

GypLyner

IWL



Independent wall
lining system



GypLyner IWL

GypLyner IWL 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.



30 - 120

mins



59 - 61

R_w dB

Key Benefits



Totally independent from wall with fixings to floor and soffit only



Provides fire protection to structural steelwork



Used horizontally to form a corridor ceiling



Used to upgrade the sound and thermal performance of an existing masonry wall



Satisfies BS 5234 requirements up to and including Severe Duty



Services are easily incorporated within the framework with no limitation to the cavity size that can be created



Eligible for the SpecSure warranty from Gyproc

System components

Gypframe metal components



Gypframe 'I' Studs

(70 I 70, 100 I 80, 150 I 90)
Enhanced strength stud that allows for lining height, without increasing lining width. Designed to receive fixing of board to one side only



Gypframe Standard Floor & Ceiling Channels

(72 C 50, 102 C 50, 152 C 50)
Standard floor channels for retaining Gypframe studs at floor junctions up to heights not exceeding 4200mm. Also used around openings



Gypframe Deep Flange Floor & Ceiling Channels

(72 DC 60, 102 DC 60, 152 DC 60)
Floor and ceiling channels with deep flanges for retaining the Gypframe studs at floor and ceiling junctions for partitions 4200mm to 8000mm high. Also used around openings and in deflection heads (maximum 30mm deflection)



Gypframe Extra Deep Flange Floor & Ceiling Channels

(72 EDC 80, 102 EDC 80, 152 EDC 80)
Floor and ceiling channels with extra deep flanges for retaining the Gypframe studs at floor and ceiling junctions for partitions over 8000mm high. Also used around openings and in deflection heads (maximum 50mm deflection)



Gypframe GFS1 Fixing Strap

Used to support horizontal board joints



Gypframe GA1 Steel Angle

Used as a fixing mechanism to hold ISOVER Eco APR in place



Gypframe 103 FC 50

Fixing Channel

A versatile metal fixing channel used to support the weight fixtures on walls



Gypframe 103 FC 90

Fixing Channel

A versatile metal fixing channel used to support heavy weight fixtures on walls



Gypframe Service Support Plate

For installation of 18mm plywood within a partition cavity to support medium to heavyweight fixtures

System components (continued)

Board products



Gyproc Regular^{1, 2, 3}
(12.5, 15mm)
Standard gypsum plasterboard



Gyproc DuraLine^{1, 2, 3}
(15mm)
Gypsum plasterboard with fire resistant additives and a high density core for enhanced sound insulation and impact resistance performance



Gyproc Moisture Resistant^{2, 3}
(12.5, 15mm)
Gypsum plasterboard with a high density core for enhanced sound insulation performance.



Gyproc Habito²
(12.5, 15mm)
Next generation plasterboard which consists of a specially reinforced gypsum core designed for high strength and fixing capability



Gyproc FireStop^{1, 2, 3}
(12.5, 15mm)
Gypsum plasterboard with fire resistant additives



Glasroc X²
(12.5mm)
Glasroc X is a high performance board with a glass-mat liner on both surfaces and a mold & moisture resistant (M2TECH) gypsum core



Gyproc SoundBloc^{1, 2}
(12.5, 15mm)
Gypsum plasterboard with a high density core for enhanced sound insulation performance

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 technology

³ Available with M2TECH technology



System components (continued)

Fixing products



Gyproc Drywall Screws

Corrosion resistant self-tapping steel screws for fixing board to metal framing less than 0.8mm thick, excluding 'I' studs



Gyproc Habito Screws

Corrosion resistant self-tapping screw with counter sunk cross heads specifically used for fixing Gyproc Habito plasterboard to 'C' Stud framing 0.8mm thick or greater and 'I' Studs greater than 0.7mm thick



Gyproc Jack-Point Screws

Corrosion resistant self-drilling steel screws for fixing boards to Gypframe metal framing 0.8mm thick or greater and all 'I' studs



Gyproc Wedge Anchor

Corrosion resistant anchor used for fixing fire rated partition and ceiling systems into masonry



Gyproc Waferhead Screws

Corrosion resistant self-tapping steel screws for fixing metal to metal framing less than 0.8mm thick, excluding 'I' studs



Gyproc Waferhead Jack-Point Screws

Corrosion resistant self-drilling steel screws for fixing metal to metal framing 0.8mm thick or greater and all 'I' studs



Gyproc Hammer Fix

Corrosion resistant nail, screw engaged in a nylon plug, suitable for fixing non fire rated partition systems and ceiling perimeters into masonry

Plasterboard accessories



Gyproc Jointing Compound

Air-drying, asbestos free, ready mixed compound for filling and finishing plasterboard joints and corner beads



Gyproc FireStrip

Soft extruded linear gap seal introduced for use within Gyproc system deflection head details



Gyproc Sealant

Used for sealing air paths to reduce air-leakage and optimise sound insulation performance



Gyproc Paper Tape

Designed for reinforcing flat joints when finishing plasterboard joints and provides improved resistance against cracking



Gyproc Fibre Tape

Suitable for flat joint reinforcements



Glasroc X Tape

Glass mat drywall tape ideal for use with mold-resistant and paperless drywall systems for high-humidity and moisture-prone applications. Available in a 30m roll

System components (continued)

Corners



Habito Flex 83

Using SLAM technology it provides an impact resistant corner by fitting every angle, every time



Levelline Flex

Drywall corner that flexes to any inside or outside corner angle



Gyproc Drywall Corner Bead

Provides corner reinforcement and protection to plasterboards and plasters



Gyproc Drywall Metal Edge Bead

A galvanised steel channel used to protect plasterboard edges and to form a defined edge commonly used around window reveals

Insulation products



ISOVER Eco

Acoustic Partition Roll (APR)

(25, 50, 75 and 100mm)

Non-combustible glass mineral wool roll for sound insulation in partitions, linings and ceiling systems.

Minimum density: 16 kg/m³



KIMMCO ISOVER

Stone mineral wool

(50 and 70mm)

For fire stopping, where required.

Minimum density: 33 kg/m³

Installation overview



Gypframe Floor & Ceiling channels are fixed to the concrete substrate using Gyproc Wedge Anchors (for fire rated systems) or Gyproc Hammer Fix (for non-fire rated systems).



Gypframe 'C' Studs are suitably fixed to abutments.



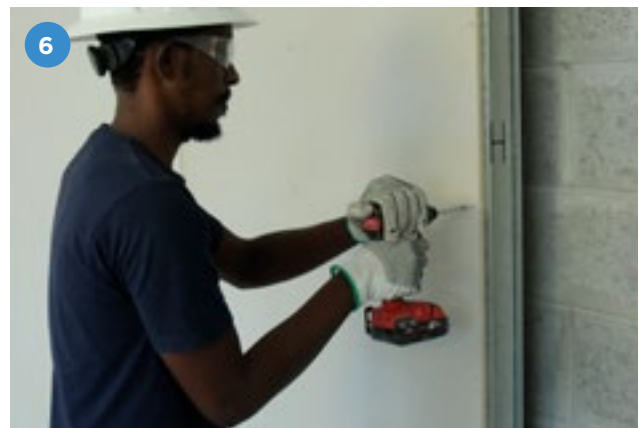
Gypframe 'I' Studs are friction fit vertically at the required centres within the channel sections to form the framework. This allows for adjustment of stud positions during boarding.



The perimeter of the metal framework is then sealed with Gyproc Sealant for optimum sound insulation performance.



ISOVER Eco APR is added to the lining cavity for increased acoustic performance.



Gyproc plasterboards are fixed with Gyproc Drywall Screws to Gypframe studs. Ensure board joints are staggered between board layers and horizontal board joints in the face layer board should be supported with Gypframe GFS1 Fixing Strap.

Table 1a - GypLyner IWL maximum heights¹ for Gypframe 'I' Studs at 600mm centres

Stud type	12.5mm boards maximum heights		15mm boards maximum heights	
	single mm	double mm	single mm	double mm
Gypframe 70 I 70	3600	4200	3900	4300
Gypframe 100 I 80	5100	5700	5400	5800
Gypframe 150 I 90	6900	7200	7200	7500

Table 1b - GypLyner IWL maximum heights¹ for Gypframe 'I' Studs at 400 centres

Stud type	12.5mm boards maximum heights		15mm boards maximum heights	
	single mm	double mm	single mm	double mm
Gypframe 70 I 70	4100	4800	4500	5000
Gypframe 100 I 80	5800	6500	6200	6600
Gypframe 150 I 90	7900	8200	8200	8600

Table 1c - GypLyner IWL maximum heights¹ for Gypframe 'I' Studs at 300 centres

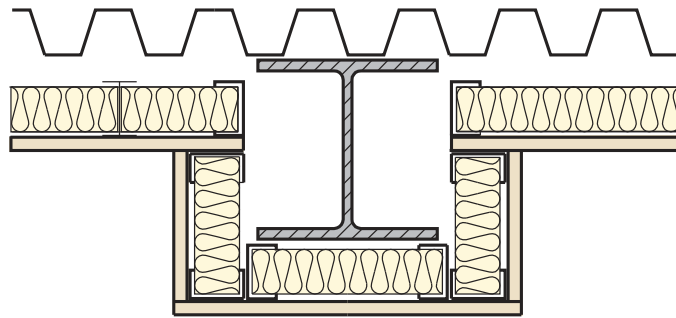
Stud type	12.5mm boards maximum heights		15mm boards maximum heights	
	single mm	double mm	single mm	double mm
Gypframe 70 I 70	4500	5200	4900	5500
Gypframe 100 I 80	6400	7100	6800	7200
Gypframe 150 I 90	8700	9000	9100	9500

¹ Based on a limiting deflection of L/240 at 200 Pa. For BS EN 1364-1 the heights are limited to 3000mm maximum fire state field of application.

NB For heights between 4200mm and 8000mm, Gypframe Deep Channel should be used at the base and at head (subject to deflection criteria). For heights over 8000mm, Gypframe Extra Deep Channels should be used at head and base

**Table 2 – GypLyner IWL linings to steel clad external walls¹
Solutions to satisfy the requirements of BS 476: Part 22: 1987**

1



Board linings to one side of Gypframe 'I' Stud framework and 50mm ISOVER Eco APR forming an independent lining to structural steel columns, in association with external steel cladding. Linings as in table.

Detail	Board type ³	Lining thickness mm	Duty rating
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30 minutes integrity : 30 minutes insulation² fire resistance

1	Regular	2 x 12.5	Severe
1	SoundBloc	2 x 12.5	Severe
1	Regular	2 x 15	Severe
1	SoundBloc	2 x 15	Severe

60 minutes integrity : 30 minutes insulation² fire resistance

1	FireStop	1 x 12.5	Medium
1	FireStop	1 x 15	Heavy

90 minutes integrity : 30 minutes insulation² fire resistance

1	FireStop	2 x 12.5	Severe
1	FireStop	2 x 15	Severe

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 The boards listed and the performances shown include MR, M2TECH & Activ'Air versions.

NB For increased fixing capability replace above listed boards with equivalent thickness of Gyproc Habito

NB 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 the Gyproc Technical Team.

NB Where tiling, refer to 'Tiling section' on page 304

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

Board type	Lining thickness	Fire protection mins	Section factor ¹ A/V (Hp/A) m ⁻¹
	mm		
FireStop/Habito	1 x 12.5	30	Up to 300
FireStop/Habito	1 x 12.5	60	Up to 165
FireStop/Habito/DuraLine	1 x 15	30	Up to 300
FireStop/Habito/DuraLine	1 x 15	60	Up to 195
Regular/SoundBloc	2 x 12.5	30	Up to 300
FireStop/Habito	2 x 12.5	60	Up to 300
Regular/SoundBloc	2 x 15	60	Up to 300
FireStop/Habito	2 x 12.5	90	Up to 200
FireStop/Habito/DuraLine	2 x 15	90	Up to 300
FireStop/Habito	3 x 12.5	90	Up to 300
FireStop/Habito/DuraLine	2 x 15	120	Up to 110
FireStop/Habito	3 x 12.5	120	Up to 190
FireStop/Habito/DuraLine	3 x 15	120	Up to 300

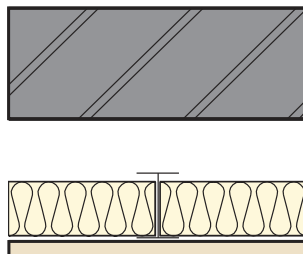
¹Based on four-sided exposure. Protection is afforded to universal column sections as described in BS 4: Part 1. Based on critical temperature 550°C (information on other critical temperatures is available). A 10mm air gap is required between the back of the board and the face of the structural steel.

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 the Gyproc Technical Team.

NB Where tiling, refer to 'Tiling section' on page 304

**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 Eco APR forming an independent lining to masonry construction with a sealed surface mass of 1700 kg/m³ (minimum). Linings as in table.

Detail	Board type ²	Lining thickness	Sound insulation R _w (R _w + C _{tr}) dB	Acoustic improvement over existing wall	Duty rating	Approx. weight kg/m ²
		mm				

120 minutes fire resistance¹

1	SoundBloc	1 x 12.5	59 (51)	+14	Medium	11
1	SoundBloc	1 x 15	59 (51)	+14	Medium	13
1	SoundBloc	2 x 12.5	61 (54)	+16	Severe	20
1	SoundBloc	2 x 15	61 (54)	+16	Severe	23

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

² The boards listed and the performances shown include MR, M2TECH & Activ'Air versions.

NB For increased fixing capability replace above listed boards with equivalent thickness of Gyproc Habito

NB 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'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 the Gyproc Technical Team.

NB Where tiling, refer to 'Tiling section' on page 304

Design

Planning – key factors

GypLyner IWL comprises of Gypframe 'I' Studs installed at 600mm centres within Gypframe Floor & Ceiling Channels to receive board to one side. 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 any solid form of thermal 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 / splicing studs

Where the wall height exceeds the available length of the Gypframe '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 Waferhead Jack-Point Screws in each flange to each side. Refer to construction detail 2.

Where greater heights than listed in table 1a, 1b and 1c 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.

Junction with a suspended ceiling

Where a GypLyner IWL system is to be fixed, in accordance with Gyproc's installation instructions, to the underside and into the framework of a Gyproc MF ceiling, it's permissible maximum height is equal to that of where it is fixed.

In situations where a GypLyner IWL system is fixed up to a structural soffit but has a Gyproc MF ceiling to one side of the lining, where it is appropriately fixed to both this lining and perimeter partitions / walls, consideration can be given to the lateral restraint provided by the ceiling when developing the lining specification.

The relevant maximum height then, is the greater of the floor to Gyproc MF ceiling height or ceiling to structural soffit height. Where heights are specified based on lateral restraint from a suitable MF ceiling, either this ceiling should be in place at the time of installation or temporary restraint should be used.

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 R_w 45dB sound insulation gave a 14dB improvement when the wall was lined with GypLyner IWL. A 16dB improvement was achieved with a double layer plasterboard lining incorporating ISOVER insulation. Refer to Table 4. Careful detailing is required at junctions with sound insulating linings in order to maintain acoustic performance. Refer to construction detail 6.

Cavity barriers

Local building regulations may require the provision of vertical cavity barriers to long runs of lining. Minimum 12.5mm plasterboard, cut to cavity depth and screw-fixed to the leg of Gypframe GL1 Stud will provide a satisfactory cavity barrier, or alternatively stone mineral

wool (by KIMMCO ISOVER) cut neatly to fit across the cavity also forms a suitable closure. The nature of the barrier and its fixing should not detract from the general performance of the wall.

Fixing floor and ceiling channels

Gypframe Floor & Ceiling Channels must be securely fixed with a row of fixings at 600mm maximum centres. For 94mm 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 and still damp, consideration should be given to the installation of a damp-proof membrane between the floor surface and the channel or sole plate.

Deflection heads

GypLyner IWL can accommodate deflection at the head with suitable detailing incorporating Gypframe Deep Flange or Extra Deep Flange Floor & Ceiling Channels. Refer to construction detail 4.

Control joints

Control joints may be required in the partition to relieve stresses induced by expansion and contraction of the structure. They should coincide with movement joints within the surrounding structure.

Insulation

ISOVER insulation batts, matching approximately the same depth as the Gypframe 'I' stud specified, are inserted to a friction-fit within the stud cavity. The Batts are self-supported from the 'I' stud flanges. Where a thinner ISOVER slab is to be used compared to the Gypframe 'I' Stud depth, additional sections of ISOVER insulation batt appropriately cut to size are inserted as a packer within the 'I' stud flange to help retain the slab in place. Alternatively, ISOVER Eco APR may be hung from the structural soffit either between stud modules or within the cavity formed between the background and the back of the 'I' stud flanges if appropriate.

Thermal performance

Uncontrolled air movement through the drylining cavity can result in a reduction in thermal performance through the lining system. U-values for GypLyner IWL wall lining systems are typically calculated on a sealed cavity between the lining and the background. This is achieved in practice if the abutting elements and the background are well fitted, and junctions are sealed using Gyproc Sealant.

Condensation and water vapour resistance

The application of two coats of a vapour control sealer (by others) to Gyproc plasterboards after installation and jointing should provide a water vapour resistance of at least 15 MNs/g. Alternatively using an appropriate vapour control layer such as a polythene membrane, prior to installing the plasterboard lining will significantly reduce the risk of interstitial condensation.

It is important, particularly in new buildings, that external masonry walls are properly dried out before a vapour control layer is provided, otherwise moisture may be trapped, impairing the performance of the construction.

Design (continued)

Services

The stud cut-outs can be used for services provided that the Isover insulation (where required) remains in place. The positioning of stud cut-outs is shown in construction detail 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 or other equivalent international standard.

Fixtures

Lightweight fixtures can be made directly to the lining. Medium weight fixtures should be made to Gypframe 103 FC 50 Fixing Channel. Heavyweight fixtures (to BS 5234: Part 2) such as wash basins and wall cupboards, can be fixed using plywood secured with Gypframe Service Support Plates. Refer to Service installations for further information.

Where it is not possible to predetermine the exact location of fixtures, or where additional fixtures may be added or moved around the room in the future, Gyproc Habito board should be considered as the lining board where medium and/or heavy weight fixtures are to be included. Refer to GypWall HABITO on page 118 for further information.

Board finishing

Refer to Finishing systems on page 298.

Tiling

Tiles up to 32 kg/m² can be applied to the surface of Gyproc plasterboard systems. Tiles up to 60 kg/m² can be applied when using Glasroc X or Aquaroc FC board. Refer to Tiling on page 304 for further information.

Mold & moisture protection

Where additional protection against moisture is required, for example in a bathroom, kitchen or other area subject to intermittent humidity, then the moisture resistant grade of the required board type should be specified – for example Gyproc SoundBloc MR. Similarly, if protection against mold spores forming is required then M2TECH (mold & moisture technology) versions of the boards should be specified – for example Gyproc SoundBloc M2TECH.

Using MR or M2TECH versions of any of the plasterboard linings listed in the performance tables, will not affect the fire, acoustic, height or robustness performances listed.

Air quality

Consideration should be given to specifying plasterboard linings that, in addition to the performances listed in the preceding tables from page 222-223 (covering fire, acoustic, duty rating etc), actively absorb harmful volatile organic compounds (VOC's) such as formaldehyde, from the atmosphere. Where additional protection against VOC's is required, then Activ'Air versions of the boards listed in these pages should be specified – for example Gyproc SoundBloc Activ'Air.

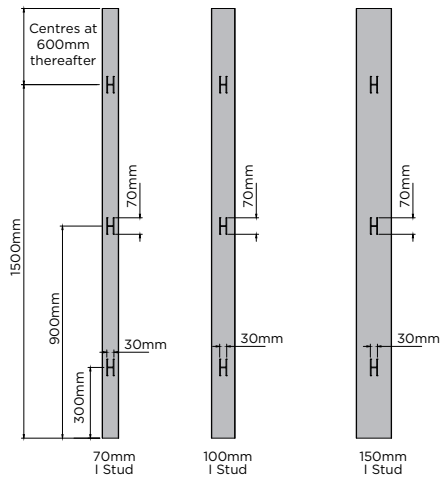
Using Activ'Air versions of any of the plasterboard linings listed in the performance tables, will not affect the fire, acoustic, height or robustness performances listed.

Construction details

For GypLyner IWL construction details, refer to the construction details shown on pages 226 to 227. For more typical or example details, please contact the Gyproc Technical Team.

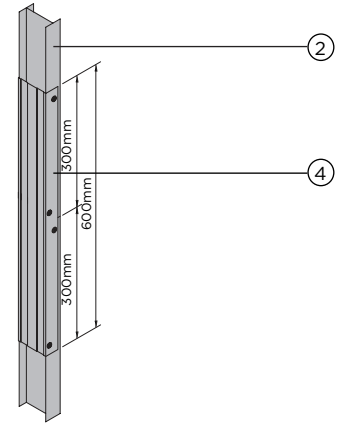
Construction details

1



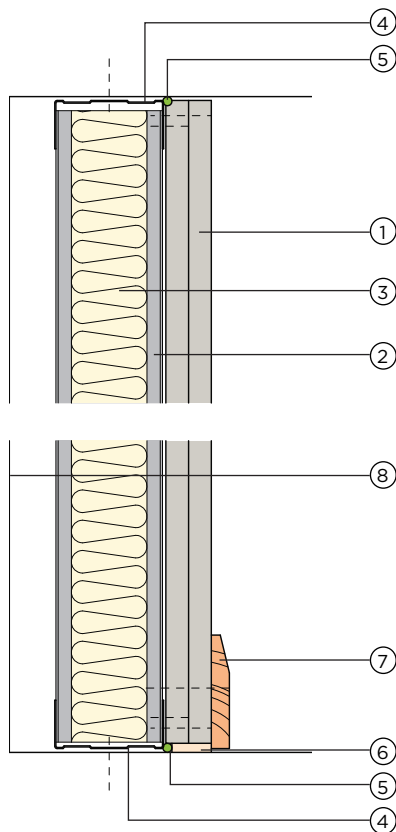
Service cut-outs - Gypframe 'I' Studs

2



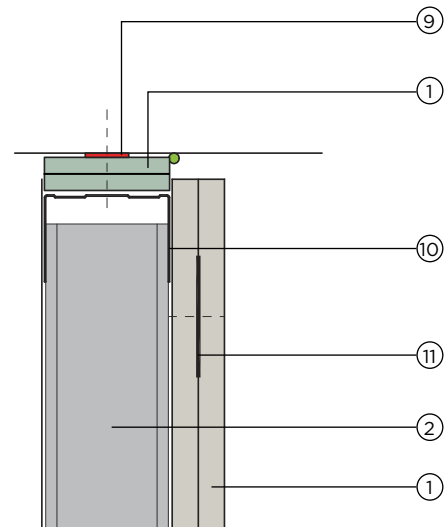
Gypframe 'I' Stud splicing detail

3



Head and base detail

4



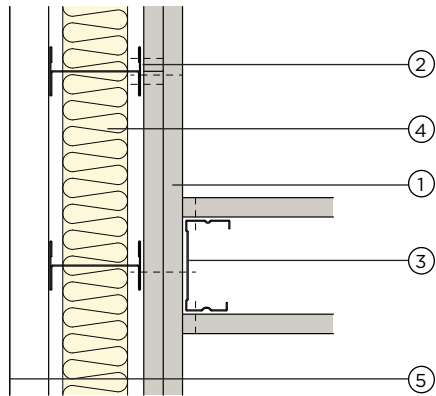
Deflection head detail

1. Gyproc plasterboard
2. Gypframe 'I' Stud
3. ISOVER Eco APR
4. Gypframe Floor & Ceiling channel
5. Gyproc Sealant
6. Bulk fill with Gyproc Jointing Compound (where gap exceeds 5mm)

7. Skirting
8. Wall structure
9. Gyproc FireStrip (continuous)
10. Gypframe Deep Channel
11. Gypframe GFS1 Fixing Strap

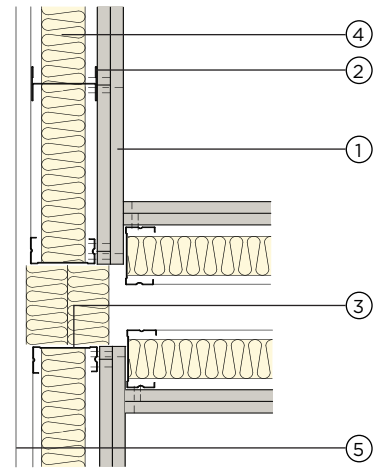
Construction details (continued)

5



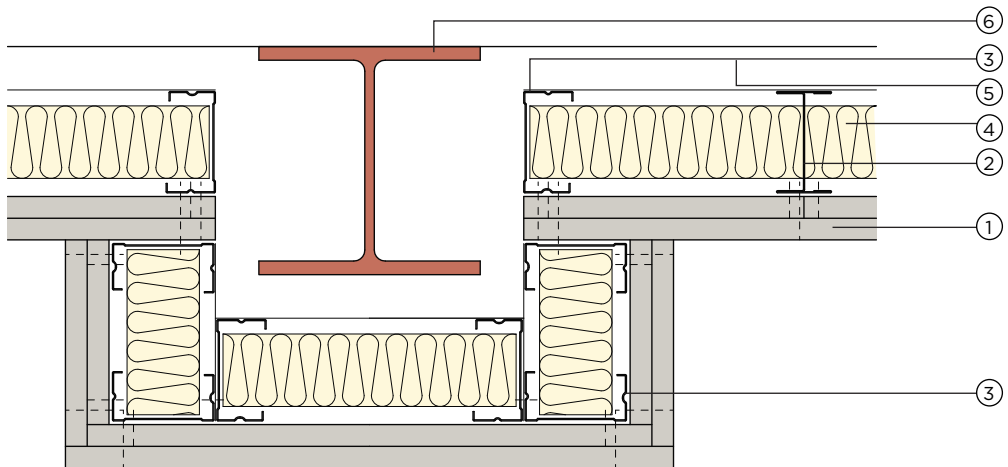
Partition junction detail

6



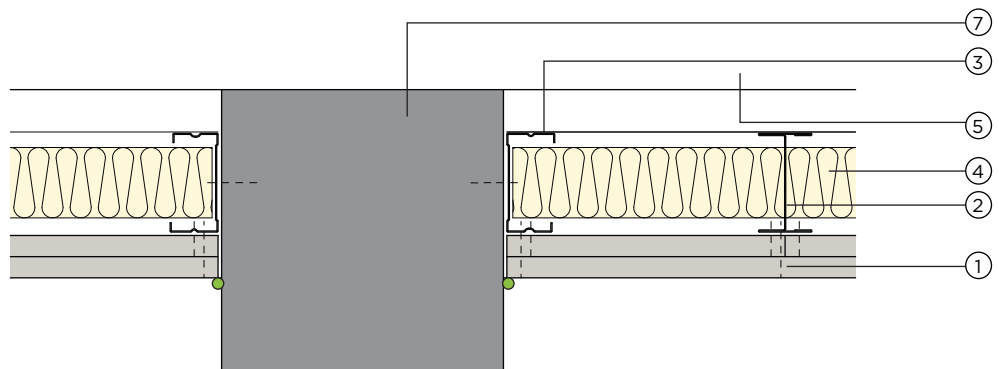
Partition junction detail to optimise acoustic performance and reduce flanking transmission

7



Lining detail around steel column

8



Concrete column junction detail

- 1. Gyproc plasterboard
- 2. Gypframe 'I' Stud
- 3. Gypframe 'C' Stud
- 4. ISOVER Eco APR

- 5. Wall structure
- 6. Steel column
- 7. Concrete column
- 8. Gyproc Sealant