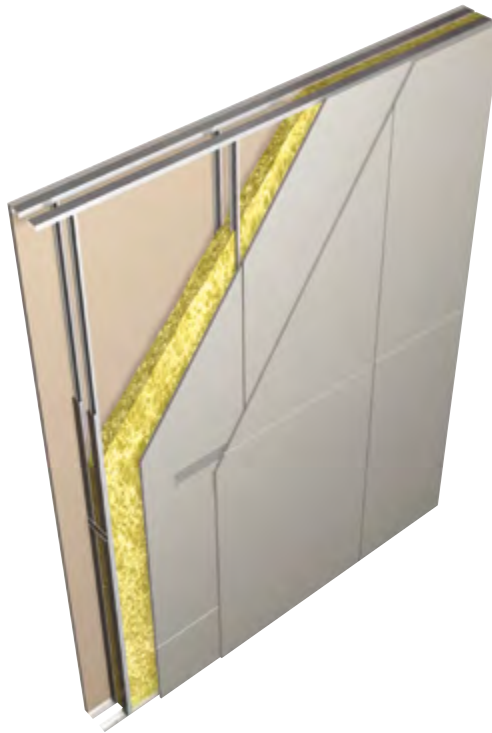


# GypWall AUDIO

The ultimate cinema wall system



**GypWall AUDIO** is a non-loadbearing, twin frame high performance wall system that provides exceptionally high levels of sound insulation. It is used to separate multiple use facilities, such as lecture theatres, music rooms, multi-screen cinemas, exhibition and conference centres and leisure centres.



## Key facts

- Exceptionally high levels of sound insulation
- Designed to satisfy sound insulation requirements for cinemas equipped with high performance sound systems
- Provides Severe Duty rating in accordance with BS 5234:Parts 1 & 2
- Lightweight, compared to masonry alternatives
- Up to 180 minutes fire resistance
- Can provide fire protection to structural steel within the wall cavity

## Applications

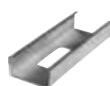
Applications requiring high performance acoustic partitioning, such as cinema walls.

## Sector

- ✓ Entertainment
- ✓ Education

## System components

## Gypframe metal products

**92 S 10 'C' Stud****Length**  
3000mm

Standard Floor &amp; Ceiling Channel

**94 C 50**

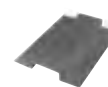
Deep Flange Floor &amp; Ceiling Channel

**94 DC 60**

Extra Deep Flange Floor &amp; Ceiling Channel

**94 EDC 80**

All channels are available in 3000mm.

**103 FC 50 Fixing Channel****Length**  
3000mm**103 FC 90 Fixing Channel****Length**  
2400mm**153 FC 90 Fixing Channel****Length**  
2400mm**GFS1 Fixing Strap****Length**  
2400mm**GA4 Steel Angle****Length**  
3000mm**GA6 Splayed Angle****Length**  
3000mm**Service Support Plate****Length**  
92mm**Corner Bead**

25, 81mm

**Edge Bead**

9.5, 12.5, 15mm

## Board products

**Gyproc Regular<sup>2</sup>**Thickness  
Width12.5, 12.7, 15, 15.9mm  
1200mm**Gyproc FireStop<sup>1,2</sup>**Thickness  
Width12.5, 12.7, 15, 15.9mm  
1200mm**Gyproc DuraLine<sup>2</sup>**Thickness  
Width15, 15.9mm  
1200mm<sup>1</sup> Moisture resistant (MR) versions of the above boards are specified in intermittent wet use areas, e.g. shower cubicles.<sup>2</sup> Available with Activ'Air and M2TECH technology.

## Fixing and finishing products

**Gyproc Wafer Head Jack-Point Screws**

For Gyproc metal-to-metal fixing 0.8mm thick or greater

**Gyproc Jack-Point Screws**

For fixing boards to Gyproc metal framing 0.8mm thick or greater.

**Gyproc Jointing Compound**

For seamless jointing.

**Gyproc M2TECH Jointing Compound**

For seamless jointing. Specially developed for high moisture and mold-prone environments.

**Gyproc Paper Tape**

For joint reinforcement.

**Gyproc Fibre Tape**

For joint reinforcement.

**Gyproc M2TECH Fibre Tape**

For joint reinforcement. Comes with an anti-microbial coating.

## Insulation products

**Isover Acoustic Partition Roll**

25mm, 50mm and 75mm, for improved acoustic performance.

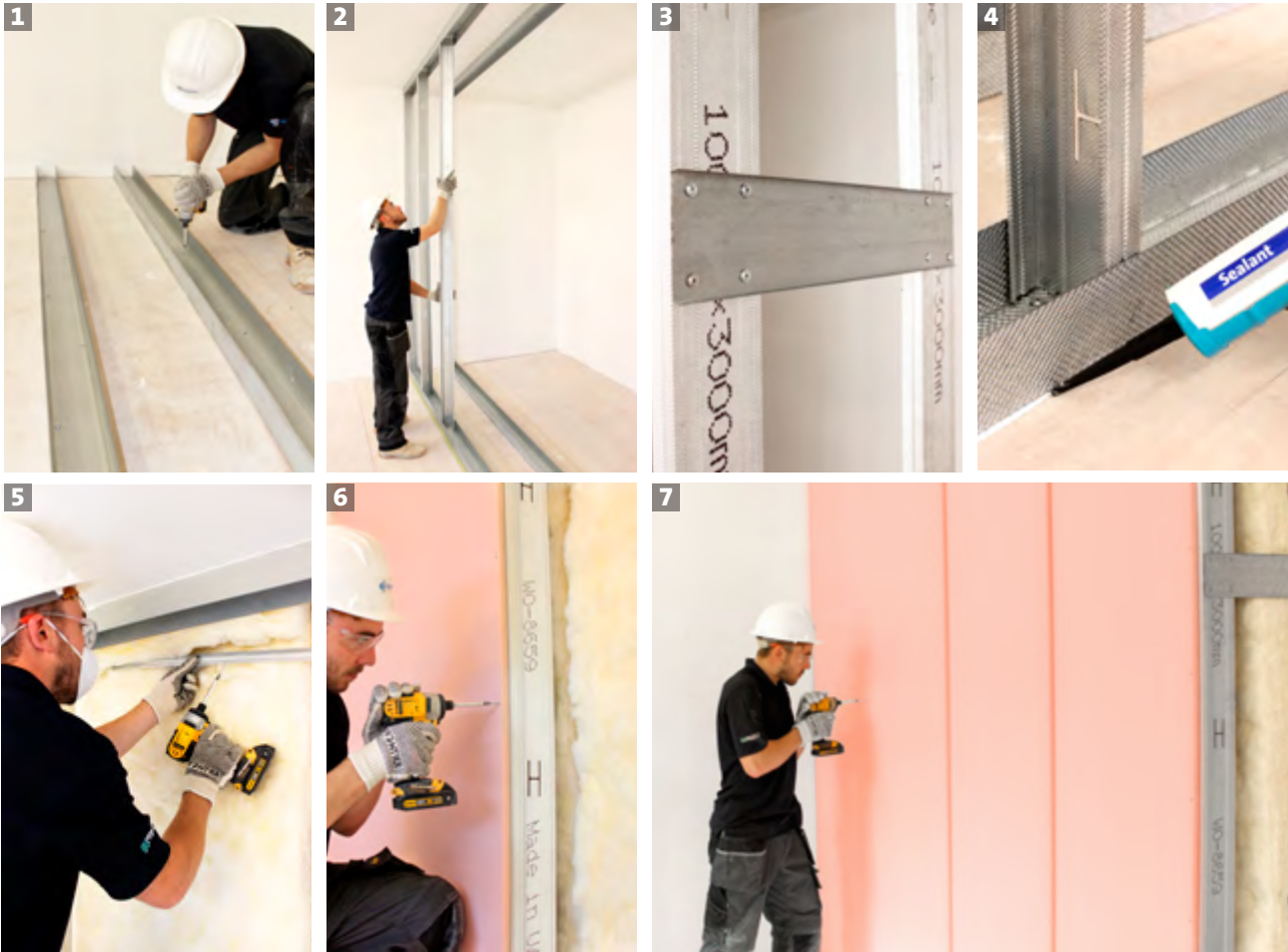
**Stone mineral wool by KIMMCO**

For fire-stopping and to achieve acoustic performance.

FUTURE PROOF

Eligible for the  
**SpecSure warranty**  
from Gyproc





Gypframe Channels are fixed at the head and base to achieve the specified wall thickness. Gypframe 'C' Studs are fitted vertically to friction-fit within the channel sections and to abutments, to form the framework. This allows for adjustment during boarding. Studs should be fitted so as to all face the same direction. Additional framing is installed as required to support heavy fixtures. Insulation is installed into the cavity-formed frameworks. The frames are braced using Gypframe 103 FC 50 at specified centres. Gyproc Sealant is applied to the frame perimeters to seal airpaths. Boards are screw-fixed to framing members to form the lining. Horizontal joints in face layer boards should be backed with Gypframe GFS1 Fixing Strap.

### Services

Electrical and other services are normally installed after one side is boarded. Horizontal runs are routed through cut-outs in the studs. A high performance service box detail must be used.

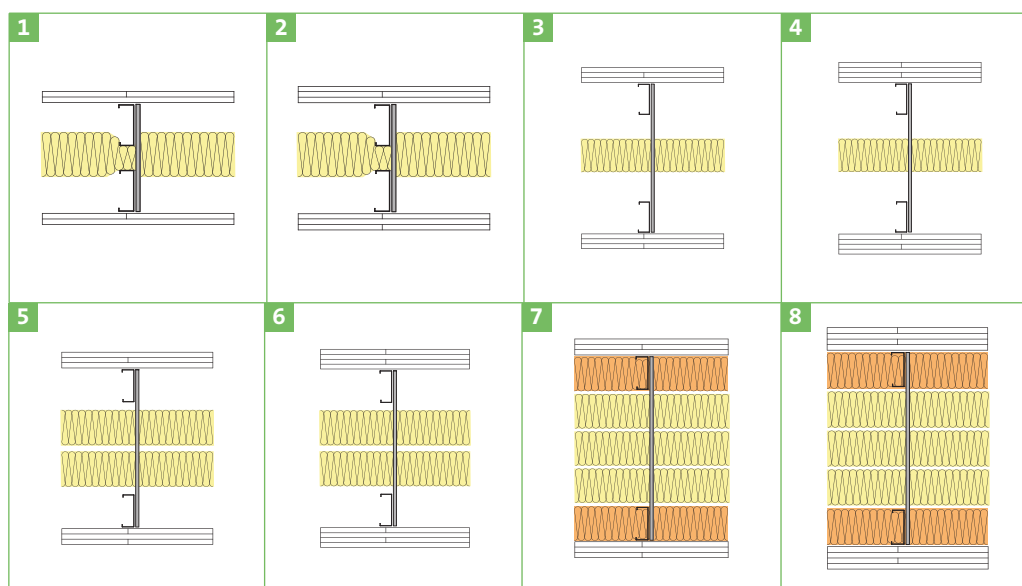
Refer to **Service penetrations and fixing into drywall systems.**

### GypWall AUDIO incorporating alternative stud sizes

Whilst the system solutions shown in the following pages show Gypframe 92 S 10 'C' Studs, other Gypframe stud sizes can be used depending on the maximum height requirements. Contact the Gyproc Technical Team for further guidance.

**Table 1 – GypWall AUDIO 92mm Gypframe ‘C’ Stud.****Solutions to satisfy the requirements of BS 476: Part 22: 1987, ASTM E119, ANSI / UL 263 and NFPA 251**

Two frames of Gypframe 92 S 10 ‘C’ Studs spaced at 600mm centres with Gypframe 103 FC 50 at 3600mm centres. Linings and insulation as in table.



Detail	Partition thickness	Board type <sup>1</sup>	Lining thickness	Recommended maximum partition heights <sup>2</sup> Braces at 3600mm centres L/240 mm		Acoustic Partition Roll	Sound insulation R <sub>w</sub> (R <sub>w</sub> + Ctr)	Duty rating	Approx. weight	System reference
	mm		mm		L/125 <sup>3</sup> mm	mm	dB		kg/m <sup>2</sup>	
90 minutes fire resistance										
1	300	Regular	2 x 15	8000	9500	100	67	Severe	46	A326011
2	300	Regular	3 x 12.5	8000	9500	100	69	Severe	53	A326002
120 minutes fire resistance										
1	300	FireStop	2 x 15	8000	9500	100	66	Severe	51	BTC2918A
180 minutes fire resistance										
3	550	FireStop	3 x 15	9000	11500 <sup>4</sup>	100	73 (67)	Severe	73	A326016
4	550	FireStop	4 x 12.5	9000	11500 <sup>4</sup>	100	75 (69)	Severe	74	A326016A
5	550	FireStop	3 x 15	9000	11500 <sup>4</sup>	200	74 (66)	Severe	73	A326013
6	550	FireStop	4 x 12.5	9000	11500 <sup>4</sup>	200	76 (68)	Severe	74	A326013A
7	600	FireStop	3 x 15	9000	11500 <sup>4</sup>	3 x 100 + 2 x 100 stone mineral wool	75 (67)	Severe	87	A326018
8	600	FireStop	4 x 12.5	9000	11500 <sup>4</sup>	3 x 100 + 2 x 100 stone mineral wool	77 (69)	Severe	96	A326018A
7	700	FireStop	3 x 15	9000	11500 <sup>4</sup>	3 x 100 + 2 x 100 stone mineral wool	76 (69)	Severe	87	A326019
8	700	FireStop	4 x 12.5	9000	11500 <sup>4</sup>	3 x 100 + 2 x 100 stone mineral wool	78 (71)	Severe	96	A326019A
7	800	FireStop	3 x 15	9500	11500 <sup>4</sup>	3 x 100 + 2 x 100 stone mineral wool	78 (69)	Severe	87	A326019B
8	800	FireStop	4 x 12.5	9500	11500 <sup>4</sup>	3 x 100 + 2 x 100 stone mineral wool	80 (71)	Severe	96	A326019C

<sup>1</sup> For improved durability and impact resistance, the outer layer of Gyproc FireStop or Gyproc Regular can be replaced with a layer of 15mm Gyproc DuraLine.

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

<sup>3</sup> Refer to deflection criteria, in Design section.

<sup>4</sup> Refer to deflection criteria, in Design section. L/125 heights shown only suitable for systems with a fire resistance rating of upto 120 minutes.

**(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.

**(NB)** For heights between 4200mm and 8000mm, Gypframe Deep Channel should be used at 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 - GypWall AUDIO fire protection to structural steel.**  
**Solutions to satisfy the requirements of ENV 13381-4: 2002 and BS 476: Part 21: 1987**

Board type <sup>1</sup>	Minimum Lining thickness mm	Fire resistance mins	Section factor <sup>2</sup> A/V (Hp/A) m <sup>-1</sup>
Regular	2 x 12.5	30	Up to 300
Regular	2 x 15	60	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
FireStop	2 x 15	120	Up to 110
FireStop	3 x 15	120	Up to 300

<sup>1</sup> For improved durability and impact resistance, the outer layer of Gyproc FireStop or Gyproc Regular can be replaced with a layer of 15mm Gyproc DuraLine.

<sup>2</sup> Based on four-sided exposure, with no vertical joints aligning with the column, and boards not fixed to the column to maintain air space.

## Design

### Planning - key factors

The position of services and heavy fixtures should be pre-determined and their installation planned into the frame erection stage.

### Deflection criteria

Partitions built to a maximum height based on L/125 at 200 Pa will exhibit greater deflection compared to partitions built to a maximum height based on L/240 at 200 Pa. Partitions with deflection characteristics outside the standard L/240 criteria will exhibit more flex during installation and in general use, and therefore we recommend you verify the acceptability of the deflections with the relevant interested parties before specifying / installing partitions based on L/125 criteria.

### Cross bracing

Laboratory tests were carried out on walls without bracing. The results, however, are a realistic representation of site conditions in which Gypframe 103 FC 50 cross-braces are fitted at the recommended 3600mm maximum centres, provided that appropriate measures are taken on site to eliminate flanking sound transmission. Test evidence is provided by Gyproc Report ATR 1299, where a site test on a large multi-screen cinema wall achieved comparable performance to the equivalent specification tested in the laboratory without bracing.

### Cavity fire barriers

Stone mineral wool cut neatly to fit across the cavity forms a suitable closure.

Refer to Cavity fire barriers.

### Services

#### Penetrations

Penetrations of fire-resistant or sound-insulating constructions for services need careful consideration to ensure that the performance of the element is not downgraded and also that the services themselves do not act as the mechanism of fire spread or sound transmission.

Refer to Service installations.

#### Independent support

When designing for the installation of services, such as fire dampers and associated ductwork, through a GypWall partition, consideration should be given to the size and weight of the damper. This will determine whether it can be supported directly from the partition or needs to be independently supported from the structure.

Refer to Service installations.

### Electrical

The installation of electrical services should be carried out in accordance with BS 7671. The cut-outs in the studs can be used for routing electrical and other small services (see GypWall CLASSIC Construction details – 1). Switch boxes and socket outlets can be supported from Gypframe 103 FC 50 Fixing Channels fixed horizontally between studs or a high performance socket box detail where higher acoustic performance is required.

### Fixing floor and ceiling channels

Gypframe Channels must be securely fixed with a row of fixings at 600mm maximum centres. For 102mm 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.

### Door openings

Any openings will require careful detailing if the acoustic performance is to be maintained. Specialist heavy acoustic doorsets may require additional support.

### Framing surround for openings

Where services such as horizontal ducts, fire dampers and access panels are required to penetrate the wall, their position should be pre-determined in order that a framed opening can be provided.

Refer to Service installations.

### Deflection heads

Partition head deflection designs may be necessary to accommodate deflections in the supporting floor. Deflection heads may also be required to the underside of roof structures subjected to positive and negative pressures.

Refer to section Principles of building acoustics.

### Fixtures

Lightweight fixtures can be made directly to the partitions. 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 Gypframe Fixing Channel.

Refer to section Service penetrations and fixing into drywall systems.

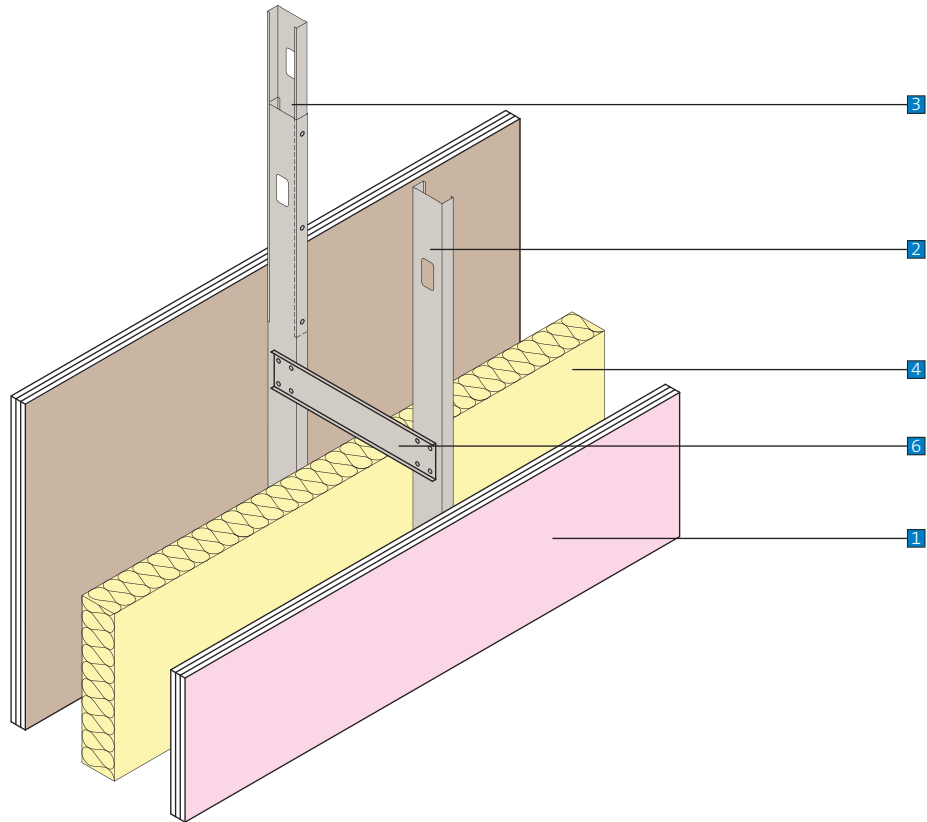
### Plasterboard Types

The plasterboards shown in the performance tables throughout these White Book sections are typically Regular, FireStop or DuraLine boards. It is possible to have additional properties of MR (Moisture Resistance), M2TECH (moisture & mold resistance) or ActivAir (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.

### Board finishing

Refer to section 9 – Finishing systems and decorative effects.

### 1 Splicing and bracing between stud pairs.



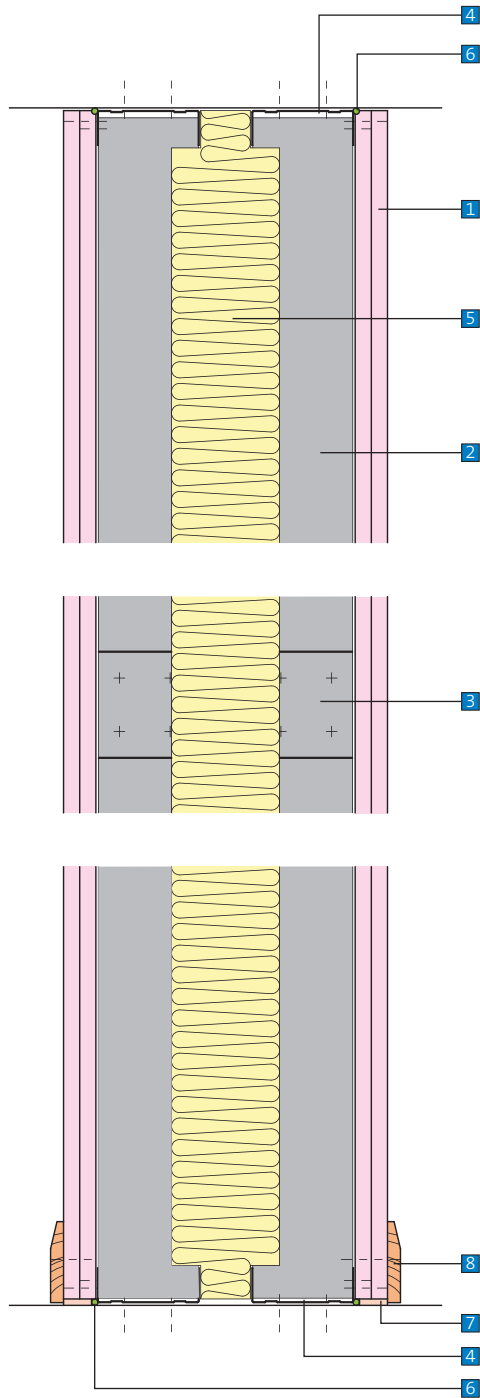
- 1 Gyproc plasterboard
- 2 Gypframe 'C' Stud
- 3 Splice - 600mm overlap with three Gyproc Wafer Head Jack-Point Screws into each flange

- 4 Isover insulation
- 6 Brace formed from Gypframe 103 FC 50



## Construction Details

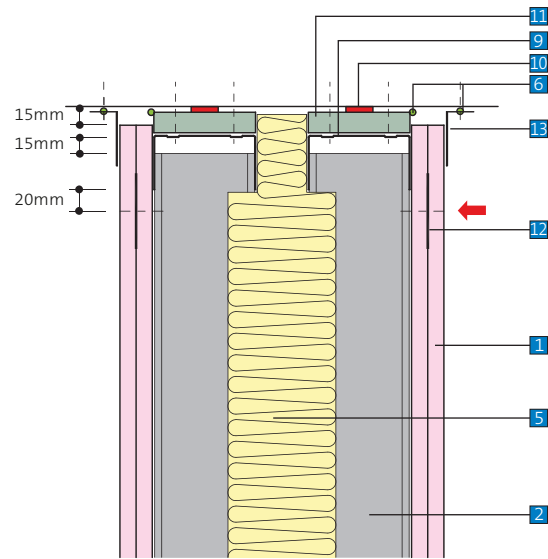
### 2 Head and base



- 1 Gyproc plasterboard
- 2 Gypframe 'C' Stud
- 3 Gypframe 103 FC 50 Fixing Channel
- 4 Gypframe Standard Floor & Ceiling Channel
- 5 Isover insulation from KIMMCO
- 6 Gyproc Sealant
- 7 Bulk fill with Gyproc jointing materials (where gap exceeds 5mm)
- 8 Skirting

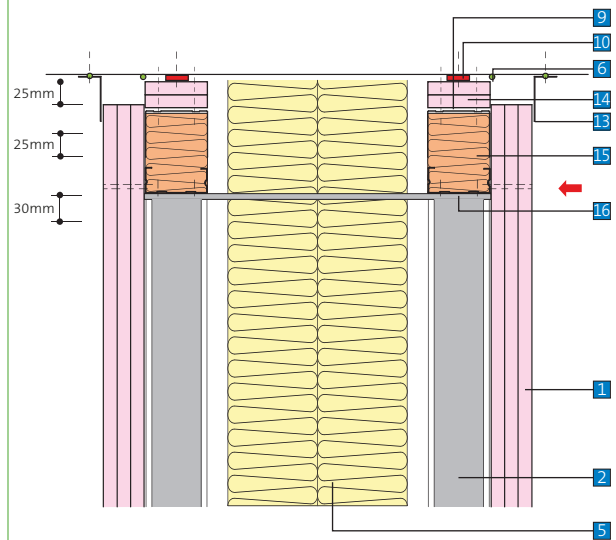
### Deflection head for 15mm downward movement and 90 minutes fire resistance

3



### Deflection head for 25mm downward movement and 120 minutes fire resistance

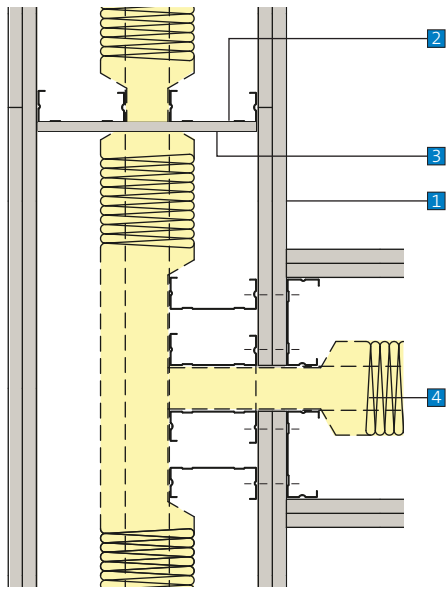
4



- 9 Gypframe Deep Channel suitably fixed through fire-stop to structure
- 10 Gyproc FireStrip (continuous)
- 11 Gyproc CoreBoard
- 12 Gypframe GFS1 Fixing Strap
- 13 Gypframe GA4 Steel Angle
- 14 2 layers of 15mm Gyproc FireStop plasterboard
- 15 Stone mineral wool - 33kg/m<sup>3</sup> minimum density
- 16 Stud noggings tied together with short lengths of Gypframe 103 FC 50 Fixing Channel

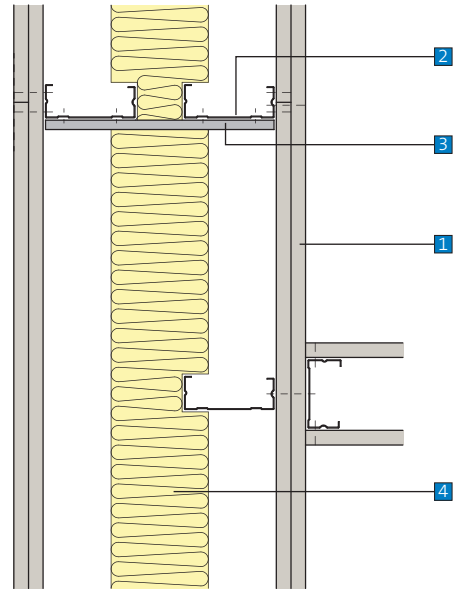
**NB** No fixings should be made through the boards into the flanges of the head channel. The arrow (→) denotes the position of the uppermost board fixing, which should be made into Gypframe GFS1 Fixing Strap. Continuous Firestrip must be installed as shown to maintain fire performance.

3 'T' junction

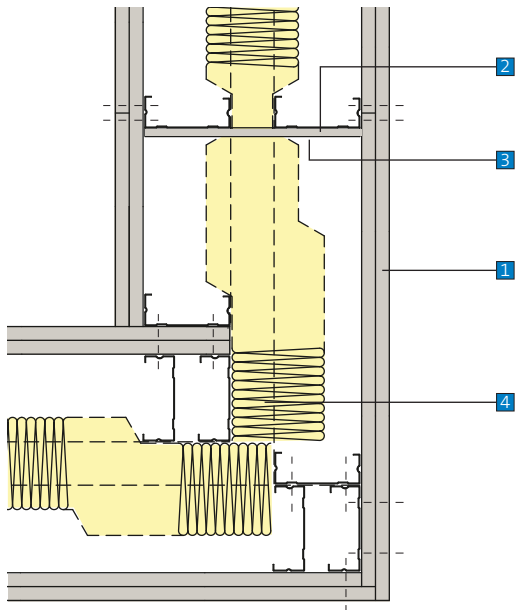


'T' junction with **GypWall classic** partition

4



5 Internal / external corner



- 1 Gyproc plasterboard
- 2 Gypframe 'C' Stud

- 3 Gypframe 103 FC 50 Fixing Channel
- 4 Isover insulation