

VICUCLAD® Encasements to Steelwork

1. Only general information can be provided in this document. It is recommended that Promat Technical Department is contacted to confirm details that are not covered.
2. The fixing methods are suitable for steel sections up to 686mm deep and 325mm wide. For larger sections and when protecting multiple sections within a single encasement, please consult Promat Technical Department.
3. The adhesive-fix method is suitable for up to 4 hours fire protection and the mechanical-fix method for up to 2 hours fire protection.
4. Where a column cladding box encasement abuts a beam protected with a profiled fire protection system e.g. spray, the column webs should be sealed using VICUCLAD®.
5. Whilst the VICUCLAD® system is not recommended for the fire protection of external steelwork, providing it is fixed in dry conditions the casing can withstand exposure to rain or site water spillages for a few weeks, after which it should be protected from exposure to water. If the cladding is likely to get severely wetted in the first 2 or 3 days after installation, the mechanical fixing method should be used.
6. When fire protecting long span beams such as portal rafters, which are subject to deflection and expansion under varying loads and ambient temperatures, an adhesive-fixed cladding may require movement joints. A mechanical-fixed casing would not normally require such joints.
7. Normally each edge of every VICUCLAD® board is continually fixed to an adjoining board, nogging, wall or floor. However, if differential movement is likely, the edge of the board should be restrained in a manner which will permit such movement whilst still holding the board in place.

Table 1: VICUCLAD® for Up to 4 Hours Fire Rating in Accordance With the Requirements of BS 476: Part 21 & AS 1530: Part 4

Fire resistance (hours)	Board thickness (mm)														
	18	20	25	30	35	40	45	50	55	60	65	70	75	80	85
1/2	265	265	265	265	265	265	265	265	265	265	265	265	265	265	265
1	265	265	265	265	265	265	265	265	265	265	265	265	265	265	265
1½	85	110	205	265	265	265	265	265	265	265	265	265	265	265	265
2	45	55	85	130	205	265	265	265	265	265	265	265	265	265	265
3	–	–	–	50	65	90	115	150	200	265	265	265	265	265	265
4	–	–	–	–	–	–	60	75	90	110	130	160	200	255	265

Maximum Hp/A section factor (m⁻¹)

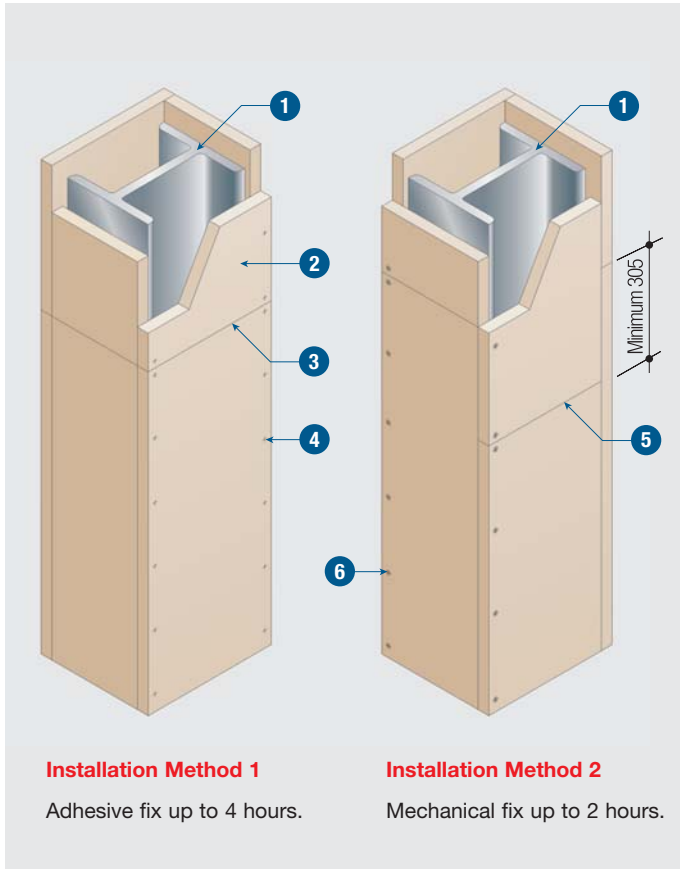
Table 2: VICUCASE for Up to 4 Hours Fire Rating in Accordance With the Requirements of BS 476: Part 21 & AS 1530: Part 4

Fire resistance (hours)	Board thickness (mm)														
	18	20	25	30	35	40	45	50	55	60	65	70	75	80	85
1/2	265	265	265	265	265	265	265	265	265	265	265	265	265	265	265
1	135	265	265	265	265	265	265	265	265	265	265	265	265	265	265
1½	–	70	125	205	265	265	265	265	265	265	265	265	265	265	265
2	–	40	55	85	120	185	265	265	265	265	265	265	265	265	265
3	–	–	–	–	–	65	80	95	120	150	200	265	265	265	265
4	–	–	–	–	–	–	–	–	65	75	90	105	120	140	170

Maximum Hp/A section factor (m⁻¹)

NOTE:

1. The above thickness have been determined assuming a steel failure temperature of 550°C. For other temperatures please consult the Promat Technical Department.
2. Note that the minimum board thickness for 4 hours is 45mm. If more than 1 layer is used to provide 4 hours protection, the minimum thickness of the outer layer should be 45mm.
3. All the above board thicknesses are available as standard up to 80mm. The 85mm thickness should comprise an inner layer of 40mm (maximum) and an outer layer of 45mm (minimum). Further advice can be obtained from the Promat Technical Department.

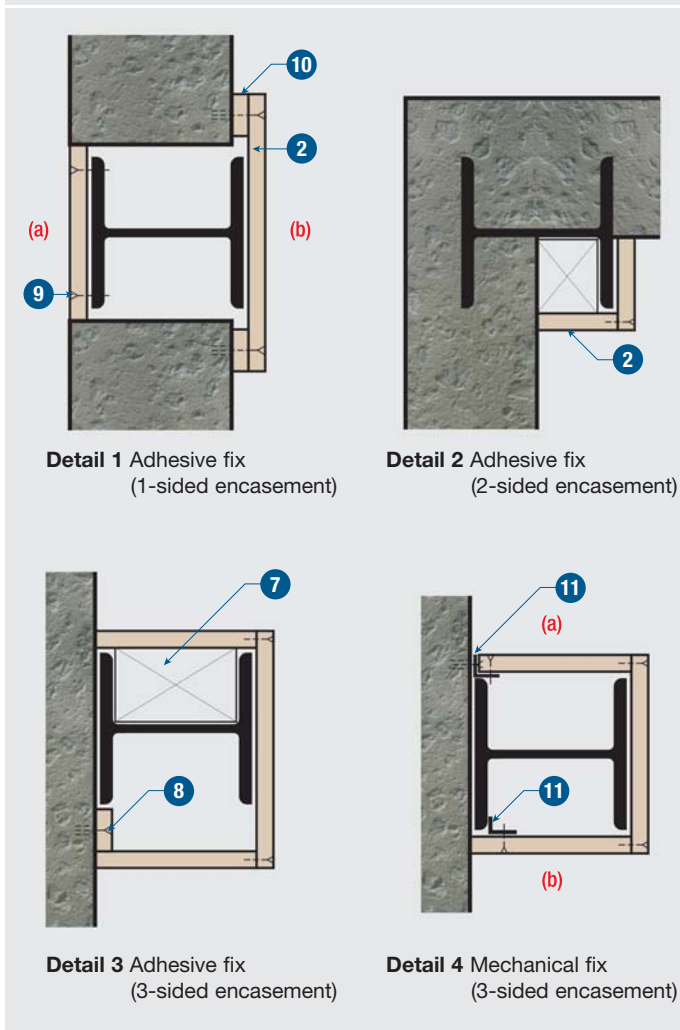


Installation Method 1

Adhesive fix up to 4 hours.

Installation Method 2

Mechanical fix up to 2 hours.



Detail 1 Adhesive fix (1-sided encasement)

Detail 2 Adhesive fix (2-sided encasement)

Detail 3 Adhesive fix (3-sided encasement)

Detail 4 Mechanical fix (3-sided encasement)

TECHNICAL DATA

- 1 Steel column
- 2 VICUCLAD® board, thickness in accordance with Hp/A-ratio (See Table 1, first page)
- 3 Fully fill all joints with VICUBOND WR, horizontal joints may be coincident. Remove excess adhesive with a cutting action to ensure a neat appearance
- 4 Galvanised nails at nominal 300mm centres, nail length should be approximately twice board thickness up to maximum of 125mm
- 5 Joints within mechanically fixed encasement can be left unfilled, joints in adjacent sides to be staggered minimum 305mm
- 6 Deep threaded screw e.g. HILLO or drywall screw at nominal 200mm centres. Screws should be approximately 40mm from end of each panel, see table below:

VICUCLAD® thickness (mm)	VICUCLAD® to angle (mm)	VICUCLAD® to VICUCLAD® (mm)
18	No. 6 x 35	No. 8 x 45
20	No. 6 x 35	No. 8 x 45
25	No. 6 x 45	No. 8 x 55
30	No. 6 x 45	No. 8 x 55
35	No. 6 x 55	No. 11 x 70
40	No. 6 x 55	No. 11 x 70

Detail 1 Adhesive fix (1-sided encasement)

(a) VICUCLAD® screwed directly to flange. Two rows of screws (9) at nominal 300mm staggered centres, if acceptable to engineer, or (b) VICUCLAD® bonded and nailed to VICUCLAD® battens minimum 50mm wide (10) if no differential movement between wall and VICUCLAD® x 25mm thick.

Detail 2 Adhesive fix (2-sided encasement)

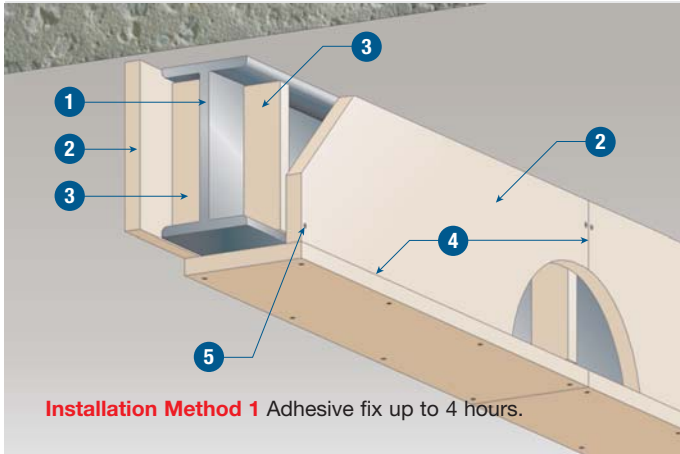
If flange board 100mm wide or less, it can be bonded to the flange and masonry wall. For wider flanges fix to wall using steel angle or VICUCLAD® batten.

Detail 3 Adhesive fix (3-sided encasement)

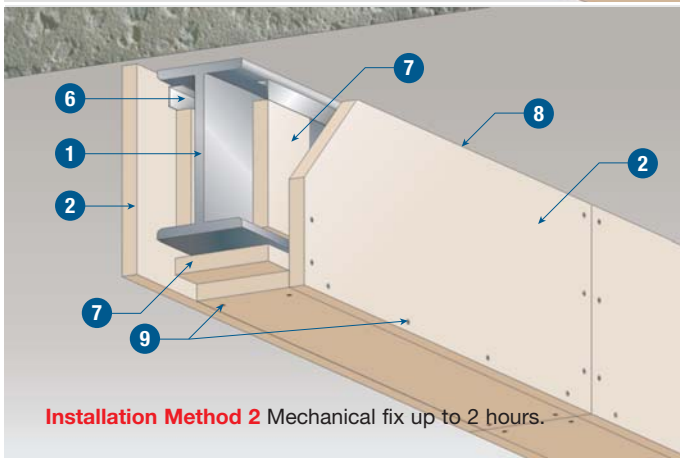
(a) VICUCLAD® bonded and nailed to VICUCLAD® noggings (7) at all joints or (b) to VICUCLAD® batten 50mm wide (8) which is bonded and nailed/screwed to masonry wall. Method (b) may not be suitable if there is differential movement between the wall and the VICUCLAD®.

Detail 4 Mechanical fix (3-sided encasement)

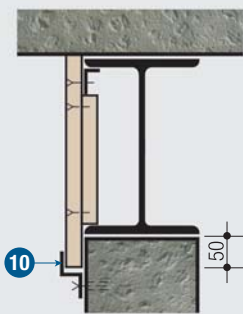
Screw boards at 250mm centres to continuous galvanised angle (11) fixed to wall or flange of section at 500mm centres.



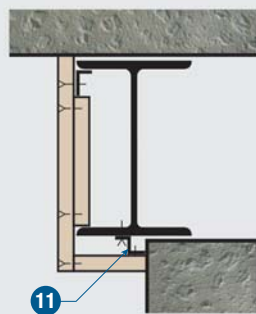
Installation Method 1 Adhesive fix up to 4 hours.



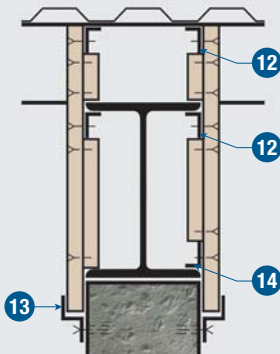
Installation Method 2 Mechanical fix up to 2 hours.



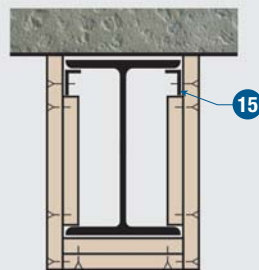
Detail 1 Mechanical fix (1-sided encasement)



Detail 2 Mechanical fix (2-sided encasement)



Detail 3 Mechanical fix (2-sided encasement)



Detail 4 Mechanical fix (3-sided encasement)

TECHNICAL DATA

- 1 Steel beam
- 2 VICUCLAD® board, thickness in accordance with Hp/A-ratio (See Table 1, first page)
- 3 VICUCLAD® nogging, same thickness as casing but not less than 25mm, located centrally behind every joint i.e. nominal 612mm or 1002mm centres
- 4 Fully fill all joints with VICUBOND WR. Remove excess adhesive with a cutting action to ensure a neat appearance
- 5 Galvanised nails at approximately 300mm centres. Nail lengths approximately twice board thickness to a maximum of 125mm
- 6 Continuous galvanised angle 50mm x 25mm x 0.8mm, secured to top flange or to floor slab at nominal 500mm centres
- 7 VICUCLAD® cover strips, 100mm wide, same thickness as casing. Can be omitted from soffit if transverse board joints fully filled with adhesive. Screw casing to strips at 100mm centres
- 8 Joints can be left unfilled (although see 7 above) and joints in adjacent sides should coincide
- 9 Screws at nominal 250mm centres. Board-to-board use deep-threaded screw e.g. HILO or drywall type. Board-to-angle use self-drilling, self-tapping screws e.g. TEKS. Screws should be located about 40mm from upper edges of side boards

VICUCLAD® thickness (mm)	VICUCLAD® to angle (mm)	VICUCLAD® to VICUCLAD® (mm)
18	No. 6 x 35	No. 8 x 45
20	No. 6 x 35	No. 8 x 45
25	No. 6 x 45	No. 8 x 55
30	No. 6 x 45	No. 8 x 55
35	No. 6 x 55	No. 11 x 70
40	No. 6 x 55	No. 11 x 70

Detail 1 Adhesive fix (1-sided encasement)

To allow for differential movement between beam and wall, restrain lower edge of side boards with continuous galvanised zed section 10 fixed to wall at 500mm centres leaving adequate movement gap. Board should overlap wall by approximately 50mm minimum.

Detail 2 Mechanical fix (2-sided encasement)

Secure soffit board to beam flange, not to wall, using continuous galvanised zed or top hat section 11 fixed to beam at 500mm centres. Seal gaps between soffit and wall with PROMASEAL® Mastic.

Detail 3 Mechanical fix (2-sided encasement)

Ensure side boards adequately restrained by securing upper and lower edges to galvanised angles 12. Zed sections 13 could be used to restrain lower board edge instead of lower angle 14.

Detail 4 Mechanical fix (3-sided encasement)

Gaps in dovetail decks can be left unfilled. In trapezoidal decks gaps can also be unfilled, if only 1 hour required. To ensure upper edges of side boards adequately secured, screw to continuous galvanised angles 15 fixed to top flange. (Also for 1½ hours if board thickness used is appropriate for beam Hp/A + 15%). See also text on page 23.