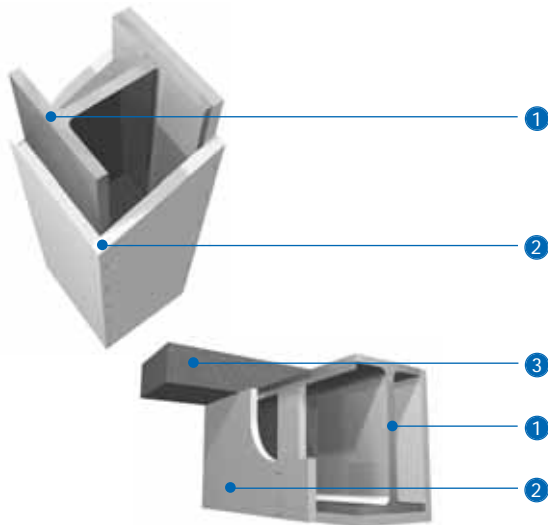


Frameless structural steel encasement system

FireCase frameless encasement system provides a high quality cladding to structural steel, and offers up to 120 minutes fire protection. The system affords protection to universal steel columns and beams, together with many joist and castellated beam sections. It can be used in any type of building where an encasement is required to structural steelwork. The Glasroc FireCase s lining provides a smooth, robust surface and there is no requirement to joint or apply a decorative treatment.





- ① Structural steel section
- ② Glasroc FireCase s cladding
- ③ Concrete structure

Key facts

- Glasroc FireCase s cladding provides a smooth, impact resistant surface
- Option of staple fixing for faster installation
- High levels of fire protection to structural steel
- Can be installed early in the build programme
- Simple and quick to install
- Non-combustible system
- Jointing and finishing is not required to meet the fire protection period

Components

Glasroc board products



Glasroc FireCase s

| | |
|-----------|--------------------|
| Thickness | 15, 20, 25, 30mm |
| Width | 600, 1200mm |
| Length | 2000, 2400, 3000mm |

Take-off quantities¹

as required

Fixings



Pulsa Staples

50mm long. Use with cordless Pulsa IM200/50 Stapler (available from Gyproc Tools) for board-to-board fixing (except 30mm board).

as required

or



Glasroc FireCase Screws

For board-to-board and board-to-Gypframe metal fixing.

Length 40, 50, 58, 70mm

as required

Gypframe metal sections



Gypframe GA1 Steel Angle

| | |
|--------|-----------|
| Width | 25 x 25mm |
| Gauge | 0.55mm |
| Length | 2900mm |

Take-off quantities¹

as required

Fixing and finishing products



Gyproc Joint Cement

For decorative seamless jointing.

as required



Thistle Multi-Finish or Thistle Board Finish

Providing a plaster finish as an alternative to jointing.

as required

or



Thistle Durafinish

To provide improved resistance to accidental damage.

as required

or



Thistle Spray Finish

Gypsum finish plaster for spray or hand application.

as required

¹ Quantities will vary according to structural steel section dimensions.

Construction tips

- Estimated construction time is as follows:

| | |
|-----------------------------------|------------------------------|
| 4-sided protection – single layer | 4m ² / man hour |
| 4-sided protection – multi layer | 3m ² / man hour |
| 3-sided protection – single layer | 3m ² / man hour |
| 3-sided protection – multi layer | 2.5m ² / man hour |
- Select the correct thickness of Glasroc FireCase s. This depends on the section factor, A/V (Hp/A), and the degree of fire protection required – refer to specification.
 - **NB** Maximum A/V (Hp/A) = 260m⁻¹, calculated on the basis of box protection to 3 or 4 sides as required
- Boards should be cut to width using a suitable saw. Use a mechanical saw with dust extraction facility where the cutting requirement is substantial. British Gypsum offer a Glasroc Table Saw Kit designed for this purpose. For details of purchase or hire costs, contact Gyproc Tools on 0115 945 6100
- Consider hire or purchase of Pulsa IM200/50 Stapler for staple fixing. Contact Gyproc Tools for details
- Fix partitions and wall linings directly to the Glasroc FireCase s cladding (subject to certain conditions – see ‘Installation, Partition fixing’, later)

Construction tips (cont'd)

- Plan the cutting operations – where Glasroc FireCase s soldiers are specified it will be preferable to pre-cut these in advance of installation
- Where the steel section web dimensions exceed 600mm, additional support will be required for the cladding. Contact the British Gypsum Drywall Academy Technical Advice Centre for guidance
- Glasroc FireCase s joints are treated using Gyproc Joint Tape bedded in Gyproc Joint Cement. External angles / corners can be reinforced using Gyproc No-Coat Ultraflex 325 bedded in Gyproc Joint Cement. If a plaster finish is required, joints should be reinforced and Thistle Board Finish or Thistle Multi-Finish applied
- **Quantities** - Will vary according to structural steel section dimensions

Installation



Site cutting

- Cut boards using a suitable mechanical saw. The Glasroc Table Saw Kit is recommended.

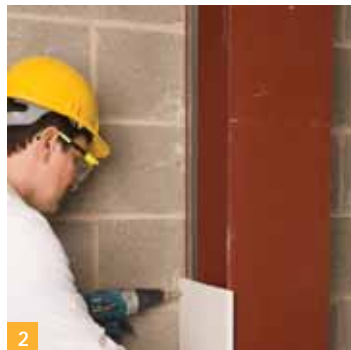
Table 1 - Screw-fixing (board-to-board)

| Glasroc FireCase s board thickness mm | Glasroc FireCase s Screw length mm |
|---------------------------------------|------------------------------------|
| 15 | 40 |
| 20 | 50 |
| 25 | 58 |
| 30 | 70 |

Fixing considerations

- Staple-fix boards (apart from the 30mm board) using a Pulsa Stapler and 50mm galvanised staples, or screw-fix using Glasroc FireCase Screws. Insert fixings throughout at 150mm centres. When fixing to steel angles, screws should penetrate by a minimum of 10mm.

NB If screw-fixing, the appropriate length of screw should be selected (see Table 1).



Four sided protection to steel columns

- Commence cladding from the base of the column through to the structural soffit.
- Cut two full length boards to the width of the section, and one half length board to the depth of the section, plus twice the thickness of Glasroc FireCase s board to cover the thickness of first layer boarding.
- Position the boards and staple-fix board-to-board using a Pulsa Stapler or alternatively Glasroc FireCase Screws of appropriate length.
- Cut a second half-length board, position against the opposite flange and install fixings.



- Position full length boards, cut to the depth of the section, plus twice the thickness of Glasroc FireCase s boards to cover the thickness of first layer boarding, and install fixings.
- Continue boarding in the same manner progressively working up the column. To complete the cladding, cut boards to suit and fix.
- **!** Stagger joints by a **minimum** of 300mm. Ensure that boards are cut square to maintain tight butt joints with no gaps.



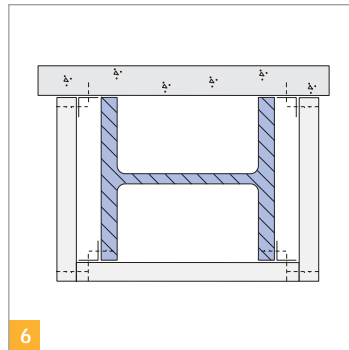
Double layer linings

- Install outer layer boards as per the first layer, staggering board joints between layers by a minimum of 300mm. Cut boards to width, making the additional allowance necessary to cover the thickness of first layer boarding.



Three sided protection to steel columns incorporating steel angles

- Locate Gypframe GA1 Steel Angle to both sides of the wall flange. Position such that the face of the angle section is level with the edge of the flange and secure using appropriate fixings (e.g. shot fired to column) at 600mm maximum centres.



- Incorporate additional Gypframe GA1 Steel Angles where the column flange is at right angles to the wall structure.



- Cut two full length boards to the depth of the section plus the thickness of Glasroc FireCase s board. Position to opposite sides of the steel section and screw-fix to the Gyprframe GA1 Steel Angles at 150mm centres.

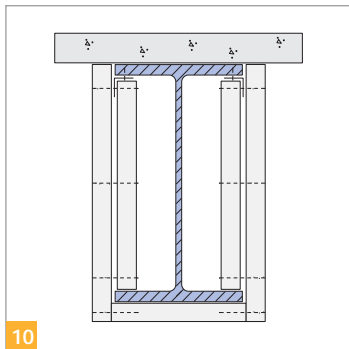


- Cut a half length board to the width of the section, position between abutting Glasroc FireCase s boards and fix using staples or screws. Position a full length board, again cut to the width of the section, and install fixings.
- Continue boarding in the same manner progressively working up the column. To complete the cladding, cut boards to suit and fix.



Double layer linings

- Install outer layer boards as per the first layer, staggering board joints between layers by a minimum of 300mm. Cut boards to width making the additional allowance necessary to cover the thickness of first layer boarding.



10 Three sided protection to steel beams incorporating steel angles

Proceed as for columns with the following exception detailed right:



- For single layer encasements, back fascia board joints with Glasroc FireCase s. Cut strips of Glasroc FireCase s minimum 60mm wide and staple or screw-fix behind fascia board ends so as to half-lap the joints.



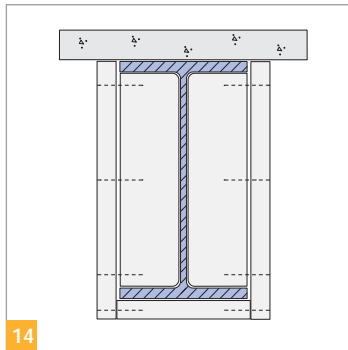
12 Three sided protection to steel columns and beams incorporating Glasroc FireCase s soldiers to support single layer linings providing up to 90 minutes fire protection

- Pre-cut Glasroc FireCase s soldiers to fit neatly into the steel section. Locate into both sides of the section at 1200mm maximum centres as boarding progresses.



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- At fascia board joints fit two soldiers side by side so that each one finishes flush with the board end.



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- Fix cladding to each joint soldier and also any intermediate soldiers using three staples or Glasroc FireCase Screws.



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- Continue boarding, staggering board joints and fixing board-to-board as previously.



Partition fixing

- Fix partitions and wall linings directly to the Glasroc FireCase s cladding subject to the following conditions being met:
 1. The fire resistance requirement of the partition is 60 minutes or less.
 2. There are no special requirements for pressure resistance e.g. around lift shafts.
 3. There are no special loading requirements i.e. Heavy Duty or Severe Duty as defined in recognised partition performance specifications (e.g. *BS 5234*).

Proceed as follows:

- Apply a bead of Gyproc Sealant to the back of the channel or stud (two beads for components over 75mm width).



- Press the channel or stud into position against the lining.

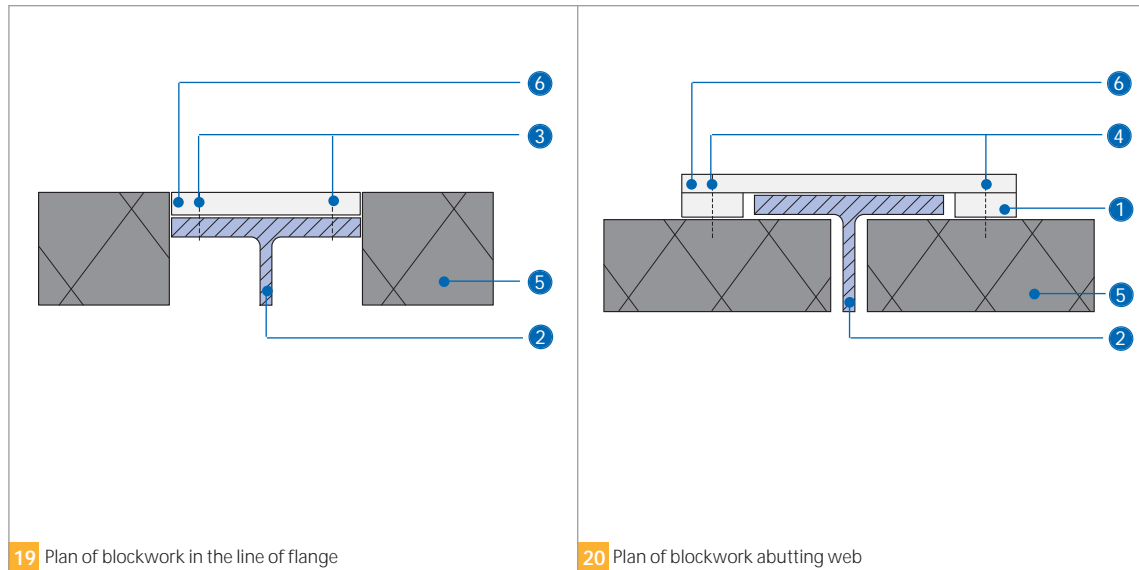


- Screw-fix at 600mm centres into the Glasroc FireCase s using Gyproc Drywall Screws (25mm minimum). Additional FireCase s packers may be required when abutting flanges of steelwork where the encasement is less than 25mm.

- Allow at least 24 hours before boarding the partition.

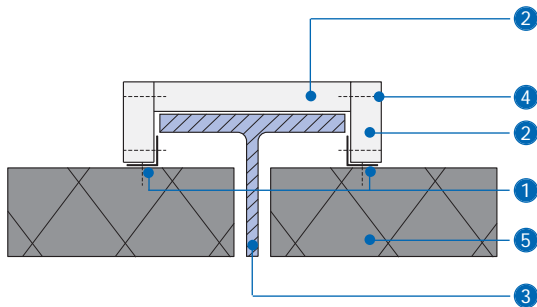
NB Where the previous conditions are not met, the partition framing must be suitably fixed to the structural steel section, through the Glasroc FireCase s cladding. Where the partition abuts the web of the structural steel, **Z** bars (supplied by others) should be provided to give a fixing point for the partition framing. The **Z** section must be adequately fixed and its dimensions determined by the designer.

Junction details – column in the line of block walls



- ① Glasroc FireCase s packer
- ② Structural steel section
- ③ Mechanical steel pin fixings at 300mm vertical centres, staggered by 150mm in each vertical row

- ④ Suitable fixing through Glasroc FireCase s packer (cut on site) into blockwork at 600mm centres. Lining boards fixed at 150mm centres using 40mm Glasroc FireCase Screw
- ⑤ Blockwork
- ⑥ Glasroc FireCase s



Plan of blockwork abutting web where steelwork flange is off-

21 set from blockwork

- 1 Gypframe GA1 Steel Angle fixed to blockwork with suitable fixings at 600mm centres
- 2 Glasroc FireCase s
- 3 Structural steel section
- 4 Glasroc FireCase Screws or Glasroc Staples
- 5 Blockwork