C04

Partitions

Partitions

This section contains a full range of lightweight partition and wall systems for use in new and existing buildings. They cover all applications, from simple space division to high performance walls

Partitions

Gyproc offers a full range of lightweight partition and wall systems. Our systems are non-loadbearing and constructed using modern, drylining techniques. Gyproc metal framed partitions and walls can be used in all types of new and existing buildings, including private and social housing, apartments, healthcare, educational facilities, recreational and industrial properties.

They cover all applications, from simple space division, through to high performance walls designed to meet the most demanding fire resistance, sound insulation, impact and height requirements.

Gyproc partition systems are constructed using lightweight materials, which can give rise to significant savings in structural design compared to masonry alternatives. Big benefits also include the speed of installation and reduction to overall build costs.

Buildings need to evolve throughout their life to suit changing demands placed upon them. Our lightweight partition systems are easy to reconfigure with minimal impact to both building and occupants resulting in less disruption, optimising the transformation process.

You may also be interested in...

For unique performance situations with specialist requirements:

- Curved partitions
- High levels of fire resistance
- Access to build from one side only
- High security including bomb blast

▶ Refer to C05. S01. P289 – Specialist partitions

Partitions

When specifying partitions, a number of performance characteristics are normally used to determine the required solution. Depending on the project or construction type, these performance parameters could be set by minimum regulatory standards, or a client or customer requirement for buildings that offer the highest standards of performance and comfort.

Our quick-reference partition system guide, below, allows you to simply select the performance categories of interest and identify the Gyproc partitions systems that best satisfy your project requirements.

					[1]	
30 - 120	**75 - 211**	**34 - 63**	**47 - 57**	**Medium - Severe**	**8100**	**GypWall**
60 - 120	**102 - 132**	**42 - 58**	**-**	**Severe**	**4900**	**GypWall ROBUST**
30 - 60	**97 - 203**	**44 - 62**	**-**	**Severe**	**7800**	**GypWall EXTREME (including EXREME / ROBUST Hybrid)**
60 - 120	**137 - 238**	**61 - 65**	**53 - 59**	**Severe**	**6800**	**GypWall QUIET SF**
30 - 90	**102 - 208**	**49 - 63**	**48 - 55**	**Heavy - Severe**	**5700**	**GypWall STAGGERED**
60 - 120	**200 - 300**	**60 - 64**	**47 - 58**	**Severe**	**7500**	**GypWall QUIET**
60 - 120	**≥200**	**66 - 70**	**58 - 62**	**Severe**	**3900**	**GypWall QUIET IWL**
60 - 120	**300 - 800**	**67 - 80**	**56 - 71**	**Severe**	**11500**	**GypWall AUDIO**
30 - 120	**88 - 196**	**34 - 52**	**-**	**-**	**-**	**Non-loadbearing timber stud (internal partitions)**
60 - 90	**141 - 293**	**56 - 63**	**48 - 53**	**-**	**-**	**Non-loadbearing timber stud (separating walls)**

[1] Based on studs at 600mm centres

Additional information

Try out **our System Selector**, an online tool designed to help find the ideal solutions for your project needs. Additional information such as BIM data (e.g. Revit) and other associated items can be downloaded. Visit gyproc.ie

GypWall performance

Acoustic performance

Table 1 — Sound insulation performance for residential specification

Technical Guidance Document E (Republic of Ireland)	On-site
	$D_{nT,w}$ dB
Separating walls between new homes	53

Booklet G (Northern Ireland)	On-site
	$D_{nT,w}$ + Ctr dB
Separating walls between new dwellings	45 (43*)
Dwellings formed by a material change of use	43
	Walls
	Floors & Stairs

*Hotel rooms, hostels, boarding houses or hall of residence

Good practice specification guidance

Gyproc's systems are designed and tested to meet every performance requirement and are fully supported by our SpecSure® guarantee.

This means that when our systems are installed following our guidance they will achieve every performance claim we make, and if they don't then we'll put it right.

To maximise the performance achieved on site, consider the following good practice specification guidance:

— Consider flanking transmission at the design stage and ensure construction detailing is specified to eliminate, or at least to minimise, any downgrading of the acoustic performance

— Small openings such as gaps, cracks or holes will conduct airborne sounds and can significantly reduce the sound insulation of a construction. For optimum sound insulation a construction must be airtight

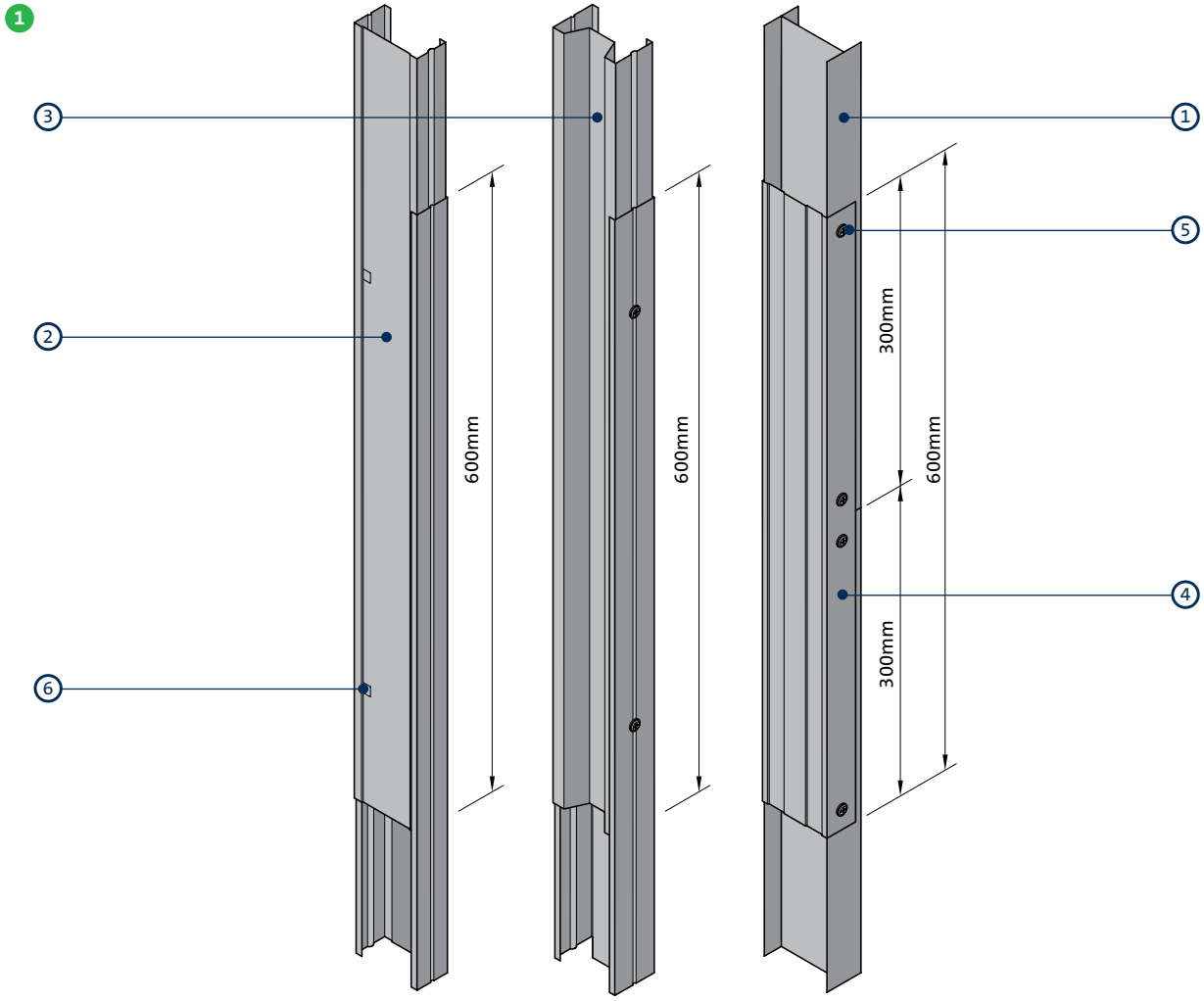
— When designing the layout of rooms requiring separation by sound insulating walls abutting structural steelwork, consideration should be given to the potential loss of sound insulation performance through the steelwork

— Deflection heads, by definition, must be able to move and, therefore, achieving an airtight seal is very difficult without incorporating sophisticated components and techniques. Air leakage at the partition heads will have a detrimental effect on acoustic performance of any partition. Where acoustic performance is a key consideration, steps must be taken to minimise this loss of performance

— A common mistake made when designing a building is to specify a high performance element and then incorporate a lower performing element within it: although sometimes unavoidable, for example, a door within a partition. Where the difference between insulation is relatively small (7dB or less), there needs to be a comparatively large area of the lower insulation element before the overall sound insulation is significantly affected. However, where there is a greater difference in sound insulation performance between the two elements, this would usually result in a greater reduction of overall sound insulation performance.

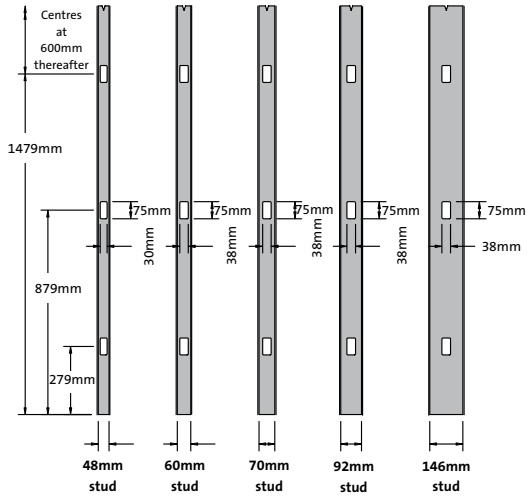
Standard GypWall construction details

To be read in conjunction with system specific details. Refer to relevant system sections



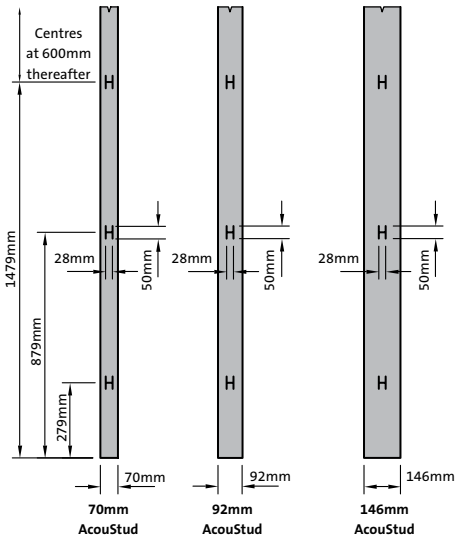
Stud splicing detail

2



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

2a



Service cut-outs - Gypframe AcouStuds

1 Gypframe 'I' Stud
2 Gypframe 'C' Stud
3 Gypframe AcouStud
4 Gypframe Floor & Ceiling Channel
5 Gyproc Wafer Head Drywall Screws or Gyproc Wafer Head Jack-Point Screws
6 Crimp

Fire protection

Plasterboard linings provide good fire protection owing to the unique behaviour of the non-combustible gypsum core when subjected to high temperatures.

Fire resistance

Elements of structure such as compartment walls which are required by national Building Regulations to be constructed of non-combustible materials or 'materials of limited combustibility', should be installed without timber sole plates. All Gyproc metal stud partitions and walls are tested for fire resistance without timber sole plates. However, if a timber sole plate is included, the plasterboard linings should be fixed to protect the sole plate on either side.

Three high performance fire resistant boards are available from Gyproc – Gyproc FireLine, Gyproc DuraLine and Gyproc MultiBoard.

Gyproc FireLine is a cost-effective fire resistant board suitable for use over a wide range of specifications.

Gyproc DuraLine combines high levels of fire performance with high impact resistance. Gyproc MultiBoard is a general purpose building board offering high levels of fire performance, impact and moisture resistance. Its flexibility makes it ideal as a lining for curved partitions, walls and ceilings.

Fire-stopping

Gaps around the perimeter of elements and inadequate sealing at junctions and around service penetrations can result in building elements failing to meet their specified levels of fire protection. The services themselves can also act as a mechanism of fire spread. By designing zones through which all services pass, the number of individual service penetrations can be minimised. Since most services are installed by specialist contractors, it is important that adequate liaison is maintained with the drylining contractor to ensure their proper location and firestopping. The necessity to independently support services will depend on their size and weight. Contact the Gyproc Technical Department for guidance.

Sound insulation

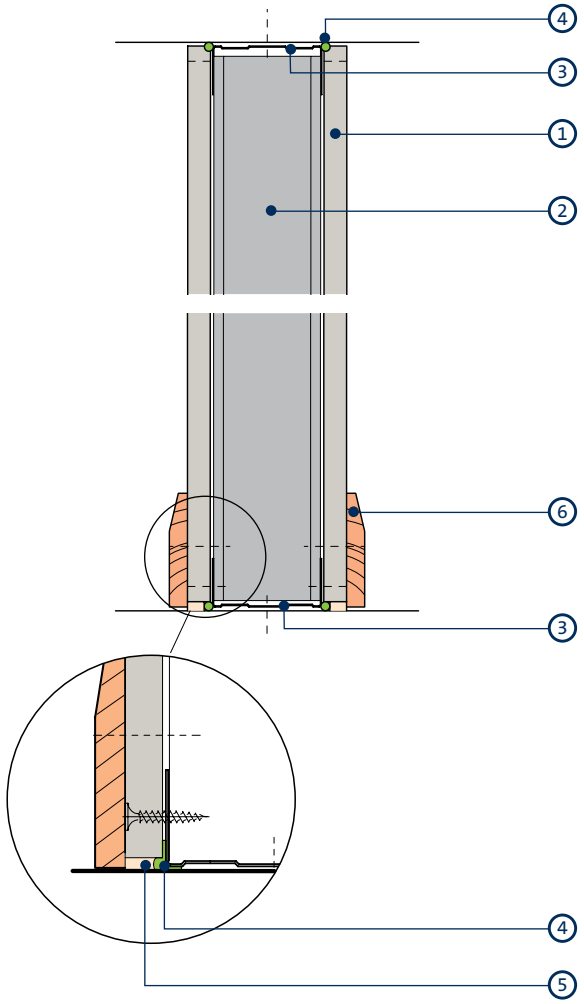
To achieve optimum sound insulation it is important that the partition is made airtight. At the base of the partition gaps will occur particularly when boards are lifted tight to the ceiling. Small gaps or airpaths can be sealed using Gyproc Sealant. Most remaining gaps can be sealed at the jointing stage using Gyproc jointing materials. It is recommended that gaps in excess of 6mm are bulk filled using a Gyproc Jointing material after application of Gyproc Sealant (see Figs 3 and 3a).

The standard of sound insulation achieved on site may be influenced by flanking transmission and direct transmission via doors, glazing, services, etc. Therefore, care should be taken to ensure that the associated structure is suitable to achieve the level of sound insulation required.

Where high levels of sound insulation are important, Gyproc SoundBloc offers significantly enhanced performance compared to the same thickness of Gyproc WallBoard.

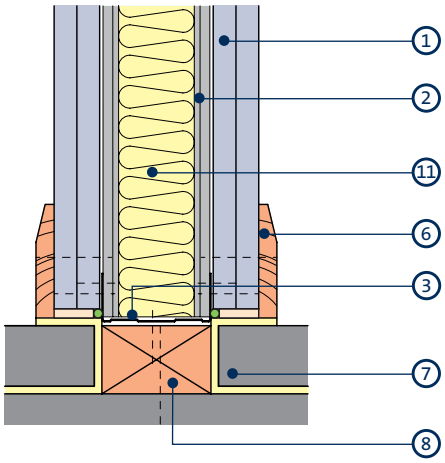
Standard GypWall construction details (continued)
To be read in conjunction with system specific details. Refer to relevant system sections

3



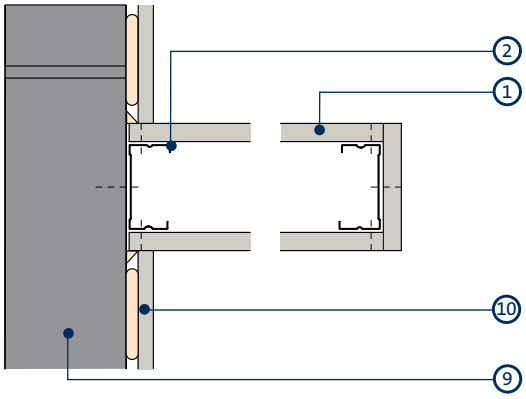
Head and base

3a



Base with timber sole plate

4

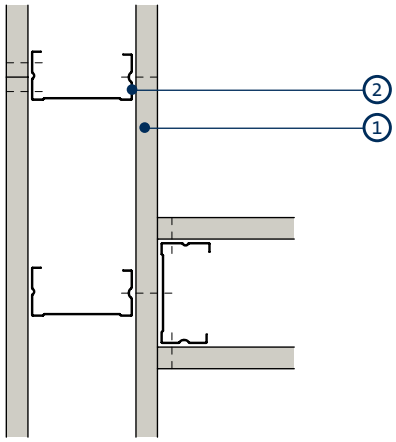


Junction with masonry and stop end detail

1 Gyproc plasterboard or Glasroc F specialist board
2 Gypframe 'C' Stud
3 Gypframe Floor & Ceiling Channel
4 Gyproc Sealant
5 Bulk fill Gyproc jointing materials (where gap exceeds 5mm)
6 Skirting
7 Floating screed on resilient layer
8 Timber sole plate suitably fixed to structure
9 Internal blockwork
10 **DriLyner** wall lining system
11 Isover insulation

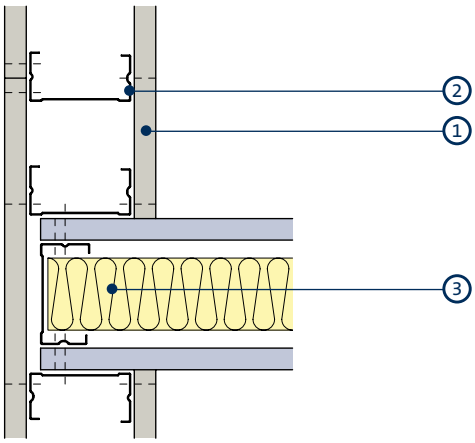
Standard GypWall construction details (continued)
To be read in conjunction with system specific details. Refer to relevant system sections

5



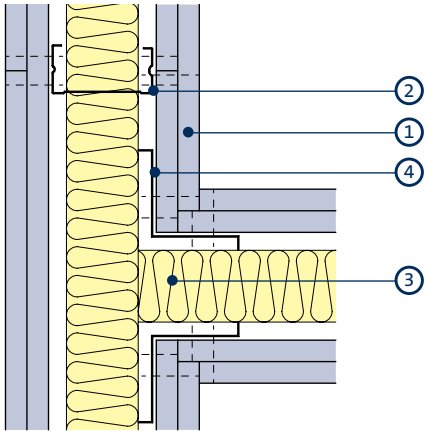
'T' junction - single layer

6



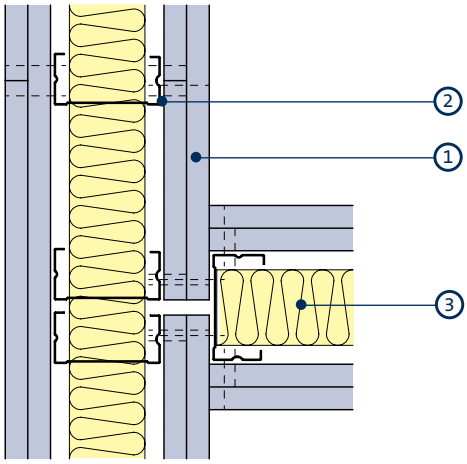
'T' Junction when partition with higher acoustic performance abuts a partition with lower acoustic performance. Acoustic principles only - detail may not be suitable for all solutions

7a



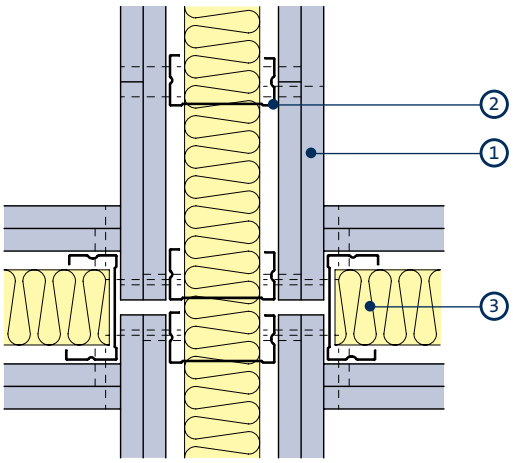
'T' junction to optimise acoustic performance and reduce flanking transmission

7b



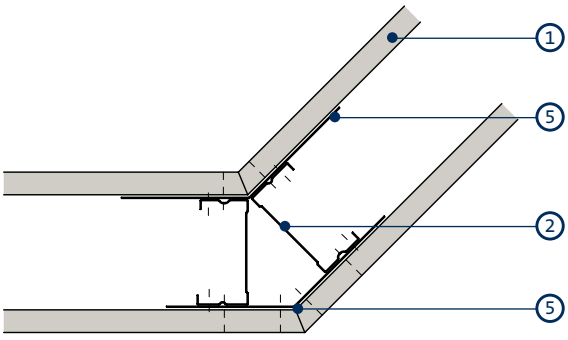
'T' junction to optimise acoustic performance and reduce flanking transmission

8



Four way junction to optimise acoustic performance and reduce flanking transmission

9

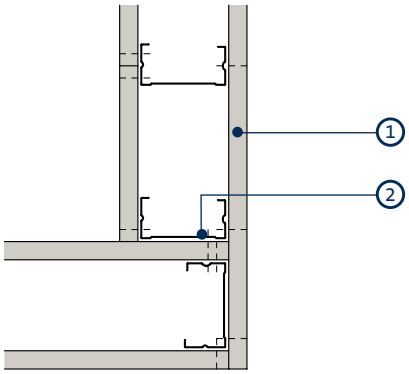


Splayed corner

1 Gyproc plasterboard or Glasroc F specialist board
2 Gypframe 'C' Stud
3 Isover insulation
4 Gypframe GA5 Internal Fixing Angle
5 Gypframe GA6 Splayed Angle

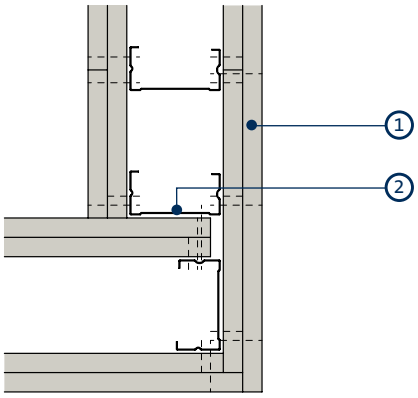
Standard GypWall construction details (continued)
To be read in conjunction with system specific details. Refer to relevant system sections

10



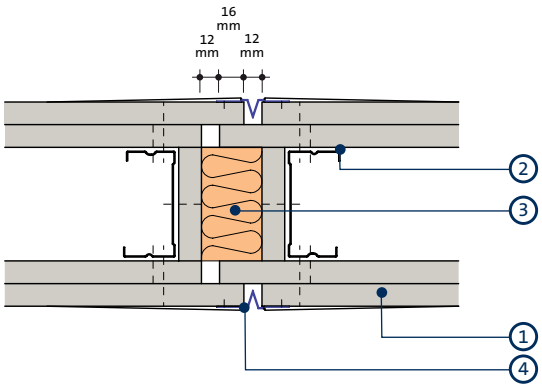
Corner detail - single layer

11



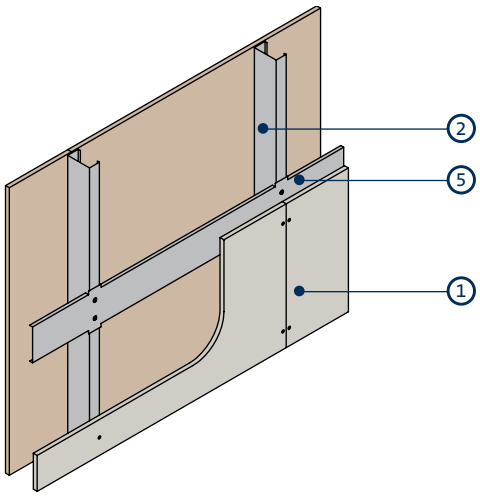
Corner detail - double layer

12



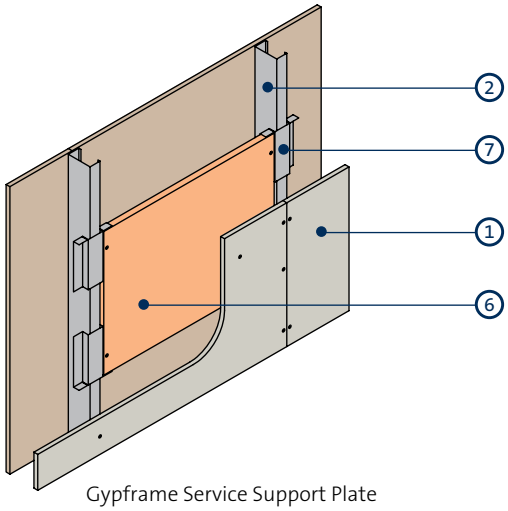
Typical control joint

13



Gypframe 99 FC 50 Fixing Channel
(short legs flattened at stud positions)

14



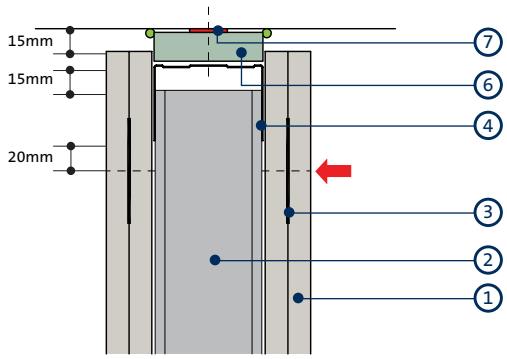
Gypframe Service Support Plate

1 Gyproc plasterboard or Glasroc F specialist board
2 Gypframe 'C' Stud
3 Stone mineral wool (minimum density 23kg/m³) (by others)
4 Gyproc Control Joint
5 Gypframe 99 FC 50 Fixing Channel
6 18mm plywood
7 Gypframe Service Support Plate

NB Installing the screw into the side of the Gypframe Service Support Plate and the web of the Gypframe 'C' Stud will avoid creating excessive distortion to the lining board.

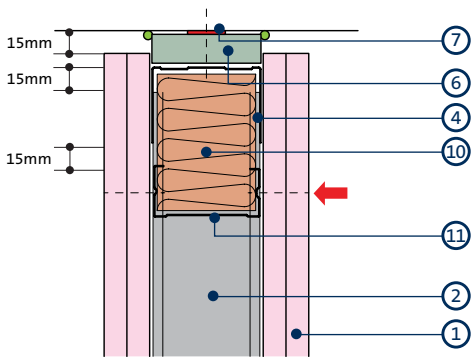
Standard GypWall construction details (continued)
To be read in conjunction with system specific details. Refer to relevant system sections

15



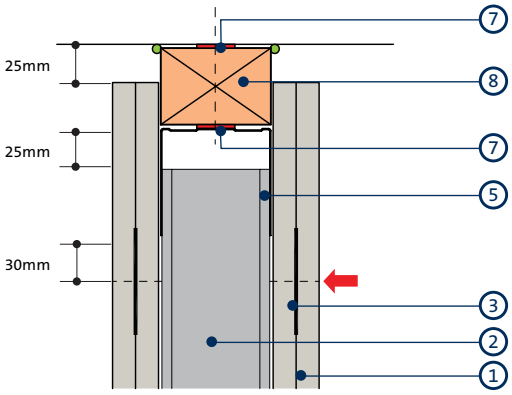
Deflection head for 15mm downward movement and 60 minutes fire resistance

16



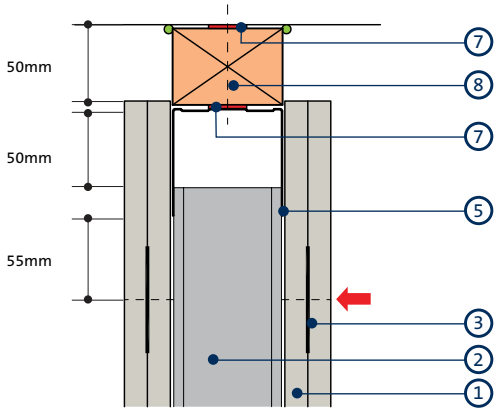
Deflection head for 15mm downward movement and up to 120 minutes fire resistance

17



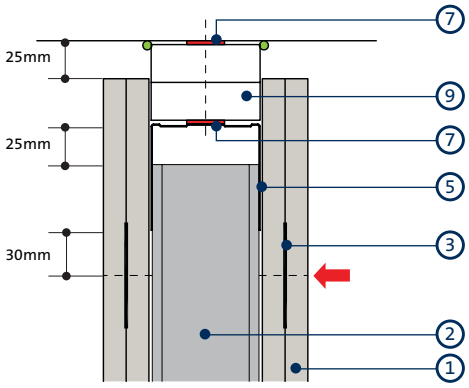
Deflection head for plus or minus 25mm movement and 60 minutes fire resistance

18



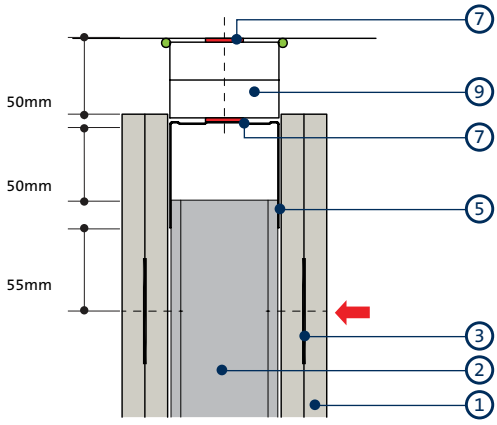
Deflection head for 50mm downward movement and 60 minutes fire resistance

19



Deflection head for plus or minus 25mm movement and 60 minutes fire resistance

20



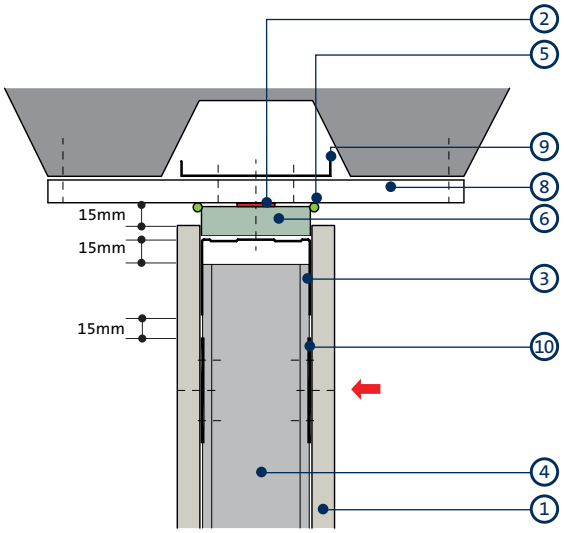
Deflection head for 50mm downward movement and 60 minutes fire resistance

1 Gyproc plasterboard or Glasroc F specialist board
2 Gypframe 'C' Stud
3 Gypframe GFS1 Fixing Strap
4 Gypframe Deep Flange Floor & Ceiling Channel
5 Gypframe Extra Deep Flange Floor & Ceiling Channel
6 Gyproc CoreBoard
7 Gyproc FireStrip (continuous)
8 Timber head plate suitably fixed to structure
9 25mm Glasroc F FIRECASE
10 Stone mineral wool (by others)
11 Nogging cut from Gypframe 'C' Stud

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 (or stud nogging in construction detail 16). Continuous Gyproc FireStrip must be installed as shown to maintain fire performance. Where there is a need for a deflection head in a 90 minute wall, the 120 minute solution can be used (refer to construction detail 16) or alternatively, please contact the Gyproc Technical Department for further guidance.

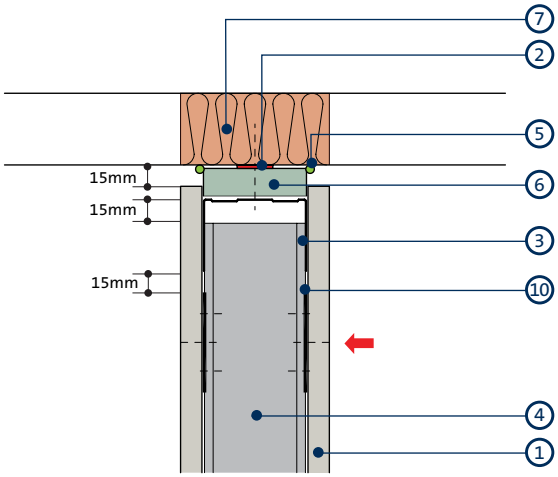
Standard GypWall construction details (continued)
To be read in conjunction with system specific details. Refer to relevant system sections

21



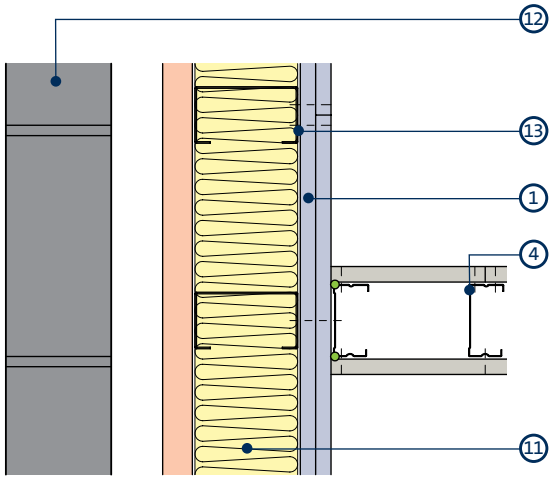
Deflection head parallel to floor profile for 15mm downward movement and up to 60 minutes fire resistance [1]

22



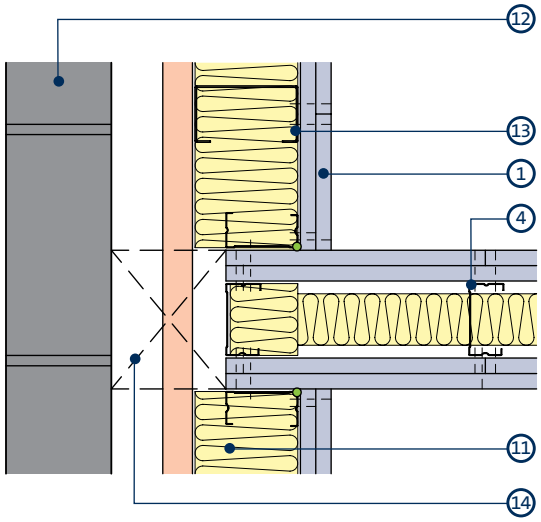
Deflection head perpendicular to floor profile for 15mm downward movement and up to 60 minutes fire resistance

23



Junction with external wall
Acoustic principles only. Fire performance of structural metal wall by others

24



Junction with external wall when acoustic performance is a key consideration - helps reduce flanking transmission. Acoustic principles only. Fire performance of structural metal wall by others

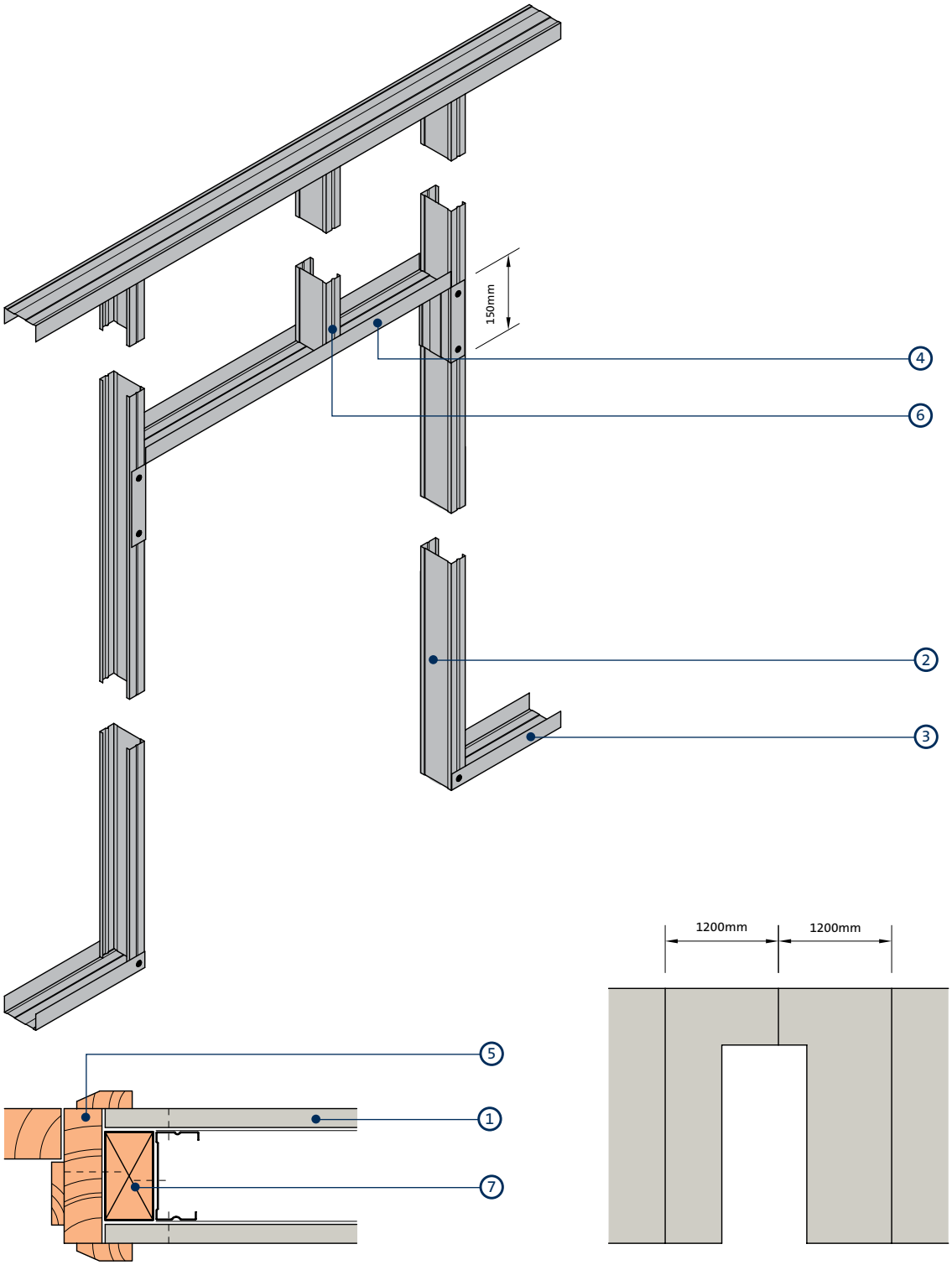
1 Gyproc plasterboard or Glasroc F specialist board
2 Gyproc FireStrip (continuous line)
3 Gypframe Deep Flange Floor & Ceiling Channels (DC)
4 Gypframe 'C' Stud
5 Gyproc Sealant
6 Gyproc CoreBoard
7 Fire-stopping (by others)
8 Glasroc F FIRECASE
9 Gypframe 99 FC 50 Fixing Channel
10 Gypframe GFS1 Fixing Strap fixed to studs with Gyproc Wafer Head Drywall Screws
11 Isover insulation
12 External facade
13 External wall frame stud / by other(s)
14 Cavity barrier (subject to regulatory requirements)

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 Gyproc FireStrip must be installed as shown to maintain fire performance.

[1] To minimise acoustic downgrade, install Isover insulation within the hollow rib void.

Standard GypWall construction details (continued)
To be read in conjunction with system specific details. Refer to relevant system sections

25



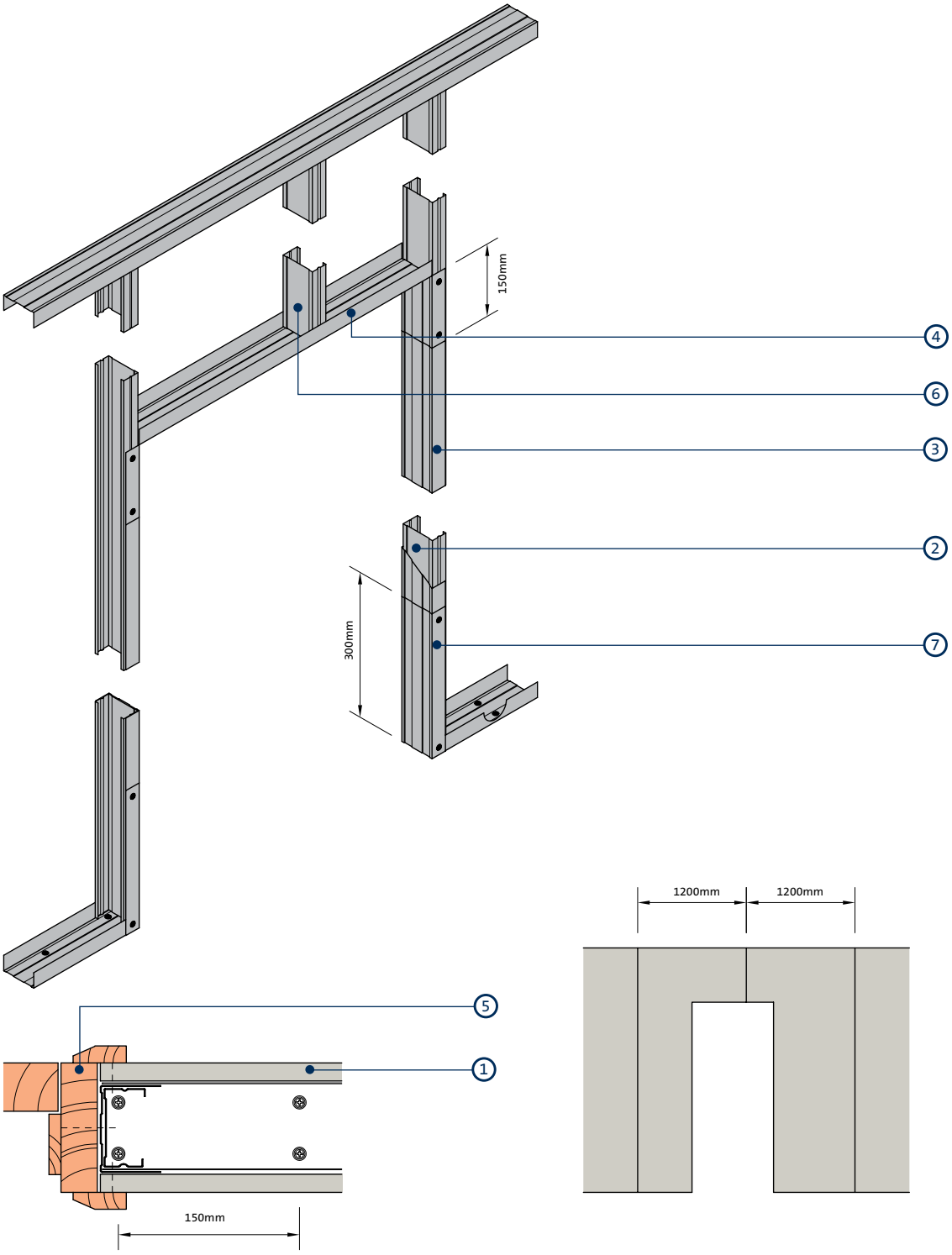
Door frame (maximum 1200mm width) to satisfy *BS 5234: Parts 1 & 2: 1992 - Light and Medium Duty (up to 35kg door)*

1 Gyproc plasterboard or Glasroc F specialist board
2 Gypframe 'C' Stud
3 Gypframe Floor & Ceiling Channel
4 Gypframe Floor & Ceiling Channel cut and bent to form door head
5 Timber door frame and architrave
6 Gypframe 'C' Stud to maintain stud module
7 Timber sub-frame

NB Advice should be sought from the door manufacturer prior to the construction of these details.

Standard GypWall construction details (continued)
To be read in conjunction with system specific details. Refer to relevant system sections

26



Door frame (maximum 1200mm width) to satisfy *BS 5234: Parts 1 & 2: 1992 - Heavy and Severe Duty (60kg door)*

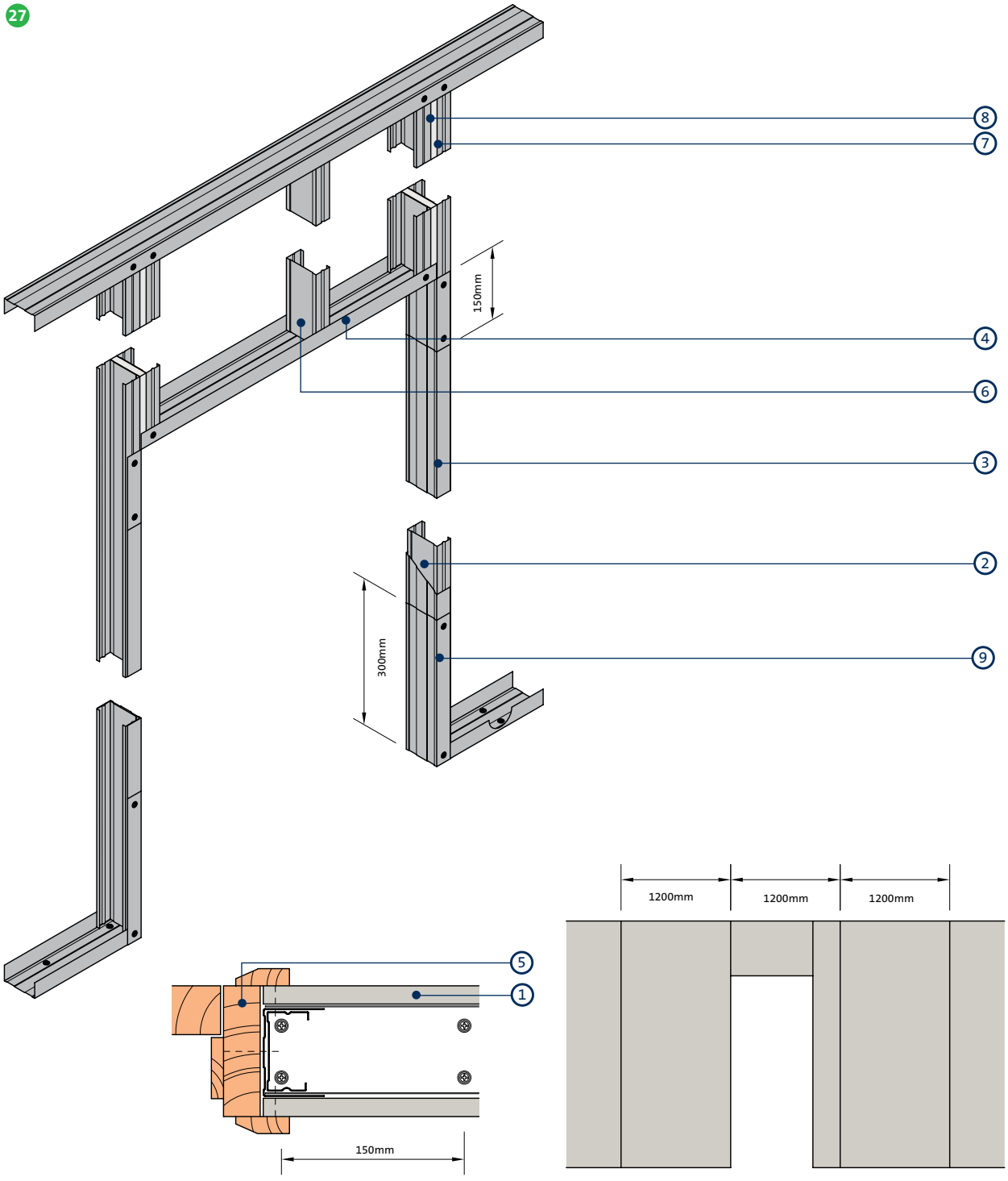
1 Gyproc plasterboard or Glasroc F specialist board
2 Gypframe 'C' Stud
3 Gypframe Floor & Ceiling Channel to sleeve studs
4 Gypframe Floor & Ceiling Channel cut and bent to form door head
5 Timber door frame and architrave
6 Gypframe 'C' Stud to maintain stud module
7 Gypframe Floor & Ceiling Channel cut and bent to extend up studs

NB Advice should be sought from the door manufacturer prior to the construction of these details.

NB At the base, the channel is cut and bent to extend 300mm up the studs and fixed each side with two Gyproc Wafer Head Drywall Screws. The studs each side of the opening are sleeved full height of opening with Gypframe Floor & Ceiling Channel.

Standard GypWall construction details (continued)
To be read in conjunction with system specific details. Refer to relevant system sections

27



Alternative door frame for fixed partition heads only (maximum 1200mm width) to satisfy
BS 5234: Parts 1 & 2: 1992 - Heavy and Severe Duty (60kg door)

1 Gyproc plasterboard or Glasroc F specialist board
2 Gypframe 'C' Stud
3 Gypframe Floor & Ceiling Channel to sleeve studs
4 Gypframe Floor & Ceiling Channel cut and bent to form door head
5 Timber door frame and architrave
6 Gypframe 'C' Stud to maintain stud module
7 Gypframe 'C' Studs fixed back to back with Gyproc Drywall Screws at 300mm centres staggered
8 Plasterboard infill (same type as lining) cut to fit between studs
9 Gypframe Floor & Ceiling Channel cut and bent to extend up studs

NB Advice should be sought from the door manufacturer prior to the construction of these details.

NB At the base, the channel is cut and bent to extend 300mm up the studs and fixed each side with two Gyproc Wafer Head Drywall Screws. The studs each side of the opening are sleeved full height of opening with Gypframe Floor & Ceiling Channel.

NB The principle of this alternative detail is only suitable for **GypWall**, **GypWall ROBUST** and **GypWall EXTREME** for fixed head situations only.

Standard GypWall construction details (continued)
To be read in conjunction with system specific details. Refer to relevant system sections

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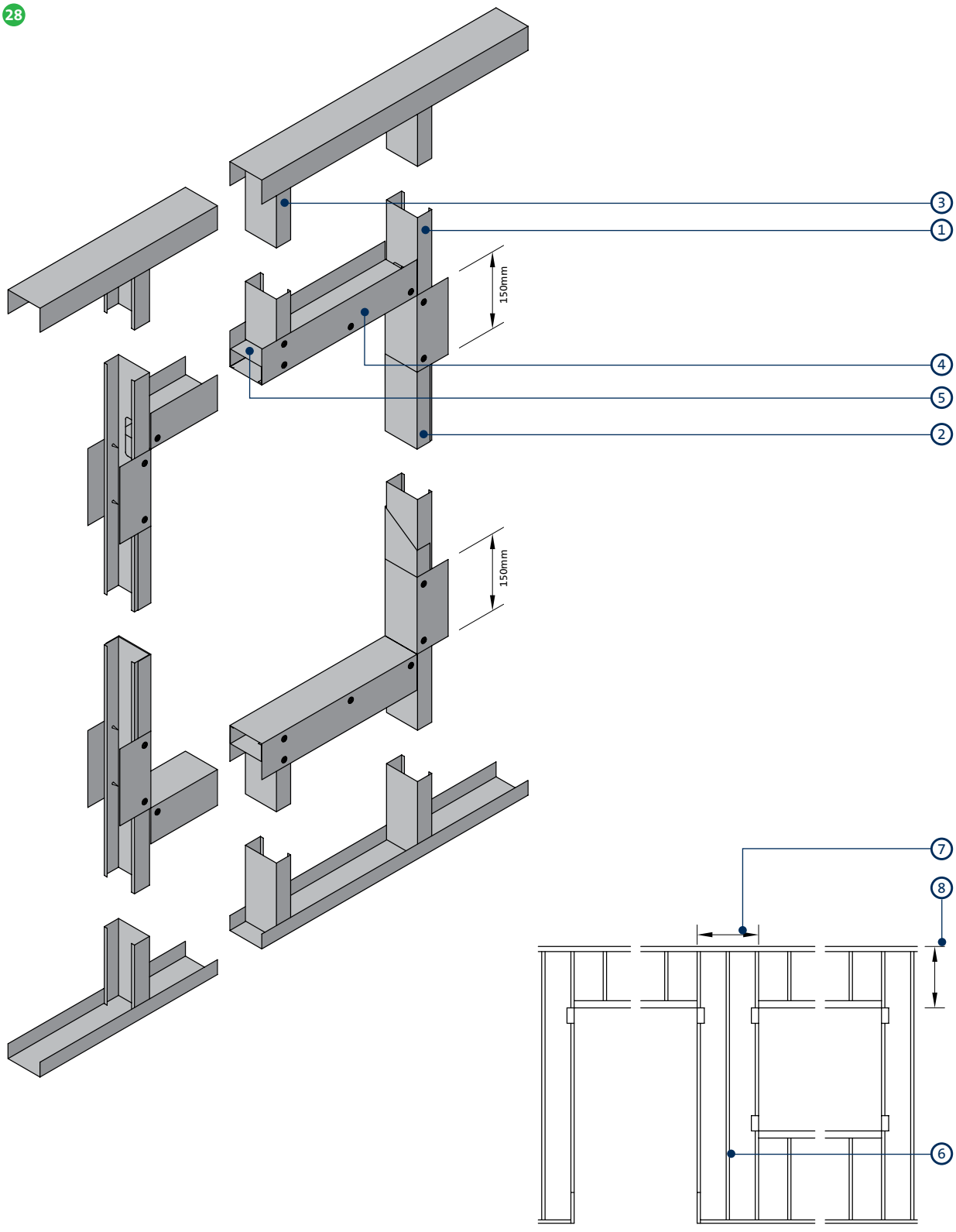

Openings 1201 - 3300mm wide, for example double doors or large windows

1 Gypframe 'C' Stud
2 Stud sleeved to full opening height with Gypframe Floor & Ceiling Channel
3 Gypframe studs (appropriate to system)
4 Gypframe Extra Deep Flange Floor & Ceiling Channel
5 Gypframe stud insert
6 Centre stud required for margin up to 600mm between openings
7 Partition between openings, minimum 600mm for Gypframe 'C' Studs (minimum 300mm for Gypframe 'I' Studs)
8 Maximum distance 2400mm (if exceeds 2400mm contact Gyproc Technical Department)

Standard GypWall construction details (continued)
To be read in conjunction with system specific details. Refer to relevant system sections

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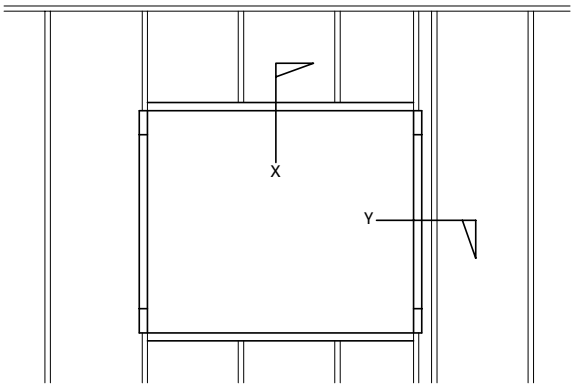
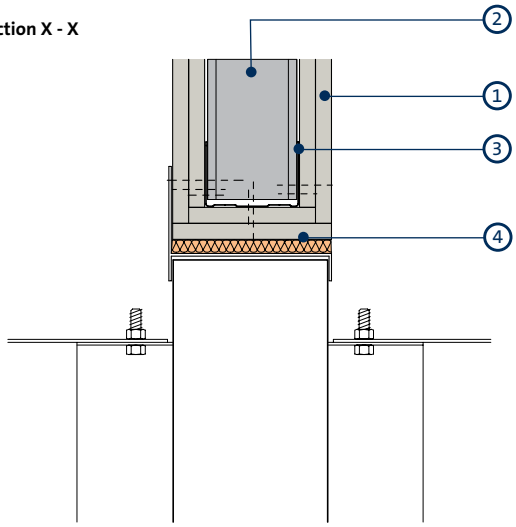
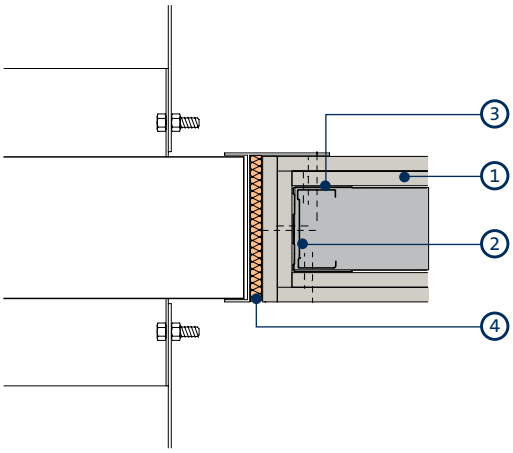
Elevation



Section X - X



Section Y - Y



Opening for service penetrations in fire-rated partitions

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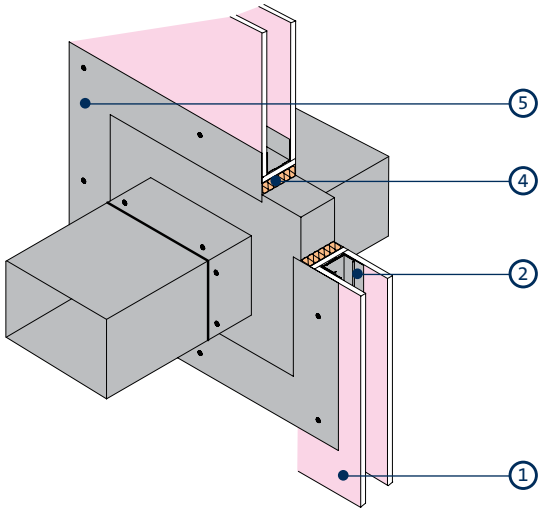

Fire tested construction in which the damper is supported by the partition (isometric view)

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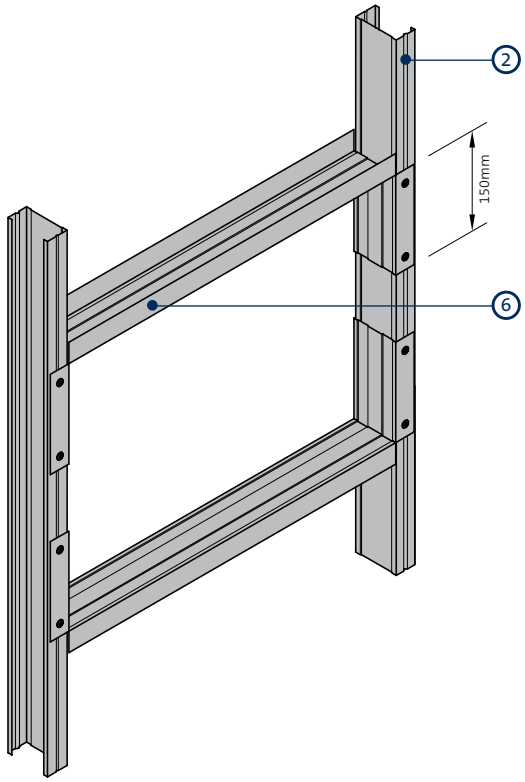
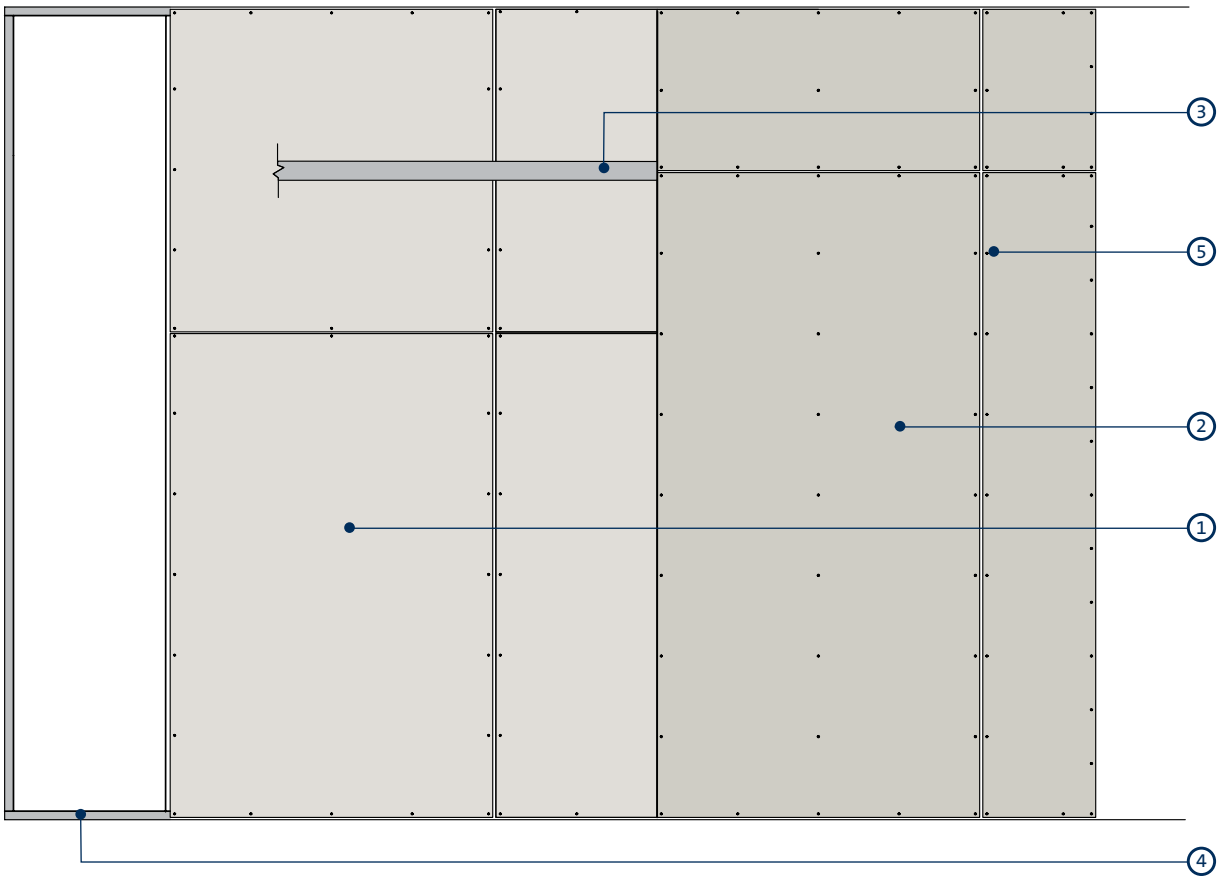


Opening up to 600mm wide for services

1 Gyproc plasterboard or Glasroc F specialist board
2 Gypframe 'C' Stud
3 Gypframe Floor & Ceiling Channel
4 Penetration seal if required (refer to damper manufacturer for details)
5 Damper (by others). Weight of damper should not exceed 57kg. Size of damper should not exceed 1400 x 1200mm
6 Gypframe Folded Edge Standard Floor & Ceiling Channel cut and bent to form opening head and cill

Standard GypWall construction details (continued)
To be read in conjunction with system specific details. Refer to relevant system sections

32



Board layout - typical configuration

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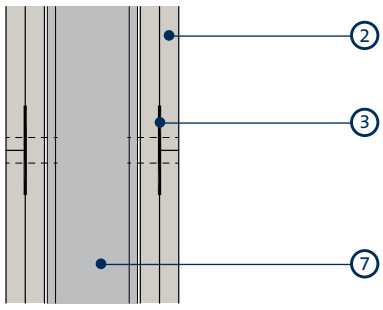

Horizontal board joint - double layer

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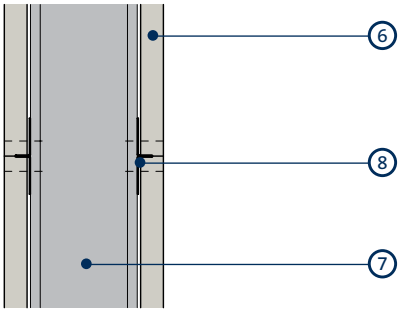

Horizontal board joint - single layer

1 Inner layer of Gyproc plasterboard or Glasroc F specialist board
2 Outer layer of Gyproc plasterboard or Glasroc F specialist board
3 Gypframe GFS1 Fixing Strap
4 Gypframe metal framing
5 Gyproc Drywall Screws
6 Gyproc plasterboard or Glasroc F specialist board
7 Gypframe 'C' Stud
8 Gypframe GFT1 Fixing T (alternatively use Gypframe GSF1 Fixing Strap)