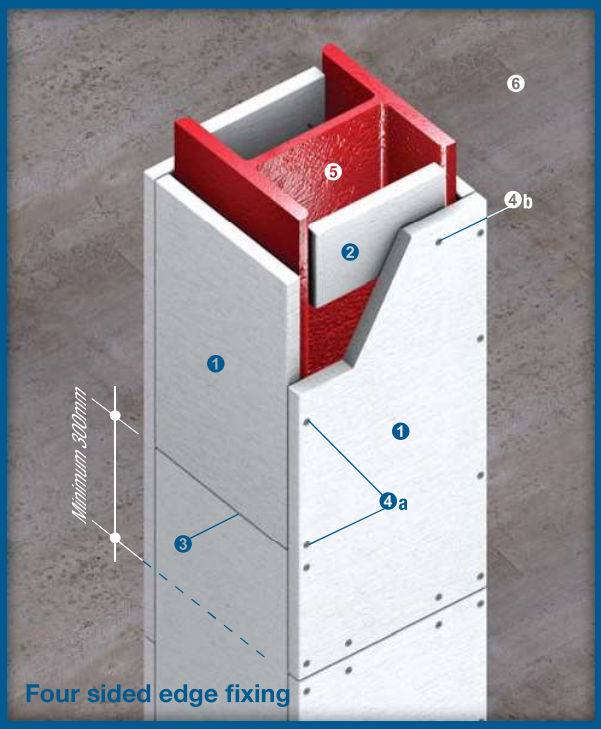
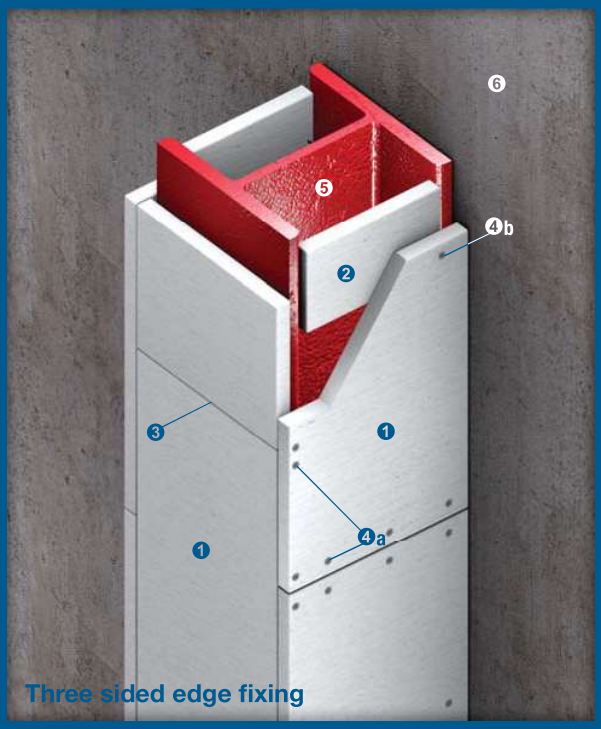




Up to 240/-/- fire resistance in accordance with the requirements of BS 476: Part 21: 1987 and AS 1530: Part 4: 2005, and up to 180/-/- fire resistance in accordance with the requirements of ASTM E119: 2007

❶ PROMATECT®-L board, thickness in accordance with the Hp/A Ratio tables on page 31

❷ PROMATECT®-L soldiers 100mm wide, minimum thickness similar to the board thickness of ❶, fixed within the web of the steel column at maximum 1220mm centres behind the board joints using screws at 100mm centres or staples at 50mm centres

❸ Horizontal joints in adjacent board sides to be staggered at minimum 300mm

For wide columns, it is advisable to include a PROMATECT®-L cover strip behind the joints within the web of the steel column to provide additional impact resistance

❹a Fixings in accordance with table below. Care should be taken not to overtighten the screws. When edge fixing it is advisable to drill pilot holes, particularly with 20mm thick boards

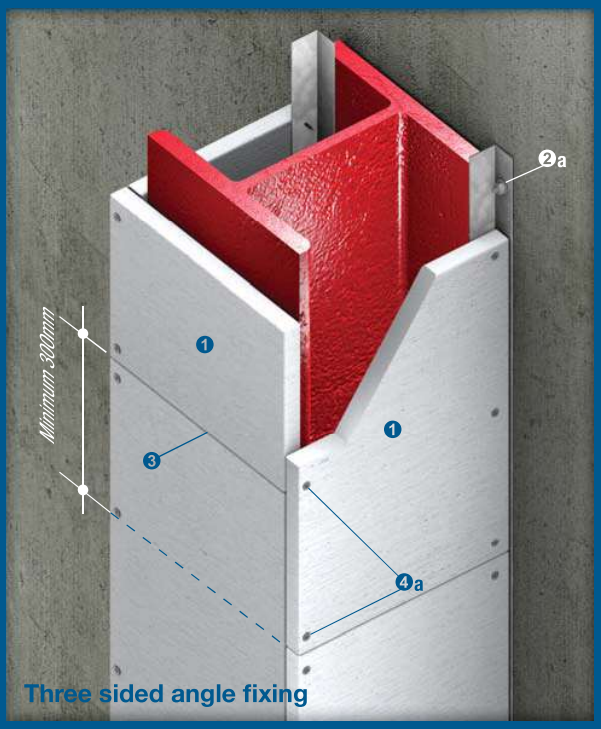
PROMATECT®-L board thickness	Deep threaded drywall screws preferably with ribbed heads at 200mm centres	Steel wire staples at 100mm centres
20mm	No. 6 x 38mm	50/11/1.5mm
25mm	No. 6 x 50mm	63/11/1.5mm
30mm	No. 8 x 63mm	63/11/1.5mm
35mm	No. 8 x 63mm	70/12/2mm
40mm	No. 8 x 75mm	70/12/2mm
50mm	No. 10 x 100mm	90/12/2mm
60mm	No. 10 x 100mm	90/12/2mm

Please consult Promat for further guidance on steel wire staple fixing

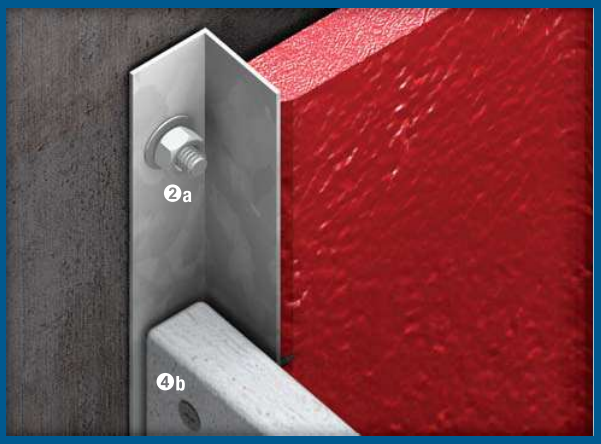
❹b Self-drilling or self-tapping drywall screws fixed to soldiers at nominal 100mm centres. Screw length should be additional 20mm of the board thickness

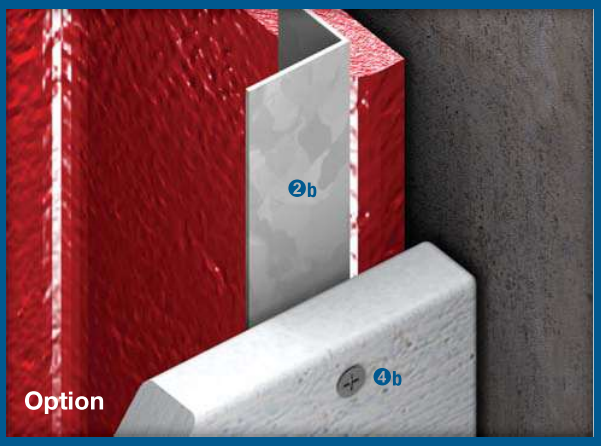
❺ Structural steel column

❻ Concrete wall substrate



Three sided angle fixing





Option

Up to 240/-/- fire resistance in accordance with the requirements of BS 476: Part 21: 1987 and AS 1530: Part 4: 2005, and up to 180/-/- fire resistance in accordance with the requirements of ASTM E119: 2007

❶ PROMATECT®-L board, thickness in accordance with the Hp/A Ratio tables on page 31

❷a Continuous galvanised steel angles minimum 32mm x 19mm x 0.9mm thick or similar fixed to the wall using non combustible proprietary anchors at nominal 500mm centres

❷b Continuous galvanised steel angles minimum 32mm x 19mm x 0.9mm thick or similar fixed to the flange using Teks screws, shot fired nails or welding. Secure edges of side boards at 200mm centres

❸ Horizontal joints in adjacent board sides to be staggered at minimum 300mm

For wide columns, it is advisable to include a PROMATECT®-L cover strip behind the joints within the web of the steel column to provide additional impact resistance

❹a Fixings in accordance with table below. Care should be taken not to overtighten the screws. When edge fixing it is advisable to drill pilot holes, particularly with 20mm thick boards

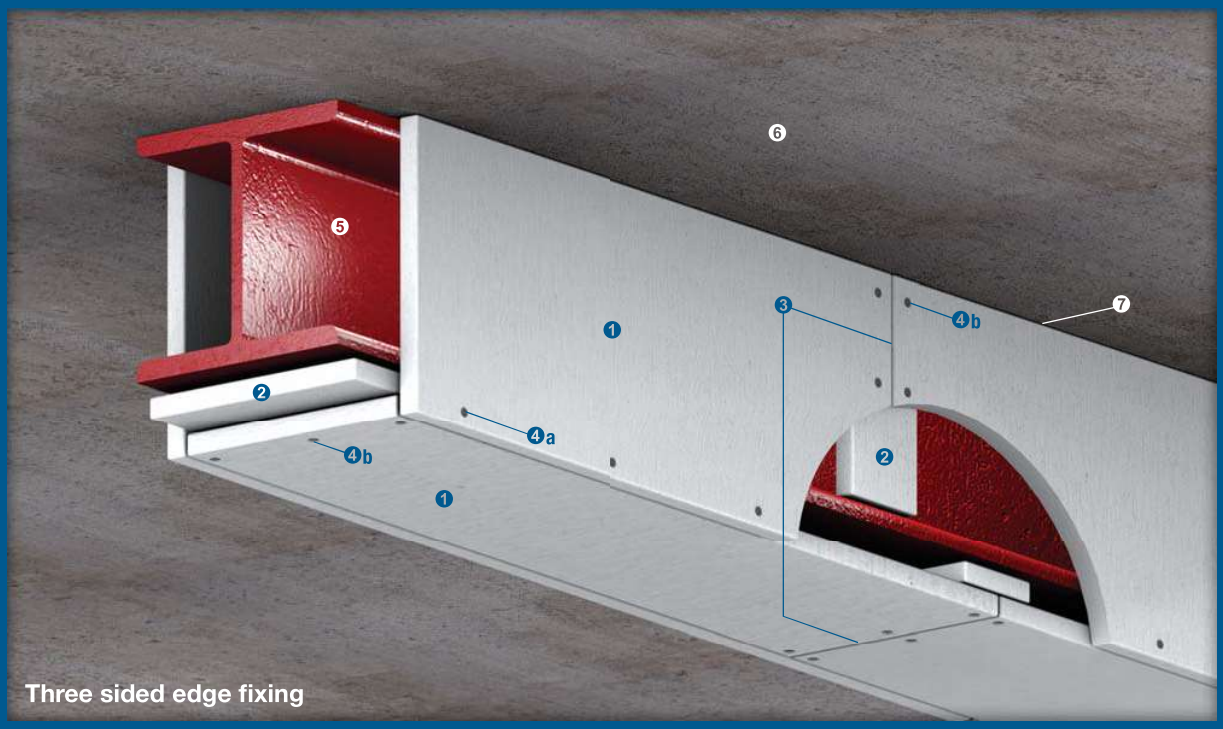
PROMATECT®-L board thickness	Deep threaded drywall screws preferably with ribbed heads at 200mm centres	Steel wire staples at 100mm centres
20mm	No. 6 x 38mm	50/11/1.5mm
25mm	No. 6 x 50mm	63/11/1.5mm
30mm	No. 8 x 63mm	63/11/1.5mm
35mm	No. 8 x 63mm	70/12/2mm
40mm	No. 8 x 75mm	70/12/2mm
50mm	No. 10 x 100mm	90/12/2mm
60mm	No. 10 x 100mm	90/12/2mm

Please consult Promat for further guidance on steel wire staple fixing

❹b Self-drilling or self-tapping drywall screws fixed to channel/angle at nominal 200mm centres. Screw length should be additional 20mm of the board thickness

❺ Structural steel column

❻ Concrete wall substrate



Three sided edge fixing

Up to 240/-/- fire resistance in accordance with the requirements of BS 476: Part 21: 1987 and AS 1530: Part 4: 2005, and up to 180/-/- fire resistance in accordance with the requirements of ASTM E119: 2007

❶ PROMATECT®-L board, thickness in accordance with the Hp/A Ratio tables on page 31

❷ PROMATECT®-L soldiers 100mm wide, minimum thickness similar to the board thickness of ❶, fixed within the web of the steel beam at maximum 1220mm centres behind the board joints using screws at 100mm centres or staples at 50mm centres

For deep beams clad with thicker boards for greater fire resistance, it is advisable to fix the soldiers at nominal 600mm centres in order to reduce the load on the soldiers. For steel beams greater than 600mm deep, a T-section soldier should be used to provide a stronger support

❸ Vertical and horizontal joints in adjacent board sides to be staggered at minimum 300mm

❹a Fixings in accordance with table below. Care should be taken not to overtighten the screws. When edge fixing it is advisable to drill pilot holes, particularly with 25mm thick boards

PROMATECT®-L board thickness	Deep threaded drywall screws preferably with ribbed heads at 200mm centres	Steel wire staples at 100mm centres
20mm	No. 6 x 38mm	50/11/1.5mm
25mm	No. 6 x 50mm	63/11/1.5mm
30mm	No. 8 x 63mm	63/11/1.5mm
35mm	No. 8 x 63mm	70/12/2mm
40mm	No. 8 x 75mm	70/12/2mm
50mm	No. 10 x 100mm	90/12/2mm
60mm	No. 10 x 100mm	90/12/2mm

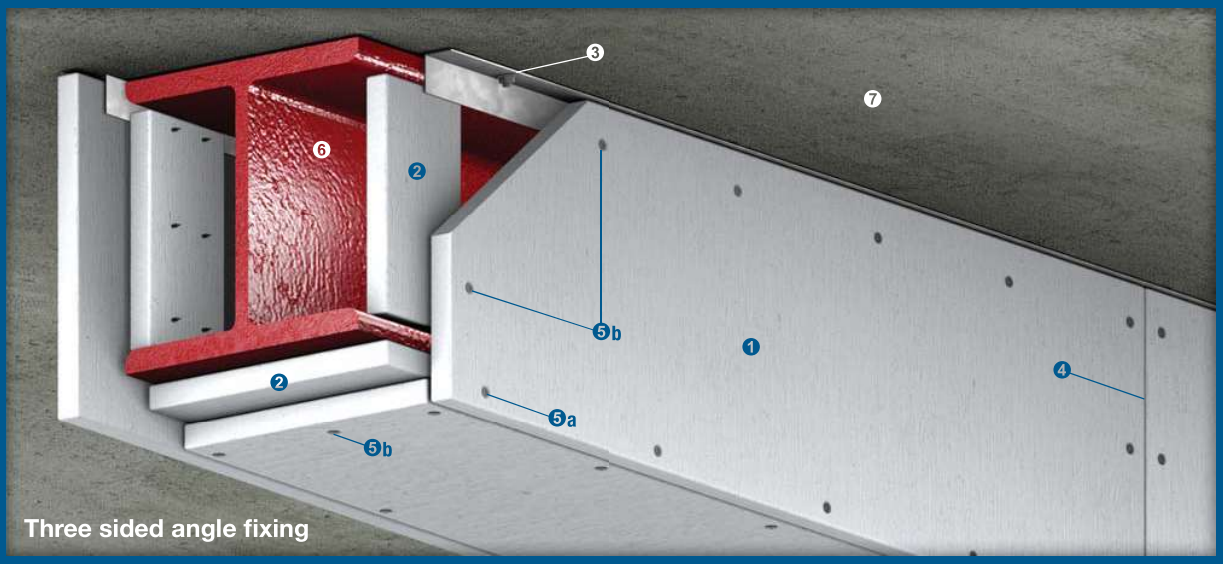
Please consult Promat for further guidance on steel wire staple fixing

❹b Self-drilling or self-tapping drywall screws fixed to channel/angle at nominal 200mm centres and to soldiers at nominal 100mm centres. Screw length should be additional 20mm of the board thickness

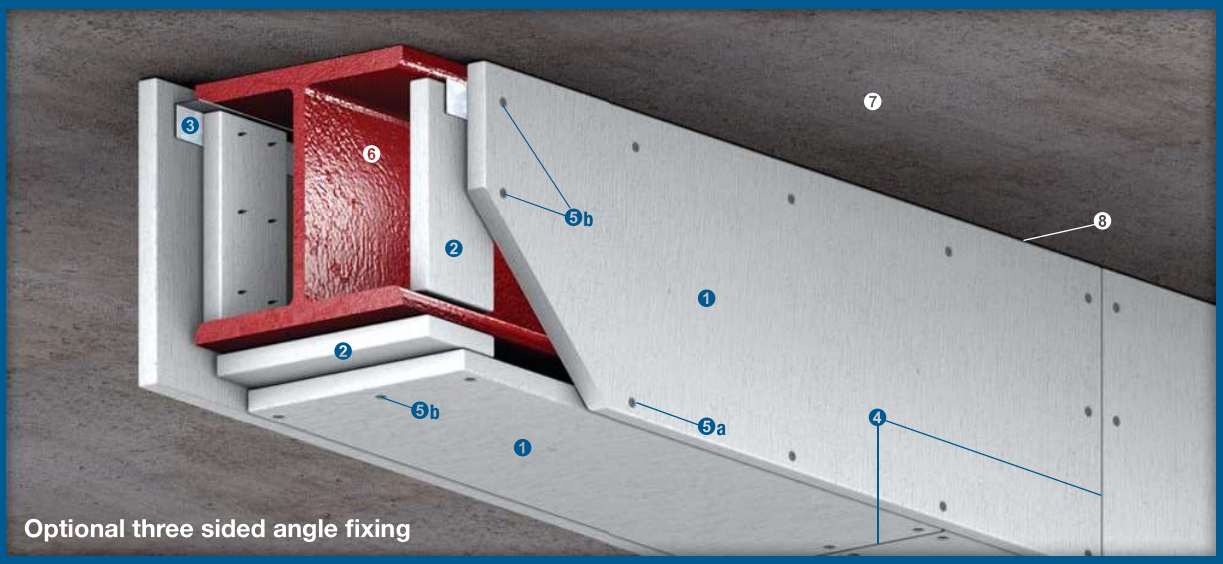
❺ Structural steel beam

❻ Floor slab

❼ Caulk all edges between the board and the floor slab with PROMASEAL®-A Acrylic Sealant, depth in accordance with the required board thickness



Three sided angle fixing



Optional three sided angle fixing

Up to 240/-/- fire resistance in accordance with the requirements of BS 476: Part 21: 1987 and AS 1530: Part 4: 2005, and up to 180/-/- fire resistance in accordance with the requirements of ASTM E119: 2007

❶ PROMATECT®-L board, thickness in accordance with the Hp/A Ratio tables on page 31

❷ PROMATECT®-L soldiers 100mm wide, minimum thickness similar to the board thickness of ❶, fixed within the web of the steel beam at maximum 1220mm centres behind the board joints using screws at 100mm centres or staples at 50mm centres

For deep beams clad with thicker boards for greater fire resistance, it is advisable to fix the soldiers at nominal 600mm centres in order to reduce the load on the soldiers. For steel beams greater than 600mm deep, a T-section soldier should be used to provide a stronger support

❸ Continuous galvanised steel angles minimum 32mm x 19mm x 0.9mm thick or similar beneath the upper flange OR fixed to the floor slab using non combustible proprietary anchors at nominal 500mm centres

❹ Vertical and horizontal joints in adjacent board sides to be staggered at minimum 300mm

❺a Fixings in accordance with the table on page 28. Care should be taken not to overtighten the screws. When edge fixing it is advisable to drill pilot holes, particularly with 25mm thick boards

❺b Self-drilling or self-tapping drywall screws fixed to channel/angle at nominal 200mm centres and to soldiers at nominal 100mm centres. Screw length should be additional 20mm of the board thickness

❻ Structural steel beam

❼ Floor slab

❽ Caulk all edges between the board and the floor slab with PROMASEAL®-A Acrylic Sealant, depth in accordance with the required board thickness

The following is a standard Architectural Specification for structural steel column and beam protection using PROMATECT®-L. Please note that PROMATECT®-L can be installed by using either screw or staple type of edge fixing. The end user must determine the suitability of any particular design to meet the performance requirements of any application before undertaking any work. If in doubt, please first obtain the advice from a suitably qualified engineer.

The installation methods described herein are suitable for steel sections up to 686mm deep and 325mm wide. For larger section or when protecting multiple sections within a single encasement, please consult Promat.

Where a column box encasement abuts a beam protected with a profiled fire protection system, e.g. intumescent paint, the column webs should be sealed at their tops using PROMATECT®-L.

Fire Exposure & Area of Application

Exposed faces of steelwork internal to building, for up to 240 minute fire resistance in accordance with the requirements of BS 476: Part 21: 1987, AS 1530: Part 4: 2005 or ASTM E119: 2007.[1]

Location

_____[2]

Type of Construction

_____ minute[3] fire resistance to PROMATECT®-L one sided, two sided, three sided or four sided encasement of structural steel columns and beams.

Lining Boards

_____mm[4] thick PROMATECT®-L matrix engineered mineral boards as manufactured by Promat International (Asia Pacific) Ltd, in size _____mm x _____mm[5], cut to size on-site/pre cut in accordance with the schedule of sizes[6] and fixed in accordance with the manufacturer's recommended details and fixing instructions.

Screw Fixing

COLUMNS

PROMATECT®-L boards to be fixed by board face-to-board edge using _____mm[7a] self-drilling, self-tapping screws at nominal 200mm centres.

BEAMS

Vertical PROMATECT®-L boards to be screwed to 100mm wide x _____mm[4] thick PROMATECT®-L soldiers wedged between flanges at 600~1200mm centres using _____mm[7a] self-drilling, self-tapping screws at nominal 100mm centres.

Where mechanical fixing is required for columns or beams, PROMATECT®-L boards to be fixed by board face-to-board edge using _____mm[7a] self-drilling, self-tapping screws at nominal 200mm centres to 32mm x 19mm x 0.9mm continuous pressed steel angles secured to soffit of floor/roof slab or top steel flange. The angles should be fixed at nominal 500mm centres.

Staple Fixing

COLUMNS

PROMATECT®-L boards to be fixed by board face to board edge using _____mm[7b] staples at nominal 100mm centres.

BEAMS

Vertical PROMATECT®-L boards to be screwed to 100mm wide x _____mm[4] thick PROMATECT®-L soldiers wedged between flanges at 600~1200mm centres using _____mm[7b] staples at nominal 50mm centres.

Where mechanical fixing is required for columns or beams, PROMATECT®-L boards to be fixed by board face to board edge using _____mm[7b] staples at nominal 100mm centres to 32mm x 19mm x 0.9mm continuous pressed steel angles secured to soffit of floor/roof slab or top steel flange. The angles should be fixed at nominal 500mm centres.

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Butt Jointing For Screw Fixing

For beam casings only, PROMATECT®-L board joints in the soffit to be backed with 100mm wide x minimum _____mm(4) thick PROMATECT®-L internal cover strips secured with _____mm(8) self-drilling, self-tapping screws at nominal 100mm centres.

Butt Jointing For Staple Fixing

For beam casings only, PROMATECT®-L board joints in the soffit to be backed with 100mm wide x minimum _____mm(4) thick PROMATECT®-L internal cover strips secured with _____mm(8) staples to one side of board joint only.

Follow-on Trades

Surface of boards to be prepared for painting/plastering/tiling(9) in accordance with manufacturer's recommendations.

NOTE:

- (1), (6), (9) delete as appropriate.
- (2) insert location, e.g. "beams and columns to offices interior", or provide steelwork drawing reference.
- (3) insert required fire resistance level (not exceeding 240 minutes for BS or AS and not exceeding 180 minutes for ASTM).
- (4) insert required thickness by reference to section factor (Hp/A) and fire resistance level.
- (5) select board size on basis of economy in cutting. Standard board size is 2500mm x 1200mm.
- (7a) insert screw length which gives minimum 25mm penetration having regard to encasement thickness.
- (7b) insert staple length which gives minimum 25mm penetration having regard to encasement thickness.
- (8) insert screw length which is minimum 5mm longer than twice the encasement thickness.

Hp/A Ratio Table 1 Up to 240/-/- fire resistance in accordance with the requirements of **BS 476: Part 21: 1987 and AS 1530: Part 4: 2005** (reports no. BRE CC 84976 and BRE CC 84889B) for **structural steel column and beam protection at critical temperature of 550°C**

Fire resistance	PROMATECT®-L board thickness (mm)									
	20	25	30	35	40	45	50	55	60	65
30 minutes	260	260	260	260	260	260	260	260	260	260
60 minutes	260	260	260	260	260	260	260	260	260	260
90 minutes	157	260	260	260	260	260	260	260	260	260
120 minutes	—	127	216	260	260	260	260	260	260	260
180 minutes	—	—	76	104	143	205	260	260	260	260
240 minutes	—	—	—	59	74	94	119	153	199	260

Hp/A Ratio Table 2 Up to 180/-/- fire resistance in accordance with the requirements of **ASTM E119: 2007** (report no. iBMB 851106) for **structural steel column and beam protection at critical temperature of 550°C**

Fire resistance	PROMATECT®-L board thickness (mm)				
	20	25	30	35	40
30 minutes	300	300	300	300	300
60 minutes	300	300	300	300	300
90 minutes	219	300	300	300	300
120 minutes	139	159	239	270	300
180 minutes	79	99	109	119	300

The thicknesses in above tables can be made up from a single layer or no more than two layers of PROMATECT®-L board. For two layer application, secure the thinner layer first and stagger all joints between layers at minimum 300mm centres. For four sided encasement of column, install the second layer separately from the first layer and no gap is required between layers. For encasements of beam, screw the second layer to the first layer.