

Promat

PROMATECT® 100 Passive Fire Protection Building & Construction Solutions



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Solely for distribution in Australia





Ceilings and floors



Ceiling type	Fire resistance performance	Mineral wool thickness x density	Total ceiling thickness	Test/Approval no.	Page no.
 <p>PROMATECT® 100 self-supporting membrane ceiling</p>	-/120/120	Not required	From 150mm	BRE CC 232157A to the requirements of AS 1530: Part 4: 2005	118
 <p>PROMATECT® 100 self-supporting membrane ceiling</p>	-/120/120	Not required	From 150mm	BRE CC 232157A to the requirements of AS 1530: Part 4: 2005	119
 <p>PROMATECT® 100 self-supporting membrane ceiling</p>	-/120/120	Not required	From 105mm	BRANZ FAR 2885 to the requirements of AS 1530: Part 4: 2005	120
 <p>PROMATECT® 100 self-supporting membrane ceiling</p>	-/240/240	Not required	From 156mm	BRANZ FAR 4283 to the requirements of AS 1530: Part 4: 2005	120
 <p>PROMATECT® 100 timber floor protection</p>	60/60/60	Not required	267mm	BRANZ FAR 2886 to the requirements of AS 1530: Part 4: 2005	124
 <p>PROMATECT® 100 timber floor protection</p>	90/90/90	Not required	267mm	LPC TE90019 to the requirements of BS 476: Part 21: 1987	125

Ceiling type	Fire resistance performance	Mineral wool thickness x density	Total ceiling thickness	Test/Approval no.	Page no.
 <p>PROMATECT® 100 timber floor protection</p>	90/90/90	Not required	287mm	BRANZ FAR 2886 to the requirements of AS 1530: Part 4: 2005	126
 <p>PROMATECT® 100 timber floor protection</p>	120/120/120	Not required	267mm	BRANZ FAR 2924 to the requirements of AS 1530: Part 4: 2005	127
 <p>PROMATECT® 100 mezzanine floor</p>	60/60/60	Not required	253mm	BRE CC 234724 to the requirements of AS 1530: Part 4: 2005	129
 <p>PROMATECT® 100 mezzanine floor</p>	120/120/120	Not required	278mm	BRE CC 234729 to the requirements of AS 1530: Part 4: 2005	130



Introduction

Promat carries a wide range of fire rated ceiling and floor systems with fire resistance of up to 240 minutes. Generally, Promat's ceiling and floor systems provide horizontal fire barriers to prevent vertical spread of fire.

Promat's ceiling and floor systems have been extensively tested and assessed to provide resistance to fire from above, below or above and below. They satisfy the integrity and insulation criteria of BS 476: Parts 20, 21, 22 and 23: 1987 and/or AS 1530 Part 4: 2005. The flooring systems not only meet the integrity and insulation criteria but also meet the loadbearing capacity (structural adequacy) criteria of the British and Australian national standards.

The system design depends on performance requirements but in overall terms, Promat's ceiling and floor systems can be divided into the following categories.

Self-supporting membrane ceilings

These are normally non loadbearing and, depending on the type of construction, are used to provide protection from fire attack from below and/or above. Ceiling panels are fixed into a steel or timber framing system spanning and supported between two walls.

Self-supporting membrane ceilings should normally be tested or assessed in accordance with BS 476: Part 22: 1987 and/or AS 1530: Part 4: 2005 to satisfy the failure criteria of integrity and insulation.

These ceiling systems allow for the protection to or from services contained within the ceiling void. They will also provide protection to steel beams that are required to meet the criteria of BS 476: Parts 21 and 23: 1987 where exposure to fire is from below.

Suspended membrane Ceilings

These are normally non loadbearing and are used to provide protection from fire attack from below. The ceilings generally incorporate steel grid systems suspended from a structure.

Suspended membrane ceilings should normally be tested or assessed in accordance with BS 476: Part 22: 1987 and/or AS 1530: Part 4: 2005 to satisfy the failure criteria of integrity and insulation.

These ceiling systems allow for the protection to or from services contained within the ceiling void. They also provide protection to steel beams that are required to meet the criteria of BS 476: Parts 21 and 23: 1987 where exposure to fire is from below.

Loadbearing floor systems

The flooring can be of timber or chipboard floor boards supported by either timber joists or steel joists system. Promat boards can be directly fixed onto these joists or fixed to a suspended exposed or concealed metal grid system.

This type of ceiling should normally be tested or assessed in accordance with BS 476: Part 21: 1987 and/or AS 1530: Part 4: 2005 and are required to satisfy the three failure criteria of loadbearing capacity (structural adequacy), integrity and insulation.

Suspended ceiling protection to steel beams

This type of ceiling is used mainly for protection of steel beams supporting a loadbearing concrete floor slab and should be tested or assessed to BS 476: Part 23: 1987 and AS 1530: Part 4: 2005. Promat boards are fixed to a metal exposed or concealed grid system suspended from the structure above.

Advantages

Promat's ceiling and floor systems require less material to achieve similar fire resistant levels when compared to the industry average. This can lead to more simplified construction methods than the standard equivalent. Use of Promat boards therefore helps to increase productivity and reduce overall installation costs.

Promat's ceiling and floor systems have been developed by Promat International to satisfy standard requirements for internal applications. Benefits include:

Time & cost effectiveness

Simple construction methods reduce installation cost and time compared to traditional systems.

Lightweight

Lighter loads on structures compared to industry average systems for equivalent fire rating.

Thermal resistance

Excellent thermal resistance performance.

Design flexibility

Lighter weight allows increased ceiling span, reduced support structure sizes and/or reduced system thickness.

Acoustic performance

Tested and assessed to ISO140-3 1995 and ISO717-1 1996 to meet the needs of the industry. Please refer to the PARTITIONS section for more details.

Board fixing

Longitudinal board joints must coincide with framing members. If the boards are in one layer, the transverse joints must be backed with fillet strips made of Promat boards or timber noggings for traditional timber joist construction. For boards laminated in two layers, the joints must be staggered by at least 600mm.

Promat boards may be fixed to the steel members using No.8 bugle head self-drilling and self-tapping screws. No.8 woodscrews shall be used to fix boards to a timber frame. For boards laminated in two layers, the outer layer boards may be stitched to the preceding layer with No. 10 laminating screws.

Minimum edge distance to fasteners and the maximum spacing between screws must be maintained. Please refer to system details for screw spacing requirements.

General design considerations

Following are some of the factors to consider when determining correct specifications that ensure a ceiling or floor system provides the required design performance, under both fire and ambient conditions. Comprehensive advice is available from local Promat offices.

Supporting structure design

The design of the framing system should be adequate for the design loads of the ceiling and floor. Promat systems are designed for timber or steel framing as described in the system specification.

Timber framing systems used in loadbearing floor applications must be designed in accordance with BS 5268: 2006, AS 1720: Part 1: 2010 and/or AS 1684: 1999. The width, depth and spacing of joists must be carefully specified to ensure that the timber floor serves its intended fire performance.

For steel framed ceiling systems, it is critical to precisely follow the dimensions of the steel sections, the grid spacing, the suspension members (if any) and the fastening methods employed. Framing members could change depending on factors such as ceiling span, movement and deflection, and local regulations.

Larger or more frequent frame sections can often improve the fire and structural performance. The framing for the ceiling systems must be securely fixed back to a substrate that has an equal or greater fire performance than the ceiling. All fixings must be non-combustible and must be similar to those listed in the approval documents.

Non loadbearing ceilings

Promat non loadbearing ceiling systems can be generally divided into steel frame suspended ceiling and self-supporting membrane ceilings. The steel framing as noted in the system specification is appropriate for the given span. Larger dimension of steel sections or more frequent spacing will be required for a ceiling span larger than specified.

At wall connections, mechanical joints are required and these joints must be carefully designed so that they accommodate the required expansion of steel at elevated temperature.

Non loadbearing ceilings in this handbook are not trafficable. Trafficable ceilings for maintenance purposes can be designed and installed. Please consult Promat for complete information.

Loadbearing ceilings

Two types of Promat loadbearing floor systems are available. One is comprised of timber joists while the other is of steel joists. Flooring material, timber type, thickness and jointing are all critical. Timber framing, of solid timber only, must be designed in accordance with BS 5268: 2006, AS 1720.1: 2010 and/or AS 1684: 1999 whereas for steel framing, members must be designed in accordance with BS 5950: 2000 and/or AS 4600: 2005.

Acoustics

Promat ceiling and floor systems also meet specific acoustic requirements. These include ratings for sound transmission, sound impact and sound absorption. Please refer to [pages 64 to 66](#) for further information.

Movement joint

Movement stress from dimensional changes due to varying temperature or moisture conditions can cause cracking and other symptoms of distress in ceiling linings.

Other external forces such as impact or vibration can directly affect structural movement of ceilings. 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.

Expansion joints are needed when a ceiling abuts a rigid mass. Where ceiling dimensions exceed 10m in either direction, a control joint should be used. Control joints should also be located to intersect column penetrations, light fixtures and air diffusers. It is however, the introduction of a control joint into a fire resistant system when an opening for flame and temperature transmission is created. This and similar openings have to be properly treated with approved fire stopping materials from Promat.

Caulking & service penetrations

To maintain fire performance and, where applicable, acoustic performance of ceiling systems, perimeter and other gaps must be appropriately filled with suitable caulking material. PROMASEAL®-A Acrylic Sealant or other tested fire and acoustic rated 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 ceiling by services to ensure:

- a) the fire stopping material remains in situ,
- b) fire and smoke do not penetrate the floor cavity,

- c) and a premature collapse of the joists and/or penetration of fire and smoke through the time flooring does not occur.

Allowance should be made for thermal movement of the services in both ambient and fire conditions to ensure unacceptable loads are not applied to the ceiling assembly. Some examples of service penetrations include penetrations by electrical cables, conduits or wires, plastic and metal pipes, air conditioning and ventilation ductwork. Further guidance on the sealing of service penetrations can be obtained from the Promat PASSIVE FIRE PROTECTION SYSTEMS APPLICATION & TECHNICAL MANUAL.

Light fittings

Light fittings located within a ceiling cavity should normally be enclosed in an adequately supported fire protection box to prevent fire spreading rapidly into the ceiling cavity. Most light fittings will require ventilation in normal use and this consideration should certainly be factored into light box design. Please consult Promat for details.

Access panels & hatches

Where access into a ceiling void is required, panels and hatches will need to be installed. Please refer to [page 117](#) or consult Promat for details.

Conclusion

Most building regulations stipulate limitations on the use of fire protecting suspended ceilings in certain situations. Care should be therefore taken that the use of a suspended ceiling system is acceptable to the approval authorities.

Steel frame components

Components selection

In order to maintain the fire and acoustic performance of Promat ceiling systems, the type of profile used for framing is important. Construction of fire resistant steel framed ceilings can be achieved using standard steel section components. Steel framing may be C or I-sections, furring channels, top hats, trusses or similar members which in all cases should be designed in accordance with BS 5950: 2000, AS 4600: 2005 and/or equivalent standard.

The profiles described in the system specification should be strictly followed at all times. However, the profiles may be amended as long as they possess comparable performances to the specified profiles.

Perimeter tracks & steel joists for self-supporting ceilings

This system is appropriate in most situations, particularly where it is difficult to install a suspended ceiling and/or within narrow rooms or corridors. No hangers are required, creating shorter installation times and provision of a completely free cavity for the accommodation of ductwork and services.

NOTE: For Australia, suitable framing profiles can be obtained from Rondo Building Services who provide comprehensive documentation for ceiling framing systems.

The framing system generally consists of a perimeter track profile and steel joists. During the design stage, choosing the right depth of the profile takes into account the maximum allowable span. The main function of perimeter tracks is to provide friction joints that hold the joists in position until the Promat board is fitted. They also provide allowance for movement of building structure under ambient conditions.

Under fire conditions, perimeter tracks of this nature allow the steel joists to expand, minimising deflection of the ceiling construction that may cause excessive cracking and then delamination of the lining boards. This type of joint is suitable for ceiling membrane systems of up to 3000mm span. Track sections should be fixed to the supporting structure using suitable masonry anchors at maximum 500mm intervals. Fixings should be located not more than 100mm from either end of the track section.

For membrane ceilings with a span of more than 3,000mm, mounting brackets are required at both ends of the steel joists. The mounting brackets will be attached to the wall, at the same time, and shall be designed to allow for expansion of the steel joists.

Please refer to [pages 115 and 116](#) for further details.

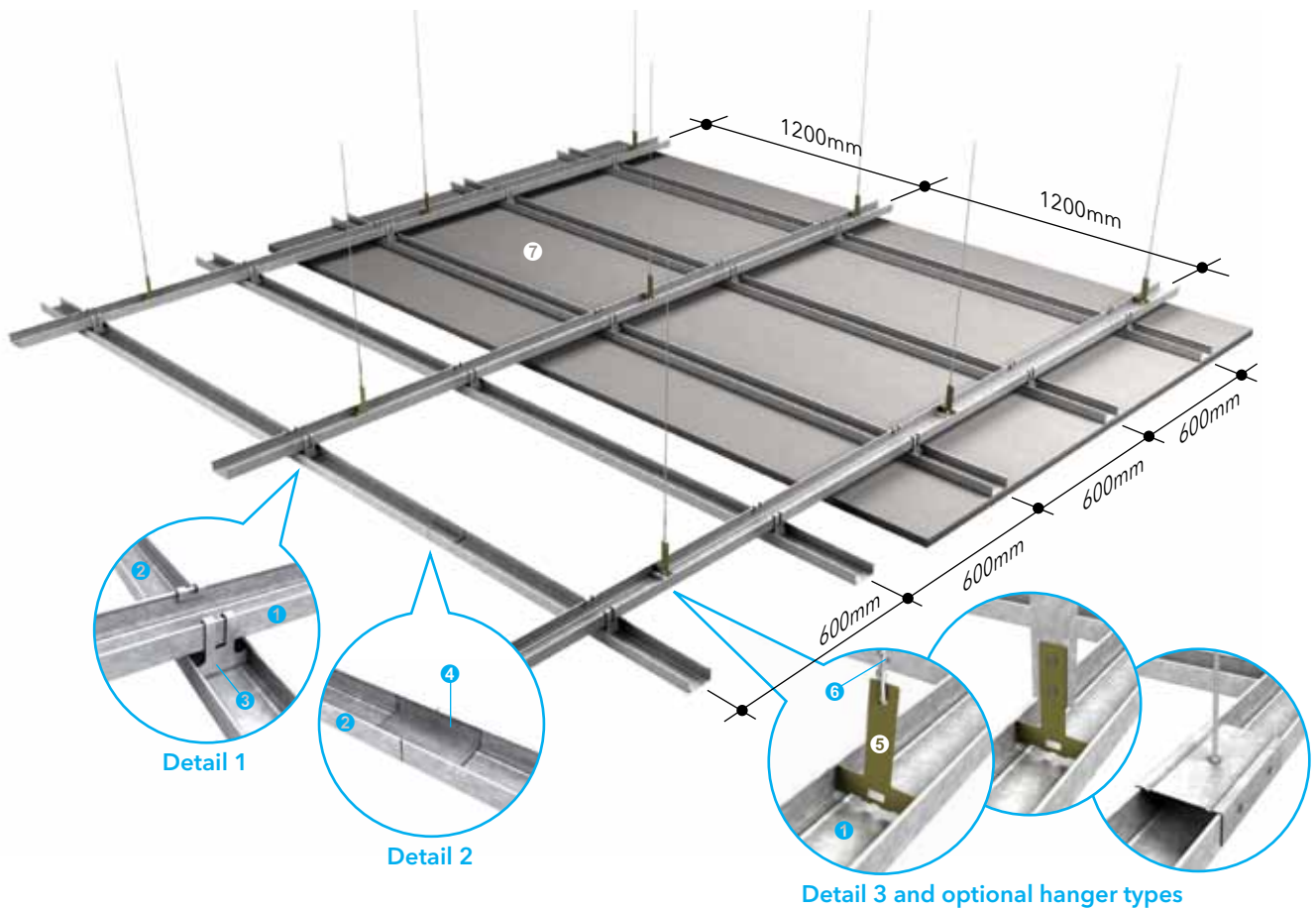


Fixing of primary and secondary profiles

- ① Wall U-profile
- ② Horizontal C-profile
- ③ Fixing point

Steel framing system for suspended ceiling






This system is the most appropriate for the installation of large area suspended ceilings. The steel structure of the suspended ceiling is composed of a grid of C-profiles and accessories, made of galvanised steel. The standard length of the C-profile is either 3000mm or 6000mm.

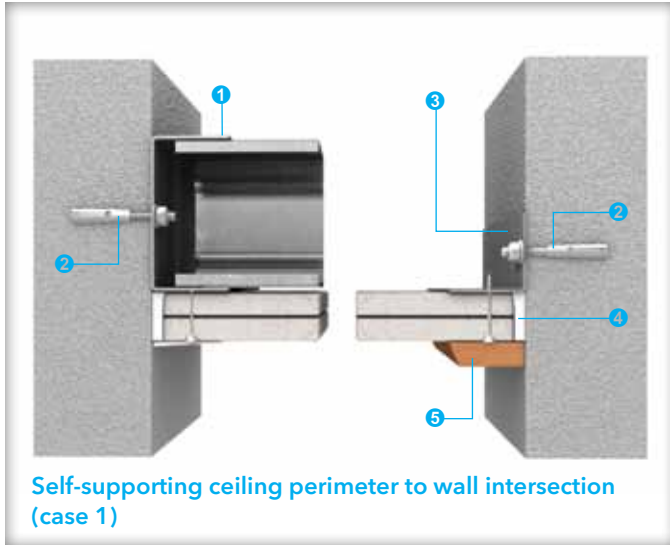


- ① Primary profile
- ② Secondary profile
- ③ Fixing hooks
- ④ Connector
- ⑤ Hanger
- ⑥ Hanger wire
- ⑦ Promat board

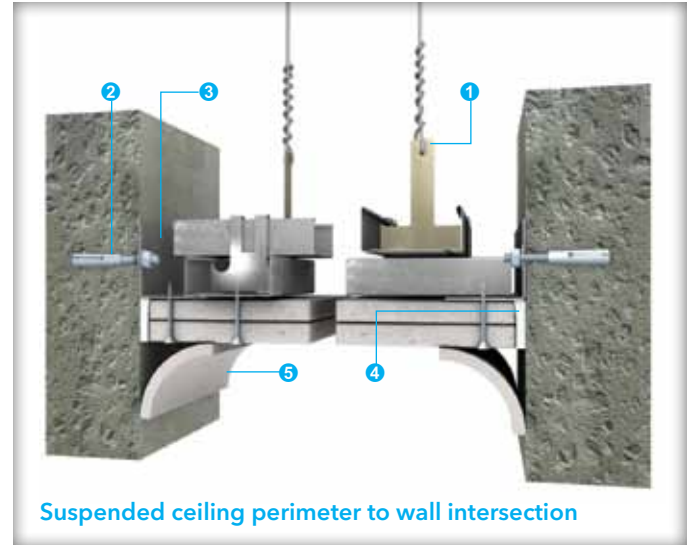
NOTE: For details of framing requirements for the installation of access panels and hatches, please refer to the Access Panels section of this handbook.

Typical profiles for ceiling construction

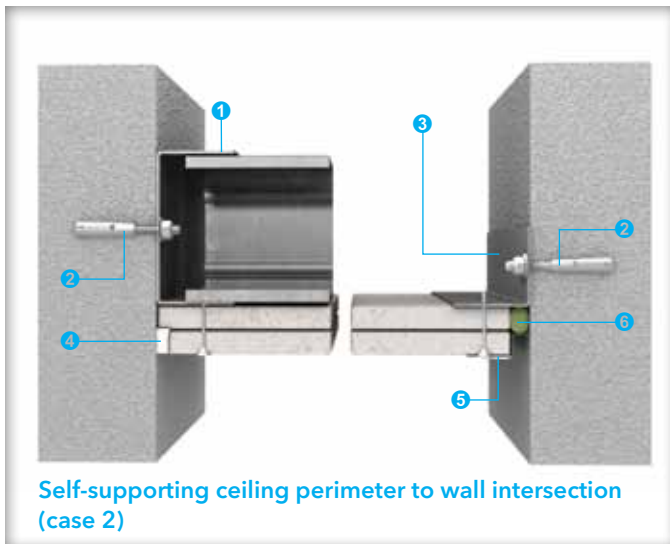
	Type: C-60 profile Dimension: 60mm x 27mm Application: Primary profile, secondary profile or cross profile		Type: Fixing hooks Dimension: 50mm x 58mm x 0.8mm Application: Fix secondary profile to primary profile
	Type: Cross fixer Dimension: 27mm x 55mm x 25mm (0.8mm) Application: Fix cross profile to secondary profile		Type: Cross fixer Dimension: 27mm x 55mm x 25mm (0.8mm) Application: Fix cross profile to ceiling
	Type: Connector Dimension: 27mm x 61.5mm x 100mm (0.8mm) Application: To link two C-60 profiles		



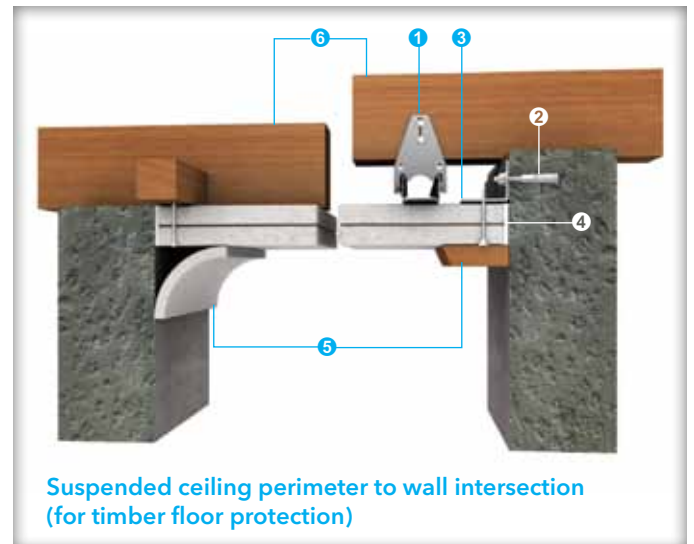
- 1 Galvanised steel perimeter channel
- 2 50mm x M6 expansion bolts at 500mm centres
- 3 Galvanised steel perimeter angle
- 4 PROMASEAL®-A Acrylic Sealant to maintain fire and acoustic performance
- 5 Ceiling trim or coving to perimeter



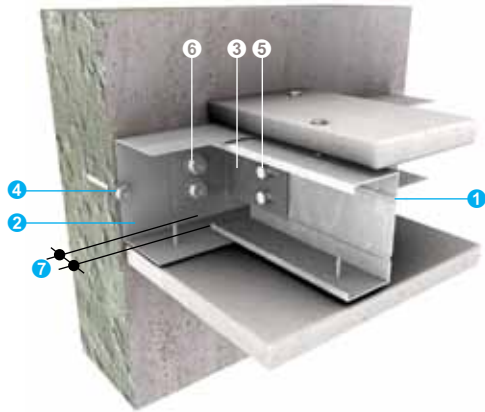
- 1 Concealed grid suspended ceiling system
- 2 50mm x M6 expansion bolts at 500mm centres
- 3 Galvanised steel perimeter angle
- 4 PROMASEAL®-A Acrylic Sealant to maintain fire and acoustic performance
- 5 Ceiling trim or coving to perimeter



- 1 Galvanised steel perimeter channel
- 2 50mm x M6 expansion bolts at 500mm centres
- 3 Galvanised steel perimeter angle
- 4 PROMASEAL®-A Acrylic Sealant to maintain the fire and acoustic performance
- 5 RONDO P50 Shadowline Trim and set over
- 6 PROMASEAL® IBS™ Ø 22mm diameter to maintain fire performance (not suitable if acoustic integrity is required)

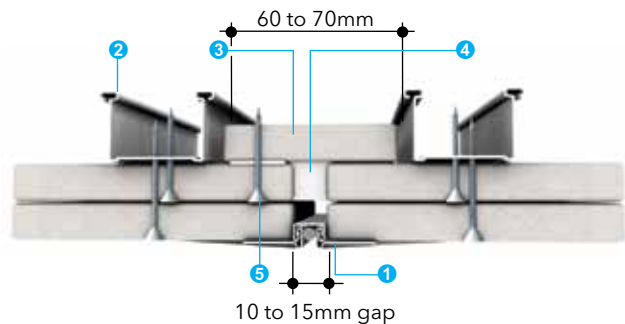


- 1 Concealed grid suspended ceiling system
- 2 50mm x M6 expansion bolts at 500mm centres
- 3 Galvanised steel perimeter angle
- 4 PROMASEAL®-A Acrylic Sealant to maintain fire and acoustic performance
- 5 Ceiling trim or coving to perimeter
- 6 Timber joists etc



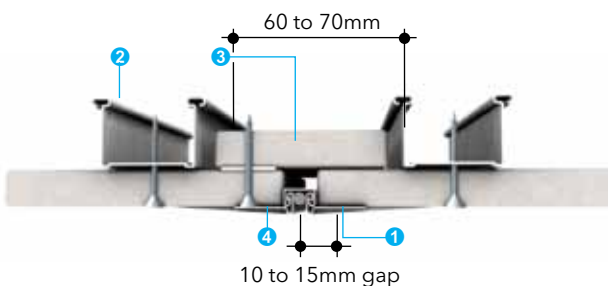
Self-supporting ceiling perimeter framing at masonry wall junction (for ceiling span above 3000mm)

- ① Steel joists at 600mm nominal centres
- ② Galvanised steel perimeter channel
- ③ Galvanised steel angle bracket 3mm thick
- ④ 50mm x M6 expansion bolts at 500mm centres
- ⑤ Two pieces of M8 bolts at each end of joist
- ⑥ Two pieces of 60mm x M8 expansion bolts per bracket
- ⑦ Expansion allowance according to system specification



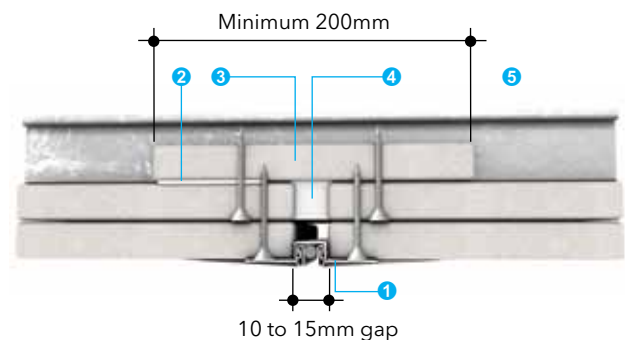
Parallel to steel framing of double layer self-supporting ceilings

- ① RONDO P35 control joint with set finish
- ② Concealed steel grid framing sections
- ③ Continuous Promat board strips
- ④ Continuously fill gap with PROMASEAL®-A Acrylic Sealant to minimum depth of 1st layer board thickness
- ⑤ Fix one side of Promat board strips with laminating screws at 200mm maximum centres or plaster based adhesive



Parallel to steel framing of single layer self-supporting ceilings

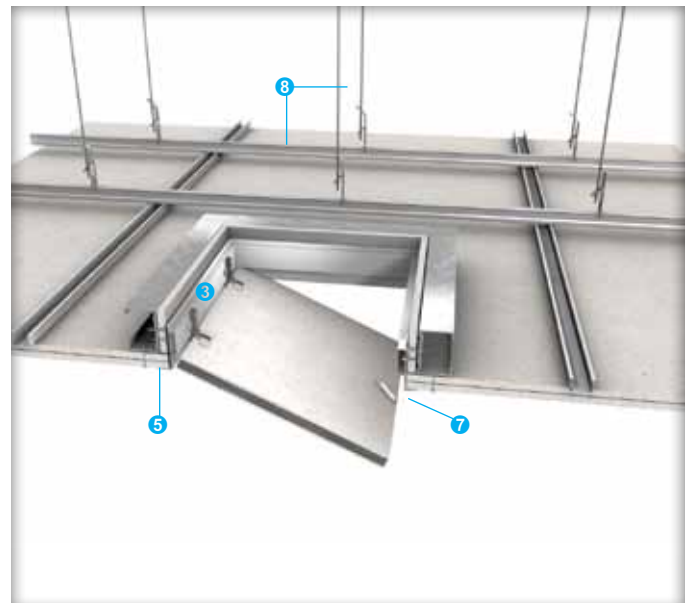
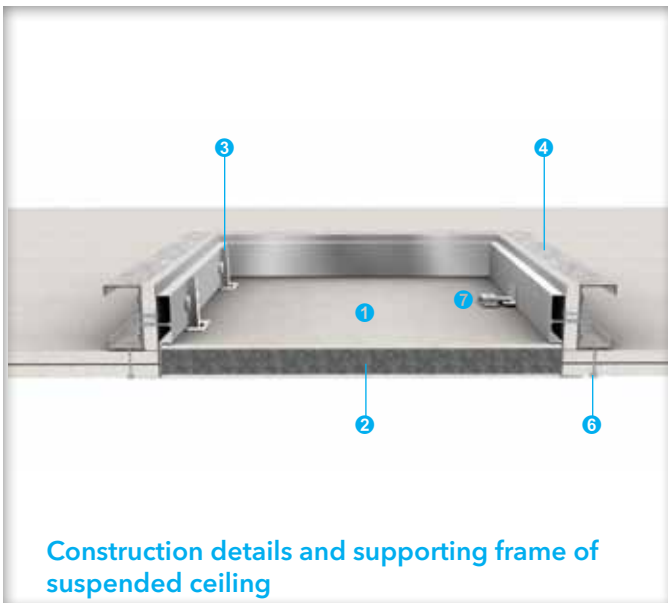
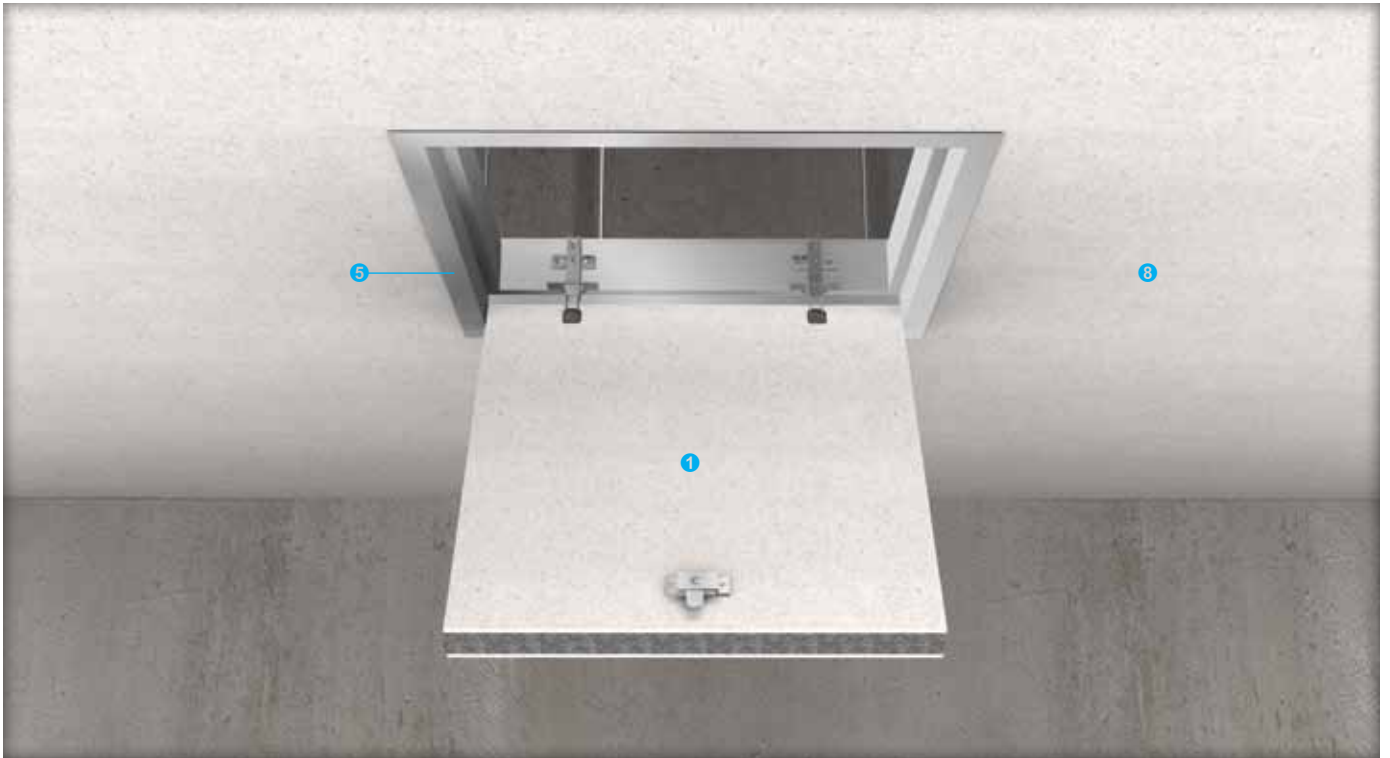
- ① RONDO P35 control joint with set finish
- ② Concealed steel grid framing sections
- ③ Continuous Promat board strips
- ④ Fix one side of Promat board strips with laminating screws at 200mm centres



Perpendicular to steel framing of double layer self-supporting ceilings

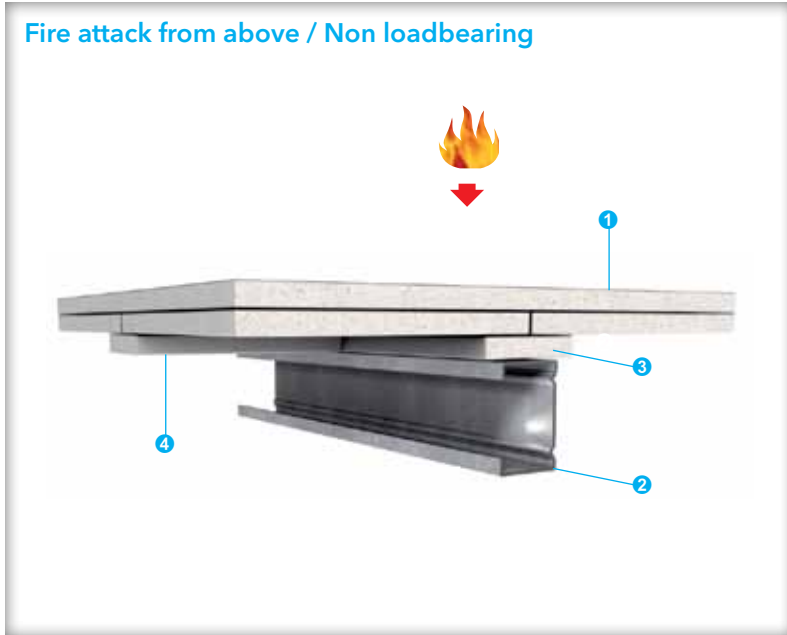
- ① RONDO P35 control joint with set finish
- ② Fix one side of Promat board strips with laminating screws at 200mm maximum centres or plaster based adhesive
- ③ Promat board strips between galvanised steel channel
- ④ Continuously fill gap with PROMASEAL®-A Acrylic Sealant to minimum depth of 1st layer board thickness
- ⑤ Continuous galvanised steel channel

Ceiling/floor access hatch



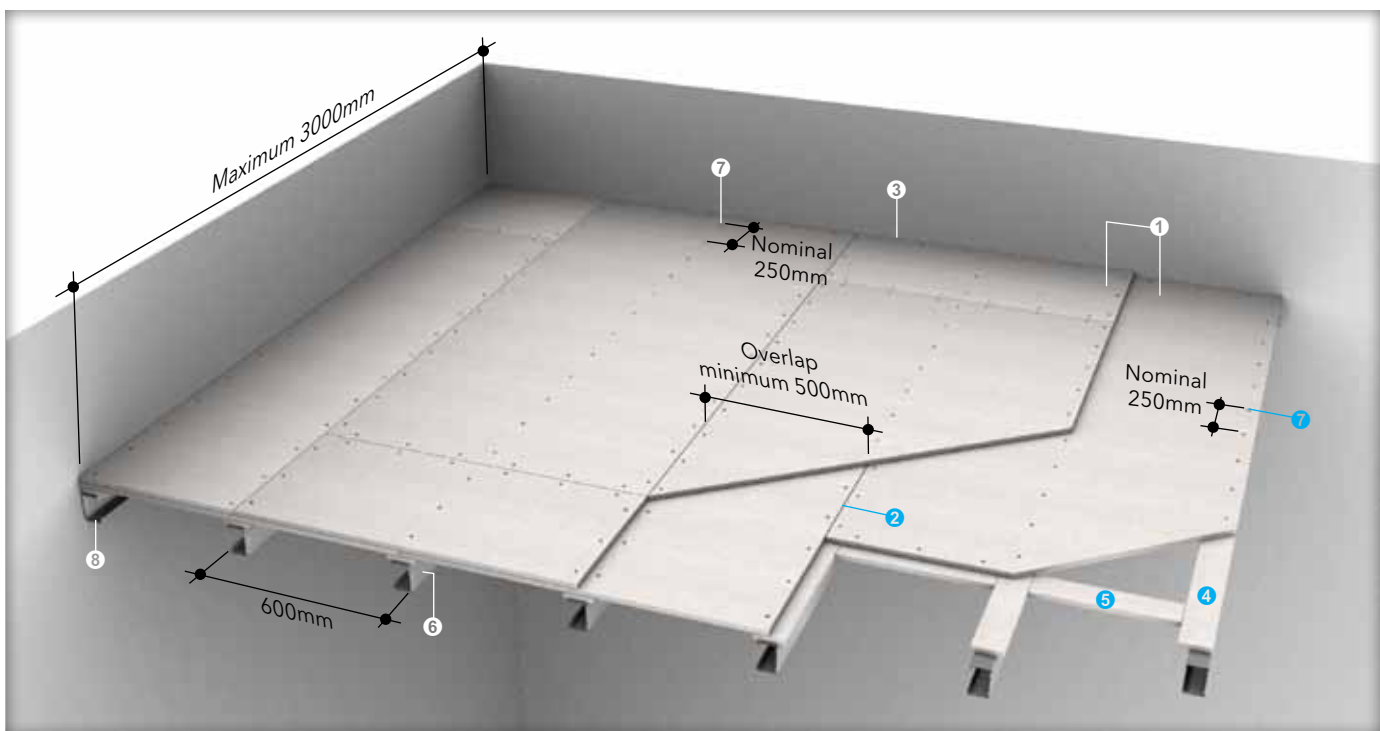
- ❶ PROMATECT® 100 board 30mm thick (maximum size 700mm x 700mm) covered with one layer of medium density fibreboard, 5mm thick on each side
- ❷ PROMASEAL® Intumescent Strip 30mm x 2mm thick at perimeter
- ❸ Access hatch framework with hinges
- ❹ Galvanised steel channel, size in accordance with the existing system of ❸
- ❺ Galvanised steel trimming flange (optional)
- ❻ 75mm self-tapping screws at nominal 250mm centres
- ❼ Lock set, quantity and centres of the locks depend on overall hatch size
- ❽ Fire resistant self-supporting/suspended membrane ceiling or concrete/masonry floor

Fire attack from above / Non loadbearing



Fire resistance	FRL	-/120/120
	Standard	AS 1530: Part 4: 2005
	Approval	BRE CC 232157A
Acoustic	# STC # R _w	36dB 36dB
	Standard	ISO 140: Part 3: 1996 ISO 717: Part 1: 1996
	Predicted assessment	Marshall Day 16th August 2007
Construction	Maximum span	3000mm
	Ceiling thickness	From 150mm
	Ceiling mass	From 39kg/m ²

Margin of error is generally within ±3dB



- ① Two layers of PROMATECT® 100 board, each 20mm thick
- ② All longitudinal board joints must be coincident with the steel framework, longitudinal board joints between the two layers must be staggered by 500mm
- ③ Gap at perimeter to be caulked with PROMASEAL®-A Acrylic Sealant
- ④ PROMATECT® 100 cover strip 50mm x 20mm thick above of perimeter channel
- ⑤ PROMATECT® 100 cover strip 50mm x 20mm thick at transverse joints in the first layer
- ⑥ Steel joist at 600mm centres
- ⑦ No. 8 steel screws at nominal 250mm centres
 - 32mm long to secure cover strips to steel
 - 50mm long to secure first layer board to steel
 - 72mm long to secure second layer board to steel
 - 35mm long laminating screws to stitch transverse joints in second layer board to first layer board
- ⑧ Steel wall channel fixed to substrate at nominal 500mm centres

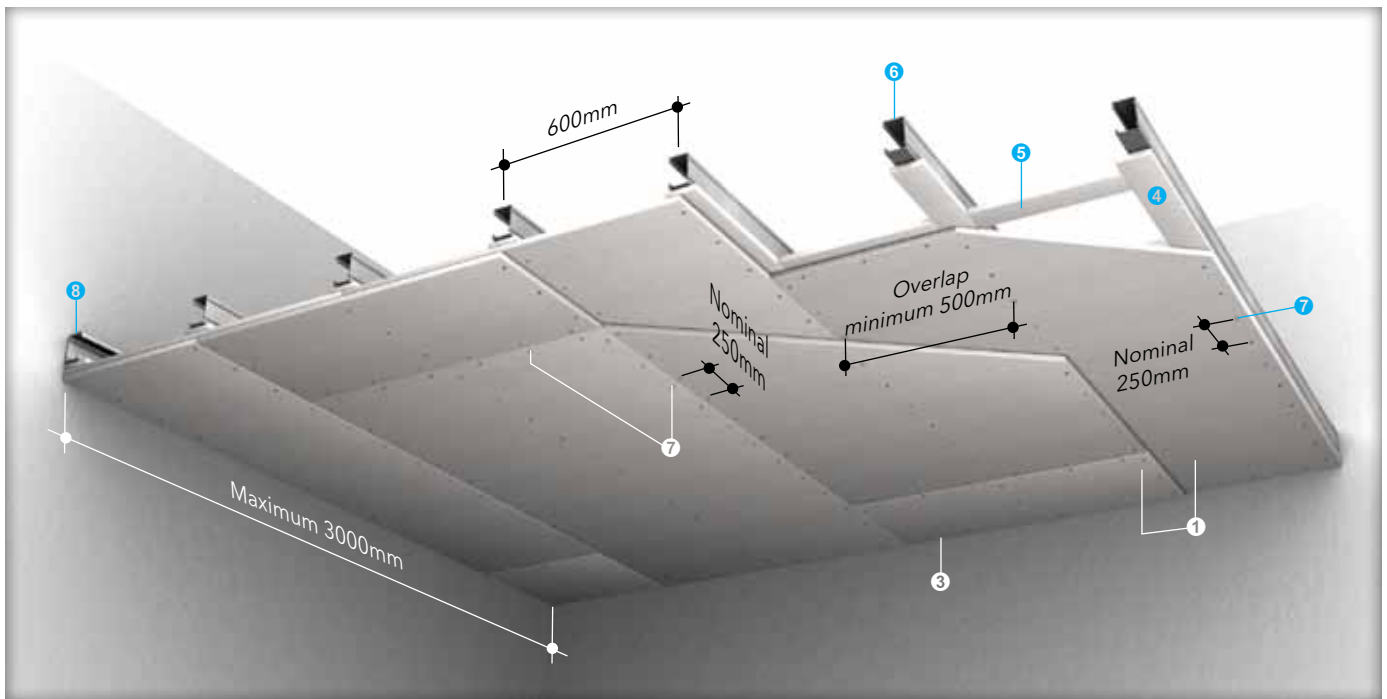
Please see pages 115 and 116 for details of perimeter and control joints

Fire attack from below / Non loadbearing



Fire resistance	FRL	-/120/120
	Standard	AS 1530: Part 4: 2005
	Approval	BRE CC 232157A
Acoustic	# STC # R _w	36dB 36dB
	Standard	ISO 140: Part 3: 1996 ISO 717: Part 1: 1996
	Predicted assessment	Marshall Day 16th August 2007
Construction	Maximum span	3000mm
	Ceiling thickness	From 150mm
	Ceiling mass	From 39kg/m ²

Margin of error is generally within ±3dB



- ① Two layers of PROMATECT® 100 board, each 20mm thick
- ② All longitudinal board joints must be coincident with the steel framework, longitudinal board joints between the two layers must be staggered by 600mm
- ③ Gap at perimeter to be caulked with PROMASEAL®-A Acrylic Sealant
- ④ PROMATECT® 100 cover strip 85mm x 20mm thick
- ⑤ PROMATECT® 100 cover strip 50mm x 20mm thick at transverse joints in the first layer
- ⑥ Steel joist at 600mm centres
- ⑦ No. 8 steel screws at nominal 250mm centres
 - 32mm long to secure cover strips to steel
 - 50mm long to secure first layer board to steel
 - 72mm long to secure second layer board to steel
 - 35mm long laminating screws to stitch transverse joints in second layer board to first layer board
- ⑧ Steel wall channel

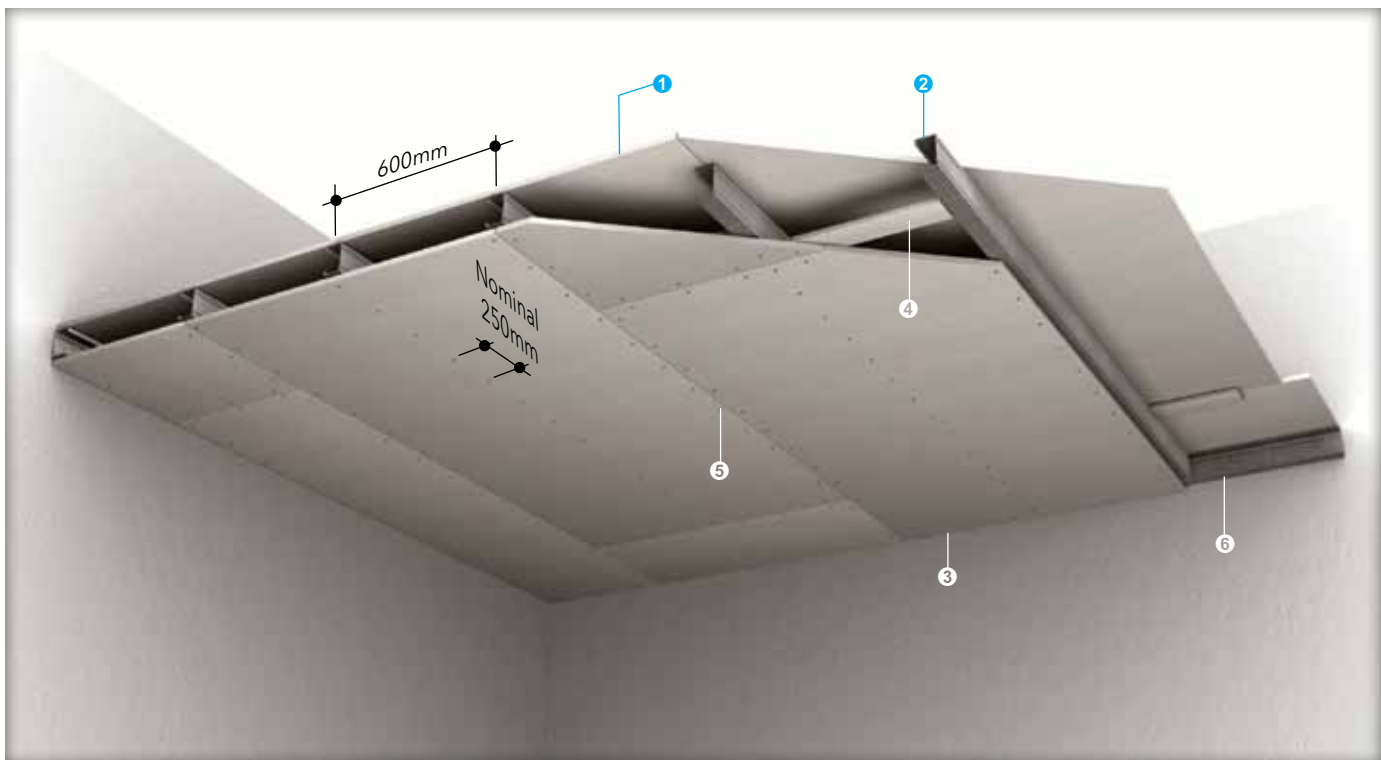
Please see pages 115 and 116 for details of perimeter and control joints

Fire attack from above and below / Non loadbearing



Fire resistance	FRL	-/120/120
	Standard	AS 1530: Part 4: 2005
	Approval	CSIRO FCO2515 BRANZ FAR 2885
Acoustic	# STC # R _w	39dB 39dB
	Standard	ISO 140: Part 3: 1996 ISO 717: Part 1: 1996
	Predicted assessment	Marshall Day 16th August 2007
Construction	Maximum span	10,000mm
	Ceiling thickness	From 105mm
	Ceiling mass	From 38.8kg/m ²

Margin of error is generally within ±3dB



- ① PROMATECT® 100 board 20mm thick to each side
- ② Steel joists at 600mm nominal centres. For up to 2.5m span, use lipped channel 64mm x 38mm x 13mm x 2.5mm
- ③ Gap at perimeter to be caulked with PROMASEAL®-A Acrylic Sealant
- ④ PROMATECT® 100 cover strip 100mm x 20mm thick at transverse joints in the top and bottom boards
- ⑤ 35mm long screws
 - No. 8 self tapping/drilling screws at 200mm centres to secure board to steel
 - No. 10 laminating screws at 100mm centres to stitch joints to cover strips
- ⑥ Steel wall channel

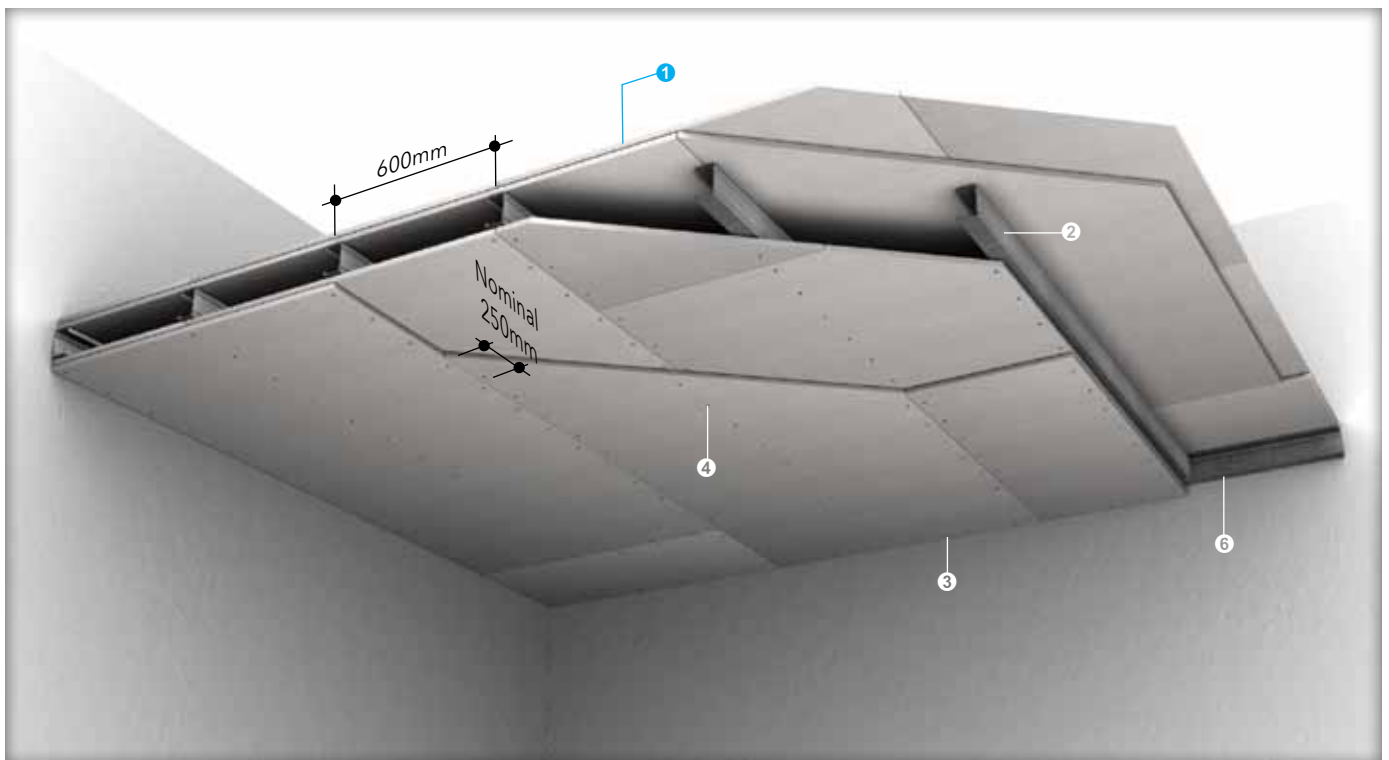
Please see pages 115 and 116 for details of perimeter and control joints

Fire attack from above and below / Non loadbearing



Fire resistance	FRL	-/240/240
	Standard	AS 1530: Part 4: 2005
	Approval	BRANZ FAR 4283
Acoustic	# STC # R _w	41dB 41dB
	Standard	ISO 140: Part 3: 1996 ISO 717: Part 1: 1996
	Predicted assessment	Marshall Day 16th August 2007
Construction	Maximum span	10,000mm
	Ceiling thickness	From 156mm
	Ceiling mass	From 70kg/m ²

Margin of error is generally within $\pm 3\text{dB}$



- ❶ Two layers of PROMATECT® 100 board, each 20mm thick
- ❷ Steel joists at 600mm nominal centres. For up to 2.5m span, use 92mm x 2.5mm wall stud
- ❸ Gap at perimeter to be caulked with PROMASEAL®-A Acrylic Sealant
- ❹ 35mm No. 8 self tapping/drilling screws at 300mm centres to secure inner board to steel
40mm No. 10 laminating screws at 100mm centres to stitch joints to steel
50mm No. 8 self tapping/drilling screws at 200mm centres to secure outer board to steel
- ❺ Steel wall channel

Please see pages 115 and 116 for details of perimeter and control joints

The following are standard Architectural Specifications for self-supporting membrane ceiling systems using PROMATECT® 100. 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 above / fire attack from below / fire attack from above & below / non loadbearing

Up to 240 minute fire resistance, integrity and insulation in accordance with the criteria of AS 1530: Part 4: 2005. Non loadbearing.

Supporting structure

Care should be taken that any structural element by which the membrane ceiling system is supported, e.g. a beam, floor or wall, has a fire resistance equal to or greater than 120 minutes and is capable of supporting the system for the required fire resistance.

Lining boards

One or two⁽¹⁾ layers of 20mm thick PROMATECT® 100 PromaX® mineral boards as manufactured by Promat International (Asia Pacific) Ltd. All joints to coincide with steel framing. Standard board dimension 1200mm x 2500mm x 20mm thick.

Fixing

Wall tracks are anchored to the wall using 60mm x M6 steel expanding anchors at maximum 500mm centres. Ceiling joists comprising steel lipped channels are then positioned at 600mm maximum centres. The ends of each of the steel joists are friction fitted between the flanges of the steel perimeter channels. Wall tracks and ceiling joists section sizes are to be selected as appropriate, according to the ceiling span outlined in the steel joist table below.

Ceiling span	Proposed steel joist	Proposed wall track
Up to 1.5m	Lipped C-92 x 35mm x 5mm x 0.55mm thick	C-94 x 32mm x 0.55mm thick
Up to 2.0m	Lipped C-92 x 35mm x 5mm x 1.15mm thick	C-94 x 32mm x 0.55mm thick
Up to 2.5m	Lipped C-102 x 51mm x 12.5mm x 1.2mm thick	C-100 x 40mm x 0.6mm thick
Up to 3.0m	Lipped C-102 x 51mm x 12.5mm x 1.5mm thick	C-100 x 40mm x 0.6mm thick

For fire exposure from above, the topside of the steel joists and perimeter channels are covered with 20mm thick PROMATECT® 100 fillets, minimum width 50mm for the perimeter channels and 85mm for the steel joists. The fillets are fixed in position using minimum 32mm x No. 8 screws at 250mm centres. Two layers of 20mm thick PROMATECT® 100 boards are then fixed to the topside of the steel framework and fillets using minimum 50mm x No. 8 screws at maximum 250mm centres. All longitudinal board joints must be coincident with the steel framework. The second layer is fixed in a similar manner using minimum 72mm x No. 8 screws, ensuring that all joints in the two layers are staggered by 600mm. Each transverse joints in second layer are fixed using 35mm laminating screws.

For the fire exposure from below, the PROMATECT® 100 boards and fixing are similar to the above but the boards are laid at the bottom of the steel joists and perimeter channels.

As for the fire exposure from either side, 20mm thick PROMATECT® 100 is fixed to either side of the steel joists and perimeter channels. The fixing uses 32mm x No. 8 screws at 200mm centres. One layer of PROMATECT® 100 cover strip 100mm x 20mm thick is fixed at transverse board joints in the top and bottom boards. The stitch joints at the cover strips are then fixed using No. 10 laminating screws.

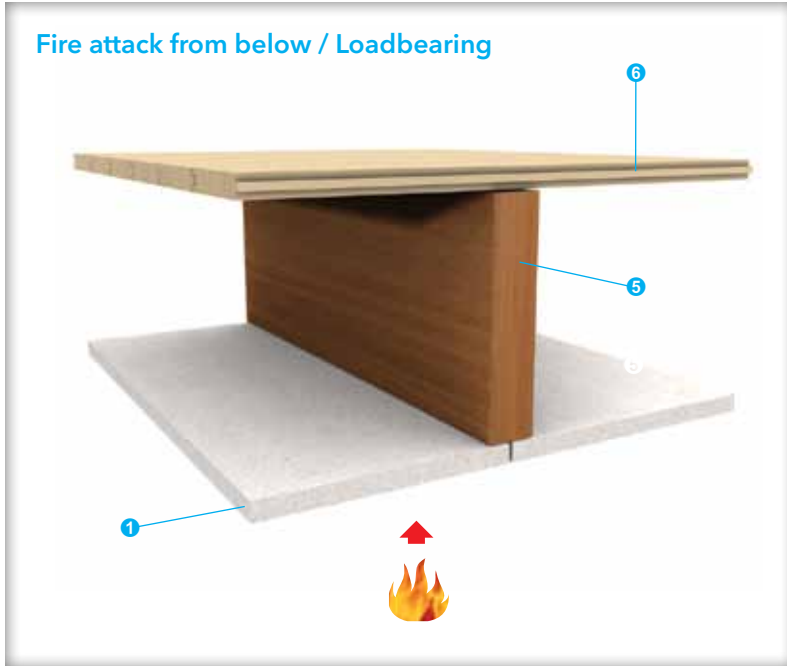
Ceiling span	Proposed steel joist	Rondo Part No.	Lysaght Part No.	Minimum sectional modulus	Expansion at each end of steel section
Up to 1.5m	C-channel 65mm x 50mm x 0.6mm thick	251 (493)	C10010	2314mm ³	9mm
Up to 2.0m	C-channel 65mm x 50mm x 1.15mm thick	511 (681)	C10010	4330mm ³	12 mm
Up to 2.5m	Lipped C-channel 65mm x 38mm x 13mm x 2.5mm thick	511 (691)	C10010	7110mm ³	15mm
Up to 3.0m	Lipped C-channel 76mm x 44mm x 16mm x 2.5mm thick	691	C10015	10300mm ³	18mm
Up to 3.5m	C-channel 103mm x 34mm x 3.0mm thick	N/A	C10019	12840mm ³	21mm
Up to 4.0m	Lipped C-channel 102mm x 51mm x 18mm x 2.5mm thick	N/A	C15015	17400mm ³	24mm
Up to 5.0m	Two back to back lipped C-channel 102mm x 51mm x 18mm x 2.5mm thick	N/A	C20015	34800mm ³	30mm
Up to 6.0m	Two back to back lipped C-channel 127mm x 51mm x 18mm x 2.5mm thick	N/A	C20024	46800mm ³	36mm
Up to 7.4m	Lipped C-channel 203mm x 76mm x 24mm x 3.0mm thick	N/A	C20024	70100mm ³	45mm
Up to 8.3m	Lipped C-channel 250mm x 75mm x 20mm x 2.3mm thick	N/A	C20024	91600mm ³	50mm
Up to 9.0m	Two back to back lipped C-channel 225mm x 75mm x 20mm x 2.3mm thick	N/A	C30030	124360mm ³	55mm
Up to 10.0m	Two back to back lipped C-channel 250mm x 75mm x 20mm x 3.0mm thick	N/A	C30030	183200mm ³	60mm

Tests & standards

The complete system along with material and framing is tested and/or assessed to meet the requirements of AS 1530: Part 4: 2005.

Follow-on trades

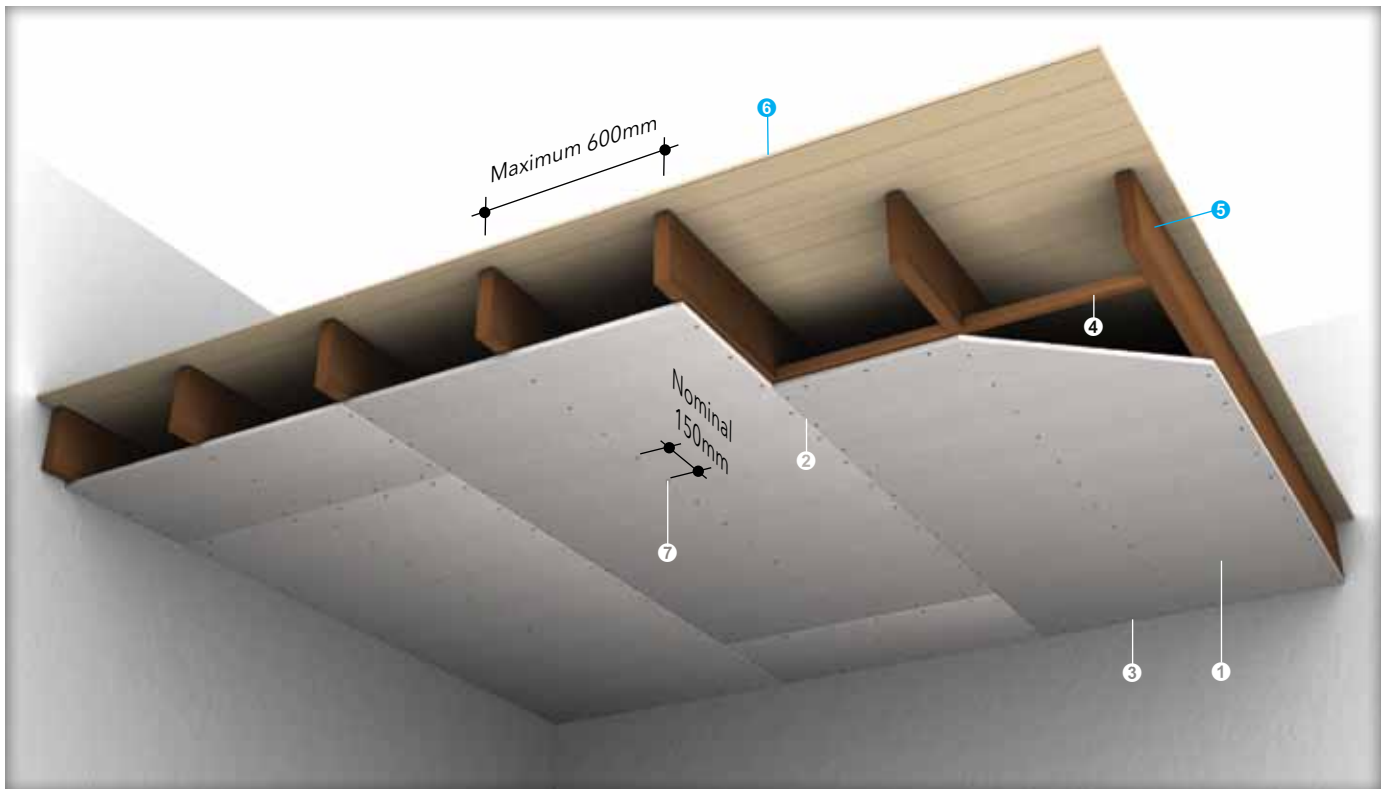
Surface of boards to be prepared for painting/plastering/tiling⁽⁵⁾ in accordance with manufacturer's recommendations.



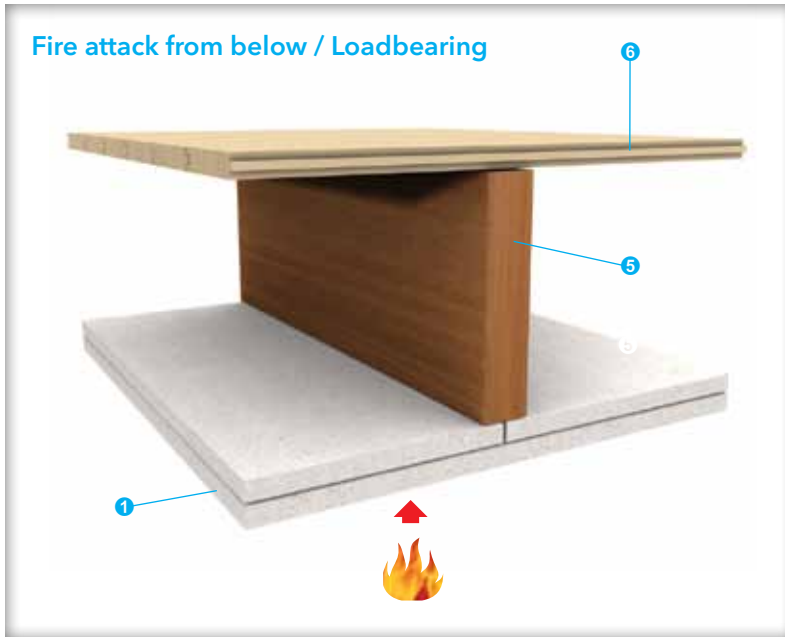
Fire resistance	FRL	60/60/60
	Standard	AS 1530: Part 4: 2005
	Approval	BRANZ FAR 2886
Acoustic	# STC	43dB
	# R _w	43dB
	Standard	ISO 140: Part 3: 1996 ISO 717: Part 1: 1996
	Predicted assessment	Marshall Day 20th August 2007
Construction	Maximum span	3000mm
	Ceiling thickness	267mm
	Ceiling mass	35kg/m ²

Margin of error is generally within $\pm 3\text{dB}$

* Based on nominal weight of the board



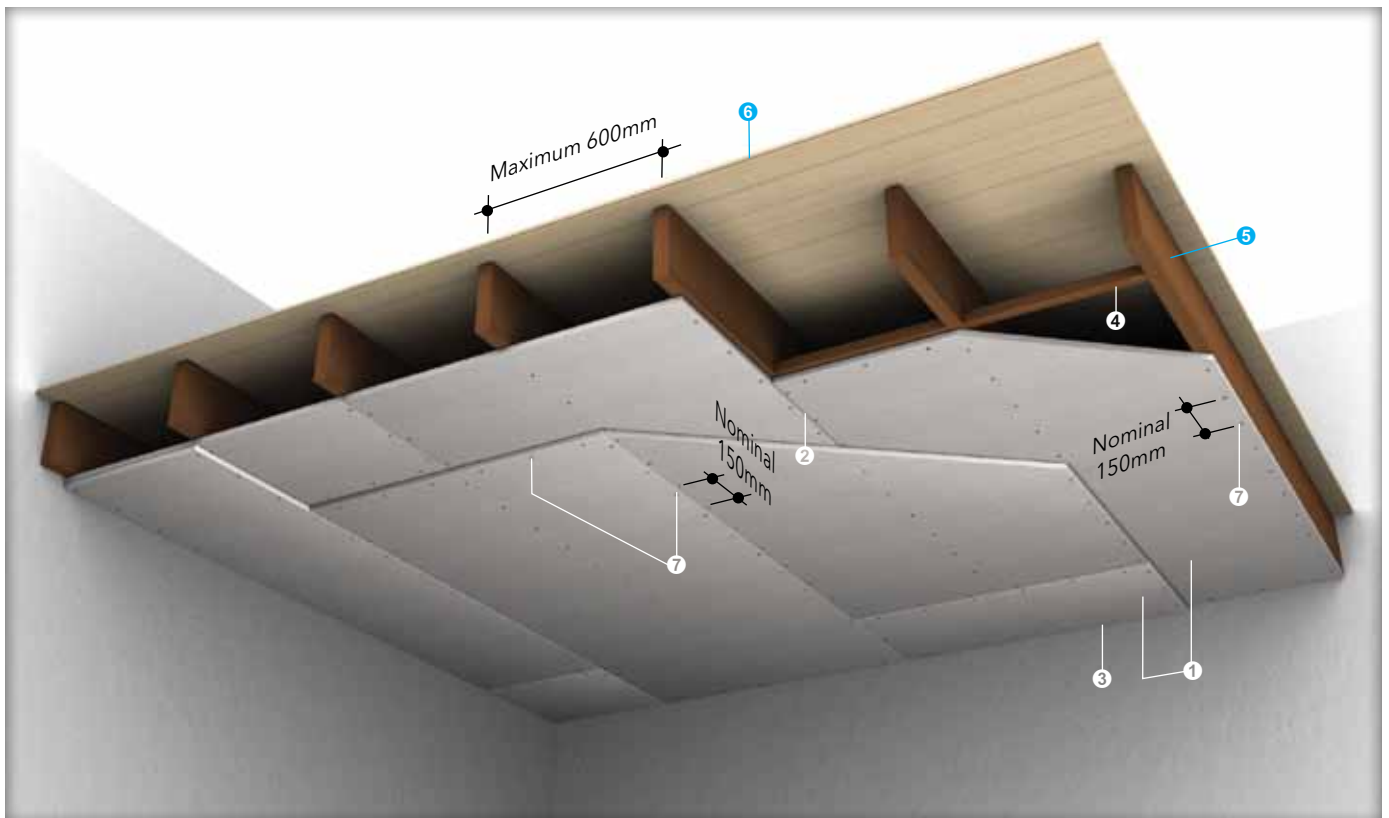
- ❶ PROMATECT® 100 board 20mm thick
- ❷ Longitudinal board joints to coincide with timber joists
- ❸ Gap at perimeter to be caulked with PROMASEAL®-A Acrylic Sealant
- ❹ Timber noggings 38mm x 38mm at 1250mm centres and to coincide with transverse board joints
- ❺ Timber joist minimum 225mm x 48mm at maximum 600 centres
- ❻ Tongue-and-groove floorboards 22mm thick
- ❼ 50mm long galvanised clout nails or woodscrews at nominal 150mm centres



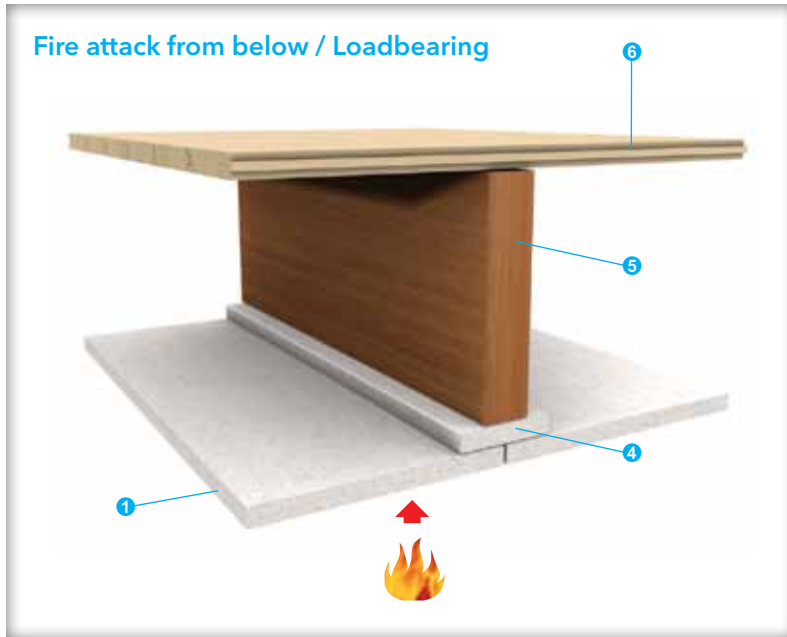
Fire resistance	FRL	90/90/90
	Standard	BS 476: Part 21: 1987
	Approval	LPC TE90019
Acoustic	# STC # R _w	43dB 43dB
	Standard	ISO 140: Part 3: 1996 ISO 717: Part 1: 1996
	Predicted assessment	Marshall Day 20th August 2007
Construction	Maximum span	3000mm
	Ceiling thickness	267mm
	Ceiling mass	36kg/m ²

Margin of error is generally within $\pm 3\text{dB}$

* Based on nominal weight of the board



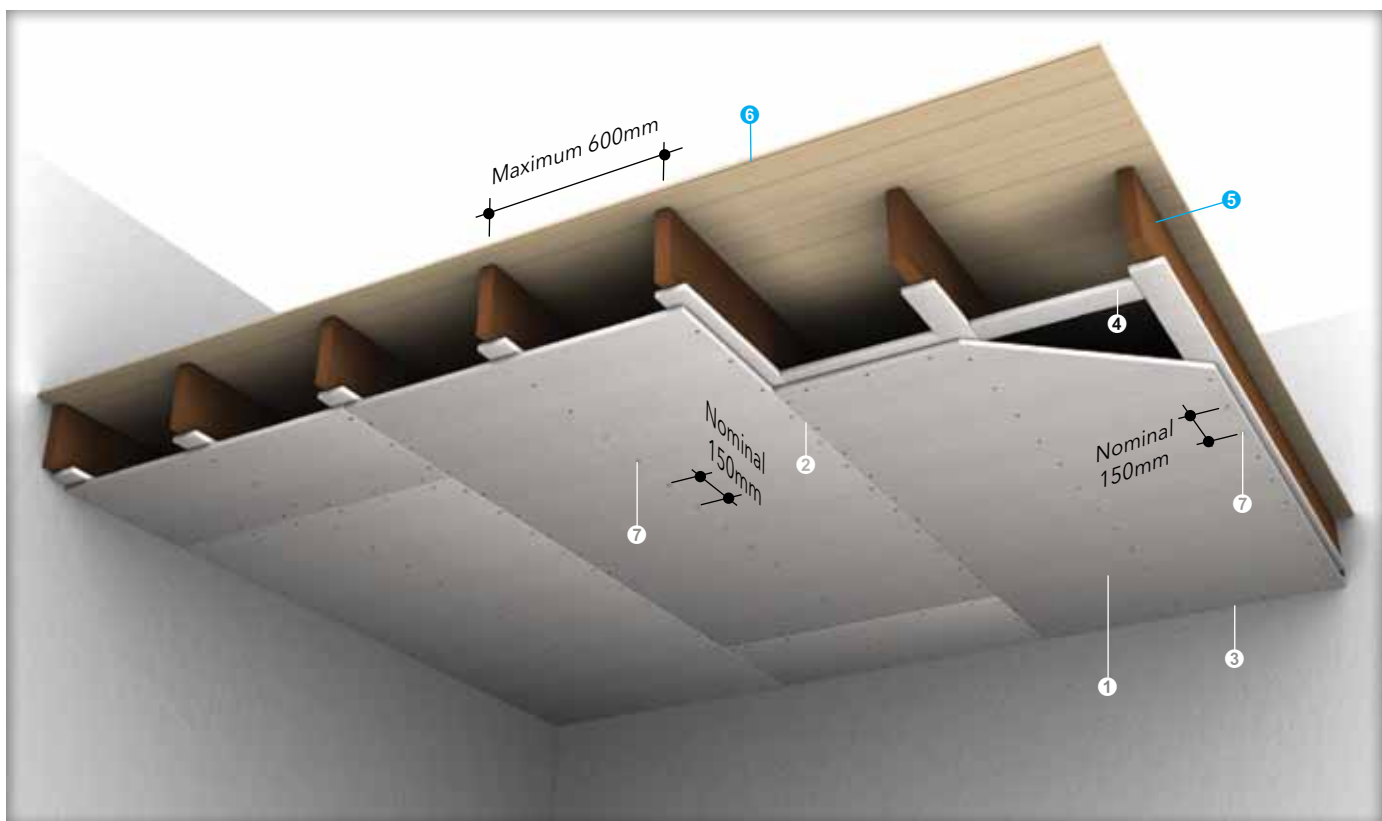
- ❶ Two layers of PROMATECT® 100 board, each 10mm thick
- ❷ Longitudinal board joints to coincide with timber joists, longitudinal board joints between the 2 layers must be staggered by 600mm
- ❸ Gap at perimeter to be caulked with PROMASEAL®-A Acrylic Sealant
- ❹ Timber noggling 38mm x 38mm at 1250mm centres and to coincide with transverse board joints in the 1st layer
- ❺ Timber joist minimum 225mm x 48mm at maximum 600 centres
- ❻ Tongue-and-groove floorboards 22mm thick
- ❼ 50mm long galvanised clout nails or woodscrews at nominal 150mm centres



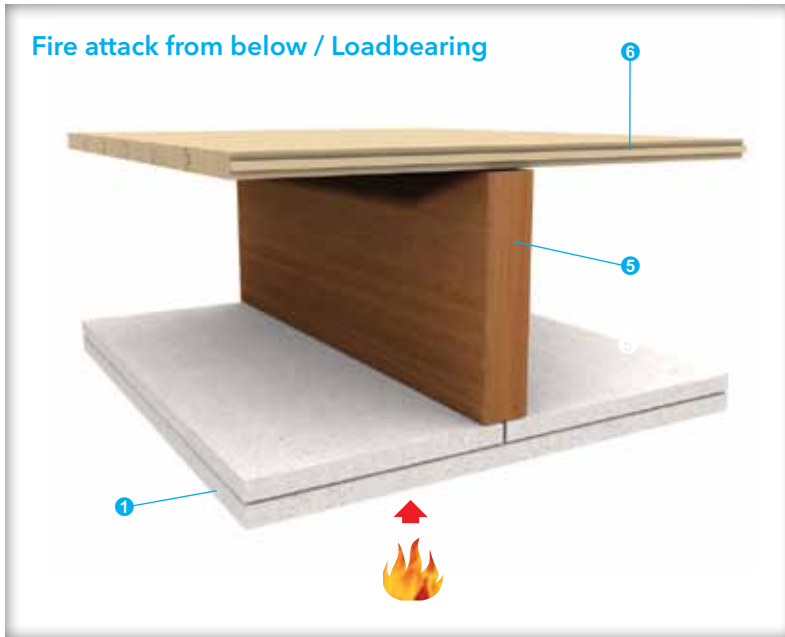
Fire resistance	FRL	90/90/90
	Standard	AS 1530: Part 4: 2005
	Approval	BRANZ FAR 2886
Acoustic	# STC # R _w	43dB 43dB
	Standard	ISO 140: Part 3: 1996 ISO 717: Part 1: 1996
	Predicted assessment	Marshall Day 20th August 2007
Construction	Maximum span	3000mm
	Ceiling thickness	287mm
	Ceiling mass	18.4kg/m ²

Margin of error is generally within $\pm 3\text{dB}$

* Based on nominal weight of the board

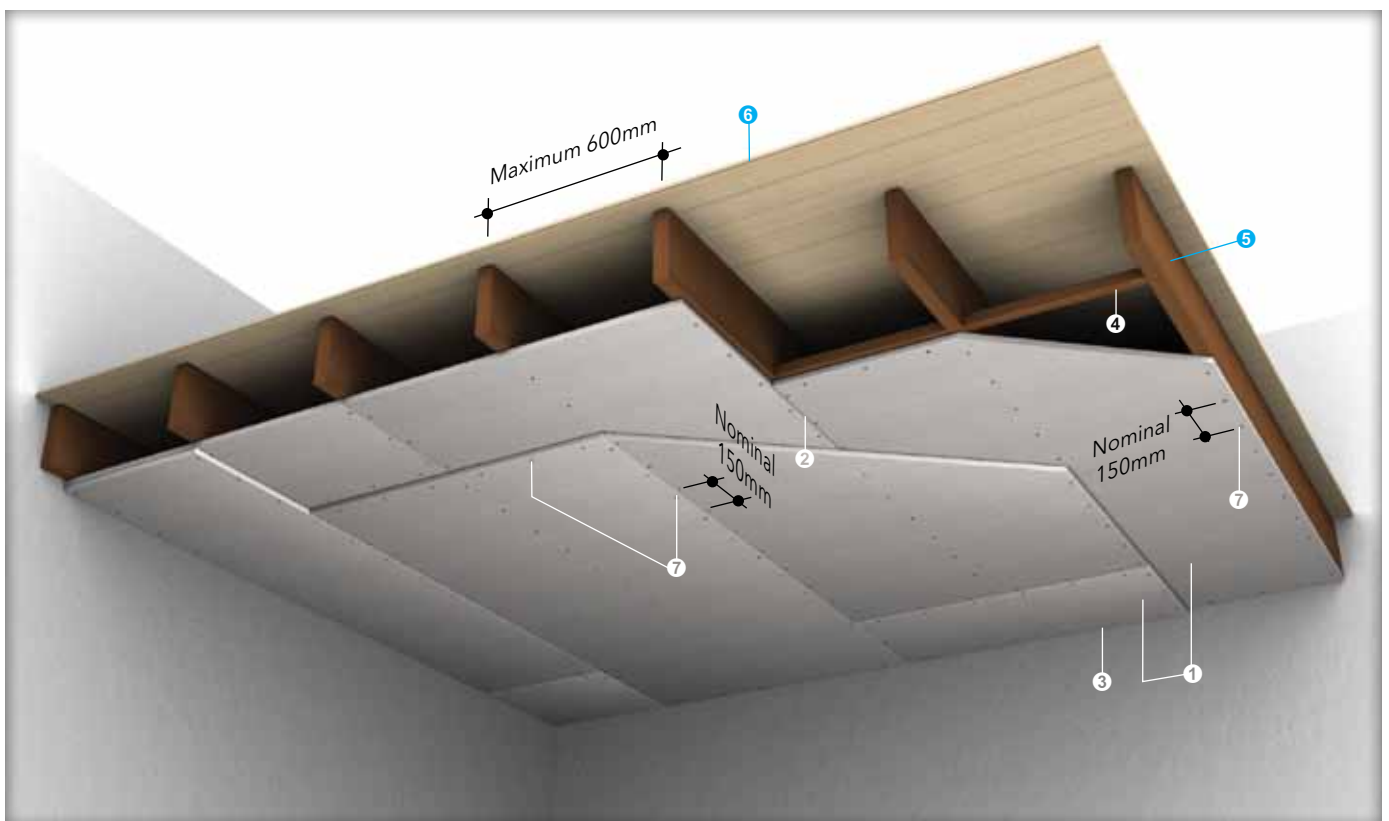


- ① One layers of PROMATECT® 100 board 20mm thick
- ② Longitudinal board joints to coincide with timber joists
- ③ Gap at perimeter to be caulked with PROMASEAL®-A Acrylic Sealant
- ④ PROMATECT® 100 cover strip 100mm x 20mm thick located on all joists and transverse board joints
- ⑤ Timber joist minimum 225mm x 48mm at maximum 600 centres
- ⑥ Tongue-and-groove floorboards 22mm thick
- ⑦ 50mm long galvanised clout nails or woodscrews at nominal 150mm centres



Fire resistance	FRL	120/120/120
	Standard	AS 1530: Part 4: 2005
	Approval	BRANZ FAR 2924
Acoustic	# STC # R _w	43dB 43dB
	Standard	ISO 140: Part 3: 1996 ISO 717: Part 1: 1996
	Predicted assessment	Marshall Day 20th August 2007
Construction	Maximum span	3000mm
	Ceiling thickness	287mm
	Ceiling mass	52.6kg/m ²

Margin of error is generally within $\pm 3\text{dB}$
* Based on nominal weight of the board



- ① Two layers of PROMATECT® 100 board, each 20mm thick
- ② Longitudinal board joints to coincide with timber joists, longitudinal board joints between the 2 layers must be staggered by 600mm
- ③ Gap at perimeter to be caulked with PROMASEAL®-A Acrylic Sealant
- ④ Timber noggling 38mm x 38mm at 1250mm centres and to coincide with transverse board joints in the 1st layer
- ⑤ Timber joist minimum 225mm x 48mm at maximum 600 centres
- ⑥ Tongue-and-groove floorboards 22mm thick
- ⑦ 50mm long galvanised clout nails or woodscrews at nominal 150mm centres for first layer, 75mm long for second layer.

The following are standard Architectural Specifications for timber floor protection systems using PROMATECT® 100. 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 below / loadbearing

Up to _____ minute⁽¹⁾ fire resistance, loadbearing capacity, integrity and _____ minute⁽²⁾ insulation in accordance with the criteria of BS 476: Part 21: 1987.

Supporting structure

Care should be taken that any structural element by which the floor protection system is supported, e.g. a beam, floor or wall, has a fire resistance equal to or greater than _____ minutes⁽¹⁾ and is capable of supporting the system for the required fire resistance.

Lining boards

Either one or two⁽³⁾ layers of 20mm or two layer of 10mm thick PROMATECT® 100 PromaX® mineral boards as manufactured by Promat International (Asia Pacific) Ltd. All joints to be coincident with steel framing. Standard board dimension 1200mm x 2500mm x 10mm or 20mm⁽³⁾ thick.

Fixing

Timber floor comprising of timber joists, 225mm x 48mm, at 600mm centres with tongue-and-groove chipboard flooring of 22mm thickness. Timber cross noggings, 38mm x 38mm, are to be located between the joists and spaced at 1250mm intervals such that they coincide with the transverse 60 minutes joints of the first layer of the PROMATECT® 100 boards.

For 60 minute fire resistance, one layer of 20mm thick PROMATECT® 100 is fixed to the timber framework using either galvanised clout nails or woodscrews of 50mm long at nominal 150mm centres, and a minimum of 12mm from board edge.

For 90 minute fire resistance, first layer of PROMATECT® 100 boards is fixed to the timber framework using either galvanised clout nails or woodscrews of 50mm long at nominal 150mm centres, and a minimum of 12mm from the board edge. The second layer of PROMATECT® 100 boards is then lined against the first layer and fixed to the timber framework with 50mm long nails or screws in a similar manner.

For 120 minute fire resistance, first layer of PROMATECT® 100 boards is fixed to the timber framework using either galvanised clout nails or woodscrews of 50mm long at nominal 150mm centres, and a minimum of 12mm from the board edge. The second layer of PROMATECT® 100 boards is then lined against the first layer and fixed to the timber framework with 75mm long nails or screws in a similar manner.

Tests & standards

The complete system along with material and framing is tested and/or assessed to meet the requirements of BS 476: Part 21: 1987 or AS 1530: Part 4: 2005.

Jointing

Plain butt joints between machined edges of boards. ⁽⁴⁾

Joints filled in preparation for painting. ⁽⁵⁾

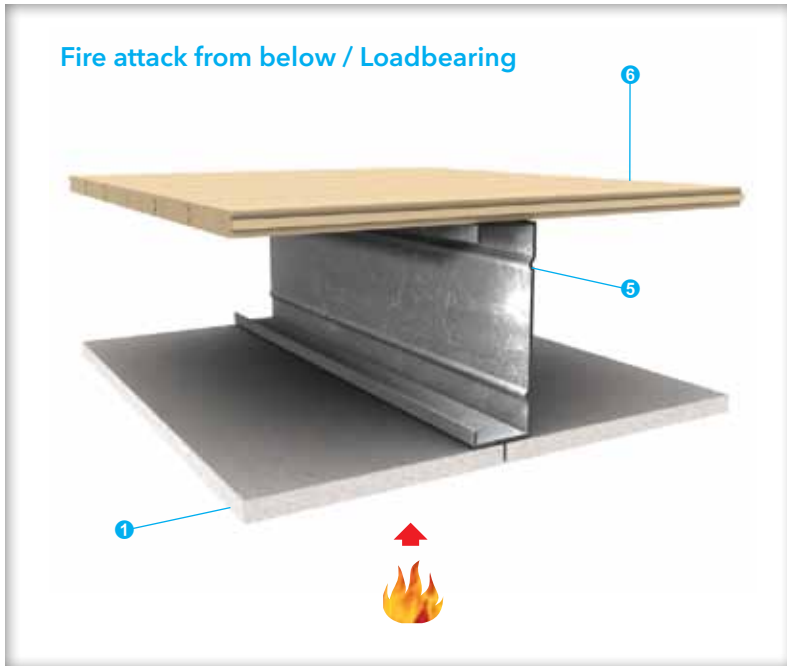
Joints filled and taped in preparation for decoration. ⁽⁶⁾

Follow-on trades

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

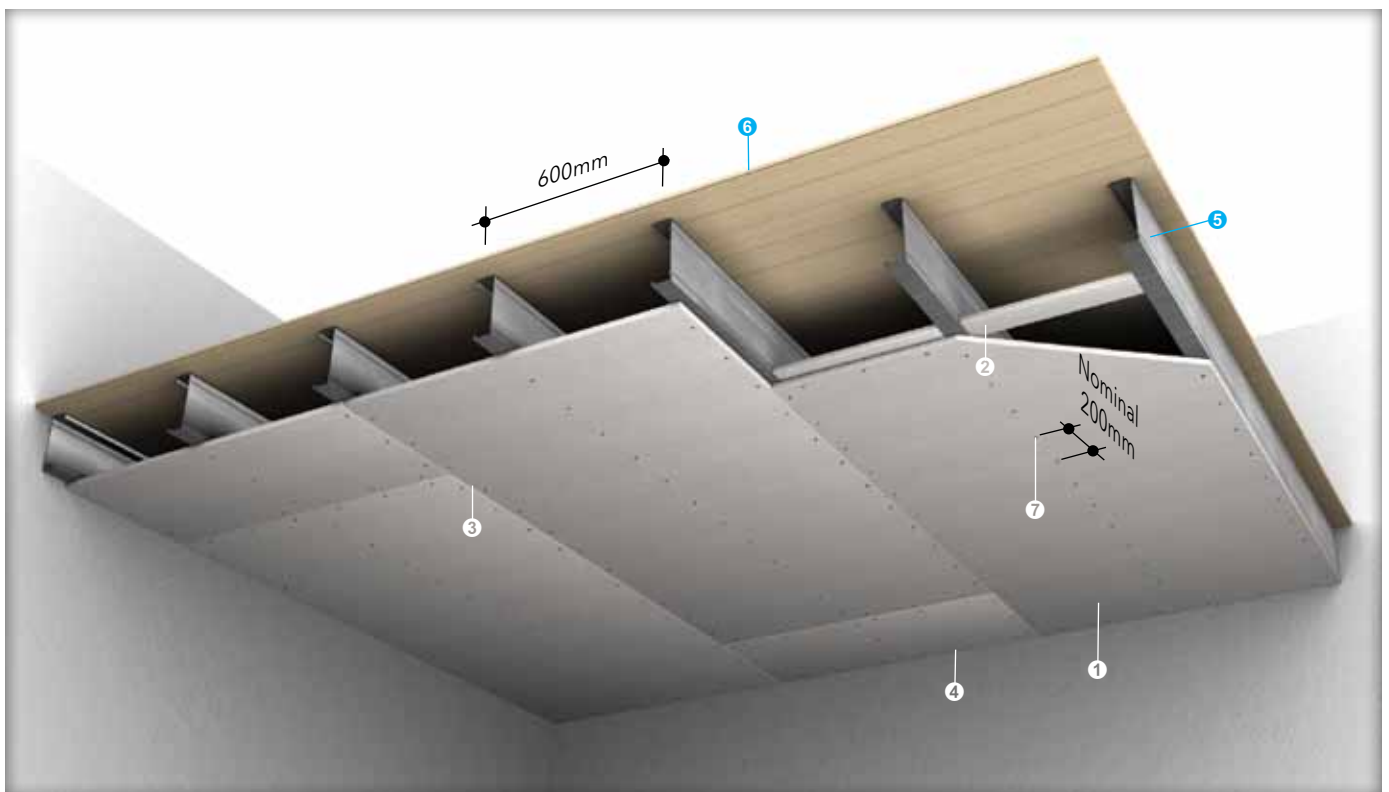
NOTES:

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



Fire resistance	FRL	60/60/60
	Standard	AS 1530: Part 4: 2005
	Approval	BRE CC 237274
Acoustic	# STC # R _w	36dB 36dB
	Standard	ISO 140: Part 3: 1996 ISO 717: Part 1: 1996
	Predicted assessment	Marshall Day 20th August 2007
Construction	Floor thickness	253mm
	Floor mass	From 19.44kg/m ²

Margin of error is generally within ±3dB

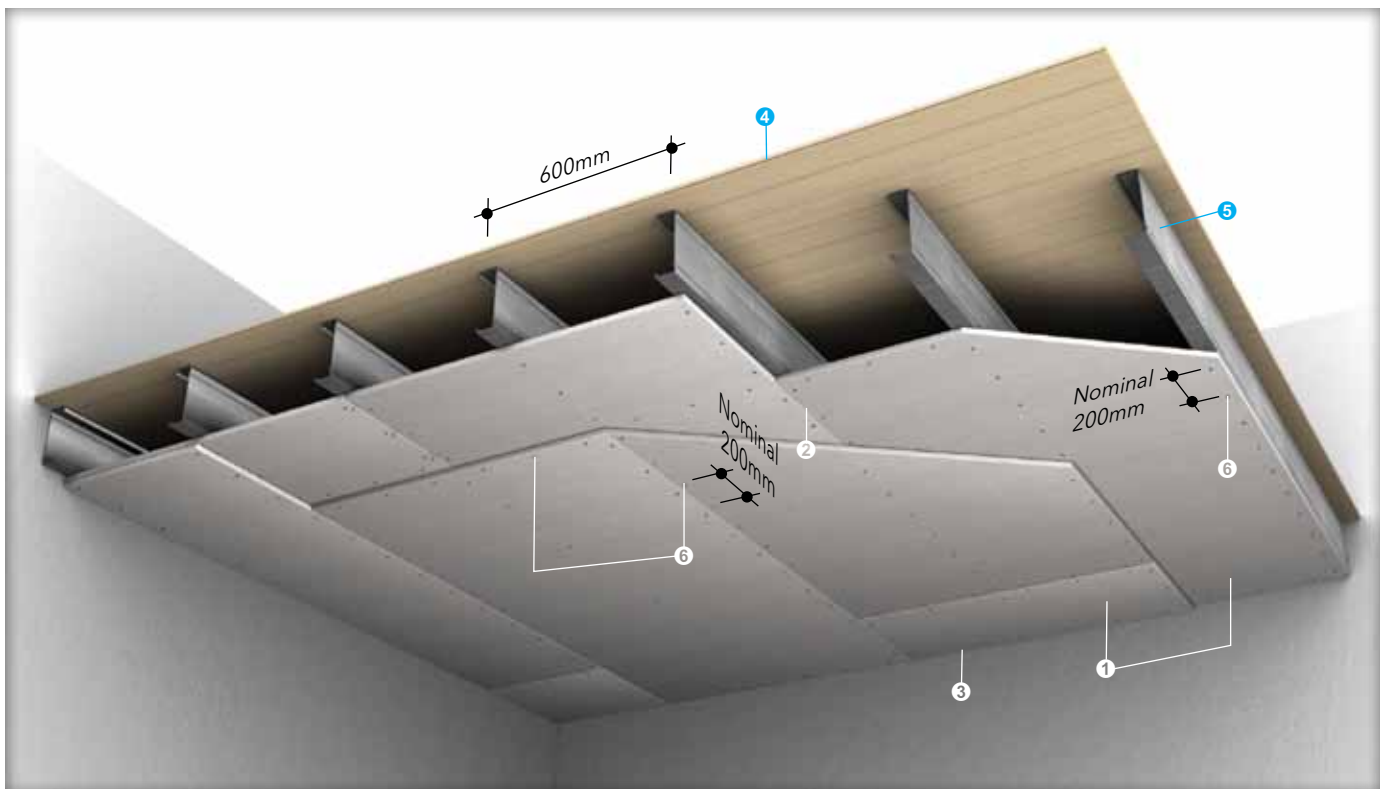


- ① PROMATECT® 100 board 20mm thick
- ② PROMATECT® 100 cover strip 100mm wide x 20mm thick located behind transverse board joint
- ③ Longitudinal board joint to coincide with steel framework
- ④ Gap at perimeter to be caulked with PROMASEAL®-A Acrylic Sealant
- ⑤ Steel joist channel 200mm x 65mm x 15mm x 1.5mm thick at 600mm centres
- ⑥ Tongue-and-groove floorboards 38mm thick
- ⑦ 35mm x No. 8 steel screws at nominal 200mm centres along all joists



Fire resistance	FRL	120/120/120
	Standard	AS 1530: Part 4: 2005
	Approval	BRE CC 234729
Acoustic	# STC # R _w	39dB 39dB
	Standard	ISO 140: Part 3: 1996 ISO 717: Part 1: 1996
	Predicted assessment	Marshall Day 20th August 2007
Construction	Floor thickness	278mm
	Floor mass	52kg/m ²

Margin of error is generally within ±3dB



- ① Two layers of PROMATECT® 100 board, each 20mm thick
- ② All longitudinal board joints must be coincident with the steel framework, longitudinal board joints between the 2 layers must be staggered by 600mm.
- ③ Gap at perimeter to be caulked with PROMASEAL®-A Acrylic Sealant
- ④ Tongue-and-groove floorboards 38mm thick
- ⑤ Steel channel 200mm x 65mm x 15mm x 1.5mm thick at 600mm centres
- ⑥ No. 8 steel screws at nominal 200mm centres along all joists
 - 35mm long to screw first layer to joists
 - 50mm long to screw second layer to joists

The following are standard Architectural Specifications for mezzanine floor systems using PROMATECT® 100. 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 below / loadbearing

Up to _____ minute⁽¹⁾ fire resistance, loadbearing capacity, integrity and _____ minute⁽²⁾ insulation in accordance with the criteria of AS 1530: Part 4: 2005.

Supporting structure

Care should be taken that any structural element by which the mezzanine floor system is supported, e.g. a beam, floor or wall, has a fire resistance equal to or greater than _____ minutes⁽¹⁾ and is capable of supporting the system for the required fire resistance.

Lining boards

One or two⁽³⁾ layers of 20mm thick PROMATECT® 100 PromaX® mineral boards as manufactured by Promat International (Asia Pacific) Ltd. All joints to be coincident with steel framing. Standard board dimension 1200mm x 2500mm x 20mm thick.

Fixing

Mezzanine floor comprising of steel joists, 200mm x 65mm x 15mm x 1.5mm, at 600mm centres with tongue-and-groove chipboard flooring of 38mm thickness.

The first layer of PROMATECT® 100 boards is fixed to the steel framework using 35mm x No. 8 steel screws at nominal 200mm centres, and a minimum of 12mm from the board edge. Where required, one layer of PROMATECT® 100 cover strips 100mm wide x 20mm thick is located behind the transverse board joints. The second layer of PROMATECT® 100 boards, where required, is then lined against the first layer and fixed to the steel framework with 50mm x No. 8 steel screws at nominal 200mm centres.

Tests & standards

The complete system along with material and framing is tested and/or assessed to meet the requirements of AS 1530: Part 4: 2005.

Jointing

Plain butt joints between machined edges of boards. ⁽³⁾
 Joints filled in preparation for painting. ⁽⁴⁾
 Joints filled and taped in preparation for decoration. ⁽⁵⁾

Follow-on trades

Surface of boards to be prepared for painting/plastering/tiling⁽⁶⁾ in accordance with manufacturer's recommendations.

NOTES:

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





FAQ's and Promat systems in Australia



FAQ's

Q1. Is PROMATECT® 100 cheaper than the conventional plasterboard systems?

A. Overall system costs must be treated as that, a SYSTEM COST. This not only includes materials, but also the labour to install them. With the PROMATECT® 100 system, labour rates can be cut by up to 40% and more importantly, the project can be completed much quicker before moving on to another profitable project.

Q2. How quick can I get PROMATECT® 100?

A. Immediately. We have stock in every state of Australia and can provide you with the material you require on short notice. We understand the needs of today's contractor and will always strive to meet these expectations. Promat Australia has a proud history of a high level of service which we always strive to maintain.

Q3. What technical support can you provide?

A. Our trained and experienced sales staff can provide certification as well as helpful advice on construction methods and other aspects of our system. Our systems are fully designed for the Australian market and are fully compliant to Australian Standards. Therefore PROMATECT® 100 should be the board of choice for your fire rated barriers.

Q4. What kind of finish will I get with the PROMATECT® 100 system?

A. The finish will be as good as or better than plasterboard and is finished using the same techniques you will already be familiar with.

Q5. Do we need any mineral wool infills?

A. No.

Q6. How come only one layer is needed on each side when plasterboard needs two or three?

A. PROMATECT® 100 is a very different board to plasterboard and has superior performance as it is a dedicated fire resistance board and not a hybrid version of non fire rated combustible material.

Q7. Is it cost competitive to gypsum board alternatives?

A. It is a one layer system either side of steel stud providing up to 120 minute protection. Competitor systems are required to use two layers either side. Labour rates are therefore cut in half making PROMATECT® 100 a competitive alternative.

Q8. What surface finish am I likely to achieve if PROMATECT® 100 is used?

A. You will have a finish that is extremely close if not better than gypsum. The PROMATECT® 100 comes with rebated edges, that allows it to be set. PROMATECT® 100 can be painted and used as a finished surface.

Promat system in Australia

PROMATECT® board systems:

- Air Ducts, plenums and enclosures
- M&E Ducts and trunking
- Ceilings and floor protection
- Concrete, timber and steel protection
- Hatches and Panels

PROMASTOP® firestopping systems:

- Pillows
- Mortar
- Sealants
- IBS open cell foam rod and strip
- Fyrestrip - high movement gap seals
- Collars for plastic pipes
- Slab service penetration formers

Brochures:

- Passive Fire Protection Application & Technical Manual
- Promat Australia Contractors Guide: Builders
- Promat Australia Contractors Guide: Electricians
- Promat Australia Contractors Guide: HVAC
- Promat Australia Contractors Guide: Plumbers
- PROMATECT® 250 PROMAXON® Technology Steelwork Fire Protection
- Tunnel Fire Protection Handbook
- Promat SYSTEMPANEL™ Quick Solutions for Fire Resistant Party Walls, Ceilings and Floors
- Fire Stopping Training Manual
- The Specifiers Guide to Fire Rated Hatches and Access Panels
- PROMASTOP® Fire Stopping Jacket
- PROMASEAL® WRAP Insulation Seals for Copper Pipes and Cable Trays
- PromaSnap® Floor Waste System

For information on any of the above applications or specialist advice on

- Custom systems
- Infrastructure
- Energy
- High temperature insulation
- Marine
- Offshore
- Process engineering

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Through its subsidiaries, the group offers an extensive range of products: small and large roofing materials, cladding and building boards, passive fire protection systems and ceramic tiles.

Etex aims to be a professional, solid partner for all kinds of building projects.

