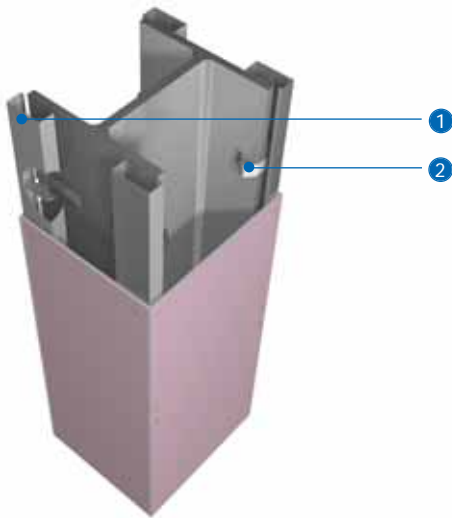


GypLyner framed structural steel encasement system

GypLyner ENCASE is a steel encasement system which provides a rapid method of cladding structural steel sections to provide up to 180 minutes fire resistance. The system will protect universal column and beam sections, with flange thicknesses between 6mm and 28mm, and will also protect many joist sections, portal frames, and castellated beam sections. It can be used in any type of building where encasement is required to structural steel.





- 1 Gypframe GL1 Lining Channel
- 2 Gypframe GL10 GypLyner Steel Framing Clip

Key facts

- Quick and simple to install
- Lightweight support framework constructed from GypLyner components
- Easy to box-out
- High levels of fire protection to structural steel
- Up to 180 minutes fire protection

Components

Gyproc and Glasroc board products

			Take-off quantities ¹
	Gyproc FireLine² Thickness 12.5, 15mm Width 900, 1200mm		as required
	Gyproc DuraLine² Thickness 15mm Width 1200mm		as required
	Glasroc FireCase s Thickness 15, 20, 25, 30mm Width 600, 1200mm		as required
	Glasroc MultiBoard Thickness 6, 10, 12.5mm Width 1200mm		as required





¹Quantities will vary according to structural steel section dimensions.

²Moisture resistant boards are specified in intermittent wet use areas e.g. shower cubicles.

Gypframe metal products

		Take-off quantities ¹
	Gypframe GL1 Lining Channel Length 2400, 2700, 3000, 3600mm	as required
	Gypframe GL3 Channel Connector	as required
	Gypframe GL10 GypLyner Steel Framing Clip	as required
	Gypframe GA2 Steel Angle Length 3200mm	as required

Fixing and finishing products		Take-off quantities ¹
	Gyproc Drywall Screws For fixing boards to framing.	as required
	Gyproc Wafer Head Drywall Screws For fixing channel noggings to Gypframe GL1 Lining Channel.	as required
	Gypframe GFS1 Fixing Strap Length 2400mm	as required
	Gypframe GFT1 Fixing 'T' Length 2400mm	as required

Fixing and finishing products		Take-off quantities ¹
	Gyproc jointing materials For a 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

Construction tips


- Estimated construction time is 6m^2 / man hour (single layer encasement) or 3m^2 / man hour (multi-layer encasement) ready for finishing
- Determine if encasement needs to be boxed-out e.g. to achieve a specific common dimension or to build out beyond fixing bolts
- Partitions and wall linings can be fixed through to the metal framework
- Where the steel section web or flange dimension exceeds 600mm, additional support will be required for the cladding (see **Installation – Additional support**)
- Select the correct type and thickness of board. This depends on the section factor, A/V (H_p/A), and the degree of fire protection required. Refer to the specification
 - **NB** Maximum A/V (H_p/A) = $260-1$, calculated on the basis of box protection to 3 or 4 sides as required

Installation



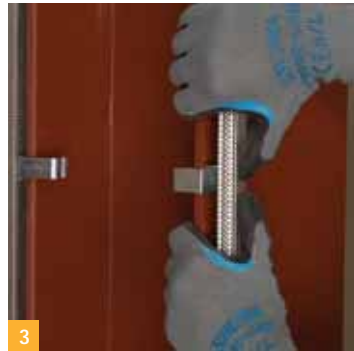
Four-sided protection to steel columns

- Friction-fit Gyframe GL10 Steel Framing Clips onto the column flanges.
- Position Gyframe GL10 clips within 100mm of the base and soffit, and at intervals in between (800mm maximum centres).

 Ensure that clips are fully engaged so that each row is in alignment.



- The Gyframe GL1 Lining Channel stand off from the face of the structural steel frame is 25mm and 10mm from the edge of the flange.



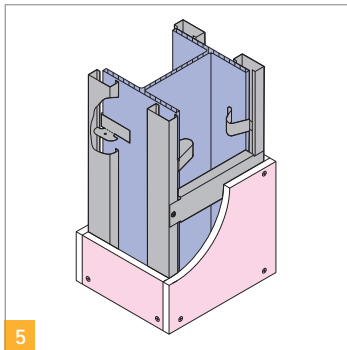
- Snap Gyframe GL1 Lining Channel section over the clips to form the steel framework.

NB Where lengths of Gyframe GL1 Lining Channel about, position Gyframe GL10 clips to either side to provide a fixing support to each channel end (i.e. two Gyframe GL10 clips to each 'joint') or alternatively use Gyframe GL3 Channel Connectors to join the Gyframe GL1 Lining Channels.



- Cut boards to width and fix to all framing members at 300mm centres using Gyproc Drywall Screws. Start with a half length board on opposite sides to stagger board joints around the column.

NB Select the length of Gyproc Drywall Screw to provide a nominal 10mm penetration into the steel framing.

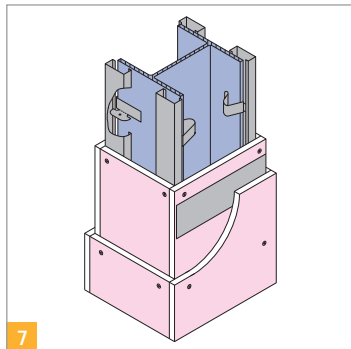


- Cut short lengths of Gypframe GL1 Lining Channel (**Figure 5**) or Gypframe GFT1 Fixing 'T' (**Figure 6**) so as to form horizontal noggings to back board end joints.

NB If the steel section web or flange dimension exceeds 600mm, a nogging should be formed from Gypframe GL1 Lining Channel installed at 600mm intervals (see **Installation – Additional support**).



- Fix to vertical channels using Gyproc Wafer Head Drywall Screws, and when board fixing provide an intermediate screw-fixing through each board end into the nogging.



- Continue cladding in the same manner progressively working up the column.
- To complete the encasement, cut boards to suit and screw-fix.

Multi-layer linings

- Locate a short length of Gypframe GFS1 Fixing Strap behind board joints at right angles to the Gypframe GL1 Lining Channels.
- Install board layers as per the first layer, staggering board joints between each layer. Cut boards to width making the additional allowance necessary to cover the thickness of the previous board layer.



Three-sided protection to steel columns and beams

- Locate Gypframe GA2 Steel Angle to both sides of the wall/soffit 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 into steel) at 600mm maximum centres.

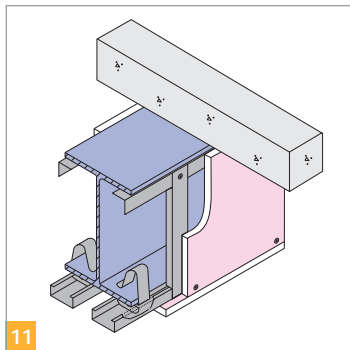


- Friction fit Gypframe GL10 clips to both edges of the room facing flange. Position at 800mm maximum centres, ensuring that adjacent clips are in alignment.
- Snap Gypframe GL1 Lining Channel over the clips to form the steel framework.

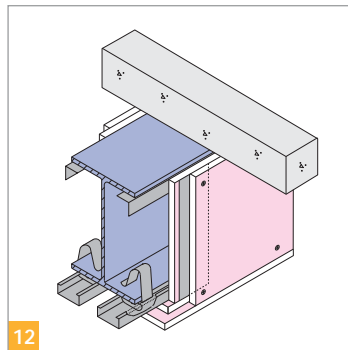
NB Where lengths of Gypframe GL1 Lining Channel abut, position Gypframe GL10 Clips to either side to provide a fixing support to each channel end (i.e. **two** Gypframe GL10 clips to each 'joint'), alternatively use Gypframe GL3 Channel Connectors to join the Gypframe GL1 Lining Channels.



- Cut boards to width and fix to all framing members at 300mm centres using Gyproc Drywall Screws. Start with a half length board on opposite sides to stagger board joints.
- NB** Select the length of drywall screw to provide a nominal 10mm penetration into the steel framing.



- Install Gypframe GL1 Lining Channel or Gypframe GFT1 Fixing 'T' noggings to support board end joints as for four sided encasements.
- Continue boarding in the same manner progressively working up the column or along the beam.
- To complete the encasement, cut boards to suit and screw-fix.

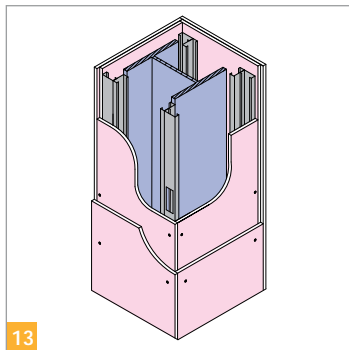


Multi-layer linings

- A short length of Gypframe GFS1 Fixing Strap is located behind board joints at right angles to the Gypframe GL1 Lining Channels.
- Install outer layer boards as per the first layer, staggering board joints between each layer by a minimum of 600mm. Cut boards to width making the additional allowance necessary to cover the thickness of the previous board layer.

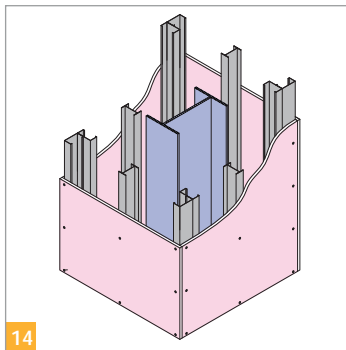
Additional support

- Where the steel section web or flange dimensions exceed 600mm, additional support will be required for the cladding.
- Fix noggings of Gypframe GL1 Lining Channel at 600mm centres between adjacent Gypframe GL1 Lining Channels, to supplement the framing. Position noggings to coincide with board end joints.



Boxing out

- Extend encasements by installing a Gypframe metal stud and channel framework independent of the steel lining height.



- Use intermediate Gypframe 'I' Stud to maintain board support at maximum 600mm centres.
- See **GypLyner iwl** for guidance.



Additional fire protection

- Where 180 minutes fire protection is required (to columns only), Glasroc FireCase s is specified as the cladding. Fix Glasroc FireCase s boards through to the metal framing as for Gyproc FireLine or Glasroc MultiBoard, using appropriate length Gyproc Drywall Screws.

