possible breakage under structural movement. NOTE: Should be taken that screw fixing does not fix through the track

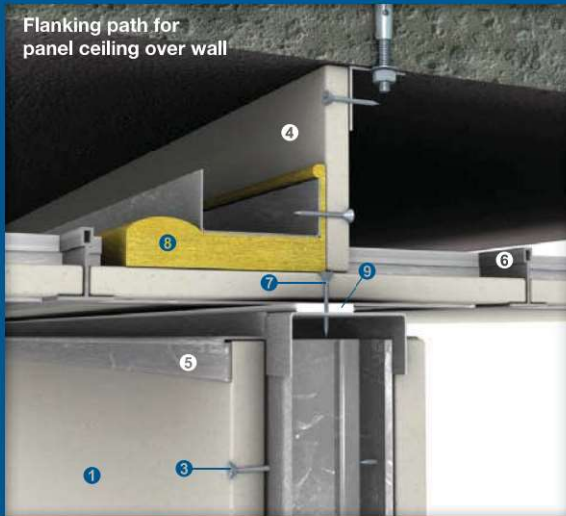


- ❺ Allow maximum 20mm gap to accomodate vertical movement of structure. Gap is to be filled with flexible sealant such as PROMASEAL®-A Acrylic Sealant in order to optimize integrity of partition
- ❻ Edge finishing (optional) based upon performance requirement to protect edge from damage
- ❼ (Optional) Corner finishing, e.g. cornice based upon aesthetic requirement



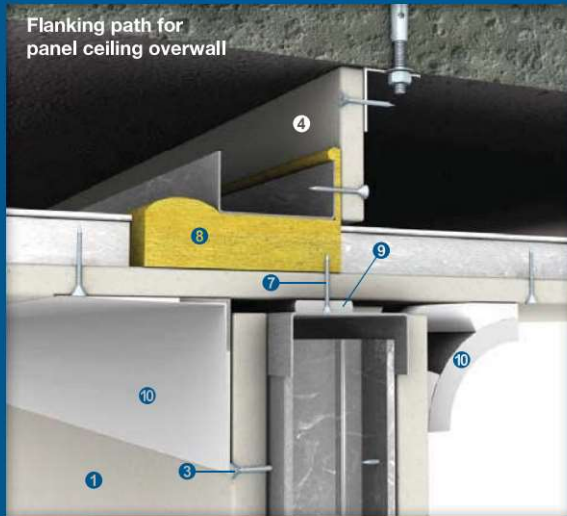


Flanking path for  
panel ceiling over wall



- 1 PROMATECT® or PROMINA® board
- 2 Use of anchor bolts at maximum 500mm centres to secure continuous angles to concrete soffit
- 3 No. 6 drywall screws at nominal 200mm centres length dependant upon board thickness
- 4 Minimum 12mm thick PROMATECT® or PROMINA® board runs over wall continuously and fixed to soffit. Joints should be backed by strips of 100mm wide PROMATECT® or PROMINA® board of similar thickness
- 5 Finishing head to protect board edge from damage due to ceiling construction and fixing of accessories such as lighting etc

Flanking path for  
panel ceiling over wall



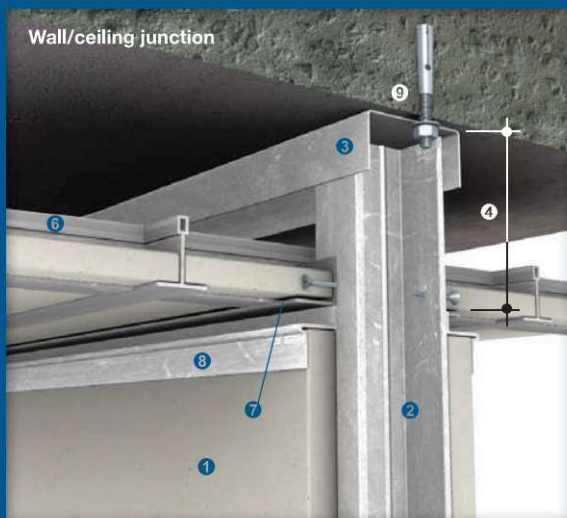
- 6 Exposed grid framing system. NOTE: Due to large number of joints in ceiling construction, not recommended where high performance acoustic rating required
- 7 Ceiling panel screw fixed to wall track to secure in position
- 8 Minimum 50mm thick glass wool or equivalent sound absorbing material held in place with track or angle, should be continuous to minimize sound leakage
- 9 Bead of PROMASEAL®-A Acrylic Sealant isolator between top track and ceiling panel to reduce conduction of sound frequencies
- 10 Tape or cornice finishing based upon requirement of aesthetic appearance

Wall/ceiling junction

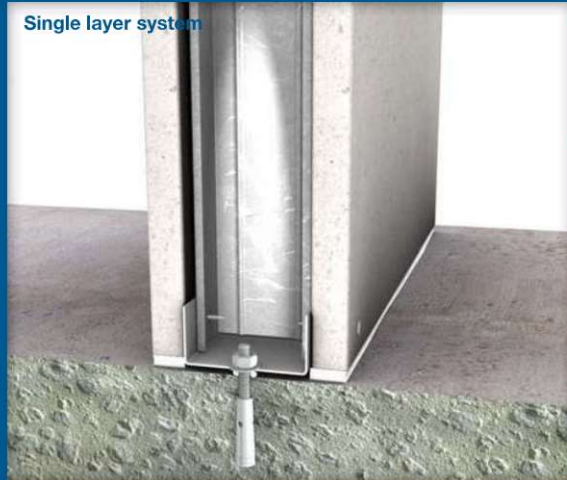


- 1 PROMATECT® or PROMINA® board
- 2 Steel stud at 610mm centres
- 3 Top track with minimum 35mm leg length fixed to concrete soffit using anchor bolts with minimum 40mm penetration to concrete substrate maximum spacing 500mm centres
- 4 Fixing point is minimum 100mm from corner edge of board to avoid unnecessary damage due to structure movement. Use No. 6 drywall screws
- 5 Set corner with tape and set or cornice finish

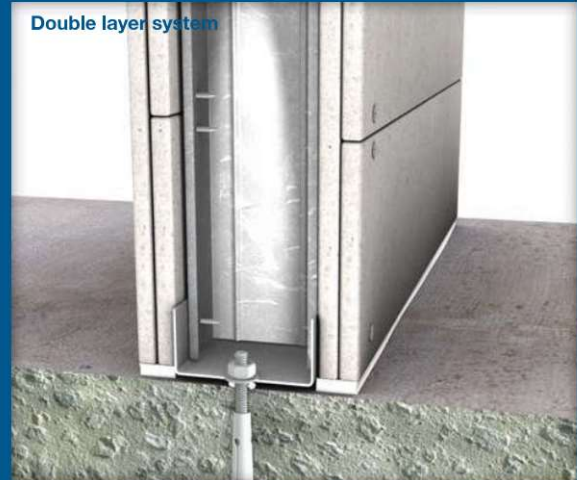
Wall/ceiling junction



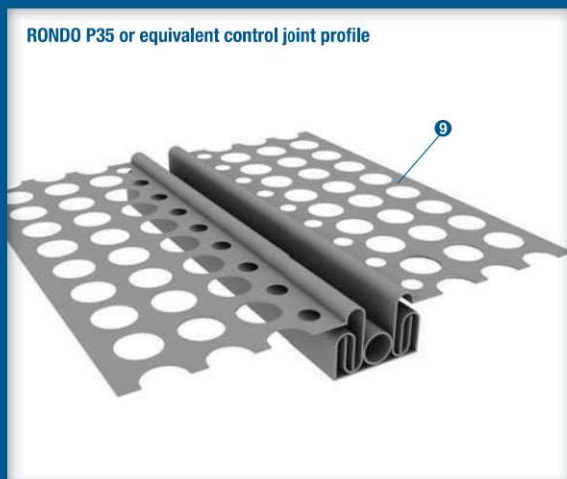
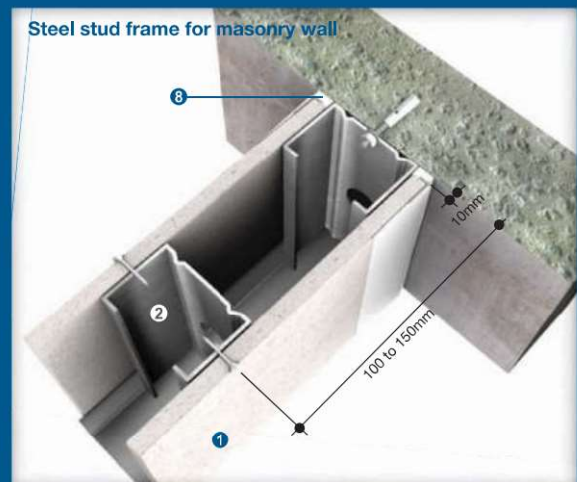
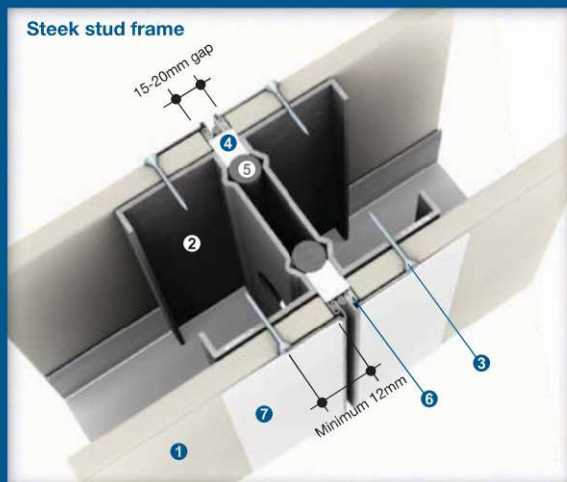
- 6 Ceiling framing, suspended from concrete soffit
- 7 Perimeter angle fixed to steel studs of partition wall to receive ceiling panels
- 8 Finishing bead to protect board edge from damage and for aesthetic appearance
- 9 Anchor bolts fixed to concrete substrate at maximum 500mm centres. For acoustic wall installation if concrete surface is uneven, apply a bead of PROMASEAL®-A Acrylic Sealant between the top track and concrete substrate to seal possible gap



- ❶ PROMATECT® or PROMINA® board
- ❷ Bottom track
- ❸ 40mm long M6 expansion anchors at 500mm centres

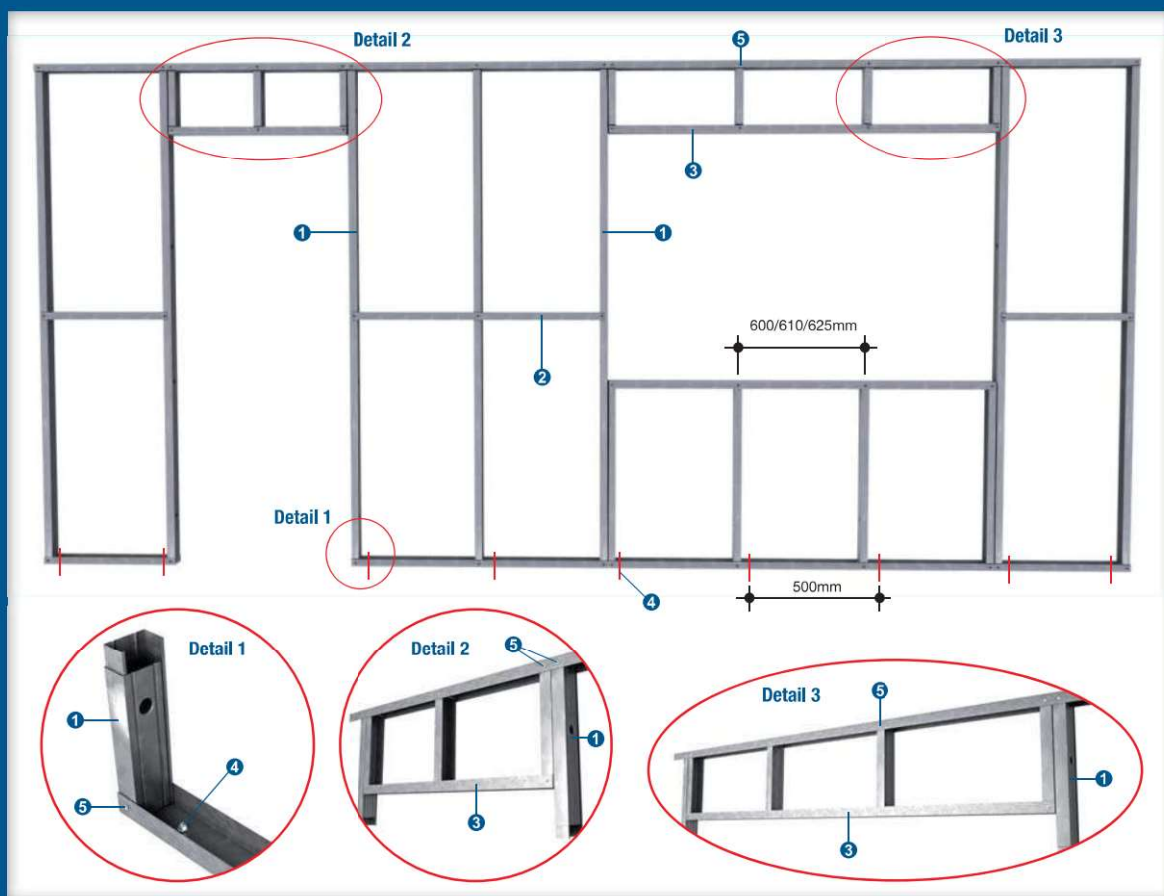


- ❹ Caulk all perimeter gaps with PROMASEAL®-A Acrylic Sealant to achieve stated fire and/or acoustic performance
- ❺ Continuous bead of PROMASEAL®-A Acrylic Sealant for acoustic integrity



- ❶ PROMATECT® or PROMINA® board
- ❷ Steel studs at maximum 610mm centres
- ❸ Fixing point is minimum 100mm from corner edge of board to avoid unnecessary damage due to structural movement. Use No. 6 drywall screws
- ❹ PROMASEAL®-A Acrylic Sealant
- ❺ Backing rod
- ❻ Rondo P35 or equivalent control joint profile
- ❼ Finish surface as per external angles
- ❽ Caulk all perimeter gaps with PROMASEAL®-A Acrylic Sealant to achieve the required fire resistance and/or acoustic performance
- ❾ Perforated locating wing

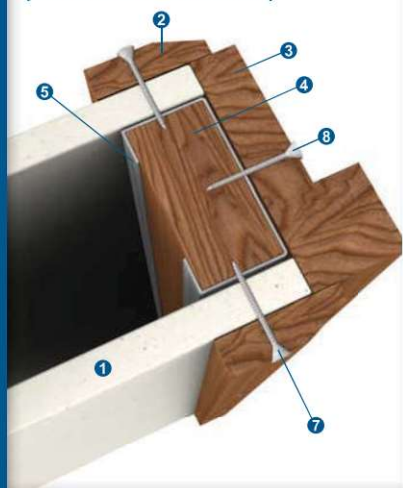




- 1 Boxed studs either side of openings, the studs need to be fixed rigidly top and bottom
- 2 Horizontal noggings
- 3 Stud track

- 4 Expansion bolt at 600mm centres
- 5 No.8 wafer head screws 16mm long or 3mm steel pop rivets

Installation of door jamb details  
(with timber reinforcement)



Installation of door jamb details  
(with boxed steel stud)

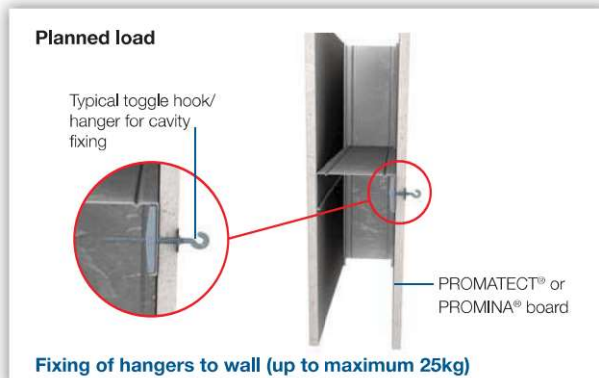
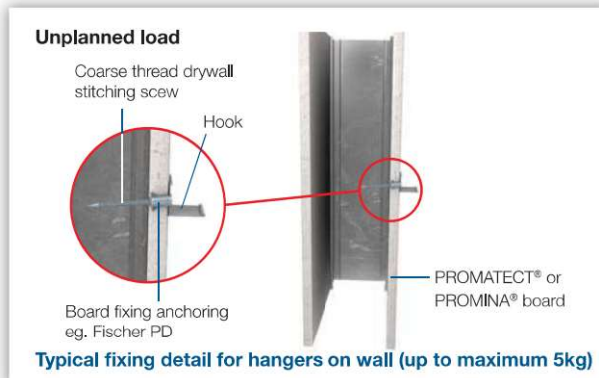


- 1 PROMATECT® or PROMINA® board
- 2 Timber architrave
- 3 Timber door jamb
- 4 Timber studs as reinforcement
- 5 Steel stud
- 6 Steel stud boxed
- 7 Screw fixing (nominal 300mm centres)
- 8 Screw fixing (nominal 500mm centres)
- 9 Screw fixing (nominal 200mm centres)
- 10 Edge metal profile

### Planned and unplanned loads

PROMATECT® and PROMINA® drywalls facilitate easy fixing of most type of loads or fixtures which can be attached either pre or post installation of the PROMATECT® and PROMINA® drywall system. The basic concept is that the support or special fixers/fasteners to be used will also employ the support of the framework of the drywall system. A wide range of propriety expanding fasteners are readily available to fix any load onto a PROMATECT® and PROMINA® wall or partition system. Use fasteners in accordance with to the manufacturer's recommendations.

### Details for planned and unplanned loads on PROMATECT® and PROMINA® drywalls.

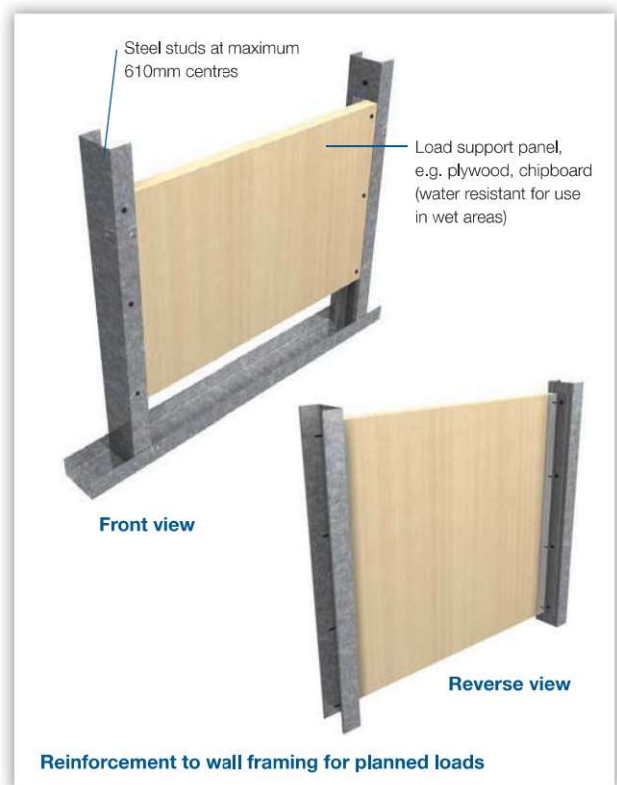
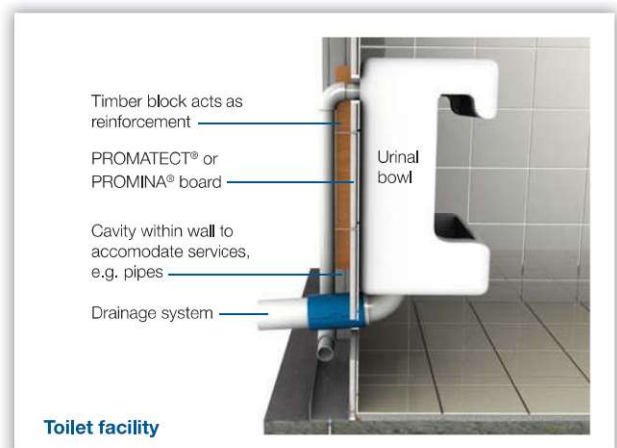
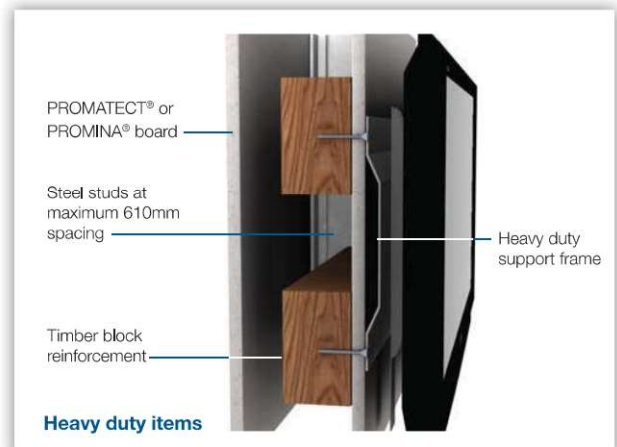


### Positioning fixtures and accessories

Most types of wall hangings such as wash basins, kitchen cabinets and shelving etc can easily be installed to PROMATECT® and PROMINA® walls or partition systems.

Typical technical details include the following:

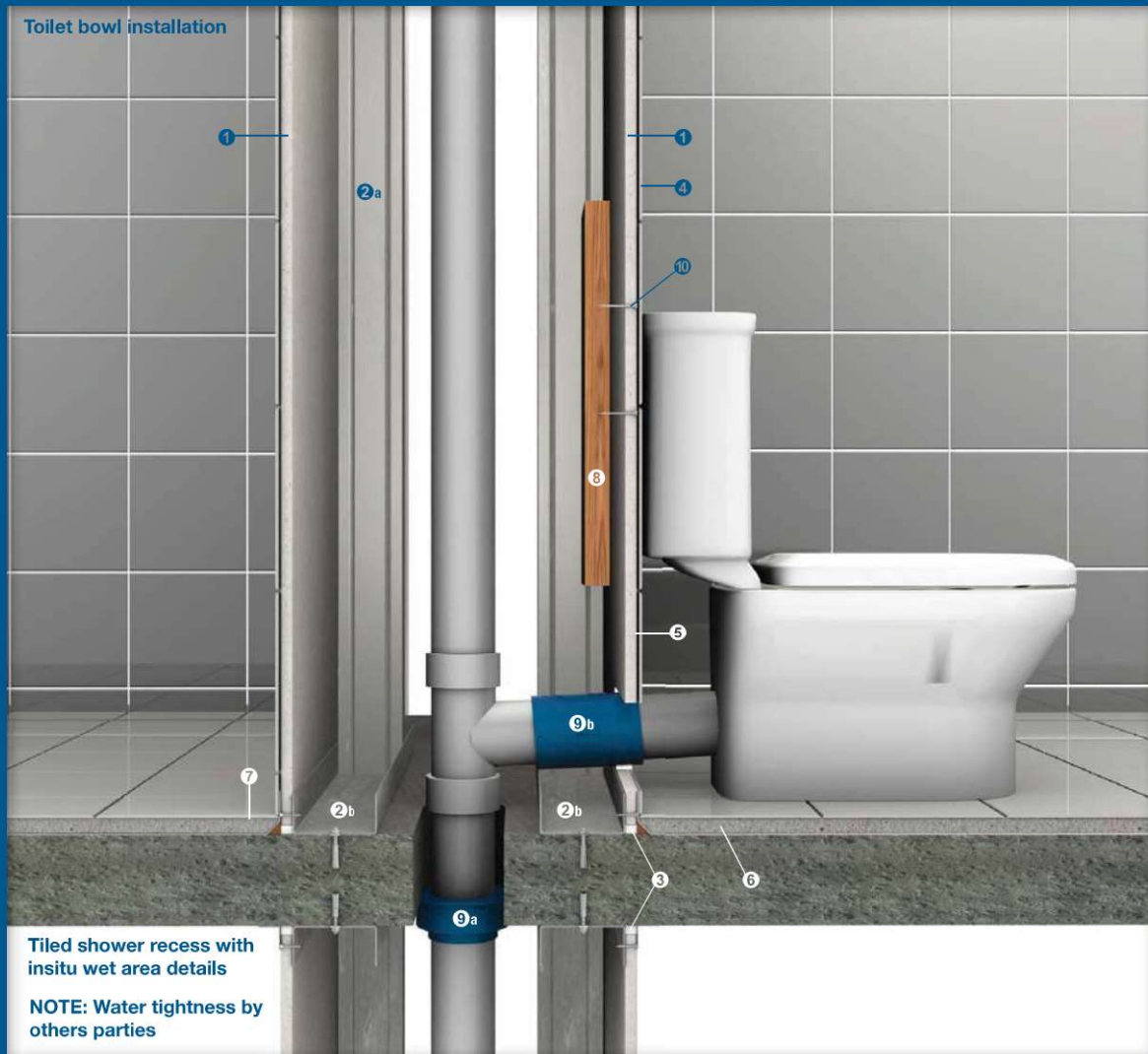
- Planned loads up to 25kg (e.g. cabinets and wash basins) can be easily added by fixing horizontal noggins made of timber members at the desired location and securing to the steel stud frame.
- Unplanned loads up to 5kg (e.g. hanging picture frames, for example) can be added by inserting the screw or cavity fixture inclined downward at the appropriate angle, as shown above.
- For planned loads up to 25kg, horizontal noggins can be fixed to the surface of the board via two additional studs and fixing the load to the strengthening horizontal noggin.
- Fittings and fixtures such as lights and switches are easily fixed to PROMATECT® and PROMINA® drywalls. Please refer to [page 19](#) for the recommendations.
- The fitting of toilet fixtures within PROMATECT® and PROMINA® wall or partition systems are fully outlined in the recommendations on [page 16](#).







Toilet bowl installation



① PROMATECT® or PROMINA® board with thickness dependant upon performance requirement

②a Steel studs, spaced at maximum 610mm centres. Studs size dependant upon performance requirement and partition height

②b Top and bottom tracks fixed to concrete substrate using anchor bolts at maximum 500mm centres. For top track, use track with minimum 35mm leg length to accomodate vertical movement of structure

③ PROMASEAL®-A Acrylic Sealant is used to fill gap and seal joints whenever necessary to maintain integrity of wall system

④ Decorative lining onto PROMATECT® or PROMINA® board  
NOTE: Installation procedures of decorative lining should be strictly in accordance with the recommendation of manufacturer/supplier

⑤ Insitu internal membrane applied to face of wall lining to prevent moisture related problems

⑥ Mortar bed prepared according to manufacturer specification to receive floor finishing e.g. tiles, etc

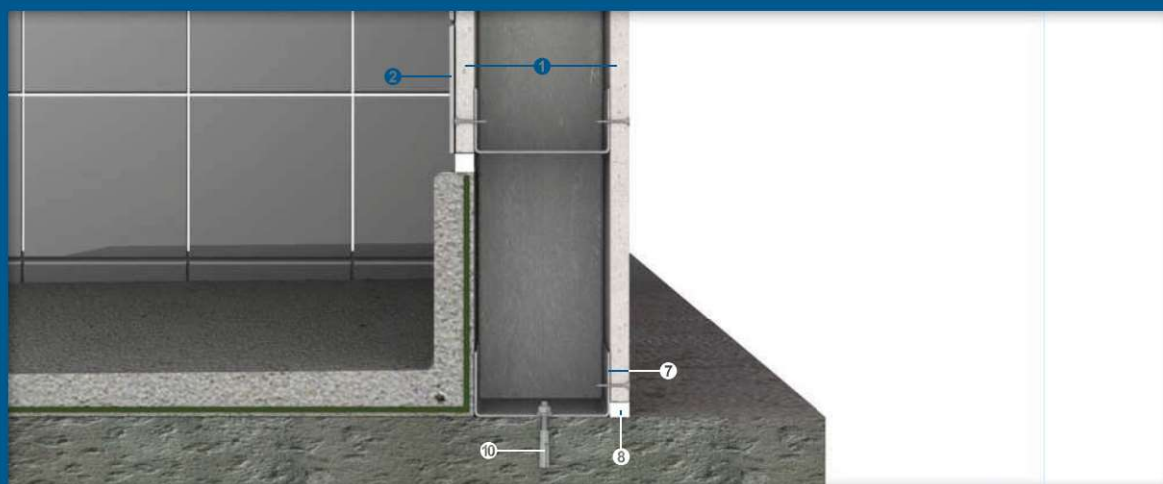
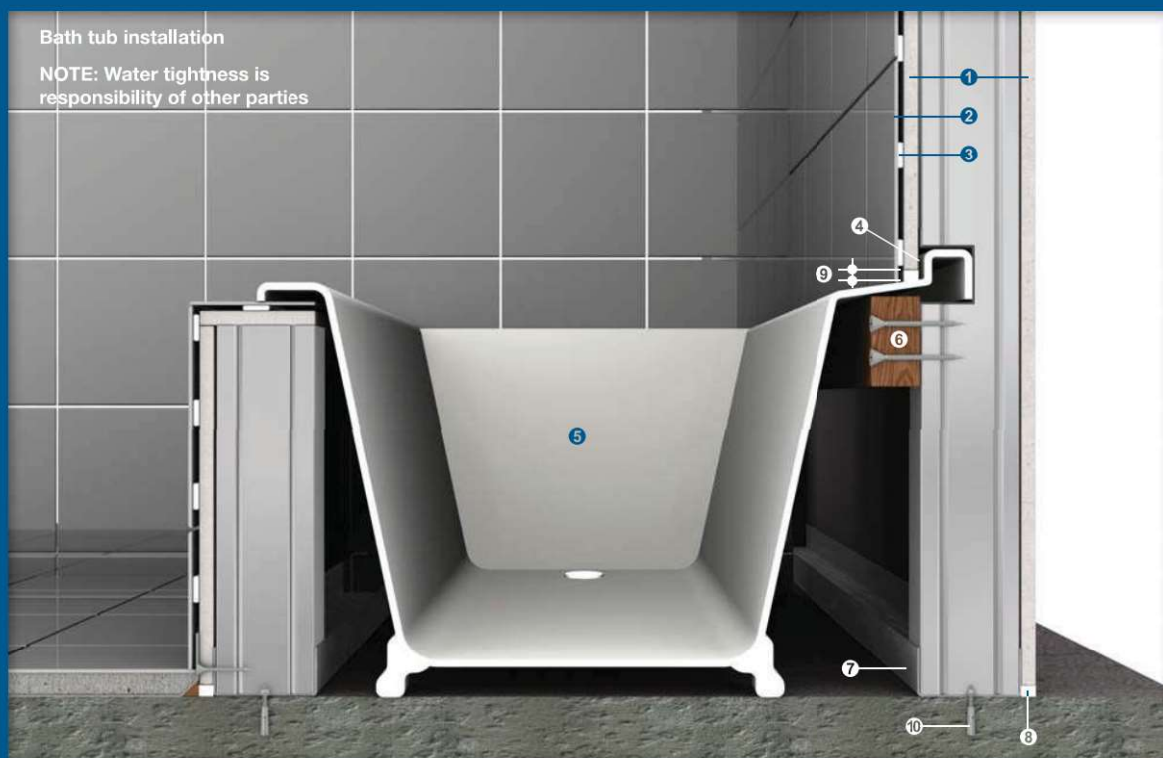
⑦ Approved flashing when required by building regulation to prevent water egress

⑧ Reinforcement material, e.g. timber plate, etc. of minimum 9mm thick to support loading

⑨a Waste pipe made of PVC, uPVC etc. protected by PROMASEAL® FC or FCS retrofit collar to maintain compartmentation during fire conditions. For option of collars please consult Promat

⑨a Plastic pipe, e.g. uPVC or PVC connection to main waste pipe protected with PROMASEAL® FCW wall collar for fire resistance application

⑩ No. 6 drywall screws fixed at maximum 200mm centres length depends upon board thickness used



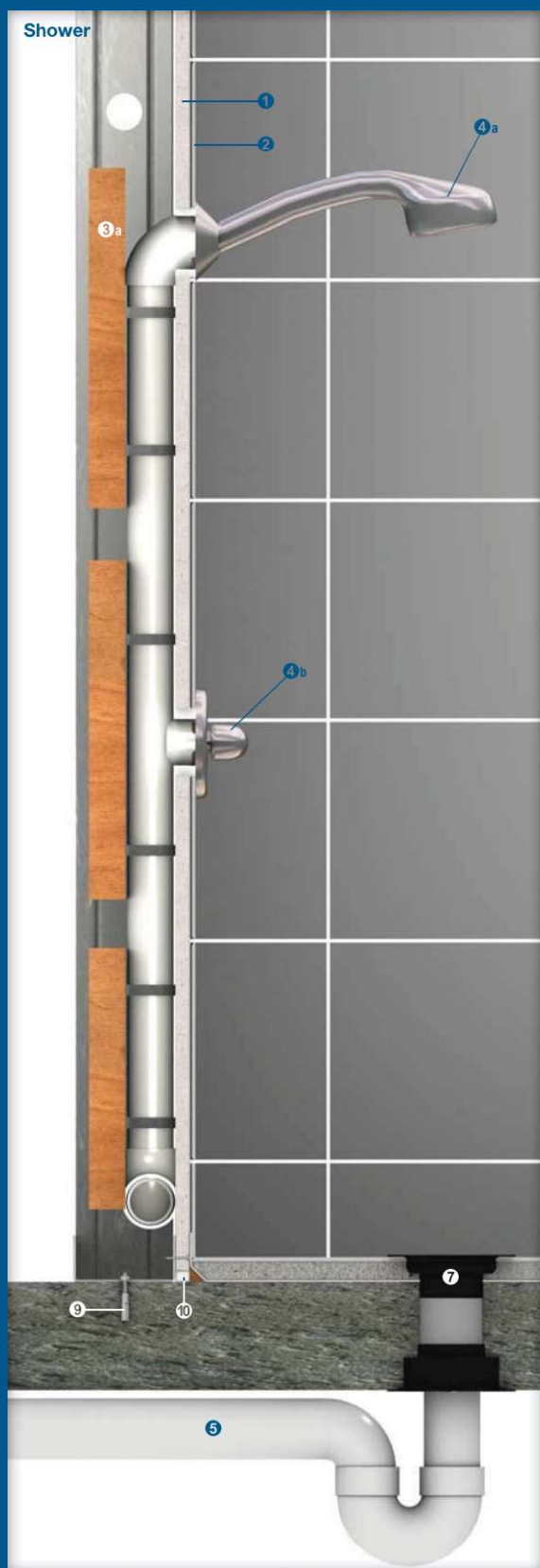
- ❶ PROMATECT® or PROMINA® board with thickness dependant upon performance requirement
- ❷ Decorative lining, e.g. ceramic or stone tiles
- ❸ Use adhesive to install decorative lining. Type of adhesive and application should strictly follow manufacturers recommendations
- ❹ Use of flashing tape to prevent water ingress
- ❺ Bath tub specified by architect or designer. Installation to be carried out according to manufacturer specification
- ❻ Supporting batten fixed to wall framing using appropriate screw fixing to secure bath tub in position

- ❼ Bottom track
- ❽ PROMASEAL®-A Acrylic Sealant
- ❾ Maximum 6mm gap is allow to accomodate fixing of bath tub. Any gap thereafter should be properly sealed with appropriate flexible sealant
- ❿ Anchor bolts bolts at maximum 500mm centres

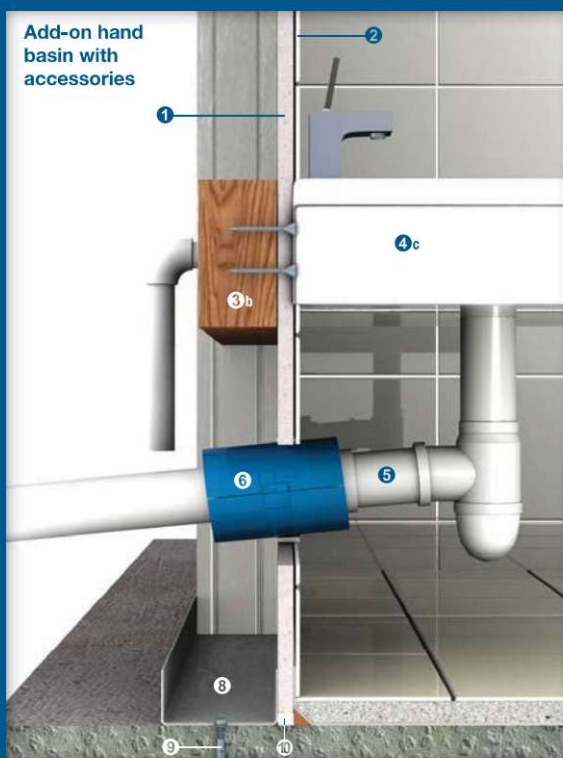




Shower



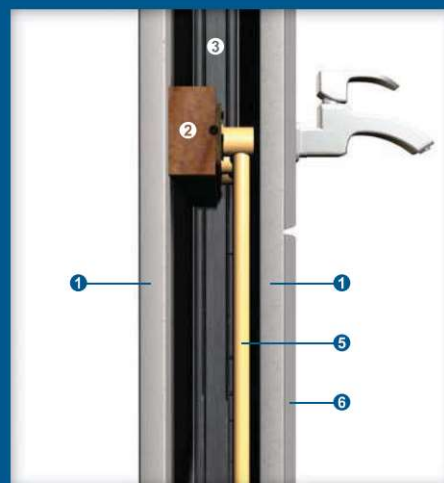
Add-on hand basin with accessories



- 1 PROMATECT® or PROMINA® board with thickness dependant upon performance requirement
- 2 Decorative lining, e.g. ceramic or stone tiles
- 3a Timber reinforcement
- 3b Timber block fixed between steel studs acting as reinforcement to support loading from basin fixture
- 4a Typical shower head (with/without handle) as specified by architect or designer
- 4b Knob to control water inlet. This is specified by architect or designer
- 4c Basin as specified by architect or designer
- 5 Water waste pipe, e.g. uPVC, etc. connecting to main sewage system
- 6 For fire protection application; PROMASEAL® FCW wall collar can be used to prevent fire spread through opening or gap. In cases where waste pipe penetrates floor slab, PROMASEAL® FC or FCS retrofit collar system may be used instead. For other option please consult Promat
- 7 PromaSnap® floor waste collar
- 8 Bottom track
- 9 Anchor bolt to concrete substrate
- 10 PROMASEAL®-A Acrylic Sealant



Typical framing details for water tap support and penetrations

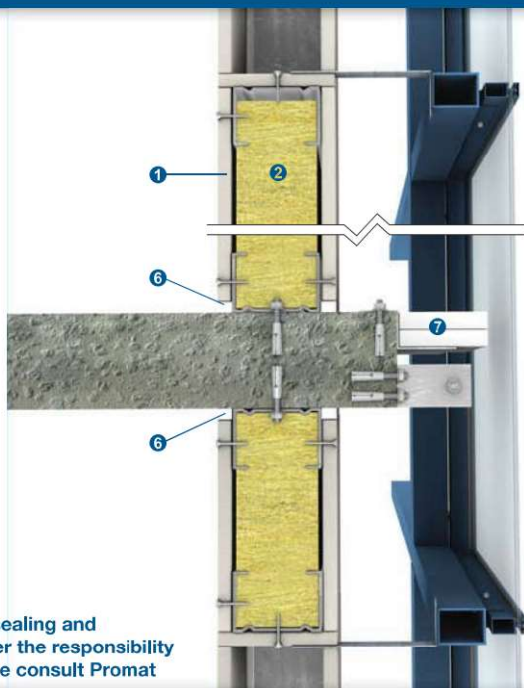


- ❶ PROMATECT® or PROMINA® board with thickness dependant upon performance requirement
- ❷ Timber supporting batten
- ❸ Steel stud
- ❹ PROMASEAL® AN Sealant for copper and steel pipes. Use PROMASEAL® Intumescent pipe collars for plastic pipes greater than 25mm in diameter
- ❺ uPVC or PVC or copper or steel pipework
- ❻ Ceramic tiles



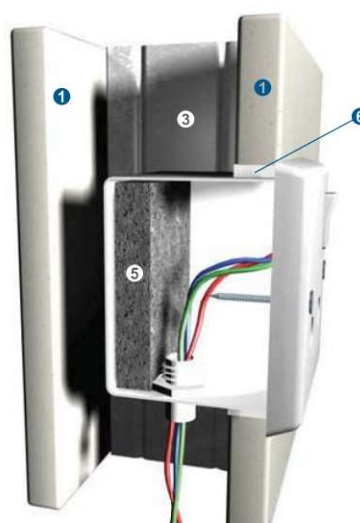
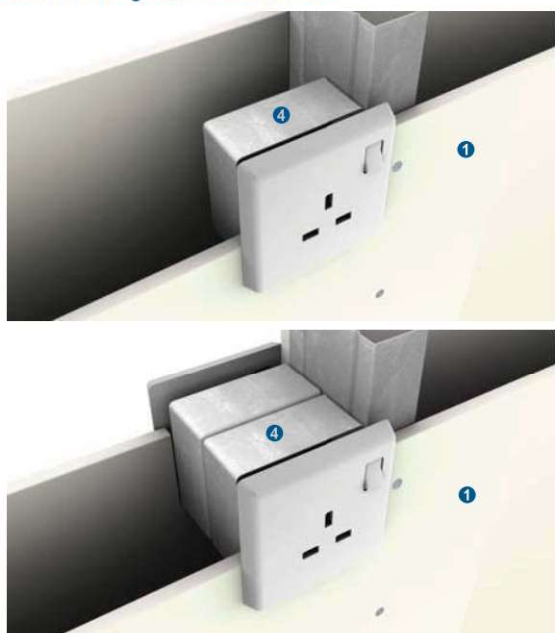


Curtain wall detail



**NOTE:** Weather tight sealing and structural design under the responsibility of other parties. Please consult Promat

Power outlet/light switch installation




**NOTE:** For fire resistant walls, steel electrical switch boxes should be employed to avoid degrading fire performance of the wall system

- ❶ PROMATECT® or PROMINA® board with thickness dependant upon performance requirement
- ❷ Insulation material enhances thermal insulation of building
- ❸ Steel studs at maximum 610mm centres. Stud size dependant upon performance requirement and partition height
- ❹ Fire resistance switchbox based upon performance. Please consult Promat

- ❺ PROMASEAL® Switchbox intumescent infill
- ❻ PROMASEAL®-A Acrylic Sealant is used to seal gap to maintain integrity of partition system
- ❼ PROMASEAL® Expansion Joint Strip



Steel stud partition type	Fire resistance performance	STC	R <sub>w</sub>	Board layer and thickness	Typical system weight	Total partition thickness	Test/Approval no.	Page no.
 PROMATECT®-H single steel stud partition (single sided)	-/240/-	27dB	27dB	1 x 9mm	* From 11.58kg/m <sup>2</sup>	From 68mm	BRE CC91456 and WF 159773 to the requirements of BS 476: Part 22: 1987	26, 27
 PROMATECT®-H single steel stud partition (double sided single layer)	-/60/60	36dB	40dB	1 x 9mm (each side)	* From 30.25kg/m <sup>2</sup>	From 86mm	WF 177939, WARRES 38435, WRCSI 23478 and PSB 54S053839/A/MW to the requirements of BS 476: Part 22: 1987 and/or AS 1530: Part 4: 2005	29, 30
	-/120/120	38dB	40dB	1 x 9mm (each side)	* From 31.91kg/m <sup>2</sup>	From 86mm		
	-/240/120	43dB	43dB	1 x 9mm (each side)	* From 36.54kg/m <sup>2</sup>	From 111mm		
 PROMATECT®-H single steel stud partition (double sided double layer)	-/240/240	56dB	55dB	2 x 9mm (each side)	* From 53.04kg/m <sup>2</sup>	From 136mm	WF 164275 and EWA 23730-01 to the requirements of BS 476: Part 22: 1987 and/or AS 1530: Part 4: 2005	31, 32
	-/360/360	56dB	57dB	2 x 12mm (each side)	* From 67.11kg/m <sup>2</sup>	From 148mm	LPC TE6371A to the requirements of BS 476: Part 22: 1987 and/or AS 1530: Part 4: 2005	

\* For partitions up to 3000mm. Stud sizes may increase for partitions above 3000mm of height. Please consult Promat.





Steel stud partition type	Fire resistance performance	STC	R <sub>w</sub>	Board layer and thickness	Typical system weight	Total partition thickness	Test/Approval no.	Page no.
 PROMATECT® 100 single steel stud partition (double sided)	-/120/120	Up to 48dB	Up to 50dB	1 x 20mm (each side)	* From 35kg/m <sup>2</sup>	From 104mm	WFRA 41088 and WFRA 45883 to the requirements of BS 476: Part 22: 1987 and/or AS 1530: Part 4: 2005	45-50
	120/120/120	Up to 48dB	Up to 50dB					
 PROMATECT® 100 double steel stud partition (double sided)	-/120/120	Up to 57dB	Up to 60dB	1 x 20mm (each side)	* From 36kg/m <sup>2</sup>	From 178mm	WFRA 41088 to the requirements of BS 476: Part 22: 1987 and AS 1530: Part 4: 2005	53, 54
 PROMINA® 60 single steel stud partition (single sided)	-/120/-	27dB	27dB	1 x 9mm	* From 11,58kg/m <sup>2</sup>	From 68mm	WF 124106 and RED I3L18 to the requirements of BS 476: Part 22: 1987 and/or AS 1530: Part 4: 2005	56, 57
 PROMINA® 60 single steel stud partition (double sided)	-/60/60	38dB	41dB	1 x 9mm (each side)	* From 20,68kg/m <sup>2</sup>	From 86mm	WARRES 58347 and BRE CC 86481 to the requirements of BS 476: Part 22: 1987 and/or AS 1530: Part 4: 2005	59, 60
	-/120/60	38dB	41dB					
	-/120/120	38dB	41dB		* From 20,18kg/m <sup>2</sup>	From 86mm	WARRES 58347, WF 165018 and BRE CC 86481 to the requirements of BS 476: Part 22: 1987	
 PROMINA® 60 single steel stud partition with gypsum plaster (double sided)	-/120/120	46dB	45dB	1 x 9mm + 1 x 15mm of gypsum plaster (each side)	* From 25,80kg/m <sup>2</sup>	From 113mm	PSB G41751/TSM and BRE CC 89767B to the requirements of BS 476: Part 22: 1987 and/or AS 1530: Part 4: 2005	62, 63



Steel stud partition type	Fire resistance performance	STC	R <sub>w</sub>	Board layer and thickness	Typical system weight	Total partition thickness	Test/Approval no.	Page no.
 PROMINA®-HD single steel stud partition with gypsum plaster (double sided)	-/60/60	43dB	43dB	1 x 6mm + 1 x 12.5mm of gypsum plaster (each side)	* From 20.57kg/m²	From 87mm	BFTC 00/02 and WF 190932 to the requirements of BS 476: Part 22: 1987	65, 66
 PROMATECT®-S single steel stud partition (single sided)	-/120/-	29dB	29dB	1 x 6mm	* From 23.89kg/m²	From 106mm	BRE CC 246885 and LPC TE83651 to the requirements of BS 476: Part 22: 1987 and/or AS 1530: Part 4: 2005	68, 69
	-/300/15	30dB	31dB	1 x 9.5mm	* From 30.80kg/m²	From 109.5mm		
 PROMATECT®-S single steel stud partition (double sided)	-/240/60	50dB	52dB	1 x 9.5mm (each side)	* From 61.17kg/m²	From 124mm	BRE CC 201034, BFTC 97/17 and LPC TE 92170 to the requirements of BS 476: Part 22: 1987 with impact resistance to the requirements of EN 1363: Part 2; 1999	70-72
	-/240/240	53dB	52dB	1 x 9.5mm (each side)	* From 95.72kg/m²	From 138mm		

Timber stud partition type	Fire resistance performance	STC	R <sub>w</sub>	Board layer and thickness	Typical system weight	Total partition thickness	Test/Approval no.	Page no.
 PROMATECT®-H timber stud partition	-/30/30	36dB	35dB	1 x 6mm (each side)	* From 20.95kg/m²	From 75mm	WFRA 45713 to the requirements of BS 476: Part 22: 1987 and/or AS 1530: Part 4: 2005	75, 76
	-/60/60	39dB	39dB	1 x 9mm (each side)	* From 27.65kg/m²	From 81mm		
	-/90/90	39dB	39dB		* From 29.41kg/m²			
	-/120/120	39dB	39dB		* From 31.89kg/m²			
 PROMATECT® 100 timber stud partition	-/120/120	Up to 35dB	Up to 39dB	1 x 20mm (each side)	* From 37kg/m²	From 130mm	BRE CC 232158A and BRE CC 232158B to the requirements of BS 476: Part 22: 1987 and/or AS 1530: Part 4: 2005	78-80
	120/120/120	Up to 35dB	Up to 39dB					

\* For partitions up to 3000mm. Stud sizes may increase for partitions above 3000mm of height. Please consult Promat.





Solid/Frameless internal partition type	Fire resistance performance	STC	R <sub>w</sub>	Board layer and thickness	Typical system weight	Total partition thickness	Test/Approval no.	Page no.
 <p>PROMATECT®-H solid/frameless internal partition</p>	-/60/60	35dB	35dB	1 x 15mm + 1 x 20mm	* From 37.18kg/m <sup>2</sup>	From 35mm	BRE CC 86480A to the requirements of BS 476: Part 22: 1987 and AS 1530: Part 4: 2005	83-86
				3 x 12mm	* From 37.85kg/m <sup>2</sup>	From 36mm		
				4 x 9mm				
	-/120/120	36dB	37dB	2 x 25mm 1 x 20mm + 2 x 15mm	* From 52.52kg/m <sup>2</sup>	From 50mm	BRE CC 224953 and BRE CC 81584A to the requirements of BS 476: Part 22: 1987 and/or AS 1530: Part 4: 2005	
 <p>PROMATECT® 100 solid/frameless internal partition</p>	-/120/120	Up to 36dB	Up to 36dB	2 x 20mm	* From 34kg/m <sup>2</sup>	40mm	BRE CC 232158A and BRE CC 232158B to the requirements of BS 476: Part 22: 1987 and/or AS 1530: Part 4: 2005	94, 95
Shaft wall type	Fire resistance performance	STC	R <sub>w</sub>	Board layer and thickness	Typical system weight	Total wall thickness	Test/Approval no.	Page no.
 <p>PROMINA® 60 shaft wall</p>	-/60/60	40dB	42dB	1 x 9mm (each side)	* From 37.12kg/m <sup>2</sup>	From 165mm	BFTC 01/73A and WF 167483 to the requirements of BS 476: Part 22: 1987	100-102
	-/120/120	40dB	42dB		* From 47.77kg/m <sup>2</sup>	From 174mm		

\* For partitions/walls up to 3000mm, Stud sizes may increase for partitions/walls above 3000mm of height. Please consult Promat.



Conversion of external to internal wall type	Fire resistance performance	STC	R <sub>w</sub>	Board layer and thickness	Typical system weight	Total wall thickness	Test/Approval no.	Page no.
 PROMATECT®-H conversion of external to internal wall	-/30/30	37dB	37dB	1 x 9mm (each side)	* From 23.72kg/m <sup>2</sup>	From 238mm	WARRES 38396 and BRE CC 231705 to the requirements of BS 476: Part 22: 1987 and/or AS 1530: Part 4: 2005	104, 105
	-/60/60	37dB	37dB		* From 25.56kg/m <sup>2</sup>			
	-/120/120	37dB	37dB		* From 31.22kg/m <sup>2</sup>			
External wall type	Fire resistance performance	STC	R <sub>w</sub>	Board layer and thickness	Typical system weight	Total wall thickness	Test/Approval no.	Page no.
 PROMATECT®-H external wall (single sided protection)	-/240/15	From 40dB	From 39dB	1 x 9mm	* From 13.43kg/m <sup>2</sup>	From 215mm	BRE CC 231704 to the requirements of BS 476: Part 22: 1987 and AS 1530: Part 4: 2005	107, 108
 PROMATECT®-H external wall (double sided protection)	-/30/30	38dB	38dB	1 x 9mm (each side)	* From 23.72kg/m <sup>2</sup>	From 242mm	BRE CC 231705 to the requirements of BS 476: Part 22: 1987 and AS 1530: Part 4: 2005	110, 111
	-/60/60	47dB	46dB		* From 25.56kg/m <sup>2</sup>			
	-/120/120	48dB	47dB		* From 29.22kg/m <sup>2</sup>			
 PROMINA® 60 external wall (single sided protection)	-/240/15	39dB	39dB	1 x 9mm (each side)	14.78kg/m <sup>2</sup>	Depends upon purlin dimension	LPC TE 83997 to the requirements of BS 476: Part 22: 1987 and AS 1530: Part 4: 2005	113, 114

\* For walls up to 3000mm. Stud sizes may increase for walls above 3000mm of height. Please consult Promat.



### Fire attack from board side / Non loadbearing



Fire resistance	FRL	~240/-
	STANDARD	BS 476: Part 22: 1987
	APPROVAL	BRE OC91456 WF 159773
Acoustic	# STC # R <sub>w</sub>	27dB 27dB
	STANDARD	ISO 140: Part 3: 1996 ISO 717: Part 1: 1996
	PREDICTED ASSESSMENT	Marshall Day 18th October 2006
Construction	MAXIMUM HEIGHT*	12000mm
	MAXIMUM LENGTH	Unlimited
	PARTITION THICKNESS	Nominal 68mm
	PARTITION MASS*	From 11.58kg/m <sup>2</sup> (for one layer) From 20.44kg/m <sup>2</sup> (for two layers)

# Margin of error is generally within ±3dB

\* Details for walls above 3000mm high are available on request

- One layer of PROMATECT®-H board 9mm thick at one side of wall for heights up to 6000mm or two layers of PROMATECT®-H board 9mm thick each for heights up to 12000mm. If using two layer system, stagger all joints minimum 610mm
- Galvanised steel studs, measurements in accordance with Studs Tables 1~2 below, vertical studs at maximum 610mm centres (allow appropriate expansion at top horizontal track, no allowance at this track for loadbearing purposes)
- 40mm long M6 masonry anchors at nominal 500mm centres
- Caulk all perimeter gaps with PROMASEAL® AN Fire Resistant Acrylic Sealant to achieve stated fire and/or acoustic performance
- 25mm long self-tapping screws at nominal 200mm centres for first layer board, and 35mm long self-tapping screws at nominal 200mm centres for second layer board

Studs Table 1: Single layer for heights up to 5000mm – Partitions lined with one layer of 9mm thick PROMATECT®-H using studs at 610mm centres

Maximum partition height	Stud depth	Minimum stud thickness	Maximum partition thickness	Top track	Clearance at top track
4000mm	50mm	0.6mm	59mm	52mm x 35mm x 0.6mm	20mm
5000mm	50mm	0.9mm	59mm	52mm x 45mm x 1.0mm	25mm
6000mm	50mm	1.2mm	59mm	52mm x 50mm x 1.0mm	30mm
7000mm	50mm	1.2mm	59mm	52mm x 55mm x 1.0mm	35mm

9mm thick PROMATECT®-H boards will be screw fixed to the frame with 25mm self-tapping screws at 200mm nominal centres

Studs Table 2: Double layer for heights up to 12000mm – Partitions lined with two layers of 9mm thick PROMATECT®-H using studs at 610mm centres

Maximum partition height	Stud depth	Stud flange	Minimum stud thickness	Maximum partition thickness	Top track	Clearance at top track
4000mm	50mm	38mm	0.6mm	68mm	52mm x 40mm x 0.6mm	24mm
5000mm	50mm	50mm	1.2mm	68mm	52mm x 45mm x 1.2mm	30mm
6000mm	65mm	50mm	1.2mm	68mm	67mm x 55mm x 1.2mm	36mm
7000mm	65mm	50mm	2.0mm	83mm	65mm x 60mm x 2.0mm	42mm
8000mm	75mm	50mm	2.5mm	93mm	75mm x 70mm x 2.5mm	48mm
10000mm	100mm	50mm	2.5mm	118mm	100mm x 85mm x 2.5mm	60mm
11000mm*	100mm	50mm	2.0mm	118mm	100mm x 100mm x 2.0mm	66mm
12000mm*	100mm	50mm	3.0mm	118mm	100mm x 100mm x 3.0mm	72mm

9mm thick PROMATECT®-H boards will be screw fixed to the frame with self-tapping screws at nominal 200mm centres, 25mm long for first layer board and 35mm long for second layer

### Vertical sheeting (single sided) / Non loadbearing



- ① One layer of PROMATECT®-H board 9mm thick at one side of wall for heights up to 6000mm or two layers of PROMATECT®-H board 9mm thick each for heights up to 12000mm. If using two layer system, stagger all joints minimum 610mm
- ② Galvanised steel studs, measurements in accordance with Studs Tables 1~2 on page 26, vertical studs at maximum 610mm centres (allow appropriate expansion at top horizontal track, no allowance at this track for loadbearing purposes)
- ③ 40mm long M6 masonry anchors at nominal 500mm centres
- ④ Caulk all perimeter gaps with PROMASEAL® AN Fire Resistant Acrylic Sealant to achieve stated fire and/or acoustic performance
- ⑤ 25mm long self-tapping screws at nominal 200mm centres for first layer board, and 35mm long self-tapping screws at nominal 200mm centres for second layer board

See page 5 for bottom and top track fixings; pages 9 to 13 for details of wall head, wall base, wall junction and wall movement joints



The following are standard Architectural Specifications for single steel stud partition systems using PROMATECT®-H. The designer must determine the suitability of the design to the application and requirements before undertaking or constructing any works relating to the specifications and where in doubt should obtain the advice of a suitably qualified engineer.

### Fire Attack From Board Side / Non Loadbearing

Up to 240 minutes fire resistance, Integrity only in accordance with the criteria of BS 476: Part 22: 1987.

### Acoustic Performance

The partition system shall have a Weighted Sound Reduction Index of  $R_w$  27.

### Supporting Structure

Care should be taken that any structural element to which the partition system is affixed, e.g. structural steel or concrete/brick wall, has a fire resistance equal to or greater than 240 minutes.

### Lining Boards

Single layer of 9mm thick PROMATECT®-H matrix engineered mineral boards as manufactured by Promat International (Asia Pacific) Ltd. All joints to be coincident with steel framing sections. Standard board dimension 1220mm x 2440mm x 9mm thick.

Double layer of 9mm thick PROMATECT®-H matrix engineered mineral boards as manufactured by Promat International (Asia Pacific) Ltd. Stagger joints by at least 300mm at both layers. Standard board dimension 1220mm x 2440mm x 9mm thick.

### Fixing

Galvanised steel frame made of ceiling and floor tracks will be secured to the floor, ceiling and walls with 40mm long M6 masonry anchors at 500mm centres. Vertical steel studs are then friction fitted into the tracks at 610mm maximum centres for boards to be installed vertically or horizontally.

### Studs Table 1: Single layer for heights up to 5000mm

Partitions lined with one layer of 9mm thick PROMATECT®-H using studs at 610mm centres.

Maximum partition height	Stud depth	Minimum stud thickness	Maximum partition thickness	Top track	Clearance at top track
4000mm	50mm	0.6mm	59mm	52mm x 35mm x 0.6mm	20mm
5000mm	50mm	0.9mm	59mm	52mm x 45mm x 1.0mm	25mm
6000mm	50mm	1.2mm	59mm	52mm x 50mm x 1.0mm	30mm
7000mm	50mm	1.2mm	59mm	52mm x 55mm x 1.0mm	35mm

9mm thick PROMATECT®-H boards will be screw fixed to the frame with 25mm self-tapping screws at 200mm nominal centres.

### Studs Table 2: Double layer for heights up to 12000mm

Partitions lined with two layers of 9mm thick PROMATECT®-H using studs at 610mm centres.

Maximum partition height	Stud depth	Stud flange	Minimum stud thickness	Maximum partition thickness	Top track	Clearance at top track
4000mm	50mm	38mm	0.6mm	68mm	52mm x 40mm x 0.6mm	24mm
5000mm	50mm	50mm	1.2mm	68mm	52mm x 45mm x 1.2mm	30mm
6000mm	65mm	50mm	1.2mm	68mm	67mm x 55mm x 1.2mm	36mm
7000mm	65mm	50mm	2.0mm	83mm	65mm x 60mm x 2.0mm	42mm
8000mm	75mm	50mm	2.5mm	93mm	75mm x 70mm x 2.5mm	48mm
10000mm	100mm	50mm	2.5mm	118mm	100mm x 85mm x 2.5mm	60mm
11000mm*	100mm	50mm	2.0mm	118mm	100mm x 100mm x 2.0mm	66mm
12000mm*	100mm	50mm	3.0mm	118mm	100mm x 100mm x 3.0mm	72mm

9mm thick PROMATECT®-H boards will be screw fixed to the frame with self-tapping screws at nominal 200mm centres, 25mm long for first layer board and 35mm long for second layer.

### Tests & Standards

The complete system along with the material and framing and approval for a performance is tested in accordance with the relevant criteria of BS 476: Part 22: 1987. The partition system should meet the requirements as specified under Clause 5.

### Jointing

Plain butt joints between machined edges of boards. <sup>(1)</sup>

Joints filled in preparation for painting. <sup>(2)</sup>

Joints filled and taped in preparation for decoration. <sup>(3)</sup>

### Follow-on Trades

Surface of boards to be prepared for painting/plastering/tiling<sup>(4)</sup> in accordance with manufacturer's recommendations.

### NOTES:

- <sup>(1)</sup>, <sup>(2)</sup>, <sup>(3)</sup>, <sup>(4)</sup> delete as appropriate.
- All perimeter gaps caulked with PROMASEAL®-A Acrylic Sealant.

## Fire attack from both sides / Non loadbearing



Fire resistance	FRL	-/60/60 -/120/120 -/240/120
	STANDARD	BS476: Part 22: 1987 AS1530: Part 4: 2005
	APPROVAL	WF177939 WARRES 38435 WRCSI 23478 PSB 54S053839/A/MW
Acoustic	# STC	38dB (-/60/60) (-/120/120) 43dB (-/240/120)
	# R <sub>w</sub>	40dB (-/60/60) (-/120/120) 43dB (-/240/120)
	STANDARD	ISO140: Part 3: 1996 ISO717: Part 1: 1996
	PREDICTED ASSESSMENT	Marshall Day 18th October 2006
Construction	MAXIMUM HEIGHT*	12000mm
	MAXIMUM LENGTH	Unlimited
	PARTITION THICKNESS	Nominal 86mm (-/60/60) Nominal 86mm (-/120/120) Nominal 111mm (-/240/120)
	PARTITION MASS*	From 30.25kg/m² (-/60/60) From 31.91kg/m² (-/120/120) From 36.54kg/m² (-/240/120)

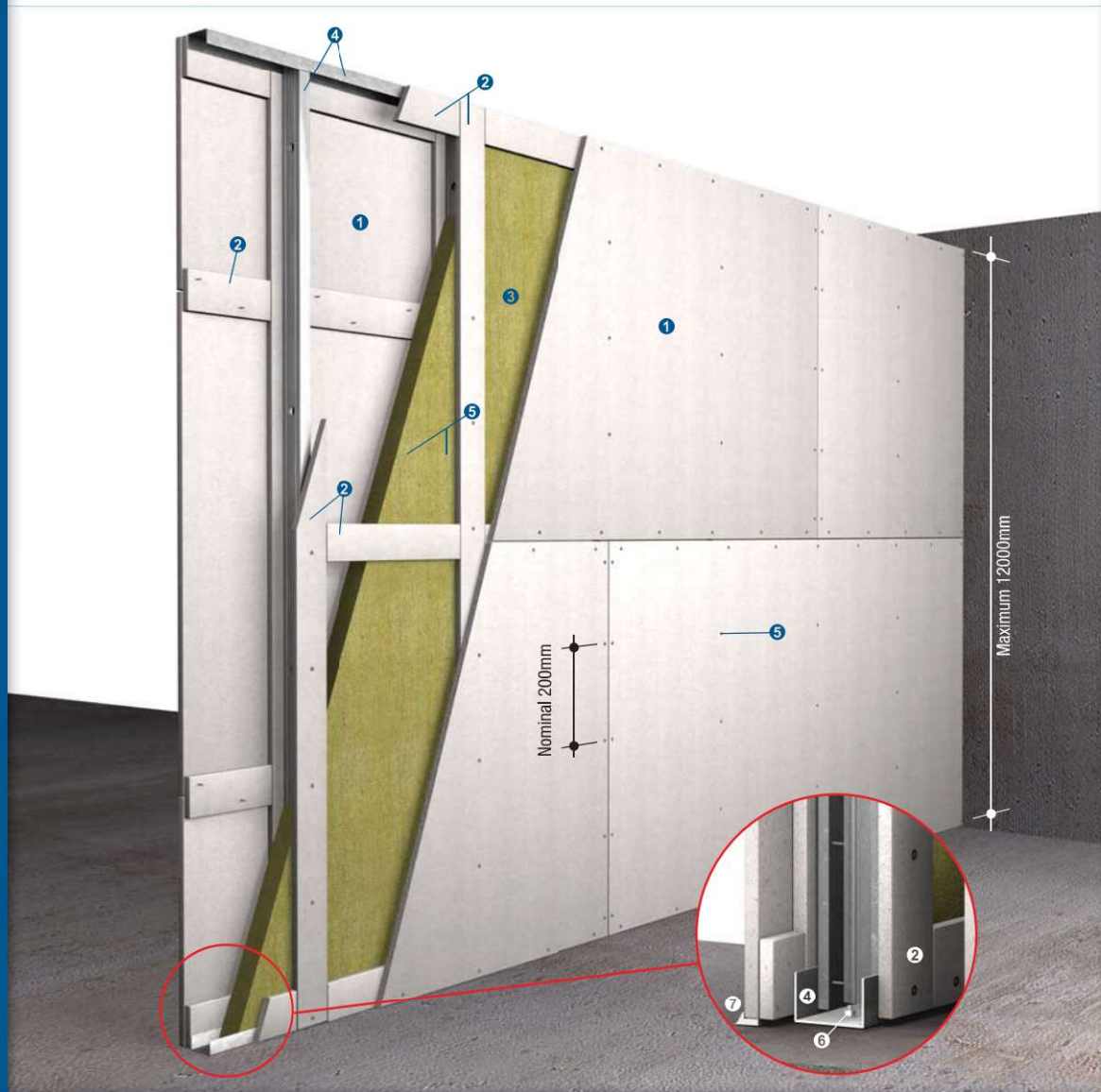
# Margin of error is generally within  $\pm 3$ dB

\* Details for walls above 3000mm high are available on request

- ❶ 9mm thick PROMATECT®-H board at each side of the partition
- ❷ 100mm x 9mm thick PROMATECT®-H cover strips, fixed to steel studs using 25mm long self-tapping screws at nominal 500mm centres
- ❸ Mineral wool infill to cavity between boards (see page 30 for different fire resistance requirements)
- ❹ Galvanised steel studs, measurements in accordance with Studs Tables 1~2 on pages 33 and 34 (allow appropriate expansion at top horizontal track, no allowance at this track for loadbearing purposes)
- ❺ 32mm long self-tapping screws at nominal 200mm centres
- ❻ 40mm long M6 masonry anchors at nominal 500mm centres
- ❼ Caulk all perimeter gaps with PROMASEAL®-A Acrylic Sealant to achieve the required fire resistance and/or acoustic performance



## Horizontal sheeting with strip joint (single layer) / Non loadbearing



- ❶ 9mm thick PROMATECT®-H board at each side of the partition
  - ❷ 100mm x 9mm thick PROMATECT®-H cover strips, fixed to steel studs using 25mm long self-tapping screws at nominal 500mm centres
  - ❸ Mineral wool:  
One layer of 50mm x 60kg/m³, 60mm x 40kg/m³ or 80mm x 30kg/m³ mineral wool for up to -/60/60 fire resistance  
One layer of 50mm x 150kg/m³ or 75mm x 100kg/m³ for up to -/120/120 fire resistance  
One layer of 75mm x 100kg/m³ or 2 layers of 40mm + 30mm x 100kg/m³ for up to -/240/120 fire resistance
  - ❹ Galvanised steel studs, measurements in accordance with Studs Tables 1~2 on page 33 and 34 (allow appropriate expansion at top horizontal track, no allowance at this track for loadbearing purposes)
  - ❺ 32mm long self-tapping screws at nominal 200mm centres
  - ❻ 40mm long M6 masonry anchors at nominal 500mm centres
  - ❼ Caulk all perimeter gaps with PROMASEAL®-A Acrylic Sealant to achieve the required fire resistance and/or acoustic performance
- See page 5 for bottom and top track fixings; pages 9 to 13 for details of wall head, wall base, wall junction and wall movement joints

## Fire attack from both sides / Non loadbearing



Fire resistance	FRL	-/240/240 -/360/360
	STANDARD	BS476: Part 22: 1987 AS1530: Part 4: 2005
	APPROVAL	WF164275 LPC TE6371A EWA 23730-01
Acoustic	# STC	56dB (-/240/240) 56dB (-/360/360)
	# R <sub>w</sub>	55dB (-/240/240) 57dB (-/360/360)
	STANDARD	ISO140: Part 3: 1996 ISO717: Part 1: 1996
Construction	PREDICTED ASSESSMENT	Marshall Day 18th October 2006
	MAXIMUM HEIGHT*	12000mm
	MAXIMUM LENGTH	Unlimited
	PARTITION THICKNESS	Nominal 136mm (-/240/240) Nominal 148mm (-/360/360)
	PARTITION MASS*	From 53.04kg/m² (-/240/240) From 67.11kg/m² (-/360/360)

# Margin of error is generally within  $\pm 3$ dB

\* Details for walls above 3000mm high are available on request

- ❶ Two layers of PROMATECT®-H at both sides of steel studs, all joints should be staggered minimum 610mm in both directions, thickness refer to table below

Fire resistance	Board thickness
-/240/240	9mm
-/360/360	12mm

- ❷ Galvanised steel studs, measurements in accordance with Studs Tables 1~2 on page 33 and 34 (allow appropriate expansion at top horizontal track, no allowance at this track for loadbearing purposes), refer to table below for the distance between stud
- ❸ Mineral wool infill to cavity between boards (see page 32 for different fire resistance requirements)
- ❹ 25mm long self-tapping screws at nominal 300mm centres for first layer board and 38mm self-tapping screws at nominal 300mm centres for second layer board. Joints do need not to coincide with studs, joints in second layer not coinciding with studs stitched to first layer using 25mm long laminating screws at nominal 300mm centres
- ❺ 60mm long M6 masonry anchors at nominal 500mm centres
- ❻ Caulk all perimeter gaps with PROMASEAL®-A Acrylic Sealant to achieve the required fire resistance and/or acoustic performance



## Vertical sheeting (double layer) / Non loadbearing



- ① Two layers of PROMATECT®-H at both sides of steel studs, all joints should be staggered minimum 610mm in both directions, thickness refer to table below

Fire resistance	Board thickness	Mineral wool density x thickness
-/240/240	9mm	100mm x 100kg/m³ or Two layers of 50mm x 100kg/m³
-/360/360	12mm	50mm x 110kg/m³

- ② Two layers of mineral wool, with the slab joints staggered minimum 300mm between layers in both directions. When the web dimension of the studs is increased, the thickness of the mineral wool must be similarly increased to fill the cavity. Alternatively, mineral wool of minimum 125mm x 80kg/m³ thick or minimum 150mm x 70kg/m³ thick may be used, refer to table above
- ③ Galvanised steel studs, measurements in accordance with Studs Tables 1~2 on page 33 and 34 (allow appropriate expansion at top horizontal track, no allowance at this track for loadbearing purposes), refer to table below for the distance between stud
- ④ 25mm long self-tapping screws at nominal 300mm centres for first layer board and 38mm long self-tapping screws at nominal 300mm centres for second layer board. Joints do need not to coincide with studs, joints in second layer not coinciding with studs stitched to first layer using 25mm long laminating screws at nominal 300mm centres
- ⑤ Caulk all perimeter gaps with PROMASEAL®-A Acrylic Sealant to achieve the required fire resistance and/or acoustic performance

See page 5 for bottom and top track fixings; pages 9 to 13 for details of wall head, wall base, wall junction and wall movement joints

The following are standard Architectural Specifications for single steel stud partition systems using PROMATECT®-H. The designer must determine the suitability of the design to the application and requirements before undertaking or constructing any works relating to the specifications and where in doubt should obtain the advice of a suitably qualified engineer.

### Fire Attack From Both Sides / Non Loadbearing

Up to \_\_\_\_\_ minute<sup>(1)</sup> fire resistance, integrity and \_\_\_\_\_ minute<sup>(2)</sup> insulation in accordance with the criteria of BS 476: Part 22: 1987 and/or AS1530: Part 4: 2005<sup>(3)</sup>.

### Acoustic Performance

The partition system shall have a Weighted Sound Reduction Index of  $R_w$  \_\_\_\_\_<sup>(4)</sup>.

### Supporting Structure

Care should be taken to ensure that any structural element by which the partition system is supported, e.g. concrete/brick wall, has a fire resistance equal to or greater than \_\_\_\_\_ minutes<sup>(1)</sup>.

### Lining Boards

For 60 and 120 minutes of fire resistance, single layer of 9mm thick PROMATECT®-H matrix engineered mineral boards as manufactured by Promat International (Asia Pacific) Ltd.

For 240 minutes of fire resistance, two layers of 9mm thick PROMATECT®-H matrix engineered mineral boards as manufactured by Promat International (Asia Pacific) Ltd.

For 360 minutes of fire resistance, two layers of 12mm thick PROMATECT®-H matrix engineered mineral boards as manufactured by Promat International (Asia Pacific) Ltd.

Standard board dimension 1220mm x 2440mm x 9mm or 12mm<sup>(3)</sup> thick.

### Fixing

Galvanised steel frame made of ceiling and floor tracks will be secured to the floor, ceiling and walls with 60mm long M6 masonry anchors at 500mm centres. Vertical steel studs are then friction fitted into the tracks at 610mm or 900mm maximum centres for boards to be installed vertically or horizontally.

Adequate clearance for vertical expansion will be allowed at the ceiling or top track. No clearance is necessary at the bottom track. See the following tables for steel size and clearance at top track for given partition height.

**Studs Table 1** Up to -/60/60 or -/120/120 fire resistance in accordance with the requirements of BS 476: Part 22: 1987 and/or AS 1530: Part 4: 2005<sup>(3)</sup>

Single layer 9mm thick PROMATECT®-H board fixed at either side of the stud at 610mm centres									
Galvanised steel stud		Maximum partition height for stud thickness of							
Web	Flange	0.6mm	0.8mm	1mm	1.2mm	1.5mm	2mm	2.5mm	3mm
50	38	3100mm	3400mm	3700mm	3900mm	4200mm	—	—	—
50	50	3200mm	3500mm	3800mm	4000mm	4300mm	—	—	—
65	50	4800mm	5200mm	5600mm	6000mm	6400mm	7000mm	7400mm	7800mm
75	50	5400mm	5900mm	6400mm	6700mm	7200mm	7900mm	8400mm	8800mm
100	50	7000mm	7600mm	8200mm	8600mm	9200mm	10000mm	10700mm	11200mm
100*	50*	—	—	—	—	11200mm	12000mm	12000mm	12000mm

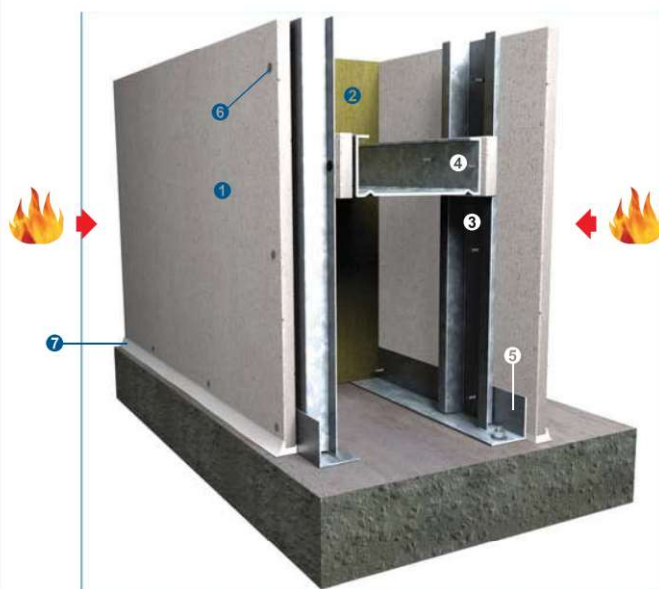
\*Back to back studs

The dimension of the web of the top and bottom track channels must be the necessary width to match the size of the studs.

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### Fire attack from both sides / Non loadbearing



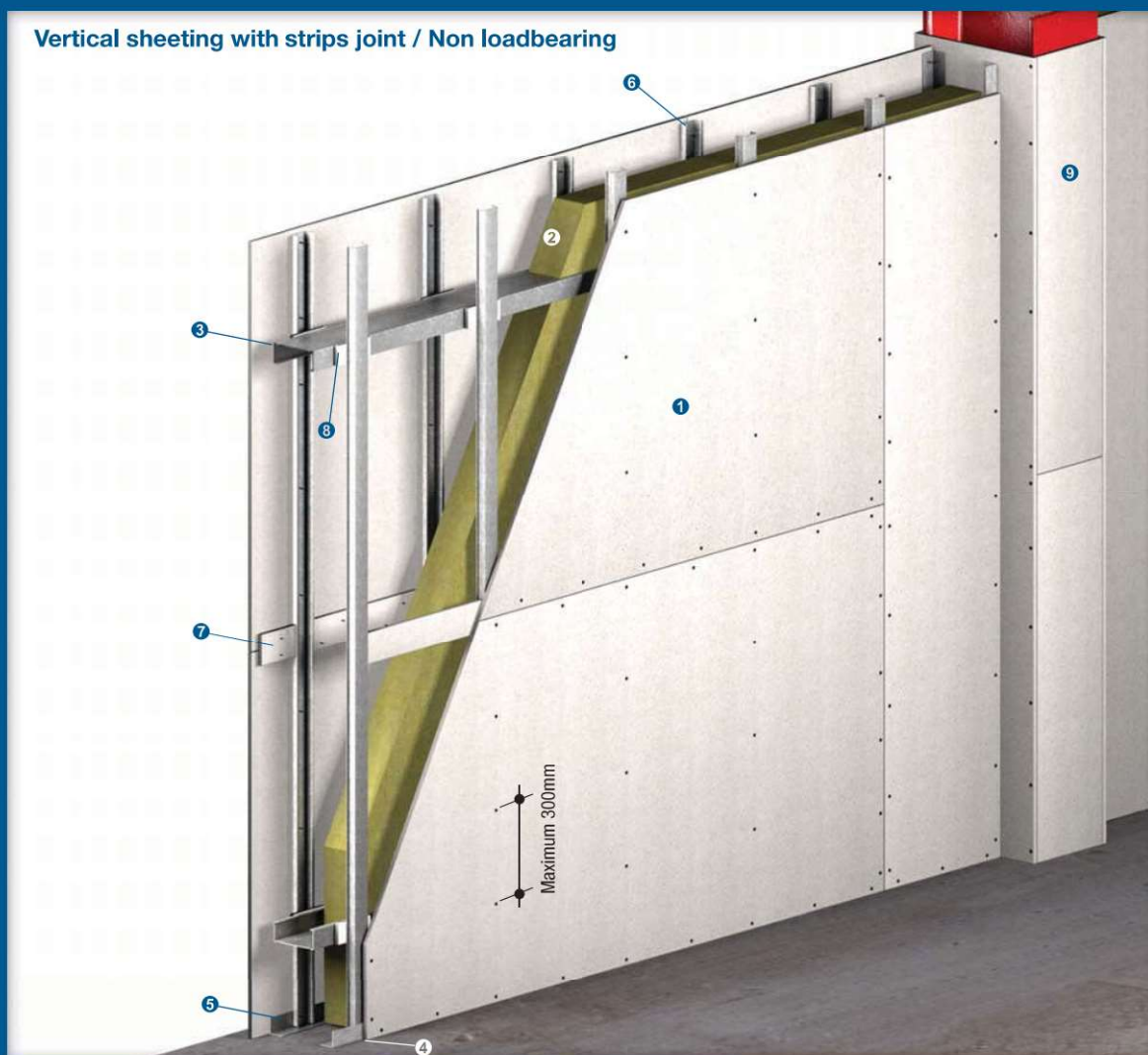
Fire resistance	FRL	~ /30/30 ~ /60/60 ~ /120/120
	STANDARD	BS476: Part 22: 1987 AS1530: Part 4: 2005
	APPROVAL	WARRES 38396 BRE CC 231705
Acoustic	# STC # R <sub>w</sub>	37dB 37dB (-7)
	STANDARD	ISO140: Part 3: 1996 ISO717: Part 1: 1996
	PREDICTED ASSESSMENT	Marshall Day 18th October 2006
Construction	MAXIMUM LENGTH	Unlimited
	PARTITION THICKNESS	From 238mm
	PARTITION MASS*	From 23.72kg/m² (~ /30/30) From 25.56kg/m² (~ /60/60) From 31.22kg/m² (~ /120/120)

# Margin of error is generally within  $\pm 3$ dB

\* Details for walls above 3000mm high are available on request

- 1 One layer of PROMATECT®-H board 9mm thick
- 2 Mineral wool where applicable
- 3 Steel top hat sections approximately 26mm x 80mm x 0.56mm thick. Width of face to which boards are fixed should be minimum 50mm. Secure top hats at 610mm centres to every rail using two steel fixings per rail
- 4 Horizontal sheeting rail at maximum 1800mm centres, first layer of PROMATECT®-H filler strip 100mm x 9mm thick x depth of the sheeting rail fixed to the rail at the location of the top hat sections
- 5 Perimeter steel angle, 50mm x 25mm x 0.56mm thick or similar secured to wall or floor using 40mm long M6 masonry anchors at 500mm centres
- 6 25mm long No. 8 self-tapping screws at nominal 300mm centres
- 7 Caulk all perimeter gaps with PROMASEAL®-A Acrylic Sealant to achieve the required fire resistance and/or acoustic performance

### Vertical sheeting with strips joint / Non loadbearing



- 1 One layer of PROMATECT®-H board, 9mm thick at each side of wall
- 2 One layer of mineral wool

Fire resistance	Mineral wool thickness x minimum density
-/30/30	Not required
-/60/60	80mm x 3 23kg/m <sup>3</sup> , suspended between the sheeting rails and secured to the underside of each rail using steel angle 50mm x 25mm x 0.56mm thick or similar, fixed through the mineral wool to the rail at maximum 500mm centres
-/120/120	75mm x 3 100kg/m <sup>3</sup>

- ③ Horizontal sheeting rail at maximum 1800mm centres
- ④ Caulk all perimeter gaps with PROMASEAL®-A Acrylic Sealant to achieve stated fire and/or acoustic performance
- ⑤ Perimeter steel angle, 50mm x 25mm x 0.56mm thick or similar secured to wall or floor using 40mm long M6 masonry anchors at 500mm centres
- ⑥ Steel top hat sections approximately 26mm x 80mm x 0.56mm thick. Width of face to which boards are fixed should be minimum 50mm. Secure top hats at 610mm centres to every rail using two steel fixings per rail
- ⑦ One layer of PROMATECT®-H cover strip 100mm x 9mm thick at horizontal board joints
- ⑧ One layer of PROMATECT®-H filler strip 100mm x 9mm thick x depth of the sheeting rail fixed to the rail
- ⑨ Fire resistant structural steel column claddings



The following are standard Architectural Specifications for internal partition systems using PROMATECT®-H. The designer must determine the suitability of the design to the application and requirements before undertaking or constructing any works relating to the specifications and where in doubt should obtain the advice of a suitably qualified engineer.

### Fire Attack From Either Side / Non Loadbearing

Up to \_\_\_\_\_ minute<sup>(1)</sup> fire resistance, integrity and \_\_\_\_\_ minute<sup>(2)</sup> insulation in accordance with the criteria of BS 476: Part 22: 1987 or AS 1530: Part 4: 2005<sup>(3)</sup>.

### Acoustic Performance

The partition system shall have a Weighted Sound Reduction Index of  $R_w$  37.

### Supporting Structure

Care should be taken that any structural element by which the system is supported, e.g. steel structure, concrete/brick wall or slab, has a fire resistance equal to or greater than \_\_\_\_\_ minutes<sup>(1)</sup>.

### Lining Boards

Single layer of 9mm thick PROMATECT®-H matrix engineered mineral boards as manufactured by Promat International (Asia Pacific) Ltd. Standard board dimension 1220mm x 2440mm x 9mm thick.

### Fixing

Galvanised steel sheeting rails will be bolted horizontally at maximum 1800mm centres. Fix galvanised steel top hat sections vertically at 610mm centres. External cladding will be fixed in accordance with manufacturer's recommendations.

9mm thick PROMATECT®-H boards will be fixed to the steel framing at the internal face. All horizontal joints to be backed with a PROMATECT®-H board strip.

Mineral wool will be contained within the cavity where applicable.

### Tests & Standards

The complete system along with the material and framing is tested in accordance with BS 476: Part 22: 1987 or AS 1530: Part 4: 2005<sup>(3)</sup>. The partition system should meet the requirements as specified under Clause 5.

### Jointing

Plain butt joints between machined edges of boards. <sup>(4)</sup>

Joints filled in preparation for painting. <sup>(5)</sup>

Joints filled and taped in preparation for decoration. <sup>(6)</sup>

### Follow-on Trades

Surface of boards to be prepared for painting/plastering/tiling<sup>(7)</sup> in accordance with manufacturer's recommendations.

#### NOTES:

- <sup>(1)</sup> insert required fire resistance level not exceeding 120 minutes.
- <sup>(2)</sup> insert required insulation level not exceeding the fire resistance level<sup>(1)</sup>.
- <sup>(3)</sup>, <sup>(4)</sup>, <sup>(5)</sup>, <sup>(6)</sup>, <sup>(7)</sup> delete as appropriate.
- All perimeter gaps caulked with PROMASEAL®-A Acrylic Sealant.

### Fire attack from board side / Non loadbearing



Fire resistance	FRL	~240/15
	STANDARD	BS476: Part 22: 1987 AS1530: Part 4: 2005
	APPROVAL	BRE CC 231704
Acoustic	# STC	38dB (-/120/15) 40dB (-/240/15) 46dB (-/120/15) 50dB (-/240/15)
	# R <sub>w</sub>	38dB (-7) (-/120/15) 40dB (-7) (-/240/15) 46dB (-10) (-/120/15) 50dB (-10) (-/240/15)
	STANDARD	ISO140: Part 3: 1996 ISO717: Part 1: 1996
	PREDICTED ASSESSMENT	Marshall Day 18th October 2006
Construction	MAXIMUM LENGTH	Unlimited
	PARTITION THICKNESS	From 212mm (-/120/15) From 215mm (-/240/15)
	PARTITION MASS*	From 10.31kg/m² (-/120/15) From 13.43kg/m² (-/240/15)

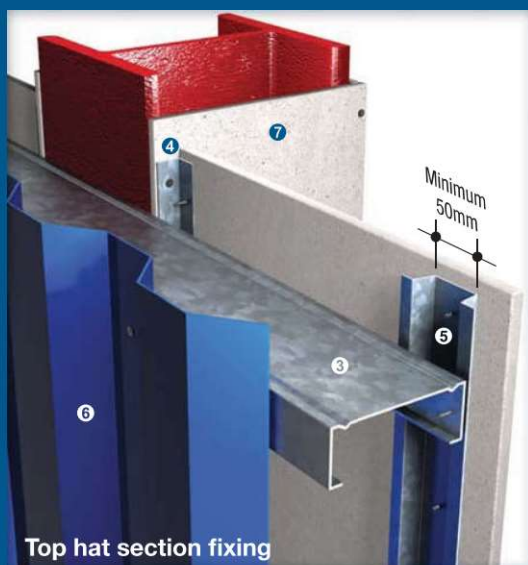
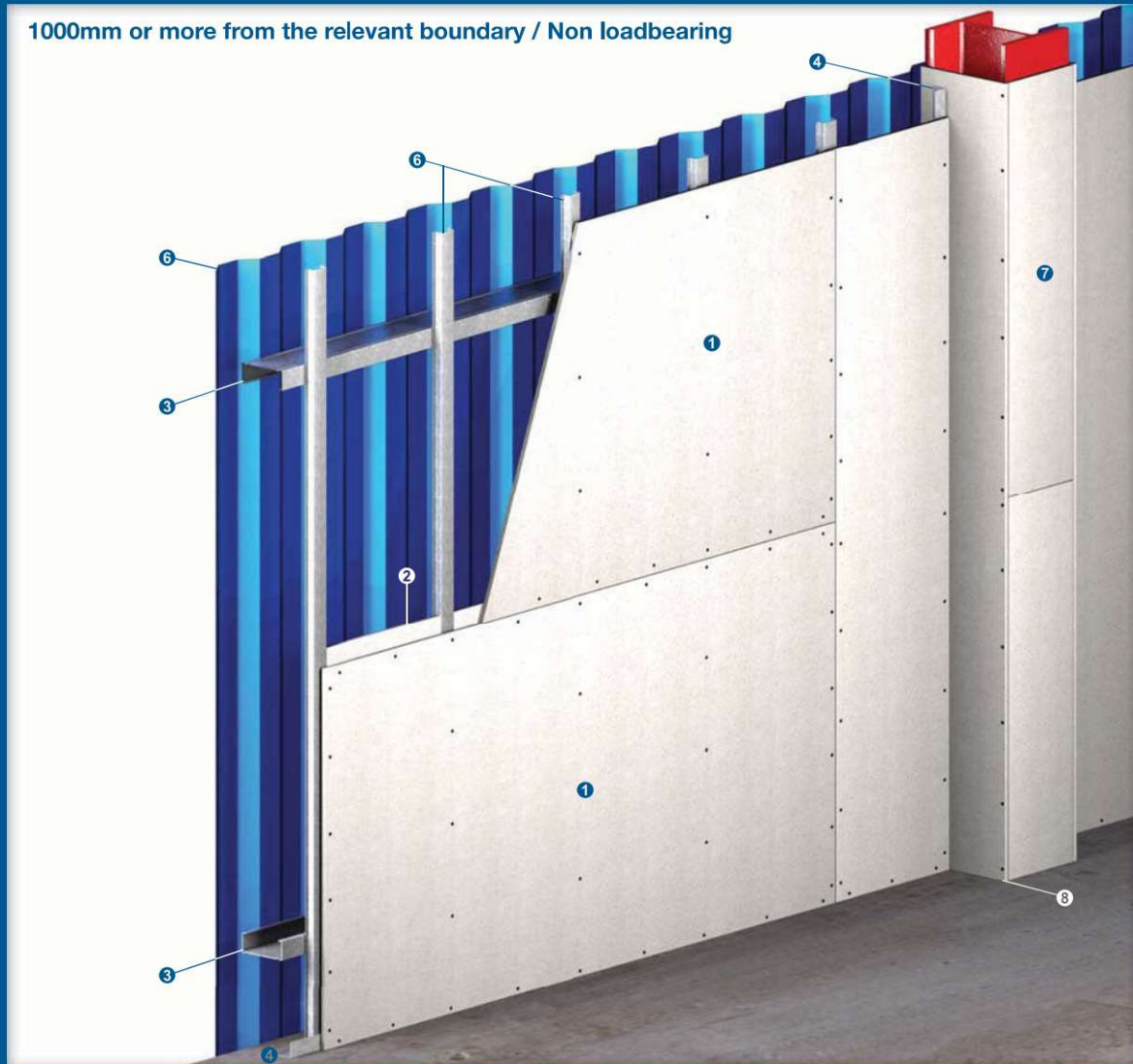
# Margin of error is generally within  $\pm 3$ dB

\* Details for walls above 3000mm high are available on request

- ❶ One layer of PROMATECT®-H board 9mm thick, screw fixed to all top hat sections at nominal 300mm centres
- ❷ Horizontal galvanised steel sheeting rails, bolted at maximum 1800mm centres
- ❸ Perimeter galvanised steel angle 25mm x 25mm x 0.56mm thick, secured to floor or wall using 40mm long M6 masonry anchors at nominal 500mm centres
- ❹ Vertical galvanised steel top hat sections approximately 26mm x 80mm x 0.56mm thick, secured to every sheeting rail using two steel fixings at 610mm centres per rail (width of the top hat section, facing where boards are fixed at, must be minimum 50mm)
- ❺ External cladding sheet either single skin steel or fibre cement (please consult Promat for other types of cladding)
- ❻ Caulk all perimeter gaps with PROMASEAL®-A Acrylic Sealant to achieve the required fire resistance and/or acoustic performance



1000mm or more from the relevant boundary / Non loadbearing



Top hat section fixing

- ① One layer of PROMATECT®-H board 9mm thick, screw fixed to all top hat sections at nominal 300mm centres
- ② One layer of PROMATECT®-H cover strips 100mm x 9mm thick, fixed at horizontal board joints
- ③ Horizontal galvanized steel sheeting rails, bolted at maximum 1800mm centres
- ④ Perimeter galvanized steel angle 25mm x 25mm x 0.56mm thick, secured to floor or wall using 40mm long M6 masonry anchors at nominal 500mm centres
- ⑤ Vertical galvanized steel top hat sections approximately 26mm x 80mm x 0.56mm thick, secured to every sheeting rail using two steel fixings at 610mm centres per rail (width of the top hat section, facing where boards are fixed at, must be minimum 50mm)
- ⑥ External cladding sheet either single skin steel or fibre cement (please consult Promat for other types of cladding)
- ⑦ Existing fire resistant structural steel column cladding
- ⑧ Caulk all perimeter gaps with PROMASEAL®-A Acrylic Sealant to achieve the required fire resistance and/or acoustic performance

The following are standard Architectural Specifications for external wall systems using PROMATECT®-H. The designer must determine the suitability of the design to the application and requirements before undertaking or constructing any works relating to the specifications and where in doubt should obtain the advice of a suitably qualified engineer.

### Fire Attack From Either Side / Non Loadbearing

Up to 240 minute fire resistance, integrity and 15 minute insulation in accordance with the criteria of BS 476: Part 22: 1987 or AS 1530: Part 4: 2005<sup>(1)</sup>.

### Acoustic Performance

The partition system shall have a Weighted Sound Reduction Index of  $R_w$  39.

### Supporting Structure

Care should be taken that any structural element by which the system is supported, e.g. steel structure, concrete/brick wall or slab, has a fire resistance equal to or greater than 240 minutes.

### Lining Boards

Single layer of 9mm thick PROMATECT®-H matrix engineered mineral boards as manufactured by Promat International (Asia Pacific) Ltd. Standard board dimension 1220mm x 2440mm x 9mm thick.

### Fixing

Galvanised steel sheeting rails will be bolted horizontally at maximum 1800mm centres. Fix galvanised steel top hat sections vertically at 610mm centres. External cladding will be fixed in accordance with manufacturer's recommendations.

9mm thick PROMATECT®-H boards will be fixed to the steel framing at the internal face. All horizontal joints to be backed with a PROMATECT®-H board strip.

Mineral wool will be contained within the cavity where applicable.

### Tests & Standards

The complete system along with the material and framing is tested in accordance with BS 476: Part 22: 1987 or AS 1530: Part 4: 2005<sup>(1)</sup>. The partition system should meet the requirements as specified under Clause 5.

### Jointing

Plain butt joints between machined edges of boards. <sup>(1)</sup>

Joints filled in preparation for painting. <sup>(2)</sup>

Joints filled and taped in preparation for decoration. <sup>(3)</sup>

### Follow-on Trades

Surface of boards to be prepared for painting/plastering/tiling<sup>(4)</sup> in accordance with manufacturer's recommendations.

#### NOTES:

- <sup>(1)</sup>, <sup>(2)</sup>, <sup>(3)</sup>, <sup>(4)</sup> delete as appropriate.
- All perimeter gaps caulked with PROMASEAL®-A Acrylic Sealant.



### Fire attack from both sides / Non loadbearing



Fire resistance	FRL	-/30/30 -/60/60 -/120/120
	STANDARD	BS476: Part 22: 1987 AS1530: Part 4: 2005
	APPROVAL	BRE OC 231705
Acoustic	# STC	38dB (-/30/30) 47dB (-/60/60) 48dB (-/120/120)
	# R <sub>w</sub>	38dB (-/30/30) 46dB (-/60/60) 47dB (-/120/120)
	STANDARD	ISO140: Part 3: 1996 ISO717: Part 1: 1996
	PREDICTED ASSESSMENT	Marshall Day 18th October 2006
Construction	MAXIMUM LENGTH	Unlimited
	PARTITION THICKNESS	From 242mm
	PARTITION MASS*	From 23.72kg/m² (-/30/30) From 25.56kg/m² (-/60/60) From 29.22kg/m² (-/120/120)

# Margin of error is generally within ±3dB

\* Details for walls above 3000mm high are available on request

① One layer PROMATECT®-H board 9mm thick, screw fixed to all top hat sections at nominal 300mm centres

② One layer of mineral wool

Fire resistance	Mineral wool thickness x minimum density
-/30/30	Not required
-/60/60	80mm x 23kg/m³ suspended between the sheeting rails using steel angle 50mm x 25mm x 0.56mm thick or similar, fixed through the mineral wool to the rail at maximum 500mm centres.
-/120/120	75mm x 100kg/m³

③ Horizontal galvanised steel sheeting rails, bolted at maximum 1800mm centres

④ Perimeter galvanised steel angle 25mm x 25mm x 0.6mm thick, secured to floor or wall using 40mm long M6 masonry anchors at nominal 500mm centres

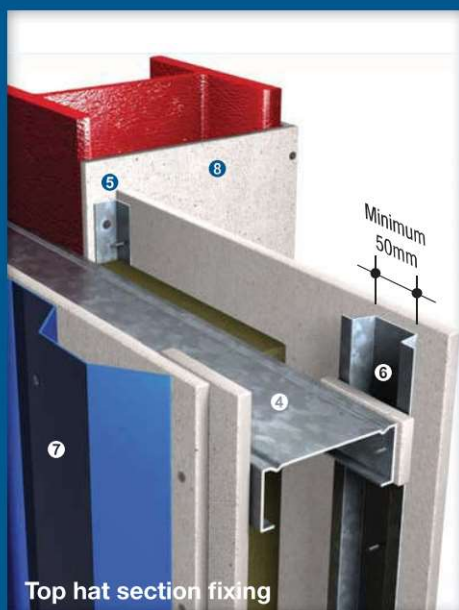
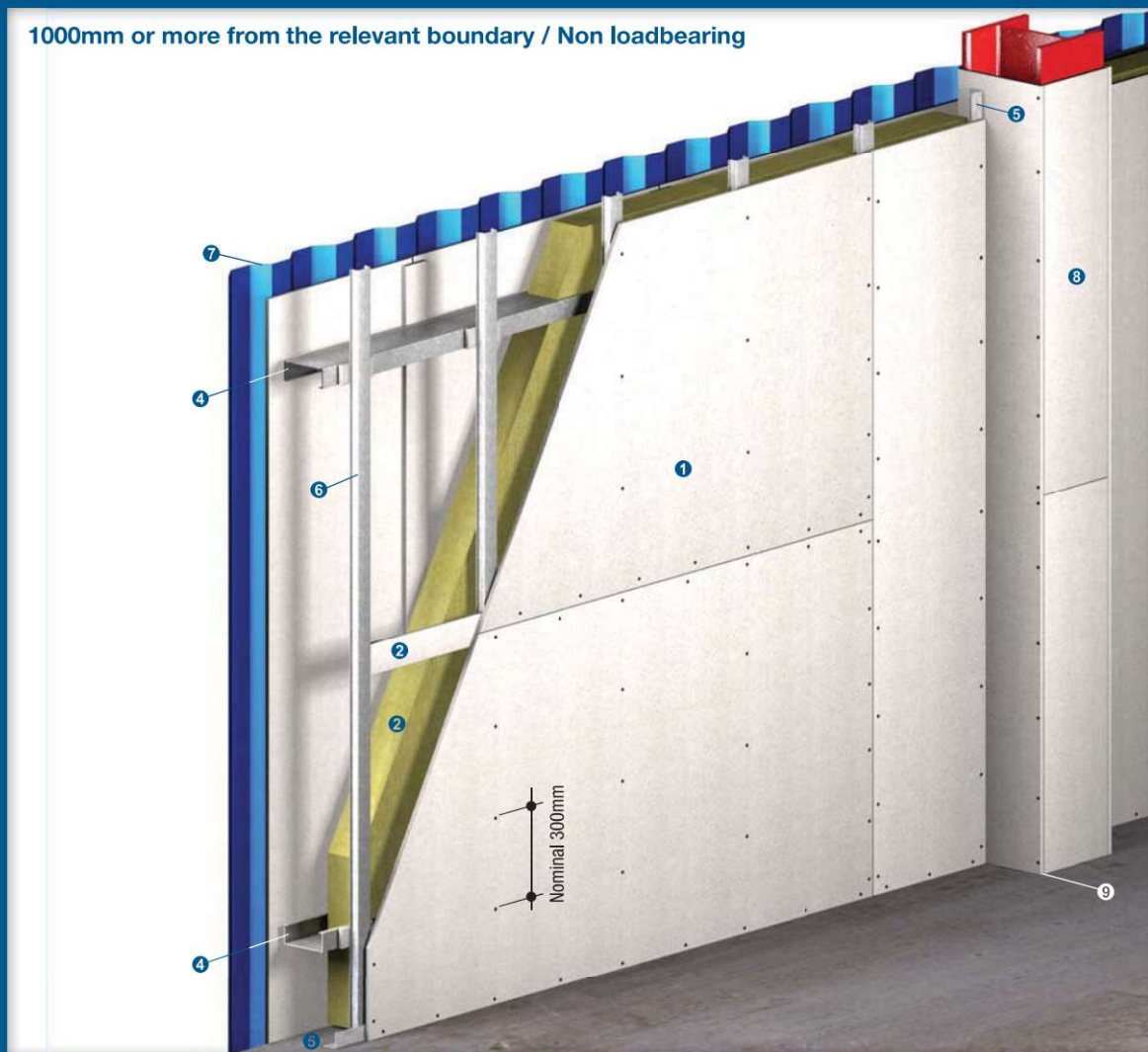
⑤ Vertical galvanised steel top hat sections approximately 26mm x 80mm x 0.56mm thick, secured to every sheeting rail using two steel fixings at 610mm centres per rail (width of the top hat section, facing where boards are fixed at, must be minimum 50mm)

⑥ 25mm long No. 8 self-tapping screws at nominal 300mm centres

⑦ External cladding sheet, either single skin steel or fibre cement (please consult Promat for other types of cladding)

⑧ Caulk all perimeter gaps with PROMASEAL®-A Acrylic Sealant to achieve the required fire resistance and/or acoustic performance

1000mm or more from the relevant boundary / Non loadbearing



Top hat section fixing

- ① One layer PROMATECT®-H board 9mm thick, screw fixed to all top hat sections at nominal 300mm centres
- ② PROMATECT®-H cover strips 100mm x 9mm thick, fixed at horizontal board joints
- ③ One layer of mineral wool

Fire resistance	Mineral wool thickness x minimum density
-/30/30	Not required
-/60/60	80mm x 23kg/m <sup>3</sup> suspended between the sheeting rails using steel angle 50mm x 25mm x 0.56mm thick or similar, fixed through the mineral wool to the rail at maximum 500mm centres.
-/120/120	75mm x 100kg/m <sup>3</sup>

- ④ Horizontal galvanized steel sheeting rails, bolted at maximum 1800mm centres
- ⑤ Perimeter galvanized steel angle 25mm x 25mm x 0.6mm thick, secured to floor or wall using 40mm long M6 masonry anchors at nominal 500mm centres
- ⑥ Vertical galvanized steel top hat sections approximately 26mm x 80mm x 0.56mm thick, secured to every sheeting rail using two steel fixings at 610mm centres per rail (width of the top hat section, facing where boards are fixed at, must be minimum 50mm)
- ⑦ External cladding sheet, either single skin steel or fibre cement (please consult Promat for other types of cladding)
- ⑧ Existing fire resistant structural steel column cladding
- ⑨ Caulk all perimeter gaps with PROMASEAL®-A Acrylic Sealant to achieve the required fire resistance and/or acoustic performance



The following are standard Architectural Specifications for external wall systems using PROMATECT®-H. The designer must determine the suitability of the design to the application and requirements before undertaking or constructing any works relating to the specifications and where in doubt should obtain the advice of a suitably qualified engineer.

### Fire Attack From Either Side / Non Loadbearing

Up to \_\_\_\_\_ minute<sup>(1)</sup> fire resistance, integrity and \_\_\_\_\_ minute<sup>(2)</sup> insulation in accordance with the criteria of BS 476: Part 22: 1987 or AS 1530: Part 4: 2005<sup>(3)</sup>.

### Acoustic Performance

The partition system shall have a Weighted Sound Reduction Index of  $R_w$  \_\_\_\_\_ <sup>(4)</sup>.

### Supporting Structure

Care should be taken that any structural element by which the partition system is supported, e.g. steel structure, concrete/brick wall or slab, has a fire resistance equal to or greater than \_\_\_\_\_ minutes<sup>(1)</sup>.

### Lining Boards

Single layer of 9mm thick PROMATECT®-H matrix engineered mineral boards as manufactured by Promat International (Asia Pacific) Ltd. Standard board dimension 1220mm x 2440mm x 9mm thick.

### Fixing

Galvanised steel sheeting rails will be bolted horizontally at maximum 1800mm centres. Fix galvanised steel top hat sections vertically at 610mm centres. External cladding will be fixed at the external part, after PROMATECT®-H boards are fixed.

9mm thick PROMATECT®-H boards will be fixed to the steel framing at the internal and external faces. Cover strips to back all horizontal joints between boards and to separate vertical top hats and sheeting rail.

### Tests & Standards

The complete system along with the material and framing is tested in accordance with BS 476: Part 22: 1987 or AS 1530: Part 4: 2005<sup>(3)</sup>. The partition system should meet the requirements as specified under Clause 5.

### Jointing

Plain butt joints between machined edges of boards. <sup>(5)</sup>

Joints filled in preparation for painting. <sup>(6)</sup>

Joints filled and taped in preparation for decoration. <sup>(7)</sup>

### Follow-on Trades

Surface of boards to be prepared for painting/plastering/tiling<sup>(8)</sup> in accordance with manufacturer's recommendations.

#### NOTES:

- <sup>(1)</sup> insert required fire resistance level not exceeding 120 minutes.
- <sup>(2)</sup> insert required insulation level not exceeding the fire resistance level<sup>(1)</sup>.
- <sup>(3), (5), (6), (7), (8)</sup> delete as appropriate.
- <sup>(4)</sup> insert acoustic value not exceeding 38dB (for -/30/30 fire resistance), 46dB (for -/60/60 fire resistance) or 47dB (for -/120/120 fire resistance).
- All perimeter gaps caulked with PROMASEAL®-A Acrylic Sealant.

#### Fire attack from board side / Non loadbearing



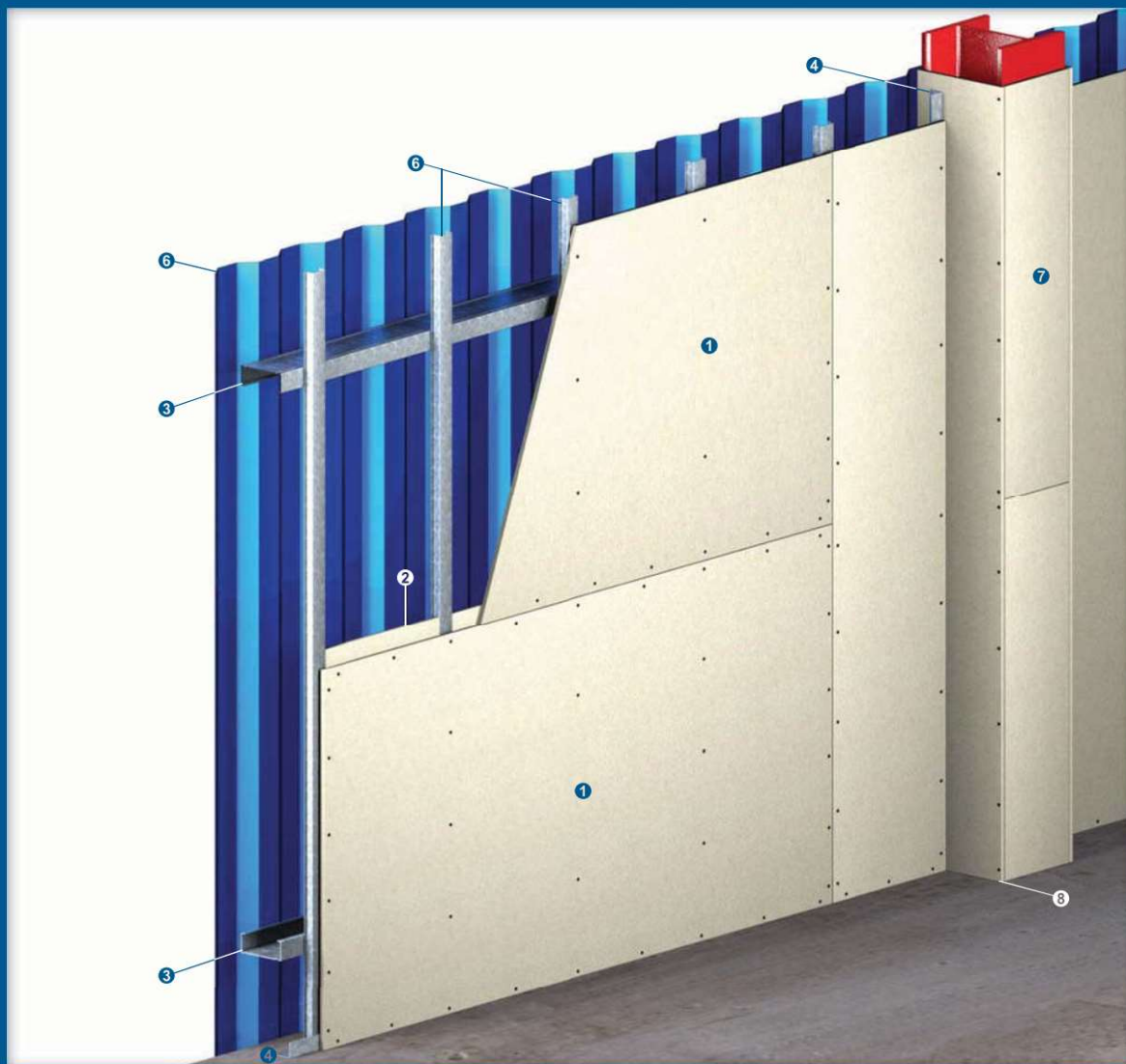
Fire resistance	FRL	~240/15
	STANDARD	BS476: Part 22: 1987 AS1530: Part 4: 2005
	APPROVAL	LPC TE83997
Acoustic	# STC # R <sub>w</sub>	39dB 39dB (-7)
	STANDARD	ISO140: Part 3: 1996 ISO717: Part 1: 1996
	PREDICTED ASSESSMENT	Marshall Day 18th October 2006
Construction	MAXIMUM LENGTH	Unlimited
	PARTITION THICKNESS	Depends upon purlin dimension
	PARTITION MASS*	From 14.78kg/m <sup>2</sup>

# Margin of error is generally within  $\pm 3$ dB

\* Details for walls above 3000mm high are available on request

- ❶ One layer of PROMINA® 60 board 9mm thick
- ❷ Vertical galvanised steel top hat sections approximately 26mm x 80mm x 0.56mm thick, secured to every sheeting rail using two steel fixings at 610mm centres per rail (width of the top hat section, facing where boards are fixed at, must be minimum 50mm)
- ❸ Horizontal galvanised steel sheeting rails, bolted at maximum 1800mm centres
- ❹ Perimeter galvanised steel angle 25mm x 25mm x 0.8mm thick, secured to floor or wall using 40mm long M6 masonry anchors at nominal 500mm centres
- ❺ Caulk all perimeter gaps with PROMASEAL®-A Acrylic Sealant to achieve the required fire resistance and/or acoustic performance
- ❻ External cladding sheet, either single skin steel or fibre cement (please consult Promat for other types of cladding)





- ① One layer of PROMINA® 60 board 9mm thick, screw fixed to all top hat sections at nominal 300mm centres
- ② One layer of PROMINA® 60 cover strips 100mm x 9mm thick, fixed at horizontal board joints
- ③ Horizontal galvanised steel sheeting rails, bolted at maximum 1800mm centres
- ④ Perimeter galvanised steel angle 25mm x 25mm x 0.56mm thick, secured to floor or wall using 40mm long M6 masonry anchors at nominal 500mm centres
- ⑤ Vertical galvanised steel top hat sections approximately 26mm x 80mm x 0.56mm thick, secured to every sheeting rail using two steel fixings at 610mm centres per rail (width of the top hat section, facing where boards are fixed at, must be minimum 50mm)
- ⑥ External cladding sheet, either single skin steel or fibre cement (please consult Promat for other types of cladding)
- ⑦ Existing fire resistant structural steel column cladding
- ⑧ Caulk all perimeter gaps with PROMASEAL®-A Acrylic Sealant to achieve the required fire resistance and/or acoustic performance



Bottom hat section fixing

The following are standard Architectural Specifications for external wall systems using PROMINA® 60. The designer must determine the suitability of the design to the application and requirements before undertaking or constructing any works relating to the specifications and where in doubt should obtain the advice of a suitably qualified engineer.

### Fire Attack From Internal Side / Non Loadbearing

Up to 240 minute fire resistance, integrity and 15 minute insulation in accordance with the criteria of BS 476: Part 22: 1987 or AS 1530: Part 4: 2005<sup>(1)</sup>.

### Acoustic Performance

The partition system shall have a Weighted Sound Reduction Index of at least  $R_w$  39.

### Supporting Structure

Care should be taken that any structural element by which the partition system is supported, e.g. steel structure, concrete/brick wall or slab, has a fire resistance equal to or greater than 240 minutes.

### Lining Boards

Single layer of 9mm thick PROMINA® 60 matrix engineered mineral boards as manufactured by Promat International (Asia Pacific) Ltd. Standard board dimension 1220mm x 2440mm x 9mm thick.

### Fixing

Galvanised steel sheeting rails will be bolted horizontally at maximum 1800mm centres. Fix galvanised steel top hat sections vertically at 610mm centres. External cladding will be fixed at the external part.

9mm thick PROMINA® 60 boards will be fixed to the steel framing at the internal face. All horizontal joints to be backed with a PROMINA® 60 board strip.

### Tests & Standards

The complete system along with the material and framing is tested in accordance with BS 476: Part 22: 1987 or AS 1530: Part 4: 2005<sup>(1)</sup>. The partition system should meet the requirements as specified under Clause 5.

### Jointing

Plain butt joints between machined edges of boards. <sup>(2)</sup>

Joints filled in preparation for painting. <sup>(3)</sup>

Joints filled and taped in preparation for decoration. <sup>(4)</sup>

### Follow-on Trades

Surface of boards to be prepared for painting/plastering/tiling<sup>(5)</sup> in accordance with manufacturer's recommendations.

#### NOTES:

- (1), (2), (3), (4), (5) delete as appropriate.
- All perimeter gaps caulked with PROMASEAL®-A Acrylic Sealant.



For latest information of the Promat Asia Pacific organisation, please refer to [www.promat-ap.com](http://www.promat-ap.com).

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