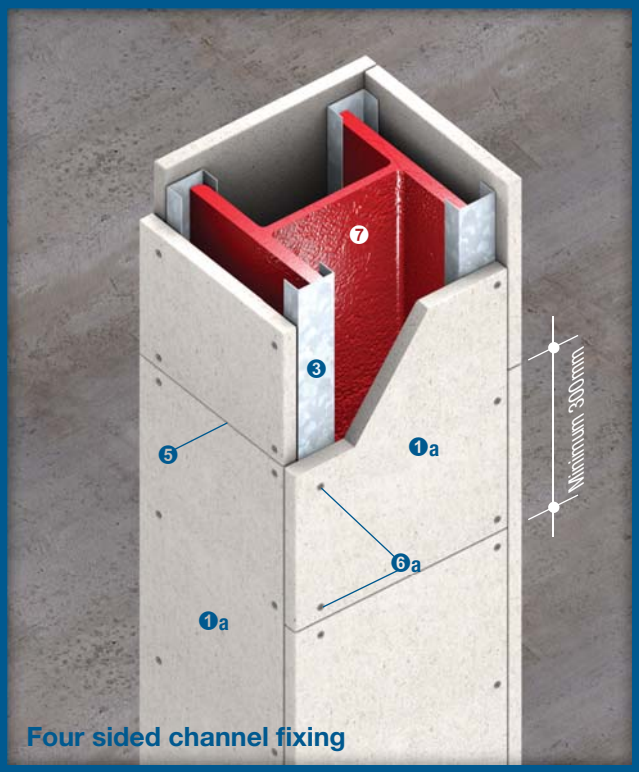
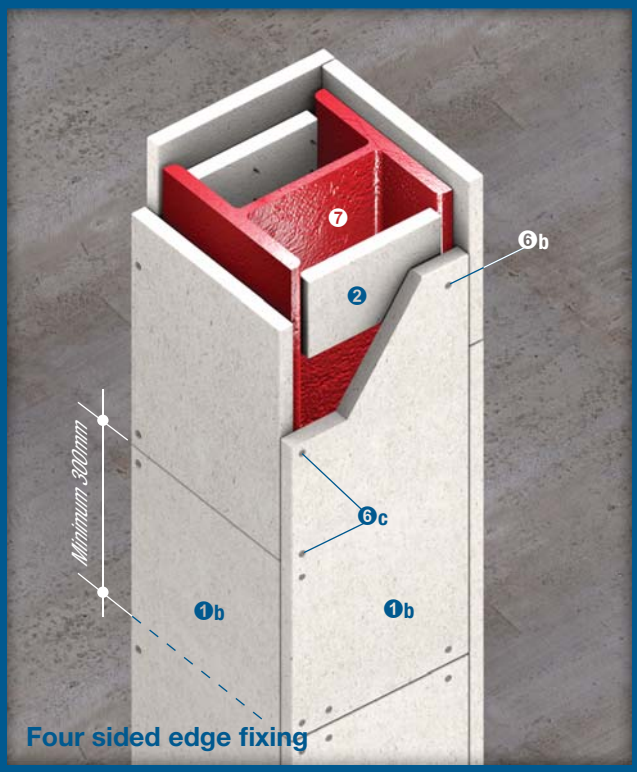
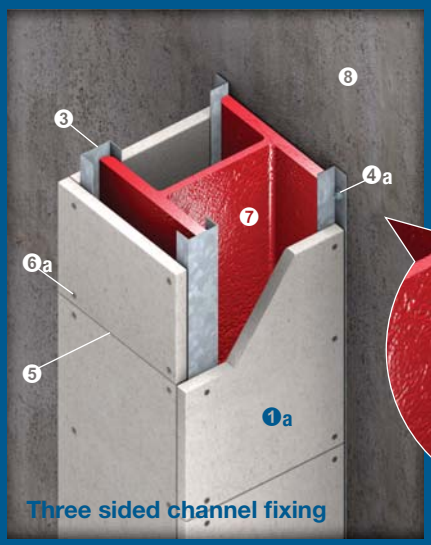


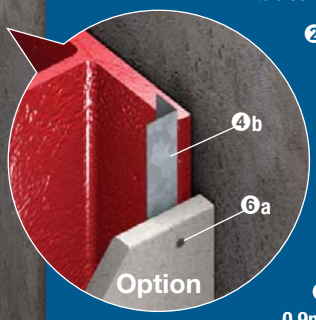
Four sided channel fixing



Four sided edge fixing



Three sided channel fixing



Up to 120/-/- 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

❶a PROMATECT®-H board, thickness in accordance with the Hp/A Ratio tables on page 25

❶b PROMATECT®-H board, ≥15mm of thickness in accordance with the Hp/A Ratio tables on page 25

❷ PROMATECT®-H soldiers 100mm wide, minimum thickness similar to the board thickness of ❶b

❸ Continuous galvanised steel channel 19mm x 38mm x 19mm x 1.6mm thick or similar, leg of each channel is located against inner surface of flange

❹a 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

❹b 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

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

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

❻a 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

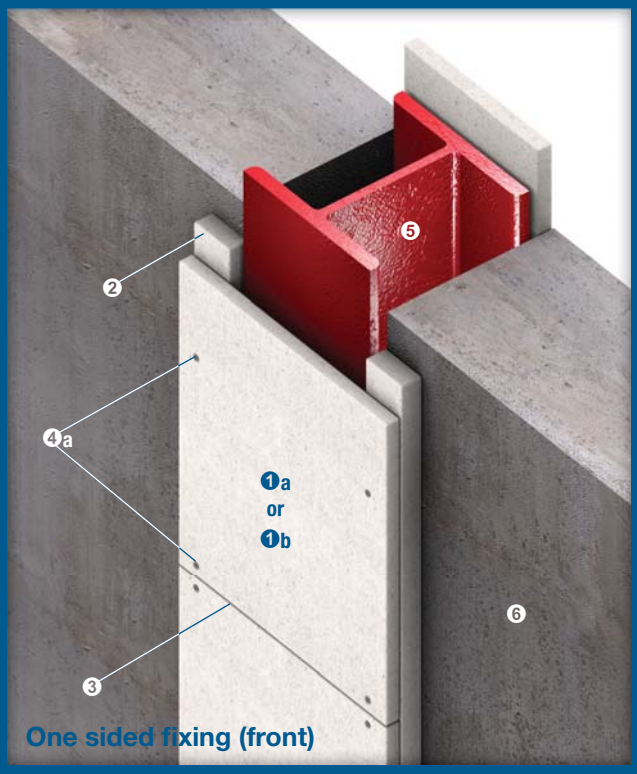
❻b Self-drilling or self-tapping drywall screws fixed to soldiers at nominal 100mm centres. Screw length should be additional 20mm of the board thickness

❻c 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 15mm thick boards

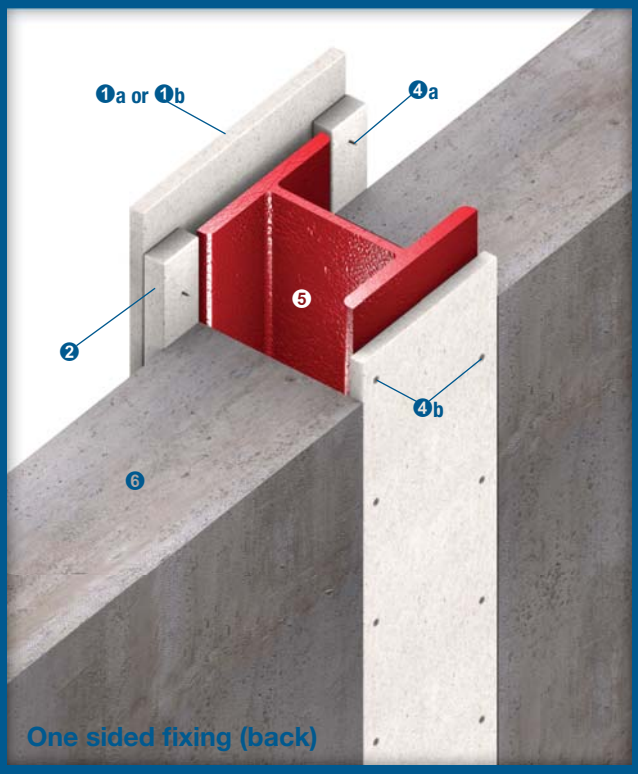
PROMATECT®-H board thickness	Deep threaded drywall screws preferably with ribbed heads at 200mm centres	Steel wire staples at 100mm centres
15mm	No. 6 x 40mm	44/10/1mm
20mm	No. 10 x 55mm	50/10/1mm
25mm	No. 10 x 60mm	50/10/1mm

NOTE: <15mm thick boards cannot be edge fixed. Please consult Promat for further guidance on steel wire staple fixing

❼ Structural steel column ❽ Concrete wall substrate



One sided fixing (front)



One sided fixing (back)

Up to 120/-/- 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

1a PROMATECT®-H board, thickness in accordance with the Hp/A Ratio tables on page 25

1b PROMATECT®-H board, ≥15mm of thickness in accordance with the Hp/A Ratio tables on page 25

2 PROMATECT®-H spacer strips, fixed to substrate using non combustible proprietary anchors at 300mm centres with minimum 50mm overlap to either side of steel section

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

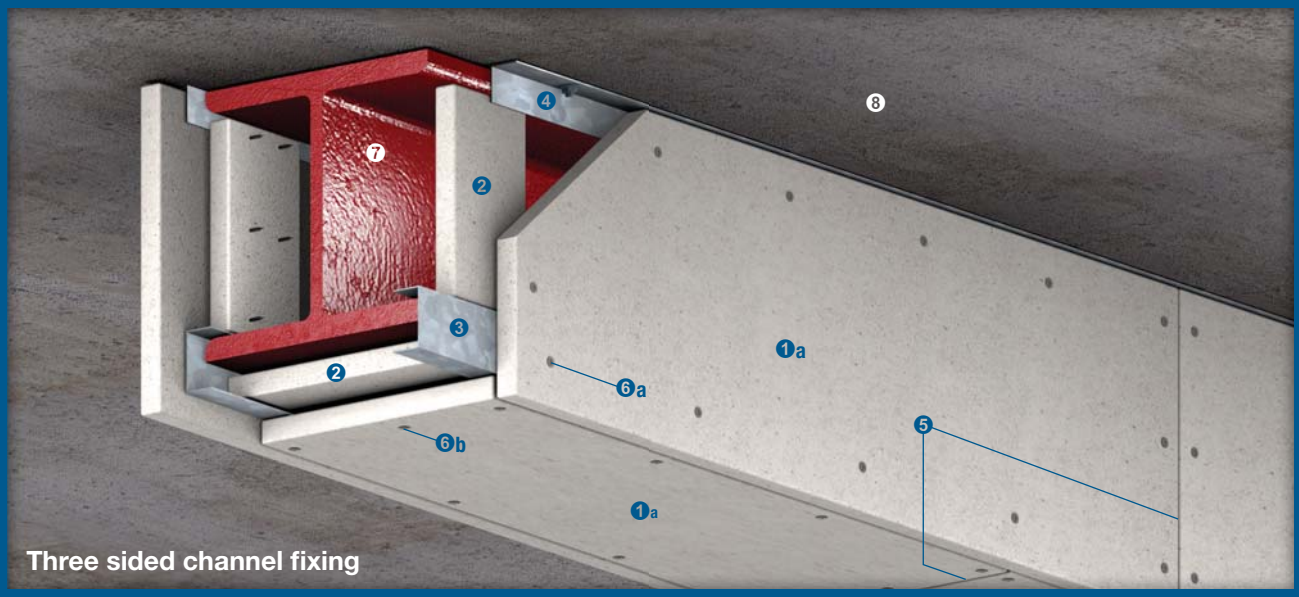
For wide columns, it is advisable to include a PROMATECT®-H cover strip behind the joints within the web of the steel column to provide additional impact resistance

4a Self-drilling or self-tapping screws at 200mm centres or steel wire staples at 100mm centres, fixed the main PROMATECT®-H board onto the spacer strips

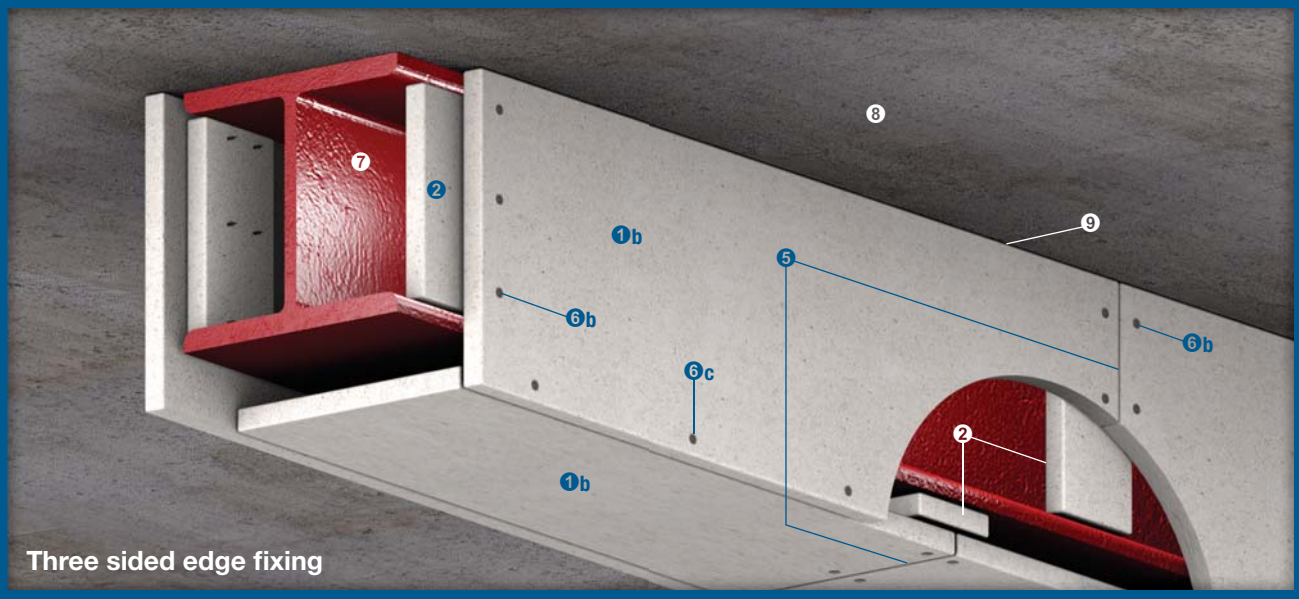
4b Two rows of self-drilling, self-tapping Teks screws fixed to steel column at nominal 300mm staggered centres

5 Structural steel column

6 Concrete wall substrate



Three sided channel fixing



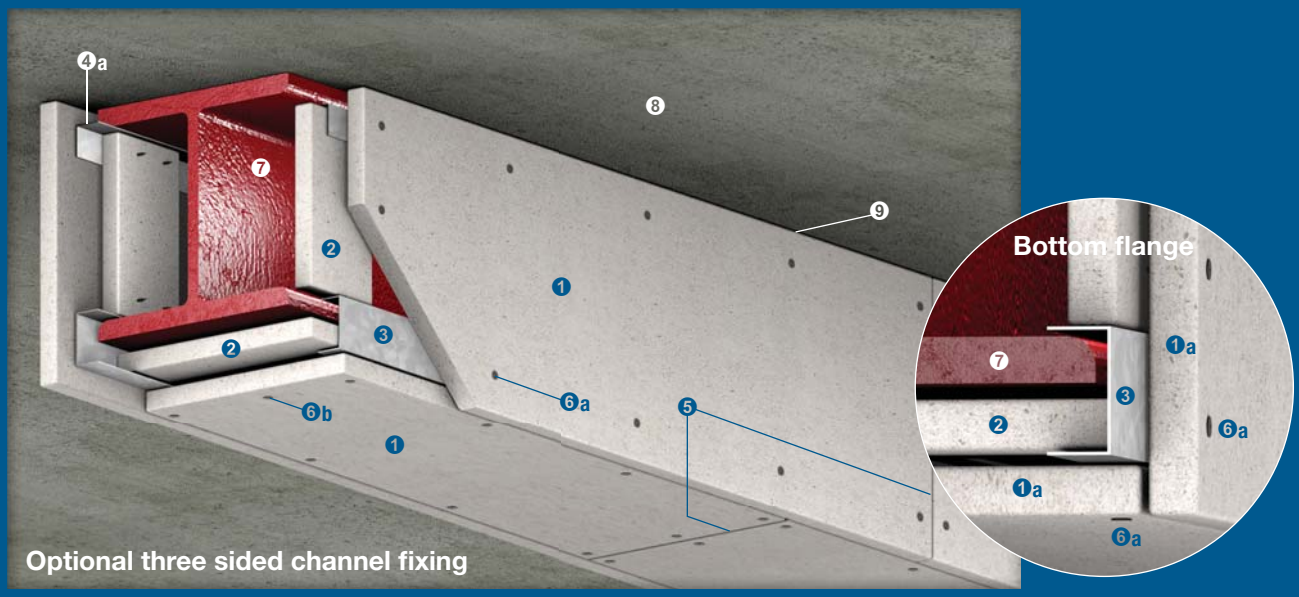
Three sided edge fixing

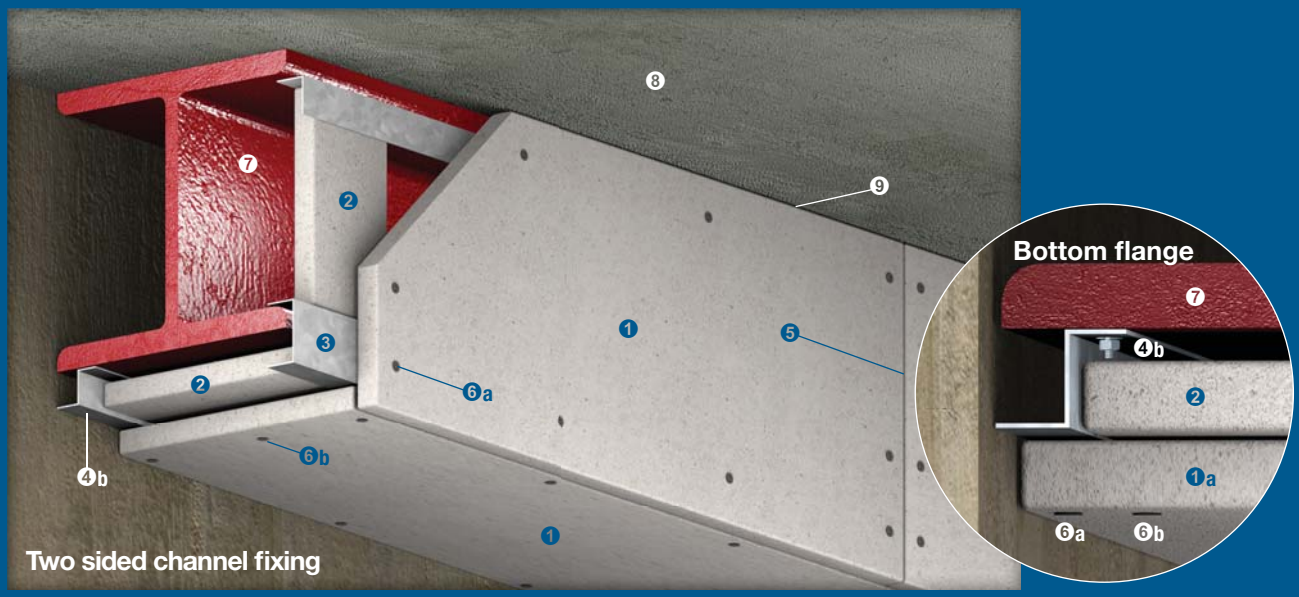
Up to 120/-/- fire resistance in accordance with the requirements of BS 476: Part 21: 1987 and AS 1530: Part 4: 2005, and up to 180/-/- fire resistance in accordance with the requirements of ASTM E119: 2007

- ❶a PROMATECT®-H board, thickness in accordance with the Hp/A ratio tables on page 25
- ❶b PROMATECT®-H board, ≥15mm of thickness in accordance with the Hp/A ratio tables on page 25
- ❷ PROMATECT®-H soldiers 100mm wide, minimum thickness similar to the board thickness of ❶b, 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 channel 19mm x 38mm x 19mm x 1.6mm thick or similar located at the bottom flange, leg of each channel is facing inner surface of the flange
- ❹ 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
- ❺ Vertical and horizontal joints in adjacent board sides to be staggered at minimum 300mm
- ❻a 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
- ❻b Self-drilling or self-tapping drywall screws fixed to soldiers at nominal 100mm centres. Screw length should be additional 20mm of the board thickness
- ❻c Fixings in accordance with the table on page 20. Care should be taken not to overtighten the screws. When edge fixing it is advisable to drill pilot holes, particularly with 15mm thick boards

  NOTE: <15mm thick boards cannot be edge fixed
- ❼ Structural steel beam
- ❽ Floor slab
- ❾ Caulk all edges between the board and the floor slab with PROMASEAL®-A Acrylic Sealant, depth in accordance with the required board thickness





Up to 120/-/- 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®-H board, thickness in accordance with the Hp/A ratio tables on page 25

❷ PROMATECT®-H 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 channel 19mm x 38mm x 19mm x 1.6mm thick or similar located at the bottom flange, leg of each channel is facing inner surface of the flange

❹a 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

❹b Continuous galvanised steel Z-section fixed to the bottom flange using non combustible proprietary anchors at nominal 200mm centres AND on the PROMATECT®-H soldier/soffit board without mechanical fixing for differential movement allowance. Caulk all edges between the board and the substrate with PROMASEAL®-A Acrylic Sealant

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

❻a 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

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

❼ Structural steel beam

❽ Floor slab

❾ 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®-H. Please note that PROMATECT®-H can be installed by being fixed to a steel frame or, for board thicknesses > 25mm, being fixed with the board face to the board edge. 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®-H.

Fire Exposure & Area of Application

Exposed faces of steelwork internal to building, for up to 180 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®-H one sided, two sided, three sided or four sided encasement of structural steel columns and beams.

Lining Boards

_____(4) thick PROMATECT®-H 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.

Fixing To Steel Frame

COLUMNS

PROMATECT®-H boards to be fixed to 19mm x 38mm x 19mm x 1.6mm continuous pressed steel channels or similar using _____mm(7a) self-tapping screws at nominal 200mm centres.

BEAMS

PROMATECT®-H boards to be fixed using _____mm(7a) self-tapping screws at nominal 200mm centres to nominal 19mm x 38mm x 19mm x 1.6mm continuous pressed steel channels or similar at bottom steel flange AND 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.

Fixing Board Face To Board Edge

COLUMNS

PROMATECT®-H boards to be fixed by board face to board edge using _____mm(7b) deep threaded screws at nominal 200mm centres. Allow minimum 25mm penetration.

BEAMS

PROMATECT®-H side boards to be fixed to 100mm x 25mm thick PROMATECT®-H soldiers wedged between flanges at nominal 1220mm centres using _____mm(7b) deep threaded screws at nominal 100mm centres.

PROMATECT®-H side boards to be fixed to PROMATECT®-H soffit boards using _____mm(7b) deep threaded screws at 200mm centres.

Continued on next page

Continued from previous page

Butt Jointing For Fixing To Steel Frame

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

Butt Jointing For Fixing Board Face To Board Edge

For beam casings only, PROMATECT®-H board joints in the soffit to be backed with 100mm wide x minimum _____mm(4) thick PROMATECT®-H internal cover strips secured with _____mm(8) deep threaded screws 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 120 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 2440mm x 1220mm.
- (7a) insert screw length which is minimum 20mm longer than the encasement thickness.
- (7b) insert screw 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 120/-/- fire resistance in accordance with the requirements of **BS 476: Part 21: 1987 and AS 1530: Part 4: 2005** (reports no. BRE CC 84889A and BRE CC 84975) for **structural steel column and beam protection at critical temperature of 550°C**

Fire resistance	PROMATECT®-H board thickness (mm)																			
	6	9	12	15	18	20	21	24	25	26	27	29	30	31	32	33	34	35	36	37
30 minutes	260	260	260	260	260	260	260	260	260	260	260	260	260	260	260	260	260	260	260	260
60 minutes	47	88	156	260	260	260	260	260	260	260	260	260	260	260	260	260	260	260	260	260
90 minutes	—	37	56	79	110	136	151	212	238	260	260	260	260	260	260	260	260	260	260	260
120 minutes	—	—	34	46	59	70	76	95	103	111	119	139	150	161	174	188	204	221	241	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®-H board thickness (mm)								
	8	10	12	15	20	25	30	35	40
30 minutes	300	300	300	300	300	300	300	300	300
60 minutes	89	139	179	239	300	300	300	300	300
90 minutes	60	79	89	139	239	300	300	300	300
120 minutes	—	—	60	79	139	219	300	300	300
180 minutes	—	—	—	—	60	79	119	159	300

The thicknesses in above tables can be made up from a single layer or no more than two layers of PROMATECT®-H 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.