C04. S08. P02 – P14
GypWall QUIET IWL

Including C04. S01. P02 – P18
Partitions introduction

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

British Gypsum offers a full range of lightweight partition and wall systems. Our systems are non-loadbearing and constructed using modern, drylining techniques. British Gypsum 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.

British Gypsum 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. P02 – 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 British Gypsum partitions systems that best satisfy your project requirements.

Fire performance	Partition thickness	Acoustic performance		Duty rating	Maximum height[1]	System	Page
mins	mm	R_w dB	$R_w + C_{tr}$ dB	*BS 5234*	mm		
30 - 120	75 - 211	34 - 63	47 - 57	Medium - Severe	8100	GypWall CLASSIC	C04.S02.P02
60 - 120	102 - 132	42 - 58	-	Severe	4900	GypWall ROBUST	C04.S03.P02
30 - 60	97 - 203	44 - 62	-	Severe	7800	GypWall EXTREME (including EXREME / ROBUST Hybrid)	C04.S04.P02
60 - 120	137 - 238	61 - 65	53 - 59	Severe	6800	GypWall QUIET SF	C04.S05.P02
30 - 90	102 - 208	49 - 63	48 - 55	Heavy - Severe	5700	GypWall STAGGERED	C04.S06.P02
60 - 120	200 - 300	60 - 64	47 - 58	Severe	7500	GypWall QUIET	C04.S07.P02
60 - 120	≥200	66 - 70	58 - 62	Severe	3900	GypWall QUIET IWL	C04.S08.P02
60 - 120	300 - 800	67 - 80	56 - 71	Severe	11500	GypWall AUDIO	C04.S09.P02
30	75 - 102	40 - 46	-	Medium	2700	GypWall RAPID dB Plus	C04.S10.P02
30 - 120	88 - 196	34 - 52	-	-	-	Non-loadbearing timber stud (internal partitions)	C04.S11.P02
60 - 90	141 - 293	56 - 63	48 - 53	-	-	Non-loadbearing timber stud (separating walls)	C04.S11.P05

[1] Based on studs at 600mm centres

Additional information

Try out **The White Book System Selector**, an online tool designed to help find the ideal solutions for your project needs. Additional information such as BIM data (Revit), NBS clauses, CAD drawings and other associated items can be downloaded. Visit british-gypsum.com

GypWall performance

Acoustic performance

Table 1 — Sound insulation performance for residential specification

Approved Document E (England and Wales)	On-site	Laboratory[2]	
	$D_{nT,w}$ + Ctr dB	Minimum solution ($R_w + C_{tr}$) dB	Recommended solution ($R_w + C_{tr}$) dB
Separating walls between new homes	45	(49)	(54)
Separating walls between purpose-built rooms for residential purposes and rooms created by a change of use or conversion	43	(47)	(52)

Technical Standards Section 5 (Scotland)	On-site	Laboratory[2]	
	$D_{nT,w}$ + Ctr dB	Minimum solution R_w dB	Recommended solution R_w dB
Separating walls between new homes, purpose-built for residential purposes and conversions (not including traditional buildings[1])	56	60	63
Separating walls between rooms created by a change of use or conversion (traditional buildings[1])	53	57	60

[1] Definition of traditional buildings - A building or part of a building of a type constructed before or around 1919:
a) using construction techniques that were commonly in use before 1919; and
b) with permeable components, in a way that promotes the dissipation of moisture from the building fabric.

[2] Minimum solutions provide little or no margin of safety to allow for reduction in performance due to flanking transmission. Recommended solutions have greater potential to satisfy the requirements of Building regulations.

Good practice specification guidance

British Gypsum's systems are designed and tested to meet every performance requirement and are fully supported by our **SpecSure®** lifetime system warranty.

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; 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 performance

Table 2 – GypWall CLASSIC metal stud partition recommended maximum heights (mm) - based on a limiting deflection of L/240 at 200Pa. Applicable to non fire-rated or *BS 476: Part 22* fire-rated constructions only (not applicable to *EN 1364-1: 1999*)

Stud	Boarding each side	600mm centres	600mm boxed	400mm centres	400mm boxed	300mm centres	300mm boxed
48 S 50	1 x 12.5mm	2500	2800	2900	3200	3100	3500
	1 x 15mm	2800	3000	3100	3300	3300	3600
	2 x 12.5mm	3400	3600	3600	3800	3800	4000
	2 x 15mm	3700	3800	3900	4000	4000	4200
48 I 50	1 x 12.5mm	2900	-	3400	-	3700	-
	1 x 15mm	3100	-	3500	-	3800	-
	2 x 12.5mm	3700	-	3900	-	4200	-
	2 x 15mm	3900	-	4200	-	4400	-
60 S 50	1 x 12.5mm	3200	3400	3500	3800	3800	4200
	1 x 15mm	3400	3600	3700	4000	4000	4300
	2 x 12.5mm	4100	4300	4300	4600	4600	4800
	2 x 15mm	4400	4500	4600	4800	4800	5000
60 I 50	1 x 12.5mm	3600	-	4000	-	4400	-
	1 x 15mm	3800	-	4200	-	4500	-
	2 x 12.5mm	4400	-	4700	-	5000	-
	2 x 15mm	4600	-	4900	-	5200	-
60 I 70	1 x 12.5mm	4100	-	4600	-	5000	-
	1 x 15mm	4200	-	4700	-	5100	-
	2 x 12.5mm	4700	-	5100	-	5500	-
	2 x 15mm	4900	-	5300	-	5600	-
70 S 50	1 x 12.5mm	3600	3900	4000	4300	4300	4700
	1 x 15mm	3800	4100	4200	4500	4500	4900
	2 x 12.5mm	4600	4800	4900	5100	5100	5400
	2 x 15mm	4900	5100	5100	5300	5300	5600
70 S 60	1 x 12.5mm	3800	4100	4200	4600	4500	5000
	1 x 15mm	4000	4300	4400	4700	4700	5100
	2 x 12.5mm	4700	4900	5000	5300	5200	5600
	2 x 15mm	5000	5200	5200	5500	5500	5800
70 AS 50	1 x 12.5mm	3800	4200	4300	4700	4600	5100
	1 x 15mm	4000	4400	4500	4800	4700	5200
	2 x 12.5mm	4700	5000	5000	5300	5300	5700
	2 x 15mm	5000	5200	5300	5600	5500	5900
70 I 50	1 x 12.5mm	4100	-	4600	-	5000	-
	1 x 15mm	4300	-	4700	-	5100	-
	2 x 12.5mm	4900	-	5300	-	5600	-
	2 x 15mm	5200	-	5500	-	5800	-
70 I 70	1 x 12.5mm	4600	-	5100	-	5600	-
	1 x 15mm	4700	-	5300	-	5700	-
	2 x 12.5mm	5300	-	5700	-	6100	-
	2 x 15mm	5500	-	5900	-	6300	-
92 S 50	1 x 12.5mm	4500	4800	4900	5400	5300	5800
	1 x 15mm	4700	5100	5200	5600	5500	6000
	2 x 12.5mm	5700	5900	6000	6300	6200	6600
	2 x 15mm	5900	6100	6200	6500	6400	6800

NB In all GypWall CLASSIC systems, it is recommended that for heights between 4200mm and 8000mm, the Gypframe Deep Flange Floor & Ceiling Channel is used. Gypframe Extra Deep Flange Floor & Ceiling Channel is used for heights above 8000mm. Additional consideration needs to be given if there is a deflection head requirement.

NB For the affect on acoustic performance refer to C02. S01. P30.

Table 2 (continued) – GypWall CLASSIC metal stud partition recommended maximum heights (mm) - based on a limiting deflection of L/240 at 200Pa. Applicable to non fire-rated or *BS 476: Part 22* fire-rated constructions only (not applicable to *EN 1364-1: 1999*)

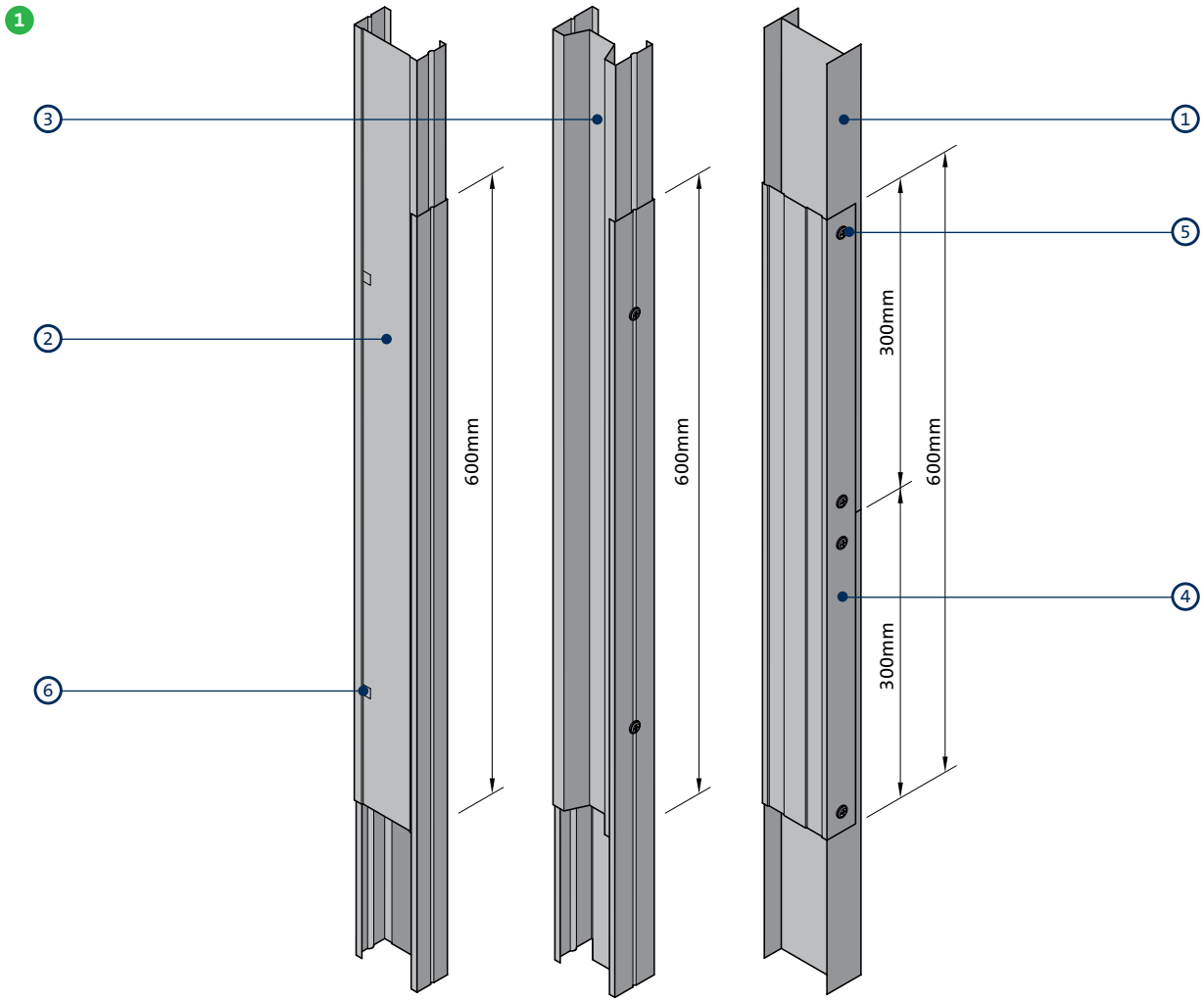
Stud	Boarding each side	600mm centres	600mm boxed	400mm centres	400mm boxed	300mm centres	300mm boxed
92 S 60	1 x 12.5mm	4700	5000	5200	5600	5600	6100
	1 x 15mm	4900	5300	5400	5800	5800	6300
	2 x 12.5mm	5800	6000	6100	6500	6500	6900
	2 x 15mm	6000	6200	6300	6700	6600	7000
92 AS 50	1 x 12.5mm	4700	5100	5200	5700	5700	6200
	1 x 15mm	4900	5300	5400	5700	5800	6400
	2 x 12.5mm	5800	6100	6200	6500	6500	6900
	2 x 15mm	6000	6300	6400	6700	6700	7000
92 S 10	1 x 12.5mm	5300	5800	6000	6600	6500	7200
	1 x 15mm	5500	6000	6100	6700	6600	7300
	2 x 12.5mm	6200	6600	6700	7200	7200	7700
	2 x 15mm	6400	6800	6900	7400	7300	7800
92 I 90	1 x 12.5mm	6000	-	6800	-	7400	-
	1 x 15mm	6200	-	6900	-	7500	-
	2 x 12.5mm	6800	-	7400	-	7900	-
	2 x 15mm	6900	-	7500	-	8000	-
146 S 50	1 x 12.5mm	6200	6800	6900	7600	7500	8300
	1 x 15mm	6500	7000	7200	7800	7700	8400
	2 x 12.5mm	7600	8000	8100	8600	8500	9100
	2 x 15mm	7900	8200	8300	8800	8700	9300
146 AS 50	1 x 12.5mm	6600	7100	7300	8000	8000	8800
	1 x 15mm	6800	7400	7600	8200	8200	8900
	2 x 12.5mm	7800	8200	8400	8900	8900	9500
	2 x 15mm	8100	8500	8600	9100	9100	9700
146 I 80	1 x 12.5mm	7900	-	8900	-	9700	-
	1 x 15mm	8100	-	9000	-	9800	-
	2 x 12.5mm	8800	-	9600	-	10400	-
	2 x 15mm	9000	-	9800	-	10500	-
146 TI 90	1 x 12.5mm	8300	-	9400	-	10300	-
	1 x 15mm	8400	-	9500	-	10400	-
	2 x 12.5mm	9200	-	10100	-	10900	-
	2 x 15mm	9400	-	10300	-	11100	-

NB In all GypWall CLASSIC systems, it is recommended that for heights between 4200mm and 8000mm, the Gypframe Deep Flange Floor & Ceiling Channel is used. Gypframe Extra Deep Flange Floor & Ceiling Channel is used for heights above 8000mm. Additional consideration needs to be given if there is a deflection head requirement.

NB For the affect on acoustic performance refer to C02. S01. P30.

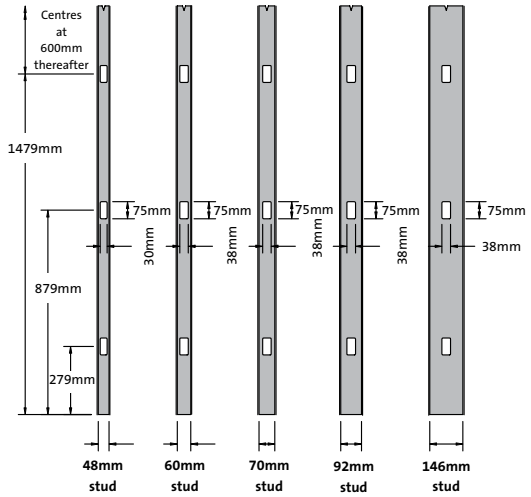
Standard GypWall construction details

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



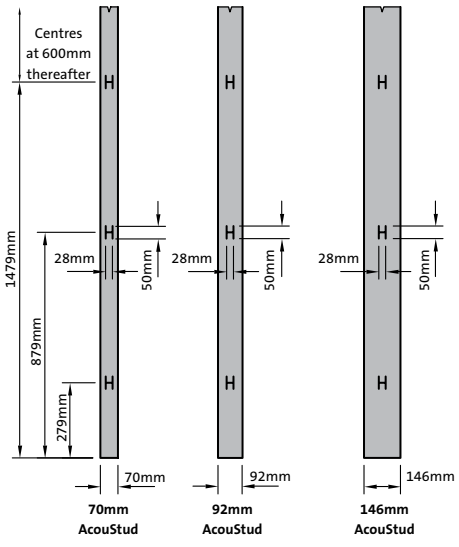
Stud splicing detail

2



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

2a



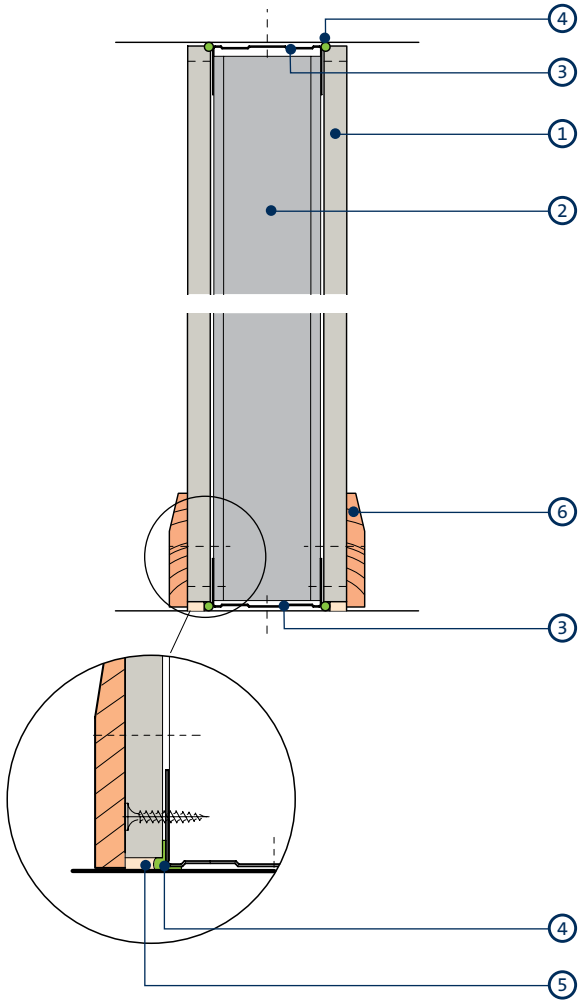
Service cut-outs - Gypframe AcouStuds

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

Standard GypWall construction details (continued)

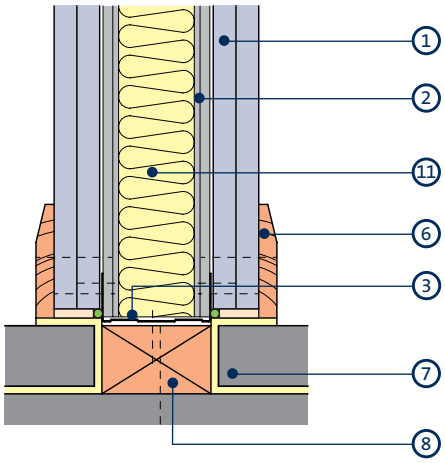
To be read in conjunction with system specific details. Refer to relevant system sections

3



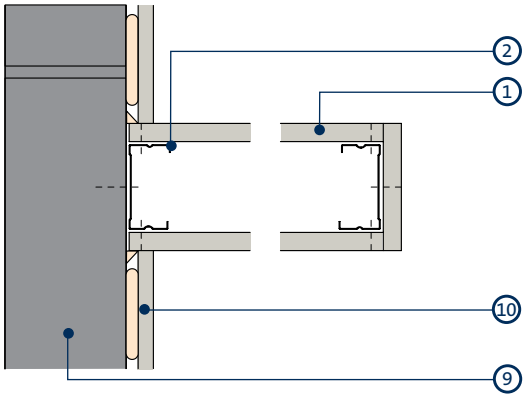
Head and base

3a



Base with timber sole plate

4



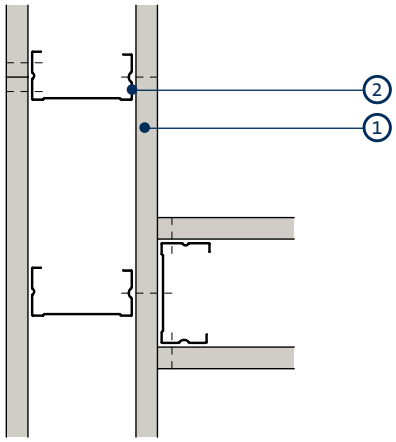
Junction with masonry and stop end detail

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 BASIC** wall lining system
11 Isover insulation

Standard GypWall construction details (continued)

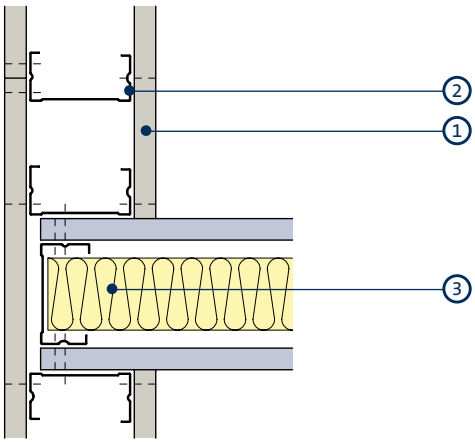
To be read in conjunction with system specific details. Refer to relevant system sections

5



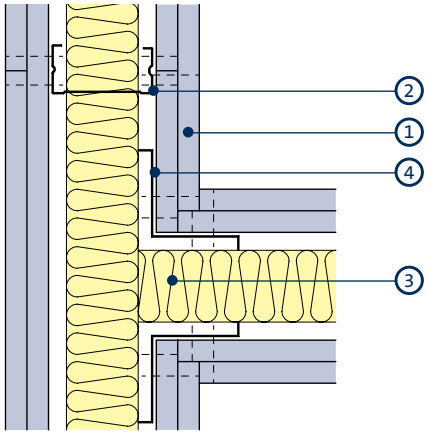
'T' junction - single layer

6



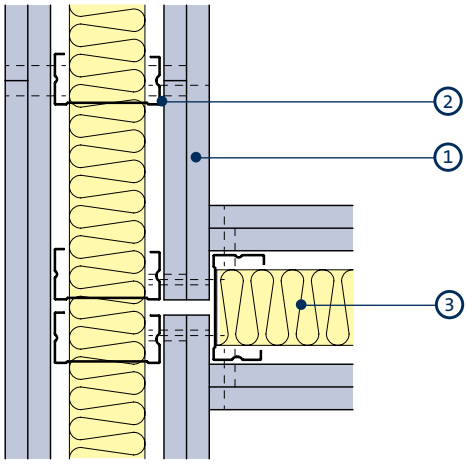
'T' Junction when partition with higher acoustic performance abuts a partition with lower acoustic performance. Acoustic principles only - detail may not be suitable for all solutions

7a



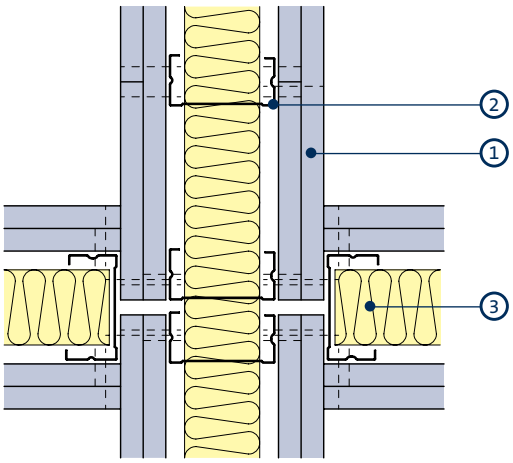
'T' junction to optimise acoustic performance and reduce flanking transmission

7b



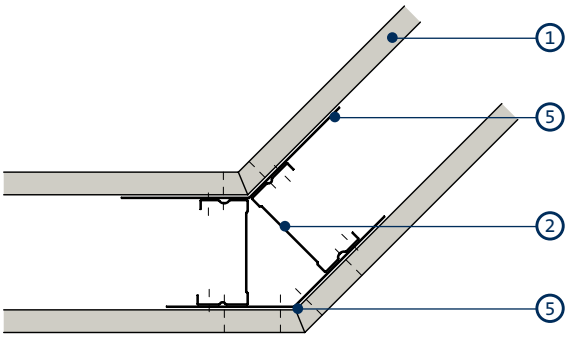
'T' junction to optimise acoustic performance and reduce flanking transmission

8



Four way junction to optimise acoustic performance and reduce flanking transmission

9



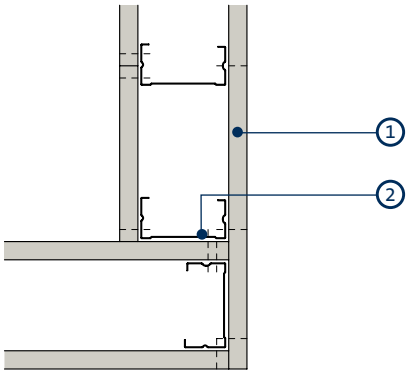
Splayed corner

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)

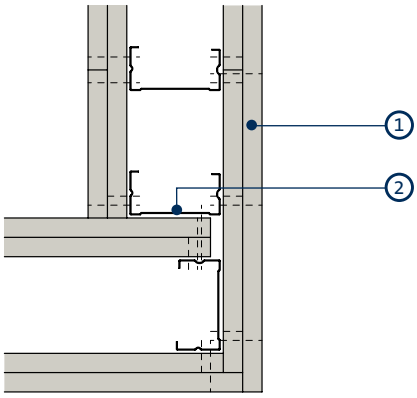
To be read in conjunction with system specific details. Refer to relevant system sections

10



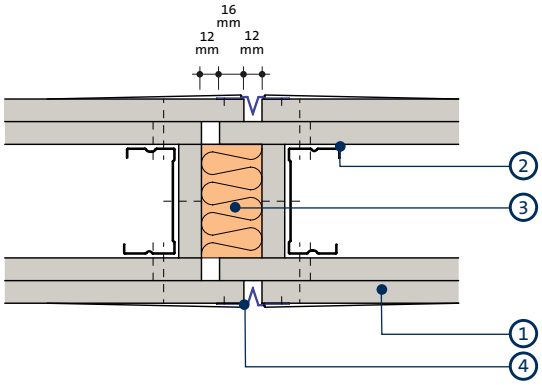
Corner detail - single layer

11



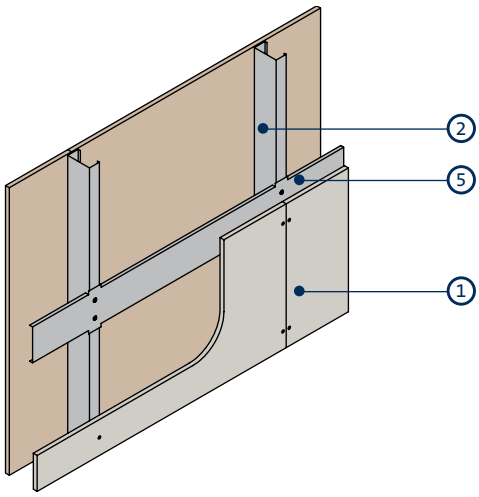
Corner detail - double layer

12



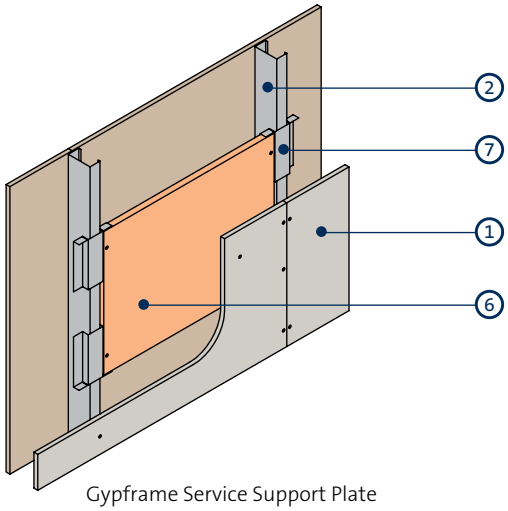
Typical control joint

13



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

14



Gypframe Service Support Plate

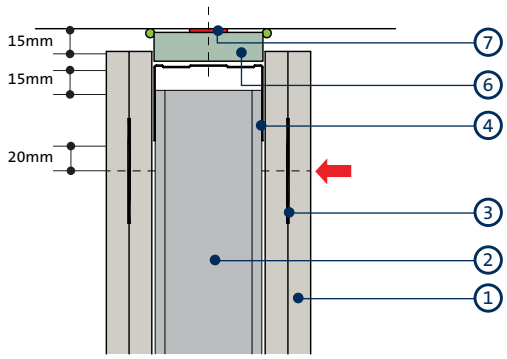
1 Gyproc plasterboard or Glasroc F specialist board
2 Gypframe 'C' Stud
3 Stone mineral wool (minimum density 23kg/m³) (by others)
4 Gyproc Control Joint
5 Gypframe 99 FC 50 Fixing Channel
6 18mm plywood
7 Gypframe Service Support Plate

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)

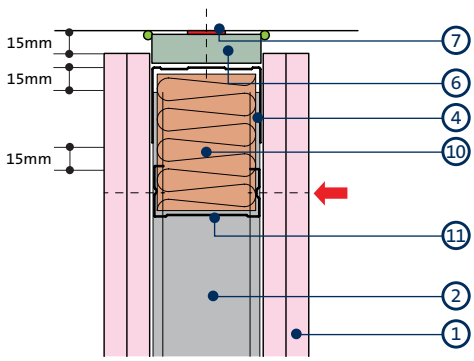
To be read in conjunction with system specific details. Refer to relevant system sections

15



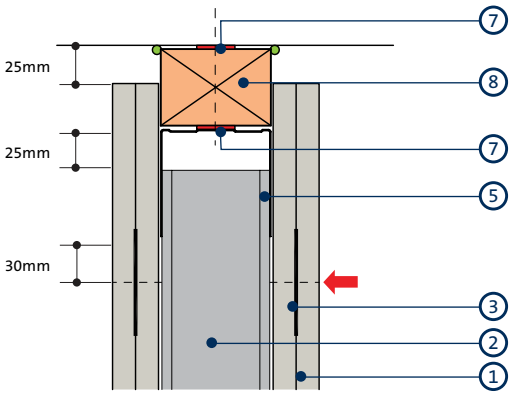
Deflection head for 15mm downward movement and 60 minutes fire resistance

16



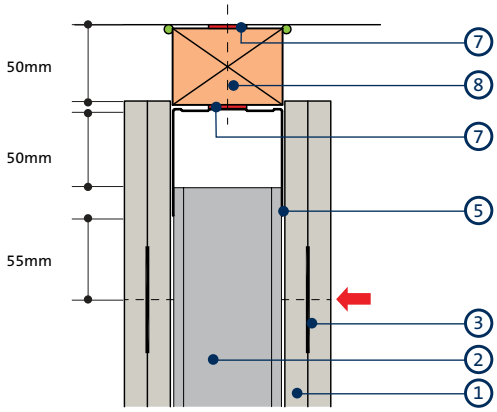
Deflection head for 15mm downward movement and up to 120 minutes fire resistance

17



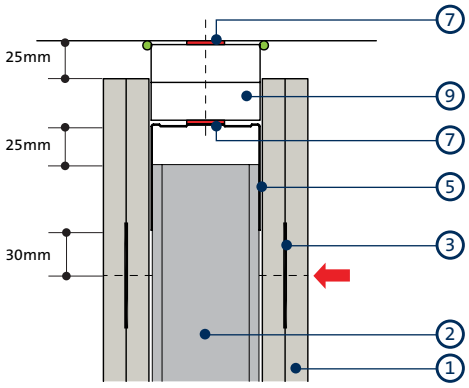
Deflection head for plus or minus 25mm movement and 60 minutes fire resistance

18



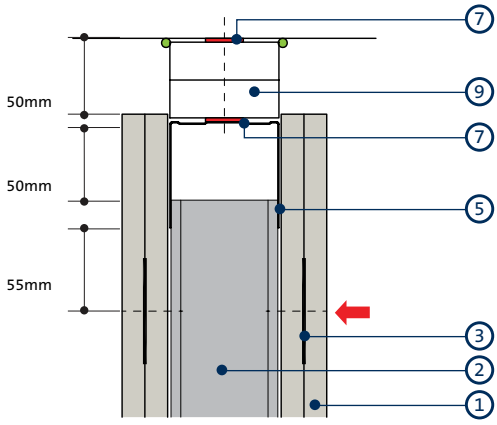
Deflection head for 50mm downward movement and 60 minutes fire resistance

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

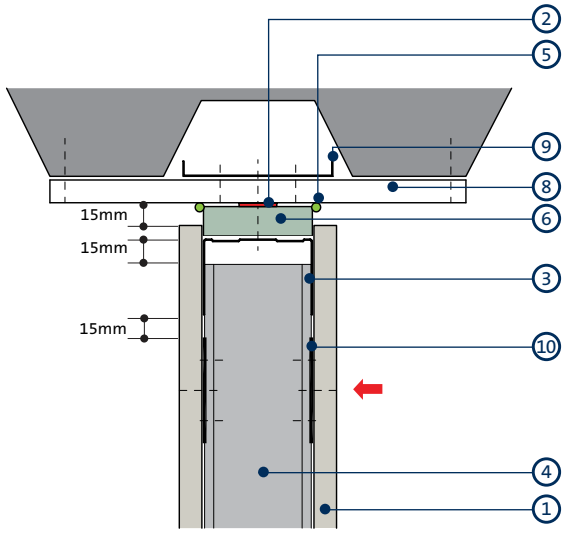
1 Gyproc plasterboard or Glasroc F specialist board
2 Gypframe 'C' Stud
3 Gypframe GFS1 Fixing Strap
4 Gypframe Deep Flange Floor & Ceiling Channel
5 Gypframe Extra Deep Flange Floor & Ceiling Channel
6 Gyproc CoreBoard
7 Gyproc FireStrip (continuous)
8 Timber head plate suitably fixed to structure
9 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 British Gypsum Technical Advice Centre for further guidance.

Standard GypWall construction details (continued)

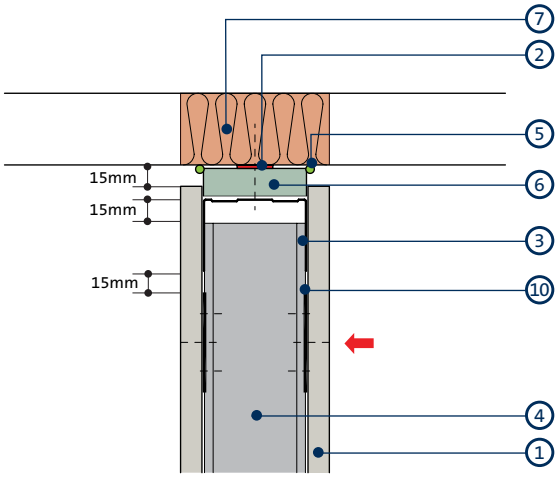
To be read in conjunction with system specific details. Refer to relevant system sections

21



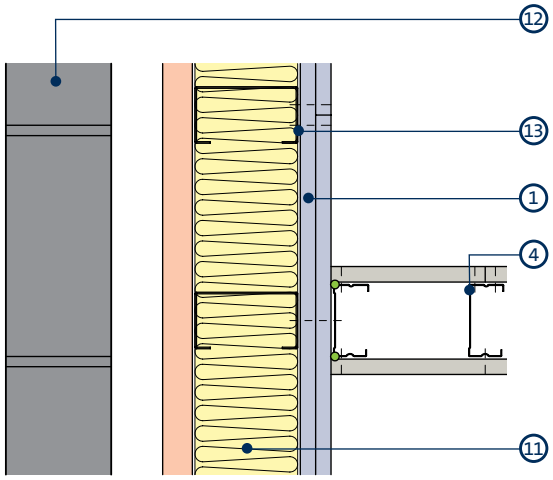
Deflection head parallel to floor profile for 15mm downward movement and up to 60 minutes fire resistance [1]

22



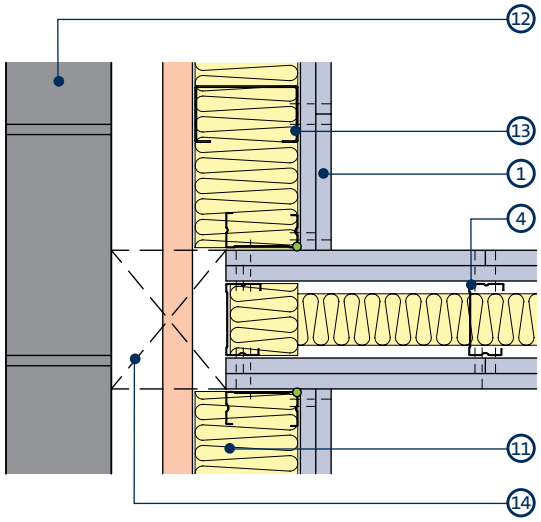
Deflection head perpendicular to floor profile for 15mm downward movement and up to 60 minutes fire resistance

23



Junction with external wall

24



Junction with external wall when acoustic performance is a key consideration - helps reduce flanking transmission

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 British Gypsum 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)

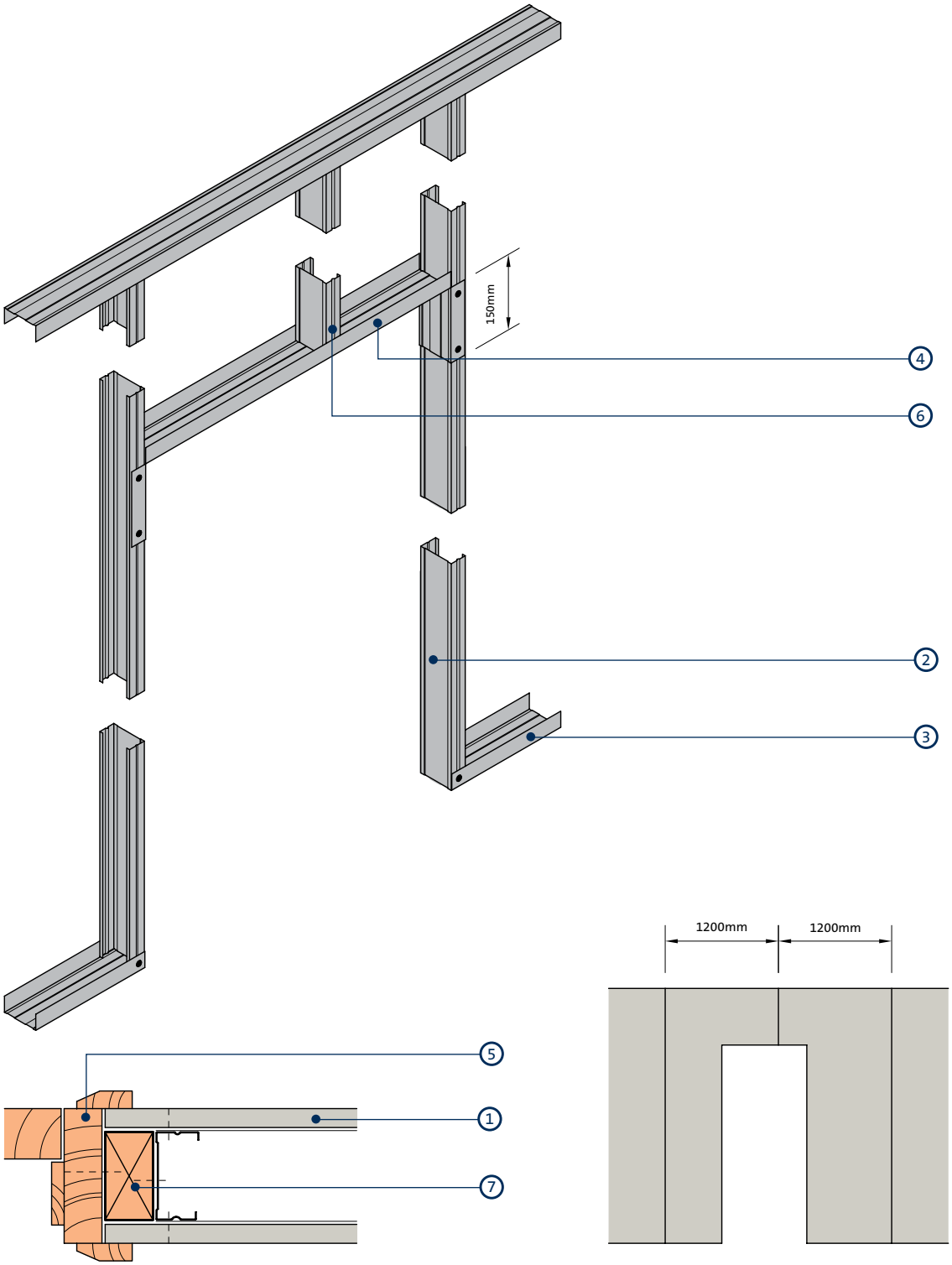
NB No fixings should be made through the boards into the flanges of the head channel. The arrow (⬅) denotes the position of the uppermost board fixing, which should be made into Gypframe GFS1 Fixing Strap. Continuous Gyproc FireStrip must be installed as shown to maintain fire performance.

[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)*

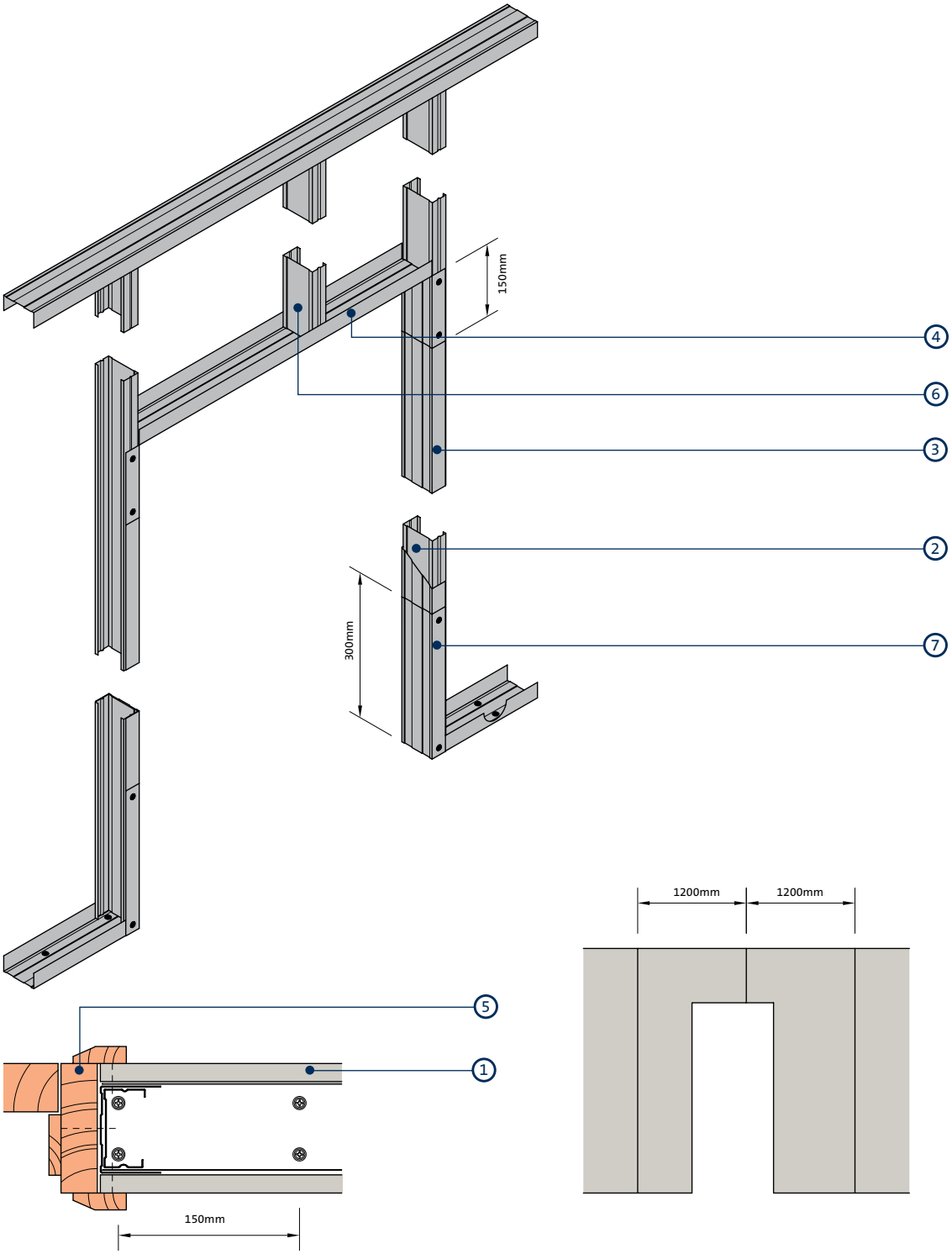
1 Gyproc plasterboard or Glasroc F specialist board
2 Gypframe 'C' Stud
3 Gypframe Floor & Ceiling Channel
4 Gypframe Floor & Ceiling Channel cut and bent to form door head
5 Timber door frame and architrave
6 Gypframe 'C' Stud to maintain stud module
7 Timber sub-frame

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 (up to 60kg door)*

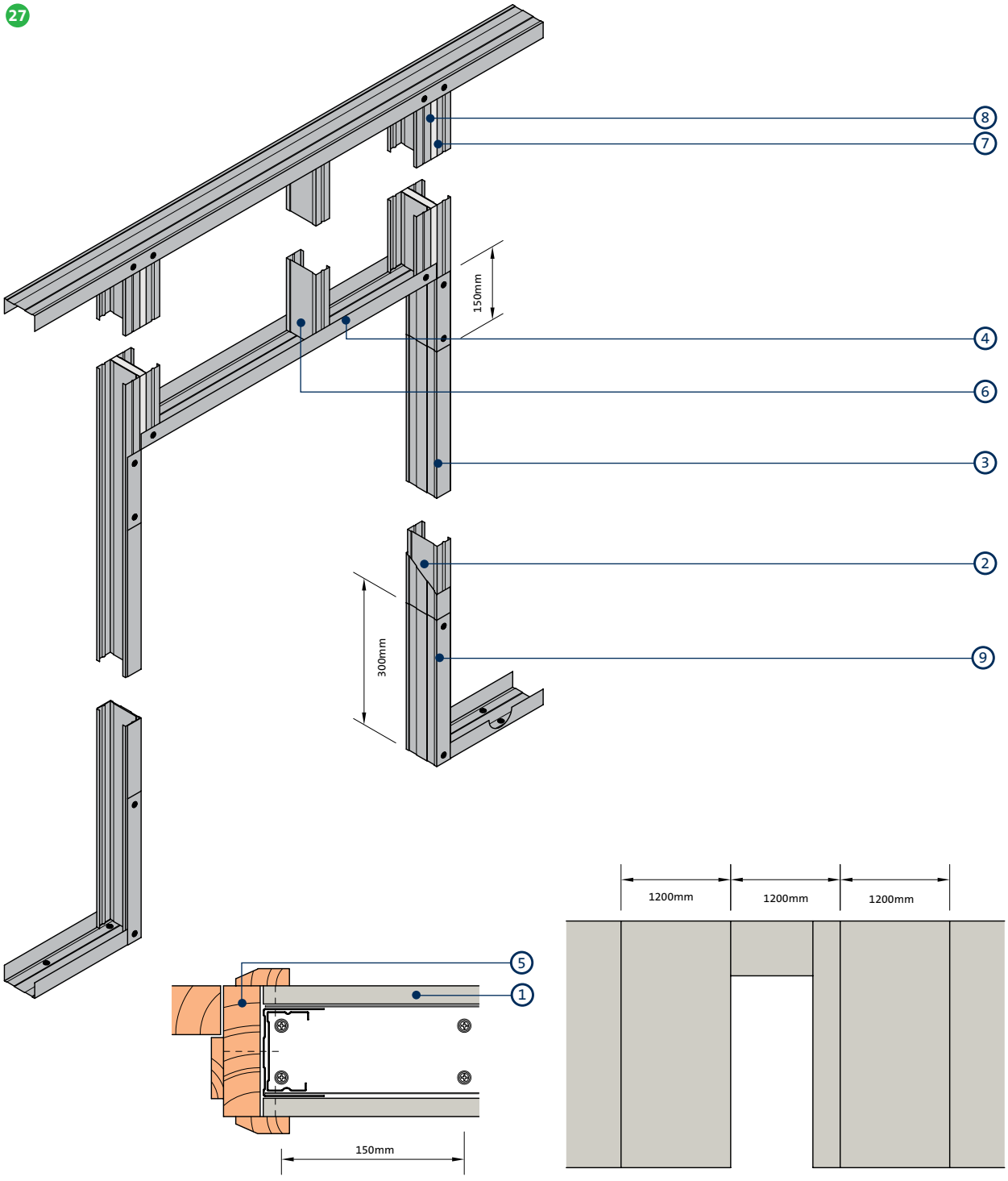
1 Gyproc plasterboard or Glasroc F specialist board
2 Gypframe 'C' Stud
3 Gypframe Floor & Ceiling Channel to sleeve studs
4 Gypframe Floor & Ceiling Channel cut and bent to form door head
5 Timber door frame and architrave
6 Gypframe 'C' Stud to maintain stud module
7 Gypframe Floor & Ceiling Channel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



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

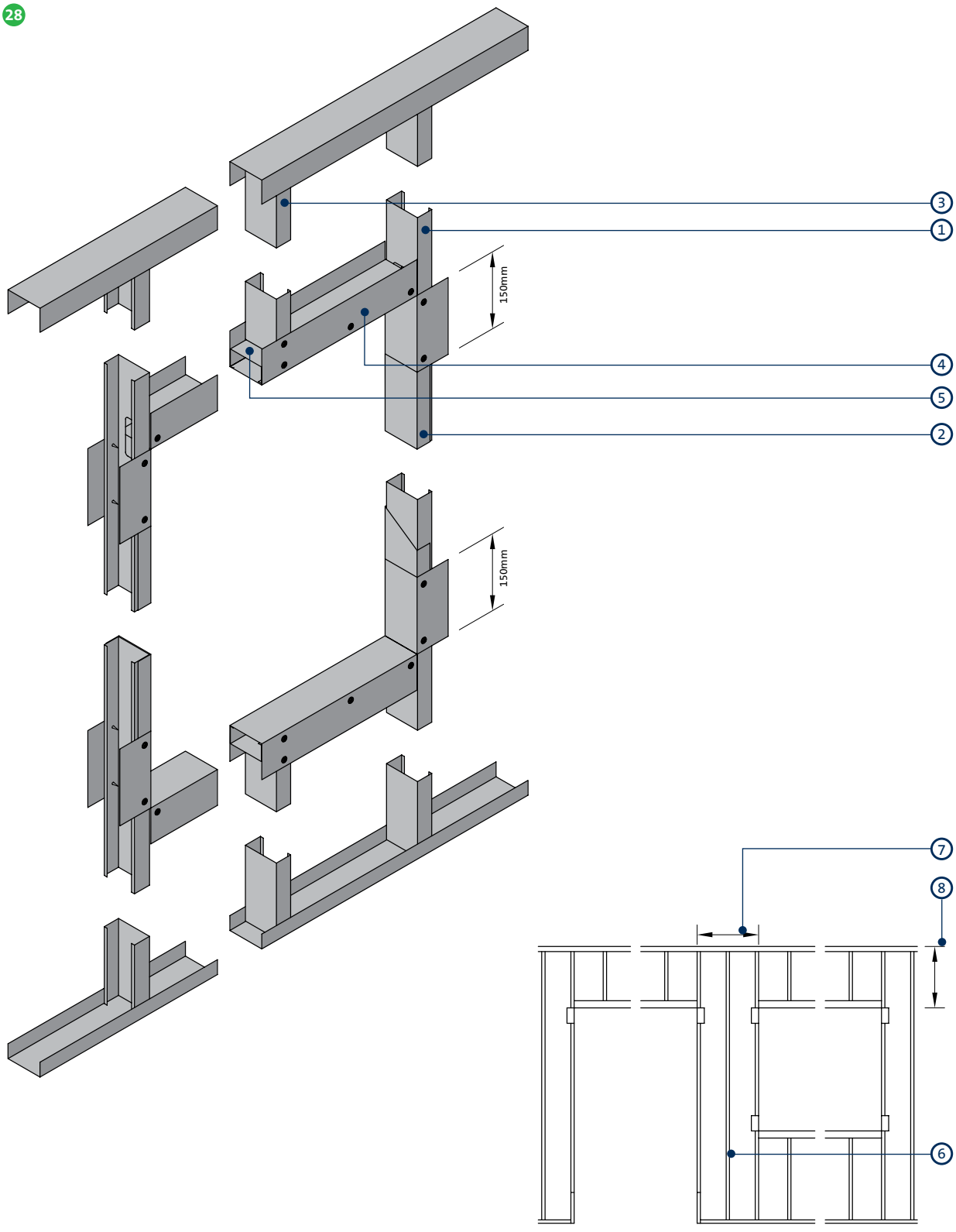
NB At the base, the channel is cut and bent to extend 300mm up the studs and fixed each side with two British Gypsum Wafer Head Drywall Screws. The studs each side of the opening are sleeved full height of opening with Gypframe Floor & Ceiling Channel.

NB The principle of this alternative detail is only suitable for **GypWall CLASSIC**, **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

28



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

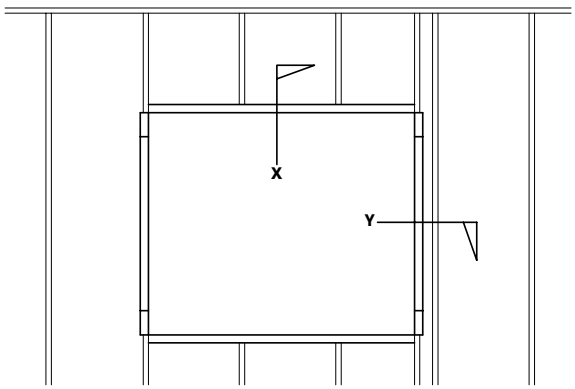
1 Gypframe 'C' Stud
2 Stud sleeved to full opening height with Gypframe Floor & Ceiling Channel
3 Gypframe studs (appropriate to system)
4 Gypframe Extra Deep Flange Floor & Ceiling Channel
5 Gypframe stud insert
6 Centre stud required for margin up to 600mm between openings
7 Partition between openings,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

Standard GypWall construction details (continued)

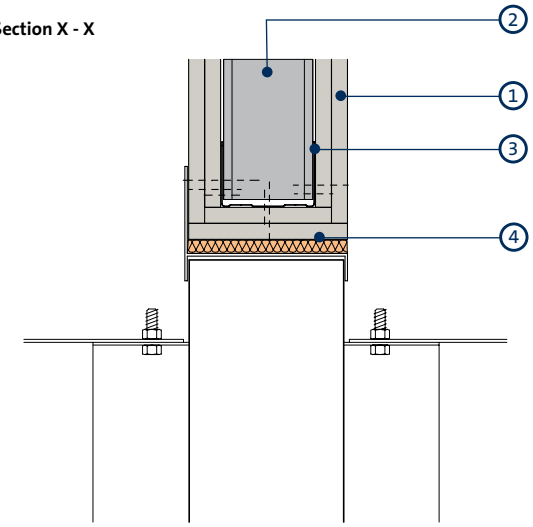
To be read in conjunction with system specific details. Refer to relevant system sections

29

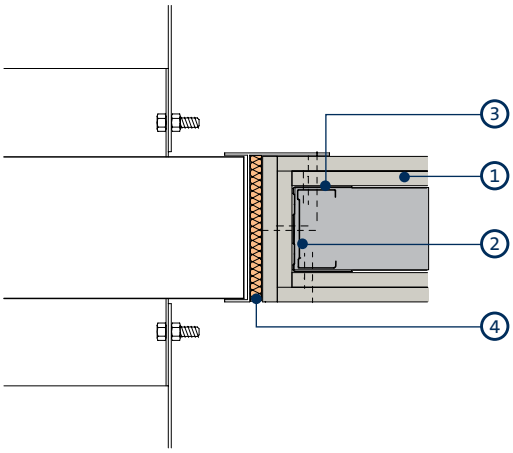
Elevation



Section X - X

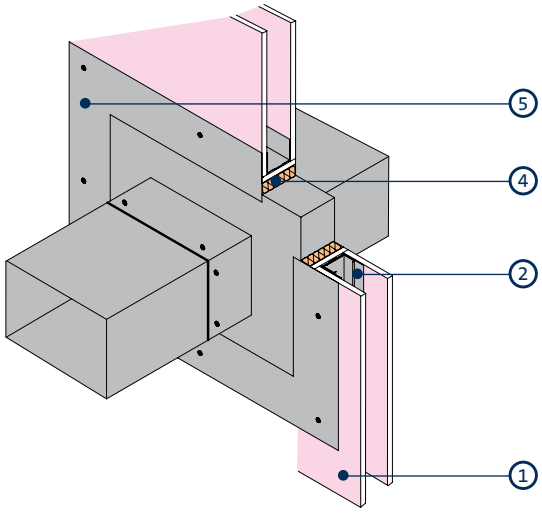


Section Y - Y



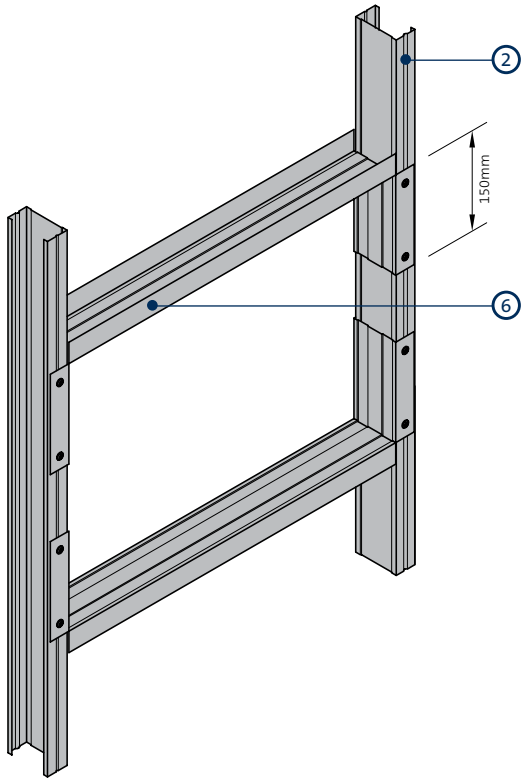
Opening for service penetrations in fire-rated partitions

30



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

31



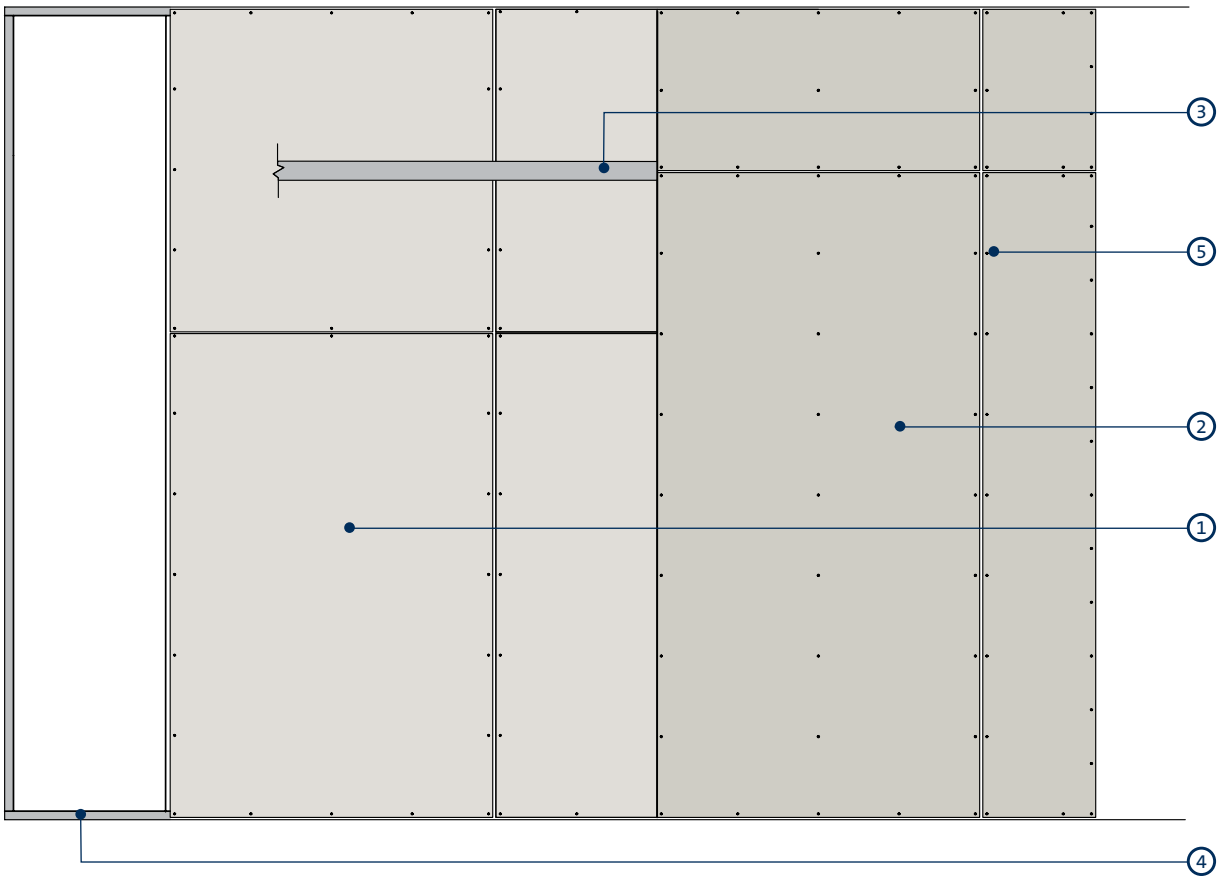
Opening up to 600mm wide for services

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)

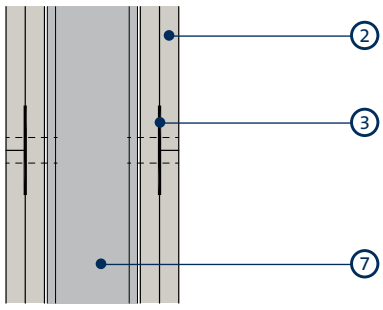
To be read in conjunction with system specific details. Refer to relevant system sections

32



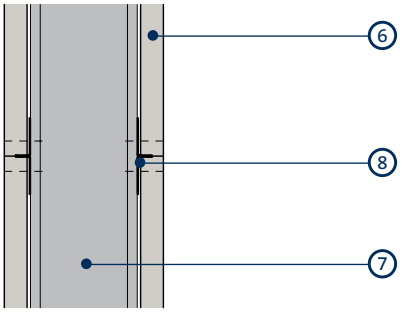
Board layout - typical configuration

33



Horizontal board joint - double layer

34



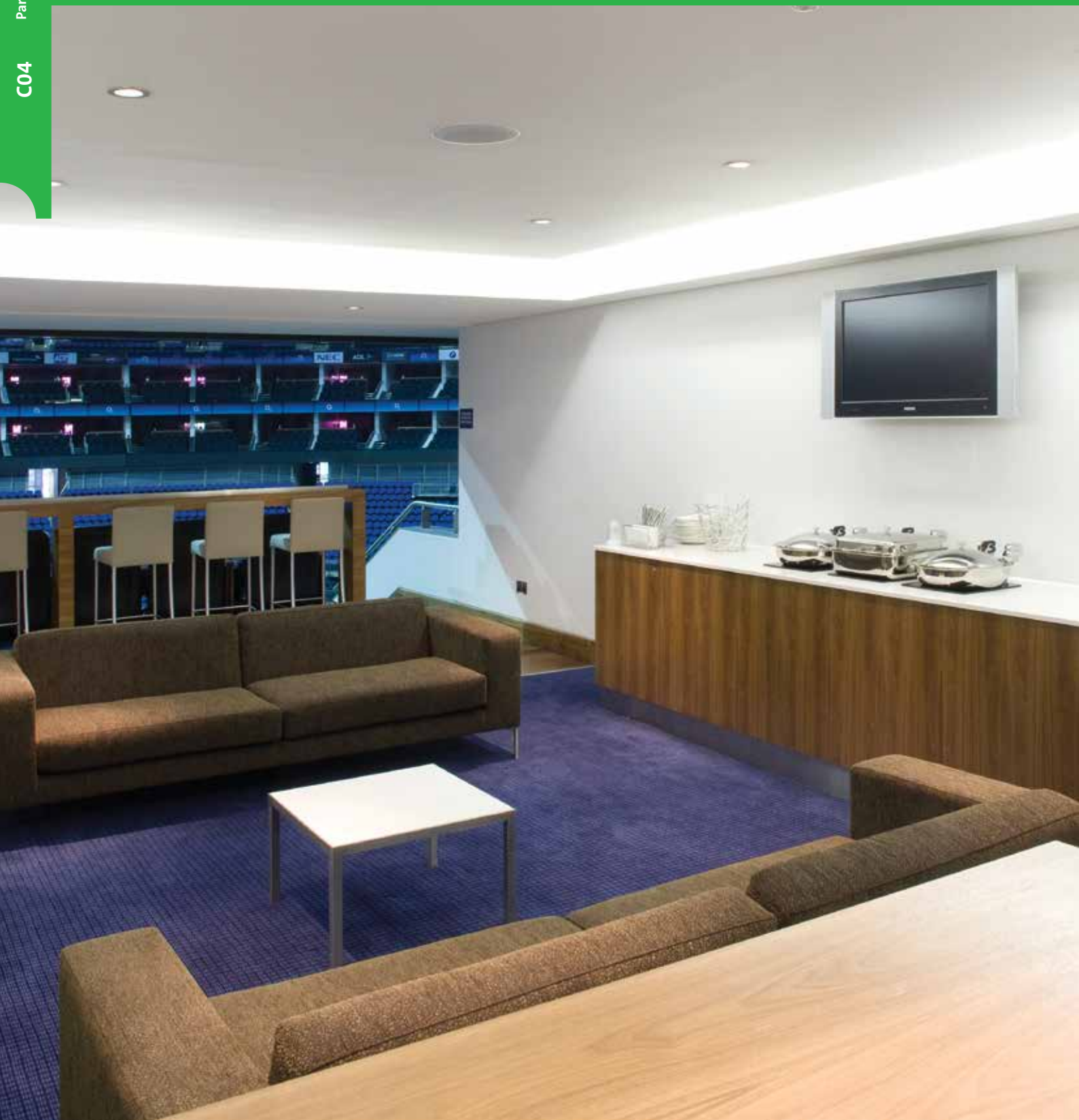
Horizontal board joint - single layer

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 British Gypsum 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)

GypWall QUIET IWL

Independent twin frame high performance acoustic separating wall system

All our systems are covered by **SpecSure®** when using genuine British Gypsum and Saint-Gobain Isover products



GypWall QUIET IWL

GypWall QUIET IWL is a lightweight, non-loadbearing high performance wall. The use of an unbraced twin-frame ensures optimal acoustic isolation, providing an enhanced specification for buildings that are targeting higher standards of health and well-being, for example those designed to BREEAM frameworks or premium developments.

60 – 120 mins

66 – 70 R_w dB

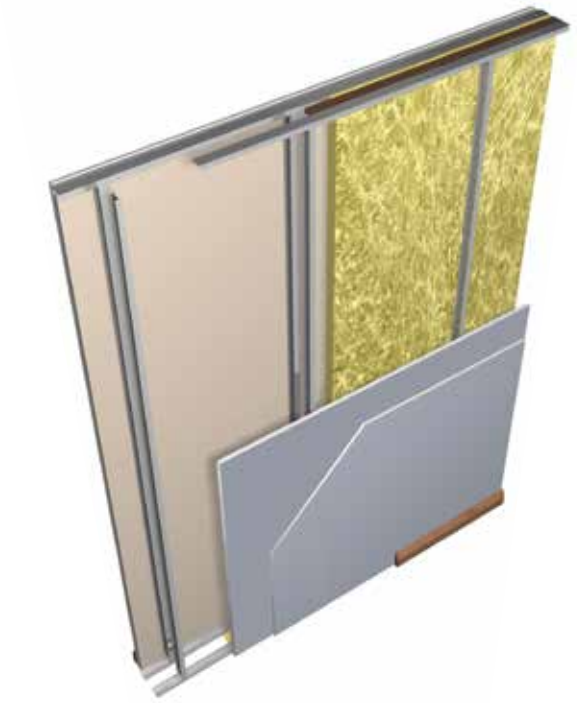
ACTIV air

Refer to C02. S01. P49

Refer to C01. S01. P07

Key benefits

- GypWall QUIET IWL is an approved Robust Detail specification (E-WS-2) meaning that it can be used without the need for Pre-Completion Testing to demonstrate compliance with Approved Document E
- Structural columns can be accommodated within the partition due to the twin-frame design
- GypWall QUIET IWL can provide up to an estimated 120 minutes fire protection to structural steel enclosed within its cavity
- Optimal resistance to impact noise transference between adjacent spaces is achieved as a result of the system's unbraced construction



You may also be interested in...

GypWall AUDIO
If you are looking for solutions with an even higher acoustic performance.

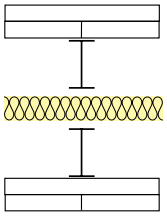
▶ Refer to C04. S09. P02 – **GypWall AUDIO.**

GypWall QUIET IWL performance

For details of when to specify fire resistance using EN
▶ Refer to **C02. S01. P05**

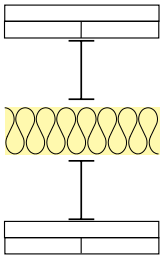
Table 1a — Solutions to satisfy requirements of *BS EN 1364-1: 1999*

1



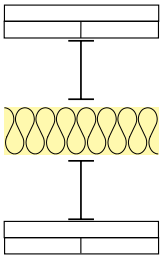
Two layers of board fixed to the outside faces of two Gypframe 48 I 50 'I' Stud frameworks with studs at 600mm centres. 50mm Isover Acoustic Partition Roll (APR 1200) in the cavity (cavity width 140mm). Linings as in table.

2



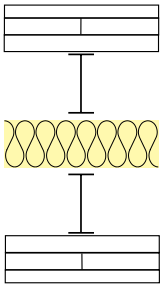
Two layers of board fixed to the outside faces of two Gypframe 60 I 70 'I' Stud frameworks with studs at 600mm centres. 100mm Isover Acoustic Partition Roll (APR 1200) in the cavity (cavity width 190mm). Linings as in table.

3



Two layers of board fixed to the outside faces of two Gypframe 60 I 50 'I' Stud frameworks with studs at 600mm centres. 100mm Isover Acoustic Partition Roll (APR 1200) in the cavity (cavity width 190mm). Linings as in table.

4



Three layers of board fixed to the outside faces of two Gypframe 60 I 70 'I' Stud frameworks with studs at 600mm centres. 100mm Isover Acoustic Partition Roll (APR 1200) in the cavity (cavity width 190mm). Linings as in table.

Detail	Partition thickness mm	Board type	ACTIV*air* technology available[1]	Lining thickness mm	Max. partition height[2] mm	Sound insulation $R_w (R_w + C_{tr})$[3] dB	Duty rating	Approx. weight kg/m²	System reference
90 minutes fire resistance EN									
1	200	Gyproc SoundBloc	✓	2 x 15	2800	66 (58)	Severe	55	A216014
2	250	Gyproc SoundBloc	✓	2 x 15	3900	RD[4]	Severe	55	A216007
3	250	Gyproc SoundBloc	✓	2 x 15	3300	70 (62) / RD[4]	Severe	55	A216013
120 minutes fire resistance EN									
1	200	Gyproc DuraLine	✓	2 x 15	2800	67 (58)	Severe	60	X216011
4	275	Gyproc SoundBloc + Gyproc FireLine	-	2 x 15 + 1 x 12.5	3900	RD[4]	Severe	75	A216005

▶ For further assistance in choosing the right solution for your project, try the White Book System Selector; an online tool that enables quick and easy filtering by performance criteria. It provides system specific information downloads including BIM (Revit) objects. Go to british-gypsum.com

[1] These systems have an ACTIV*air* board option available, which improves indoor air quality. Alternatively, all systems can be skim finished with Thistle PureFinish, which contains ACTIV*air* technology. Refer to C08. S02. P05 and C02. S01. P49 for further details.

[2] The maximum heights quoted are limited by the fire state field of application or by limiting deflection of L/240 at 200 Pa, whichever is more onerous.

[3] These British Gypsum Approved Systems are designed to achieve minimum $D_{nT,w} + C_{tr}$ 45dB, subject to Pre-Completion Testing (Refer to Partitions introduction C04. S01. P04 – table 1)

[4] RD = Robust Detail E-WS-2 - approved Robust Detail solution designed to achieve minimum $D_{nT,w} + C_{tr}$ 45dB. Minimum 60mm Gypframe 'I' Studs required.

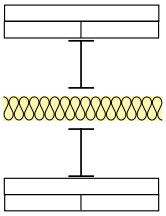
NB The fire resistance and sound insulation performances are for imperforate partitions, walls and ceilings incorporating boards with all joints taped and filled, or skimmed according to British Gypsum's recommendations. The quoted performances are achieved only if British Gypsum and Saint-Gobain Isover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

GypWall QUIET IWL performance (continued)

For details of when to specify fire resistance using BS
▶ Refer to **C02. S01. P05**

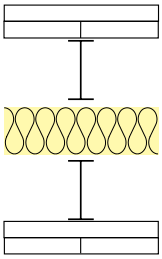
Table 1b — Solutions to satisfy requirements of *BS 476: Part 22: 1987*

1



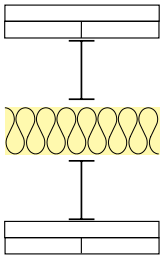
Two layers of board fixed to the outside faces of two Gypframe 48 I 50 'I' Stud frameworks with studs at 600mm centres. 50mm Isover Acoustic Partition Roll (APR 1200) in the cavity (cavity width 140mm). Linings as in table.

2



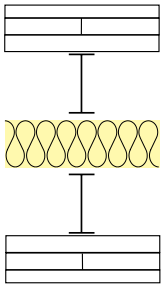
Two layers of board fixed to the outside faces of two Gypframe 60 I 70 'I' Stud frameworks with studs at 600mm centres. 100mm Isover Acoustic Partition Roll (APR 1200) in the cavity (cavity width 190mm). Linings as in table.

3



Two layers of board fixed to the outside faces of two Gypframe 60 I 50 'I' Stud frameworks with studs at 600mm centres. 100mm Isover Acoustic Partition Roll (APR 1200) in the cavity (cavity width 190mm). Linings as in table.

4



Three layers of board fixed to the outside faces of two Gypframe 60 I 70 'I' Stud frameworks with studs at 600mm centres. 100mm Isover Acoustic Partition Roll (APR 1200) in the cavity (cavity width 190mm). Linings as in table.

Detail	Partition thickness mm	Board type	ACTIV*air* technology available[1]	Lining thickness mm	Max. partition height[2] mm	Sound insulation $R_w(R_w + C_{tr})$[3] dB	Duty rating	Approx. weight kg/m²	System reference
90 minutes fire resistance BS									
1	200	Gyproc SoundBloc	✓	2 x 15	2800	66 (58)	Severe	55	A216014
2	250	Gyproc SoundBloc	✓	2 x 15	3900	RD[4]	Severe	55	A216007
3	250	Gyproc SoundBloc	✓	2 x 15	3300	70 (62) / RD[4]	Severe	55	A216013
120 minutes fire resistance BS									
1	200	Gyproc DuraLine	✓	2 x 15	2800	67 (58)	Severe	60	X216011
4	275	Gyproc SoundBloc + Gyproc FireLine	-	2 x 15 1 x 12.5	3900	RD[4]	Severe	75	A216005

▶ For further assistance in choosing the right solution for your project, try the White Book System Selector; an online tool that enables quick and easy filtering by performance criteria. It provides system specific information downloads including BIM (Revit) objects. Go to british-gypsum.com

[1] These systems have an ACTIV*air* board option available, which improves indoor air quality. Alternatively, all systems can be skim finished with Thistle PureFinish, which contains ACTIV*air* technology. Refer to C08. S02. P05 and C02. S01. P49 for further details.

[2] Based on limiting deflection of L/240 at 200 Pa.

[3] These British Gypsum Approved Systems are designed to achieve minimum $D_{nT,w} + C_{tr}$ 45dB, subject to Pre-Completion Testing (Refer to Partitions introduction C04. S01. P04 – table 1)

[4] RD = Robust Detail E-WS-2 - approved Robust Detail solution designed to achieve minimum $D_{nT,w} + C_{tr}$ 45dB. Minimum 60mm Gypframe 'I' Studs required.

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

GypWall QUIET IWL performance (continued)

For details of when to specify fire resistance using EN / BS
▶ Refer to **C02. S01. P05**

Table 2 – Solutions to satisfy requirements of *ENV 13381-2: 2002 and BS 476: Part 21: 1987*[1]

Board type[2]	ACTIV*air* technology available[3]	Lining thickness mm	Fire resistance min	Section factor[4] A/V (Hp/A) m^{-1}
Gyproc SoundBloc	✓	2 x 12.5	30	Up to 300
Gyproc SoundBloc	✓	2 x 15	60	Up to 300
Gyproc SoundBloc	✓	3 x 15	120	Up to 300

[1] Estimated fire protection to structural steelwork within the partition cavity.
[2] For improved and durability impact resistance, the outer layer of Gyproc FireLine or Gyproc SoundBloc can be replaced with a layer of 15mm Gyproc DuraLine.
[3] These systems have an ACTIV*air* board option available, which improves indoor air quality. Alternatively, all systems can be skim finished with Thistle PureFinish, which contains ACTIV*air* technology. Refer to C08. S02. P05 and C02. S01. P49 for further details.
[4] Based on four-sided exposure, with no vertical joints aligning with the column, and boards not fixed to the column to maintain air space (10mm for *BS* or 50mm for *EN*).

Table 3 — Maximum heights for Gypframe 'I' Studs at 600mm centres[1]

Stud type[1]	2 x 12.5mm boards maximum heights	2 x 15mm boards maximum heights
48 I 50	2700	2800
60 I 50	3000	3300
60 I 70	3600	3900
70 I 70	4200[2]	4300[2]
92 I 90	5700[2]	5800[2]
146 I 80	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 for *BS 476: Part 22: 1987*. Contact the Technical Advice Centre for further advice.
[2] For heights between 4200mm and 8000mm, Gypframe Deep Flange Floor & Ceiling Channel should be used at base and at head (subject to deflection criteria).

You may also be interested in...

GypWall AUDIO
If you require a solution that allows greater maximum heights.

▶ Refer to C04. S09. P02 – **GypWall AUDIO.**

GypWall QUIET IWL design

Building design

GypWall QUIET IWL comprises a twin frame of Gypframe 'I' Studs at 600mm centres within a twin row of Gypframe Floor & Ceiling Channels.

Planning — key factors

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

All penetrations will need to be adequately stopped for fire and acoustics.

Partition to structural steelwork junctions

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.

▶ Refer to C02. S01. P10 – Building Acoustics.

Fixing floor and ceiling channels

Gypframe Floor & Ceiling 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.

Splicing

Where the wall heights 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 British Gypsum Wafer Head Drywall Screws in each flange to each side.

▶ Refer to Partitions introduction C04. S01. P07 – construction detail 1.

Partition to suspended ceiling junction

Where a GypWall metal stud partition is fixed to the framework of a CasoLine MF ceiling, in accordance with British Gypsum's installation instructions, its permissible maximum height is equal to that of where it is fixed direct to a structural soffit of the same height.

In situations where a GypWall metal stud partition passes through a CasoLine MF ceiling, which is to both sides of the partition and appropriately fixed to both this partition and perimeter partitions / walls, consideration can be given to the lateral restraint provided by the ceiling when developing the partition specification.

The relevant maximum height is the greater of the floor to CasoLine MF ceiling or ceiling to structural soffit height. Care should be taken during installation of tall partitions so as to not adversely affect their performance.

Door openings

The designer should consider the thickness tolerances of the partition types in relation to the proposed door frame detail. To satisfy *BS 5234: Part 2* requirements for Heavy and Severe Duty Rating partitions, door framing should be specified. The door manufacturer should also be consulted in relation to the door detail.

▶ Refer to Partitions introduction C04. S01. P14 – construction detail 26

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. The openings should be constructed using established metal stud procedures.

▶ Refer to Partitions introduction C04. S01. P16 – construction detail 28-31

Cavity fire barriers

Stone mineral wool (by others) cut neatly to fit across the cavity forms a suitable closure.

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. Consideration also needs to be given to the services themselves so they do not act as the mechanism of fire spread or sound transmission.

▶ Refer to C02. S01. P32 – 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. Refer to Partitions introduction C04. S01. P07 – construction detail 2. Switch boxes and socket outlets can be supported from Gypframe 99 FC 50 Fixing Channel fixed horizontally between studs, or a high performance socket box detail used where higher acoustic performance is required.

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 Partitions introduction C04. S01. P17 – construction details 29-31.

GypWall QUIET IWL design (continued)

Deflection heads

Performance details apply to fixed head constructions. 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.

For special detailing that minimises the loss of acoustic performance:

▶ Refer to C02. S01. P10 – Building acoustics.

For deflection head design:

▶ Refer to construction detail 7 within this section.

Fixtures

Lightweight fixtures can be made directly to the partition linings. Medium weight fixtures can be made to Gypframe 99 FC 50 Fixing Channel. Heavyweight fixtures (to *BS 5234*) such as wash basins and wall cupboards, can be fixed using plywood secured by Gypframe Service Support Plates.

▶ Refer to C02. S01. P33 – Service installations.

Board finishing

▶ Refer to C08. S01. P02 – Finishes.

Tiling

Tiles can be applied to the surface of lightweight partition systems.

▶ Refer to C08. S04. P02 – Tiling

Robust detail E-WS-2

If using **GypWall QUIET IWL** as a Robust Detail compliant solution, refer to the Robust Detail Handbook for principles. Further information can be found at robustdetails.com or in **HomeSpec, The White Book Residential Specification Guide**

Important information

If using **GypWall QUIET IWL** as Robust Details specification E-WS-2, note the additional good practice installation guidance provided:

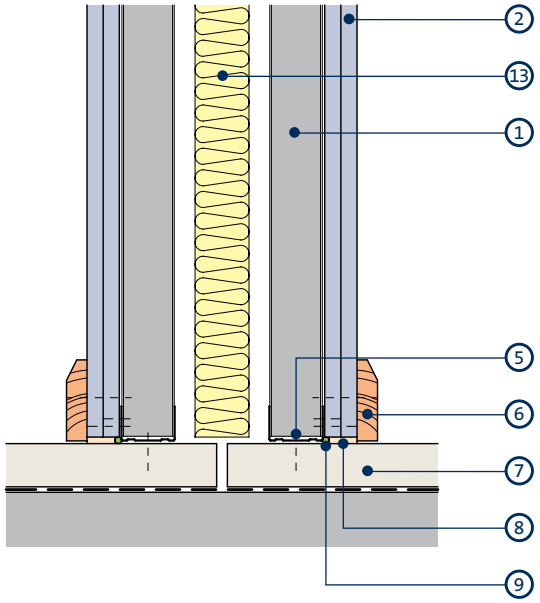
- Keep wall linings at least 190mm apart
- Ensure that the quilt covers the whole wall area without gaps
- Make sure the quilt is compressed by twin frames
- Make sure there is no connection between the two leaves
- Stagger joints in wall linings to avoid air paths
- Seal all joints in outer layer with tape or caulk with sealant
- Follow the manufacturer's instructions

SpecSure®

All our systems are covered by **SpecSure®** when using genuine British Gypsum and Saint-Gobain Isover products.

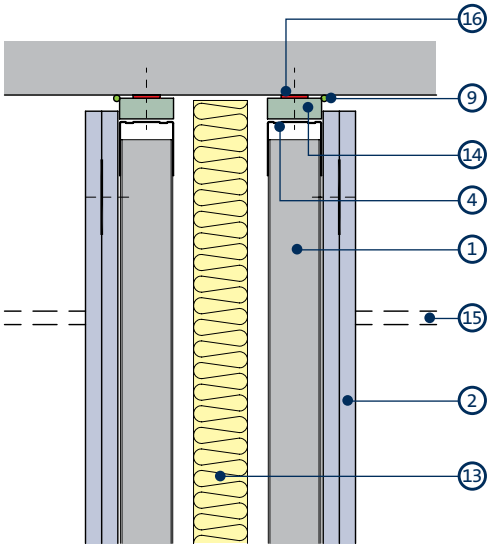
GypWall QUIET IWL construction details

1



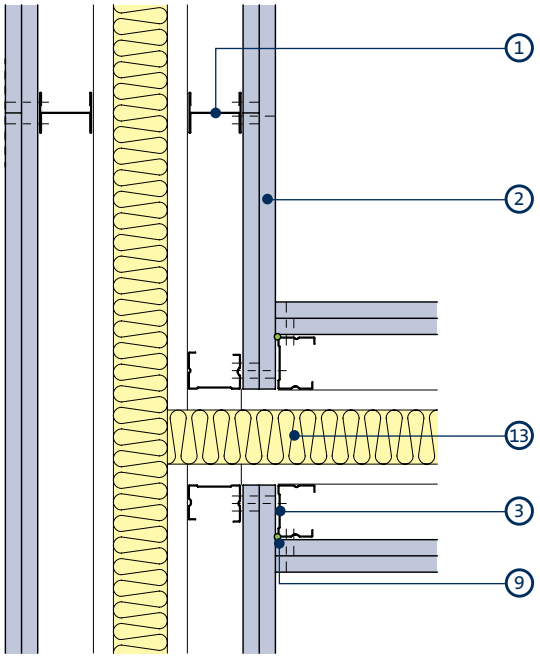
Base on concrete floor with screed

2



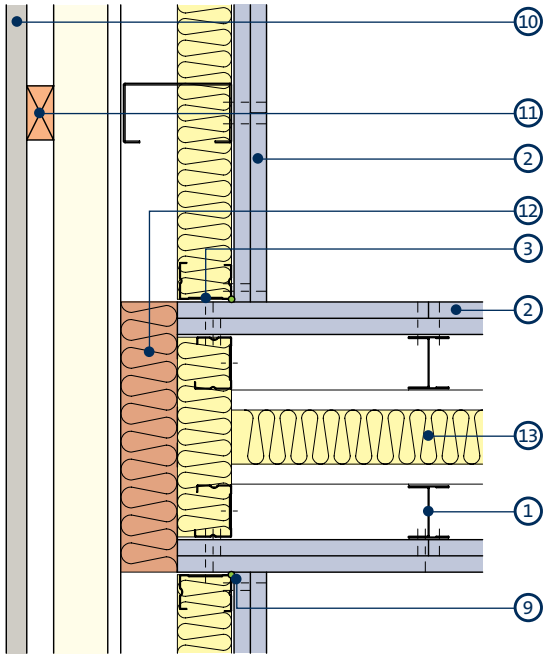
25mm deflection head - up to 60 minutes fire resistance

3



'T' junction

4

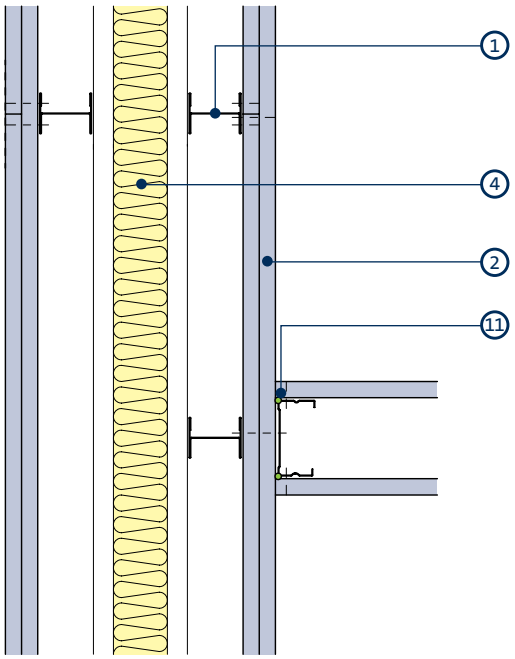


Junction with external wall when acoustic performance is a key consideration - Helps reduce flanking transmission

1 Gypframe 'I' Stud
2 Gyproc SoundBloc
3 Gypframe 'C' Stud
4 Gypframe Deep Flange Floor & Ceiling Channel
5 Gypframe Folded Edge Standard Floor & Ceiling Channel
6 Skirting
7 Screed on DPC
8 Bulk and fill with Gyproc jointing materials
9 Gyproc Sealant
10 External Cladding
11 External wall stud framework
12 Cavity barrier (subject to regulatory requirements)
13 Isover Acoustic Partition Roll (APR 1200)
14 Gyproc CoreBoard or Glasroc F FIRECASE
15 Imperforate ceiling
16 Gyproc FireStrip

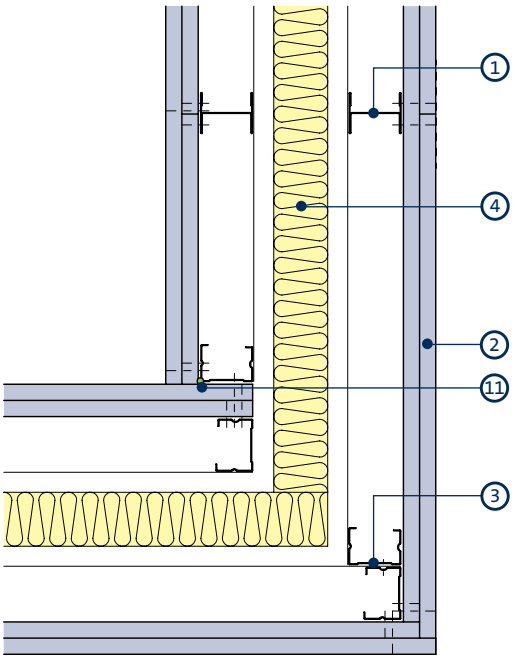
GypWall QUIET IWL construction details (continued)

5



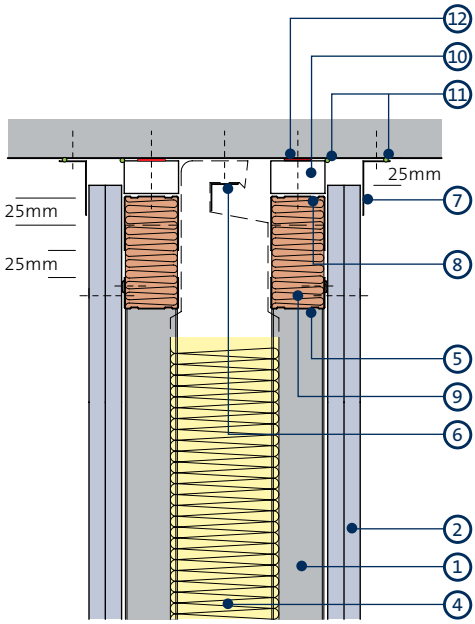
'T' junction with **GypWall CLASSIC** partition

6



Corner

7

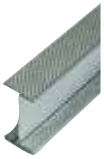


25mm deflection head - 90 or 120 minute fire resistance

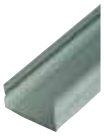
1 Gypframe 'I' Stud
2 Gyproc SoundBloc
3 Gypframe 'C' Stud
4 Isover Acoustic Partition Roll (APR 1200)
5 Gypframe Folded Edge Standard Floor & Ceiling Channel
6 Gypframe Steel Angle or timber batten
7 Gypframe GA4 Steel Angle
8 Gypframe Deep Flange Floor & Ceiling Channel
9 Stone mineral wool (by others)
10 Glasroc F FIRECASE
11 Gyproc Sealant
12 Gyproc FireStrip

GypWall QUIET IWL system components

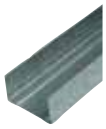
Gypframe metal components (▶ Refer to C10. S02. P02 for details)



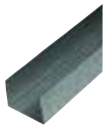
Gypframe 'I' Studs (48 I 50, 60 I 50, 60 I 70, 70 I 50, 70 I 70, 92 I 90, 146 I 80)
Enhanced strength stud that allows for increased partition height, without increasing partition width. Designed to receive fixing of board to one side only.



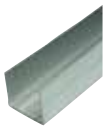
Gypframe 'C' Studs (48 S 50, 60 S 50, 70 S 50, 70 S 60, 92 S 50, 92 S 60, 92 S 10, 146 S 50)
Vertical stud. Used at abutments and openings.



Gypframe Folded Edge Standard Floor & Ceiling Channels (50 FEC 50, 62 FEC 50, 72 FEC 50, 94 FEC 50, 148 FEC 50)
Standard floor and ceiling channels for retaining the Gypframe studs at floor and ceiling junctions and around openings to heights not exceeding 4200mm.

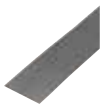


Gypframe Deep Flange Floor & Ceiling Channels (50 DC 60, 62 DC 60, 72 DC 60, 94 DC 60, 148 DC 60)
Floor and ceiling channels with deep flanges for retaining the Gypframe studs at floor and ceiling junctions for partitions 4200mm to 8000mm high. Also used around openings and in deflection heads (maximum 30mm deflection).



Gypframe Extra Deep Flange Floor & Ceiling Channels (50 EDC 70, 72 EDC 80, 94 EDC 70, 148 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).

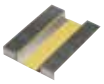
Gypframe 99 FC 50 Fixing Channel
A versatile metal fixing channel used to support medium weight fixtures on walls.



Gypframe GFS1 Fixing Strap
Used to support horizontal board joints and within deflection heads.

Gypframe GA5 Internal Fixing Angle
Steel angle providing framing stability and board support.

Gypframe GA6 Splayed Angle
Steel angle providing framing stability and board support.



Gypframe Service Support Plate
For installation of 18mm plywood within a partition cavity to support medium to heavyweight fixtures.

Board products continued (▶ Refer to C10. S03. P02 for details)

Gyproc SoundBloc[1,2]
Gypsum plasterboard with a high density core for enhanced sound insulation performance.

Gyproc FireLine[1]
Gypsum plasterboard with fire resistant additives.

Gyproc DuraLine[1,2]
Gypsum plasterboard with fire resistant additives and a high density core for enhanced sound insulation and impact resistance performance.

Glasroc F FIRECASE
Non-combustible glass-reinforced gypsum board used to form deflection head.

Gyproc CoreBoard
Gypsum plasterboard with fire and moisture resistant additives. Used to form deflection head.

[1] Also available in a Moisture Resistant (MR) version. MR boards are specified in intermittent wet use areas.
[2] Also available with ACTIV*air* technology.

GypWall QUIET IWL system components (continued)

Fixing products (▶ Refer to C10. S04. P02 for details)

British Gypsum Drywall Screws
Corrosion resistant self-tapping steel screws for fixing board to metal framing less than 0.8mm thick ('I' studs less than 0.6mm thick).

British Gypsum Jack-Point Screws
Corrosion resistant self-tapping steel screws for fixing board to metal framing 0.8mm thick and greater ('I' studs 0.6mm thick and greater).

British Gypsum Collated Drywall Screws
Corrosion resistant self-tapping steel screws for fixing board to metal framing less than 0.8mm thick ('I' studs less than 0.6mm thick).

British Gypsum Wafer Head Jack-Point Screws
Corrosion resistant self-tapping steel screws for fixing metal to metal framing 0.8mm thick and greater ('I' studs 0.6mm thick and greater).

British Gypsum Wafer Head Drywall Screws
Corrosion resistant self-tapping steel screws for fixing metal to metal framing 0.8mm thick ('I' studs less than 0.6mm thick).

Plasterboard accessories (▶ Refer to C10. S05. P02 for details)

Gyproc Jointing Materials
Jointing compounds, ready mixes and adhesives for reinforcement and finishing of board joints. Primers and sealers for treatment of boards for pre-decoration.

Gyproc edge and angle beads
Protecting and enhancing board edges and corners

Gyproc Corner Tape
A paper tape bonded to two corrosion resistant steel strips.

Gyproc Joint Tape
A paper tape designed for reinforcement of flat joints or internal angles.

Gyproc FireStrip
A soft extruded linear intumescent gap sealer to maintain fire resistance located directly to the underside of the soffit when forming a deflection head.

Gyproc Sealant
Used to seal air paths for optimum sound insulation.

Gyproc Control Joint
To accommodate structural movement of up to 7mm.

Finishing products (▶ Refer to C10. S06. P02 for details)

Thistle MultiFinish
To provide a plaster skim finish on most common backgrounds including undercoat plasters and plasterboard. Can provide enhanced acoustic performance.

Thistle SprayFinish
To provide a plaster skim finish by spray or hand application, ideal for medium to large projects.

Thistle BoardFinish
To provide a plaster skim finish to Gyproc plasterboards.

Thistle DuraFinish
To provide a plaster skim finish and provide up to 60% tougher resistance to accidental damage.

GypWall QUIET IWL system components (continued)

Finishing products continued (▶ Refer to C10. S06. P02 for details)

Thistle PureFinish
To provide a plaster skim finish with ACTIV*air* technology. Used to finish most common backgrounds including undercoat plasters and plasterboard.

Thistle Magnetic Plaster
To provide a plaster skim finish that provides an attraction to magnets used to finish a wide range of backgrounds, including undercoat plasters and plasterboard.

Thistle ProTape FT50
Self-adhesive 48mm wide glass fibre mesh tape.

Plaster accessories
Designed for the reinforcement and finishing of board joints before plaster skimming.

Thistle ProTape FT100
Self-adhesive 100mm wide glass fibre mesh tape.

Insulation products (▶ Refer to C10. S09. P02 for details)

Isover Acoustic Partition Roll (APR 1200)
Glass mineral wool for enhanced acoustic and thermal performance.

GypWall QUIET IWL installation overview

This is intended to be a basic description of how the system is built.
For detailed installation guidance refer to the **British Gypsum Site Book.**

Gypframe Floor & Ceiling Channels are suitably fixed to the floor and soffit in two rows.

Gypframe 'C' Studs are suitably fixed to abutments in two rows.

The perimeter of each frame is then sealed with Gyproc Sealant.

Gypframe 'I' Studs are then friction fitted into the Gypframe Channels at the required centres.

Door openings are constructed to the Heavy and Severe Door Duty Rating detail.

M&E services can be located within the partition cavity.

Isover Acoustic Partition Roll (APR 1200) is added to the partition cavity.

Gyproc plasterboards are then fixed to the Gypframe framework with British Gypsum Drywall Screws and British Gypsum Jack-Point Screws.

Additional information

For full installation details, refer to the **British Gypsum Site Book**, available to download from british-gypsum.com