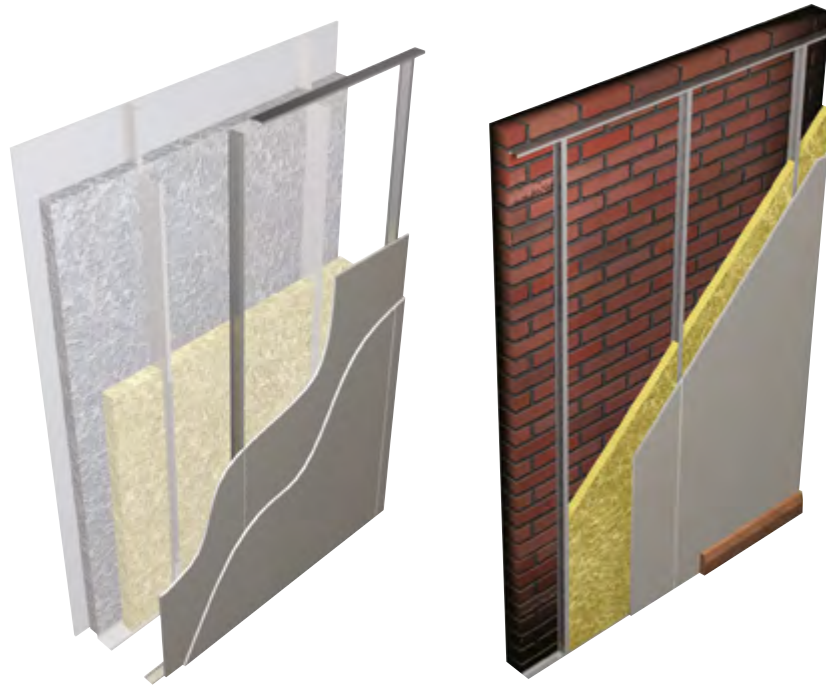


GyLyner iwl

Independent wall lining system



GypLyner IWL independent wall lining is a lightweight, non-loadbearing system, which is built independently of the external wall construction. The system is used in all types of building, but is particularly suitable for those with reinforced concrete or steel frames. The lining provides fire resistance to structural steel sections clad with lightweight metal sheeting, and can also be used in association with new or existing masonry walls to increase sound insulation and meet thermal performance requirements.



Key facts

- Fully independent wall lining
- Compatible with external wall constructions including curtain walling, rainscreen claddings, industrial claddings, brickwork and glazed atria
- Used to line non fire-rated service risers
- Used horizontally to form a corridor ceiling
- Satisfies BS 5234 requirements up to and including Severe Duty¹
- Provides fire protection to structural steelwork
- Provides fire resistance in association with external structure
- Used to upgrade the sound and thermal performance of an existing masonry wall
- Provides service void

¹Refer to section Principles of robust design.

Applications

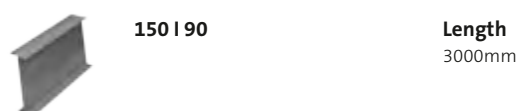
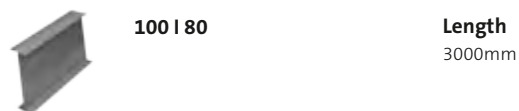
Due to the design flexibility of GypLyner IWL, this system can be tailored to meet the requirements of a wide range of applications.

Sector

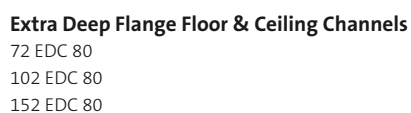
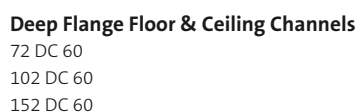
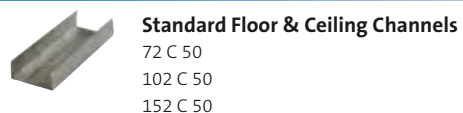
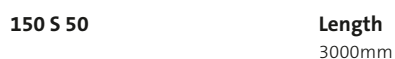
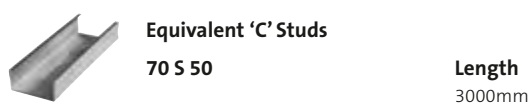
- ✓ Office / commercial
- ✓ Retail
- ✓ Sport and leisure
- ✓ Education
- ✓ Healthcare
- ✓ Industrial
- ✓ Villa residential
- ✓ Apartment buildings
- ✓ High-rise multi-occupancy

System components

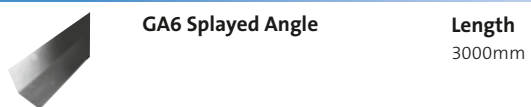
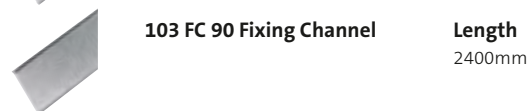
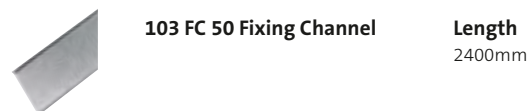
Gypframe metal products



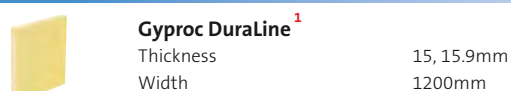
For abutments and openings only



All channels are available in 3000mm



Board products

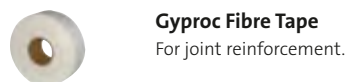
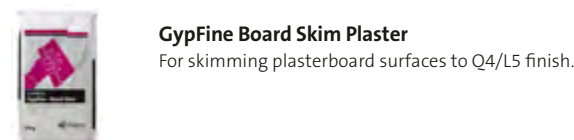
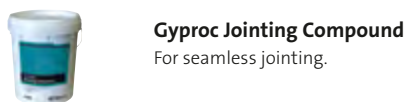
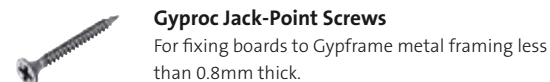
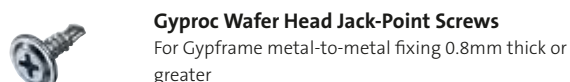


¹ Moisture resistant (MR) versions of the above boards are specified in intermittent wet use areas, e.g. shower cubicles.

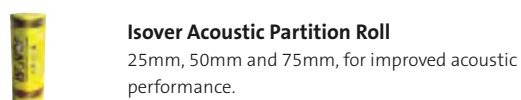
² Available with Activ'Air and M2TECH technology



Fixing and finishing products



Insulation products



FUTURE PROOF

Eligible for the
SpecSure warranty
from Gyproc



Installation overview



Gypframe Channels are fixed at the head and base. Gypframe 'I' Studs are friction-fitted vertically within the channel sections to form the framework. This allows for adjustment during boarding. If specified, Isover insulation is fitted between studs. Additional framing is installed as required to support heavy fixtures.

Boards are screw-fixed to framing members to form the lining. Horizontal joints on face layer boards should be backed with Gypframe GFS1 Fixing Strap or Gypframe 103 FC 50.

Services

Electrical and other services are normally installed at the frame erection stage. Horizontal runs are fixed to the background or can be routed through cut-outs in the studs. Gypframe 103 FC 50 Fixing Channel can be installed between studs to support recessed switch boxes/socket outlets.

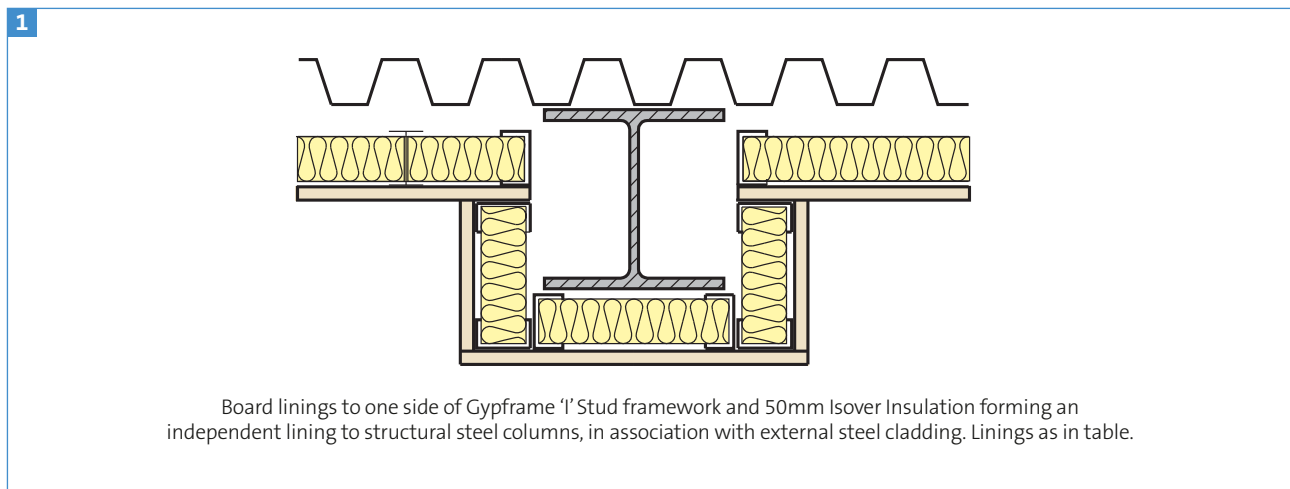
Table 1 – GyPlyner IWL maximum heights¹ for Gyframe ‘I’ Studs at 600mm centres

Stud type	12.5mm boards maximum heights		15mm boards maximum heights	
	single mm	double mm	single mm	double mm
70 I 70	3600	4200 ²	3900	4300 ²
100 I 80	5100 ²	5700 ²	5400 ²	6000 ²
150 I 90	6900 ²	7200 ²	7200 ²	7500 ²

¹ Based on a limiting deflection of L/240 at 200 Pa. Greater heights can be achieved by reducing stud centres. Contact Gyproc Technical Team for further advice.

² For heights between 4200mm and 8000mm, Gyframe Deep Channel should be used at base and at head (subject to deflection criteria).

Table 2 – GyPlyner IWL linings to steel clad external walls¹. Solutions to satisfy the requirements of BS EN 1364-1: 1999 and BS 476: Part 22: 1987



Detail	Board type ³	Lining thickness mm	Duty rating	System reference
Fire resistance – 30 minutes integrity : 30 minutes insulation²				
1	Regular	2 x 12.5	Severe	B216003
1	Regular	2 x 15	Severe	B216004
Fire resistance – 60 minutes integrity : 30 minutes insulation²				
1	FireStop	1 x 12.5	Medium	B216025
1	FireStop	1 x 15	Heavy	B216026
Fire resistance – 90 minutes integrity : 30 minutes insulation²				
1	FireStop	2 x 12.5	Severe	B216027
1	FireStop	2 x 15	Severe	B216028

¹ The fire resistances apply to external walls, whose construction incorporates structural steel sections with a profiled steel cladding, when the inside of the wall is exposed to fire.

² The figures quoted relate to the complete wall structure including the external cladding. The lining also offers fire protection to steel columns from the lining side, subject to A/V (Hp/A) factor. Refer to Table 3.

³ For improved durability and impact resistance, the outer layer of board can be replaced with a layer of Gyproc Duraline.

NB The fire resistance and sound insulation performances are for imperforate partitions, walls and ceilings incorporating boards with all joints taped and filled, according to Gyproc recommendations. The quoted performances are achieved only if Gyproc components are used throughout, and the company's fixing recommendations are strictly observed. Any variation in the specifications should be checked with Gyproc.

**Table 3 – GypLyner IWL fire protection to structural steel.
Solutions to satisfy the requirements of BS 476: Part 21: 1987**

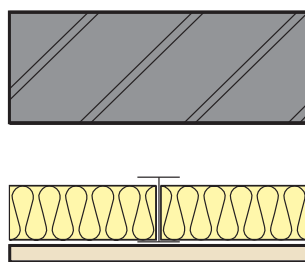
Board type	Lining thickness mm	Fire protection mins	Section factor ¹ A/V (Hp/A) m ⁻¹
FireStop	1 x 12.5	30	Up to 300
FireStop	1 x 12.5	60	Up to 165
DuraLine	1 x 15	30	Up to 300
Regular	2 x 12.5	30	Up to 300
FireStop	2 x 12.5	60	Up to 300
FireStop	2 x 12.5	90	Up to 200
FireStop	2 x 15	90	Up to 300

¹ Based on four-sided exposure. Protection is afforded to universal column sections as described in BS 4: Part 1. Based on critical temperature 550°C (information on other critical temperatures is available).

NB The fire resistance and sound insulation performances are for imperforate partitions, walls and ceilings incorporating boards with all joints taped and filled, according to Gyproc's recommendations. The quoted performances are achieved only if Gyproc components are used throughout, and the company's fixing recommendations are strictly observed. Any variation in the specifications should be checked with Gyproc.

**Table 4 – GypLyner IWL linings to masonry construction.
Solutions to satisfy the requirements of BS 476: Part 21: 1987**

1



Single or double layer board to one side of Gypframe 'I' Stud framework and 50mm Isover insulation forming an independent lining to masonry construction with a sealed surface mass of 178kg/m² (minimum). Linings as in table.

Detail	Board type	Lining thickness mm	Sound insulation R _w (R _w + C _t) db	Duty rating	Approx. weight kg/m ²	System reference
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180 minutes fire resistance¹

1	Regular	1 x 12.5	59 (51)	Medium	11	B216001
1	Regular	1 x 15	59 (51)	Medium	13	B216002
1	Regular	2 x 12.5	61 (54)	Severe	20	B216031
1	Regular	2 x 15	61 (54)	Severe	23	B216033

¹ The fire resistance quoted is that provided by the masonry wall without contribution from the lining.

NB The fire resistance and sound insulation performances are for imperforate partitions, walls and ceilings incorporating boards with all joints taped and filled, according to Gyproc's recommendations. The quoted performances are achieved only if Gyproc components are used throughout, and the company's fixing recommendations are strictly observed. Any variation in the specifications should be checked with Gyproc.

Planning - key factors

The position of services should be pre-determined and their installation planned into the frame erection stage. It is important that all parts of the lining system, including the insulation, should remain independent of the external walling. The lining is erected with the external walling in place and the windows and doors fixed.

Extended heights

Where the wall height exceeds the available length of the 'I' stud, sections of stud can be spliced together to the required length using 600mm lengths of the appropriate floor and ceiling channel, fixed with four Gyproc Wafer Head Drywall Screws in each flange to each side, (see **Construction details – 2**). Where greater heights than listed in **Table 1** are required, it may be possible to brace the lining back to the structure. Note that the system is non-loadbearing and should not be used to provide lateral restraint to masonry or other external wall constructions.

Acoustic performance

Gyplyner IWL can be used as an independent lining to improve the sound insulation of new or existing masonry walls. Acoustic testing on a basic masonry wall construction achieving Rw 45 dB sound insulation gave a 14 dB improvement when the wall was lined with Gyplyner IWL (single board). A 16 dB improvement was achieved with a double layer lining. Please see **Table 4**. Special detailing is required at junctions with sound insulating partitions in order to maintain acoustic performance, (see **Construction details – 5**).

Fixing floor and ceiling channels

Gypframe Channels must be securely fixed with a row of fixings at 600mm maximum centres. For 94mm channels and above, two rows of staggered fixings are required, each row at 600mm centres and each fixing 25mm in from the flange. If the floor is uneven, a 38mm thick timber sole plate equal to the width of the channel should be used.

If the concrete or screeded floor is new, consideration should be given to the installation of a damp-proof membrane between the floor surface and the channel or sole plate.

Deflection heads

The system can accommodate deflection at the head with suitable detailing incorporating Gypframe Deep or Extra Deep Channels. Contact the Gyproc Technical Team for further guidance.

Refer to Principles of building acoustics.

Thermal performance

Uncontrolled air movement through the drylining cavity can result in loss of cooling energy from the building. This can be reduced in practice if the abutting elements and the background are well fitted, and junctions are sealed.

The designer should also specify a method of restricting air movement around the perimeter of suspended timber floors, such as the provision of a flexible seal between the floor and walls.

Services

The stud cut-outs can be used for services provided that the Isover insulation remains in place. The positioning of stud cut-outs is shown in **Construction details – 1**.

Surface mounted services should be located against the plasterboard lining, and fixed through the lining to the stud framework. Any interruptions in the lining integrity will downgrade its performance. The installation of electrical services should be carried out in accordance with BS 7671.

Refer to Service installations - section 3.4

Fixtures

Lightweight fixtures can be made directly to the partition linings. Medium weight fixtures can be made to Gypframe 103 FC 50 Fixing Channel. Heavyweight fixtures (to BS 5234), such as wash basins and wall cupboards, can be fixed using Gypframe 103 FC 90 Fixing Channel.

Plasterboard Types

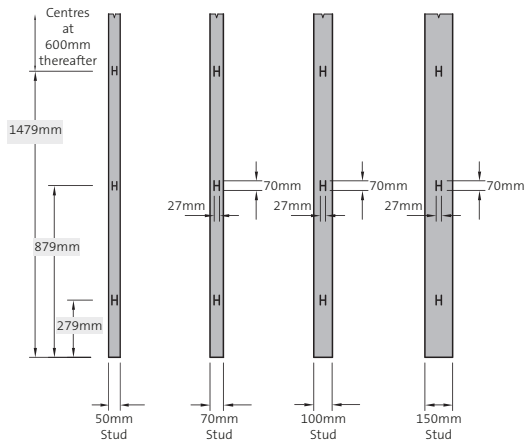
The plasterboards shown in the performance tables throughout these White Book sections are typically Regular or FireStop boards. It is possible to have additional properties of MR (Moisture Resistance), M2TECH (moisture & mold resistance) or Activ'Air (to improve indoor air quality) added to these plasterboard types. Using these 'enhanced versions' of the plasterboards will not have any detrimental effect on either the fire, acoustic or structural performances as shown in the performance tables in these White Book sections.

Refer to Service Installations - section 3.4

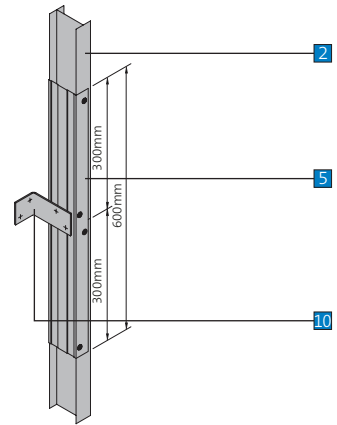
Board finishing

Refer to Finishing systems - section 9

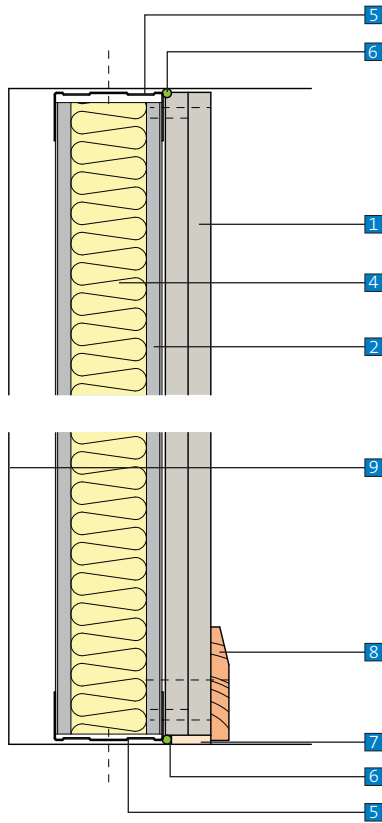
1 Service cut-outs - Gypframe 'C' Studs and Gypframe 'I' Studs



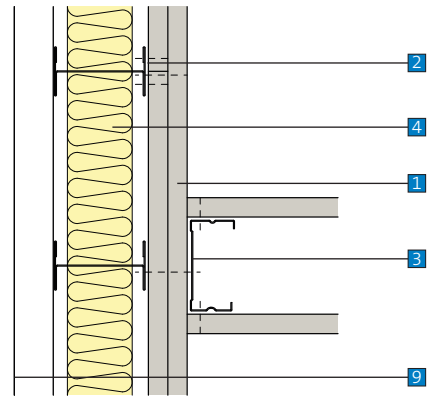
Gypframe 'I' Stud / splicing and bracing



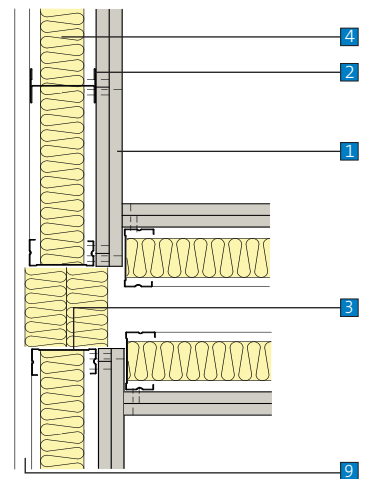
3 Head and base



Partition junction



Partition junction to optimise acoustic performance and reduce flanking transmission

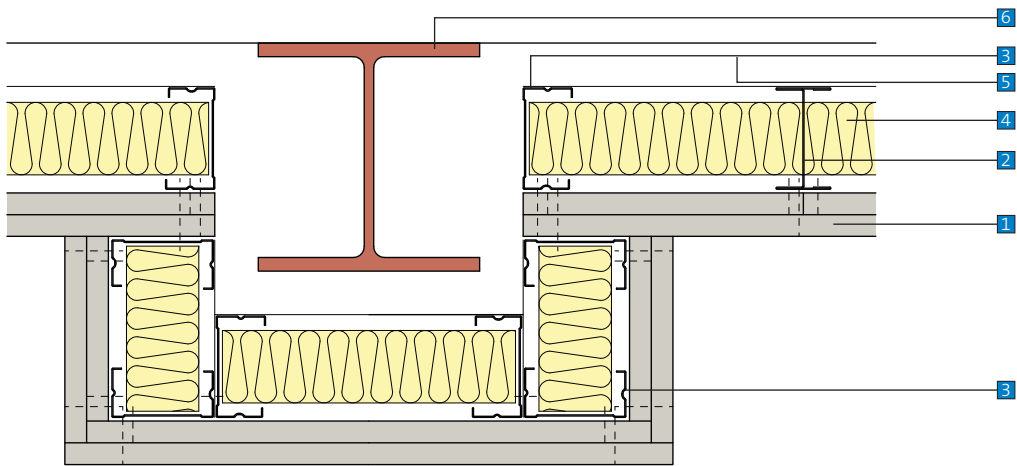


- 1 Gyproc plasterboard
- 2 Gypframe 'I' Stud
- 3 Gypframe 'C' Stud
- 4 Isover insulation
- 5 Gypframe Standard Floor & Ceiling Channel

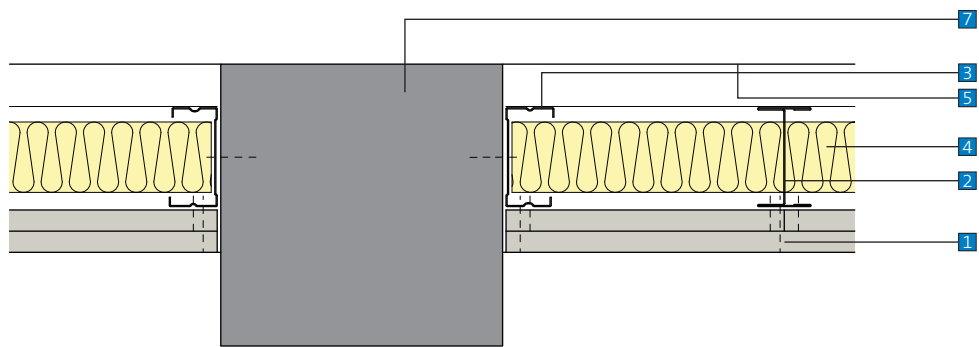
- 6 Gyproc Sealant
- 7 Bulk fill with Gyproc jointing materials (where gap exceeds 5mm)
- 8 Skirting
- 9 Wall structure
- 10 Suitable size angle brace by others if required

Construction Details

6 Lining around steel column



7 Concrete column junction



- 1 Gyproc plasterboard
- 2 Gypframe 'I' Stud
- 3 Gypframe 'C' Stud
- 4 Isover insulation

- 5 Wall structure
- 6 Steel column
- 7 Concrete column

