



This section includes updated information, added since it was first published in December 2015.

**Last updated 10/06/2019**

# **C05. S04. P02 – P10**

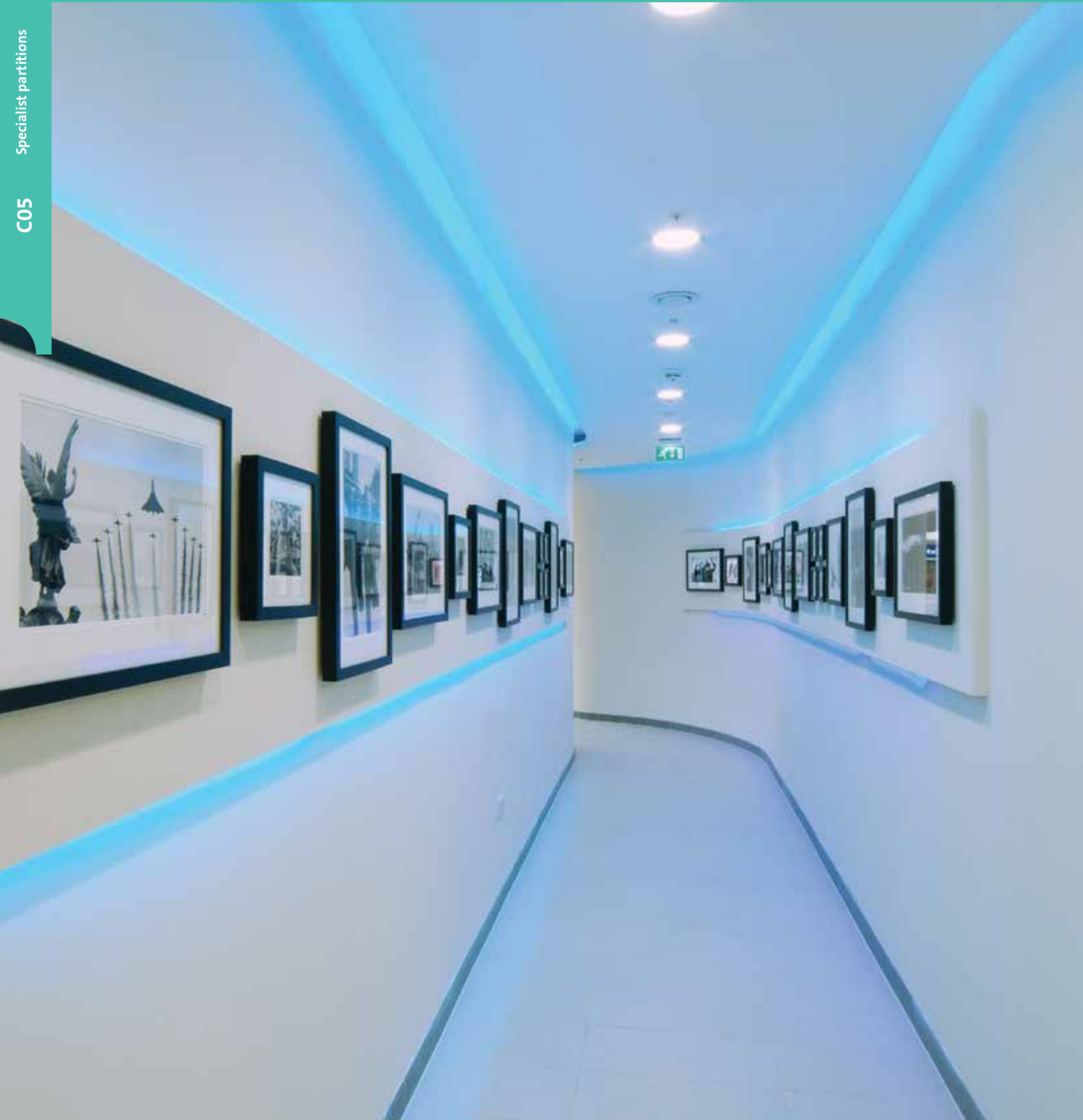
## **GypWall CURVE**

**Including C05. S01. P02**

**Specialist partitions introduction**

## Specialist partitions






This section details specialist lightweight systems where high-security, curved, fire or blast resistant partitions are required



## Specialist partitions

This section contains our solutions that have performances above and beyond the usual project requirements. Examples are enhanced security, aesthetic appeal and explosion protection.

The systems included in this section are:

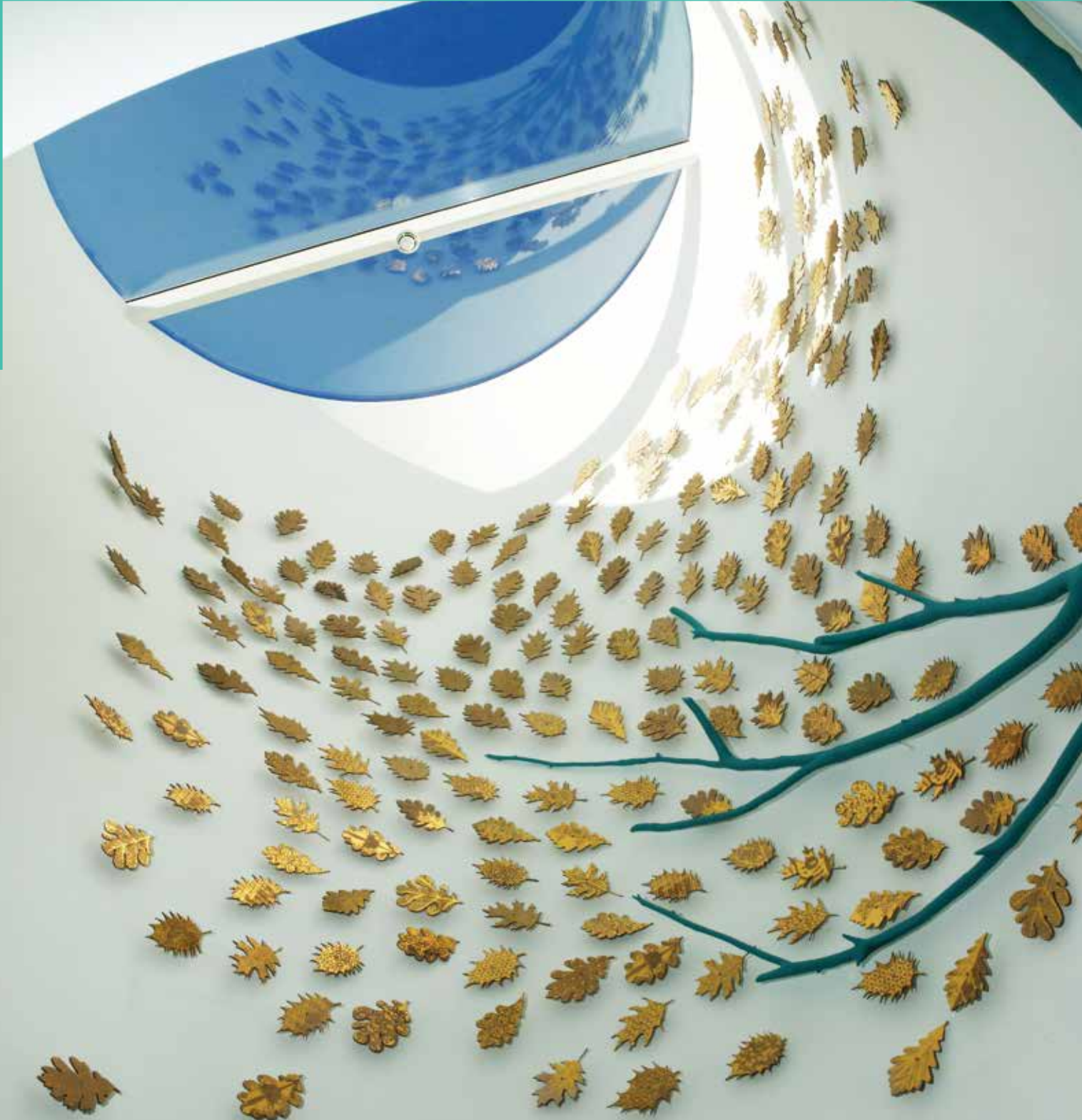
Specific performance	System	Description	Page
	ShaftWall	Lightweight, fire resistant structure to protect vertical or horizontal elements in confined spaces, where access is limited to one side only	C05.S02.P02
	FireWall	Lightweight wall capable of providing up to 240 minutes fire resistance	C05.S03.P02
	GypWall <b>curve</b>	Specifically designed to provide curved walls and linings with a high degree of design flexibility. Ideal for creating imaginative spaces with great aesthetic impact	C05.S04.P02
	GypWall <b>secure</b>	Lightweight security wall, offering high resistance to determined attack	C05.S05.P02
	BlastWall	High performance blast refuge system offering resistance to explosive devices	C05.S06.P01

# GypWall CURVE

Curved partition and wall lining system



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



# GypWall CURVE

**GypWall CURVE** is a lightweight system specifically designed to provide curved walls and linings down to a radius of 600mm. This system provides a high degree of design flexibility and can be used to create imaginative spaces with great aesthetic impact.

## Key benefits

- Cost-effective and easy-to-install solution compared to other forms of construction due to the innovative Gypframe 72 EDCL 80 Curveliner Channel and its expandable outer flange
- Compatible with other **GypWall** partition systems - only the Gypframe 72 EDCL 80 Curveliner Channel is unique to this system, minimising the number of components required on site
- No need for a curved timber template for laying out
- Can be installed as a lining to existing structures by using Gypframe 'T' Studs and boarding to one side only
- A smooth seamless finish is achieved through the use of our range of Thistle finish plasters



**Table 1 – Minimum bending radii and stud centres. Horizontal board orientation.**

Board type	Thickness mm	Minimum radius mm <sup>1</sup>	Stud centres mm <sup>2</sup>
Glasroc F MULTIBOARD	6	600	300
	10	2500	300
	12 (2 x 6)	600	300
	12.5	2700	300
Gyproc WallBoard	9.5	1800	300
	12.5	3600	300
	15	4800	300
Gyproc FireLine	12.5	4800	300
	15	5700	400
Gyproc SoundBloc	12.5	2900	300
	15	3600	300
Gyproc SoundBloc F	15	5700	400
Gyproc DuraLine	15	5700	400
Glasroc H TILEBACKER	6	600	300

<sup>1</sup> Concave or convex.

<sup>2</sup> For any radius 7000mm or more, studs can be installed at 600mm centres irrespective of board type with the exception of 6mm Glasroc F MULTIBOARD. Boards may be orientated vertically.

**NB** Double layer specifications can be used if required to meet specific performance criteria.

**Table 2 – Recommended maximum heights using Glasroc F MULTIBOARD**

Stud type	1 x 6mm each side <sup>1</sup>	2 x 6mm each side	1 x 10mm each side	2 x 10mm each side
Single 70 S 50	3400	3600	3500	4200
Boxed 70 S 50	3700	3900	3800	4500
Single 70 S 60	3600	3700	3700	4400
Single 70 AS 50	3700	3800	3800	4400
Boxed 70 S 60	3900	4100	4000	4600
Boxed 70 AS 50	4000	4100	4100	4700
Single 70 I 50	3900	4100	4000	4600
Single 70 I 70	4500	4500	4500	5000

<sup>1</sup> Studs at maximum 300mm centres. Gypframe 72 EDCL 80 should be used at head and base. Refer to table 1 for minimum bending radii and stud centres.



## Important information

For maximum heights using different stud types, refer to the '600mm centres' column within Partitions Introduction C04. S01. P05 – table 2. Studs should be constructed to 300 / 400mm centres as indicated by board type shown above in table 1.



## Important information

When installing a curve lining with board to one side only, Gypframe 'I' Studs must be used. Gypframe 'C' Studs may only be used when board is installed to both sides.

► Refer to C07. S05. P02 – GypLyner iwl



## Building design

GypWall CURVE comprises 70mm Gypframe Studs within Gypframe 72 EDCL 80 Curvelynner Channel.

## Planning – key factors

The positioning of vertical board joints on exposed board layers at the apex of the curve should be avoided. The positioning of all studs, therefore, needs to be determined at the design stage. Where straight runs occur within curved partitions or linings, stud centres can be increased as determined by the specification, once 600mm off the curve.

## Fixing floor and ceiling channels

Gypframe 72 EDCL 80 Curvelynner Channels must be securely fixed in two lines at 300mm centres in each line. 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

To extend studs, overlap by 600mm (minimum). Fix together using British Gypsum Wafer Head Drywall Screws or steel pop rivets (two to each flange), or by using the Gyproc Stud Interlocking Tool twice to each flange.

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

## 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.

## Cavity barriers

Minimum 12.5mm Gyproc plasterboard or Glasroc F MULTIBOARD can be used to form a cavity closure within the partition to prevent the spread of fire or smoke.

▶ Refer to C06. S07. P02 – Cavity barriers.

## Moisture resistance

Glasroc H TILEBACKER can be used as a substrate for tiling, but should not be exposed to running water. Care should be taken not to over tighten screws when fixing boards and all screw heads should be fully filled with adhesive.

## Fire resistance

There is no specific standard against which to test curved walls and linings, but adhoc testing has been carried out which indicates that a slight downgrade in performance may occur compared to that claimed for the straight partition. This will depend on the system selected, e.g. board specification and radius, and in some instances

a downgrade in resistance level may not occur. For specification purposes the worst case scenario is a 30 minute downgrade, e.g. for 30 minutes select a 60 minutes board specification.

## Impact resistance

Glasroc F MULTIBOARD offers a high degree of impact resistance. It also has excellent mechanical properties, is not brittle and therefore is not prone to cracking or shattering when handled.

## Degree of curvature

In common with other sheet materials, board-ends have a tendency to remain straight. The minimum radius, therefore, will be influenced by the board characteristics, the length of curve, the support centres, and the occurrence of board joints.

## Sound insulation

Reducing the centres of the metal studs within GypWall CURVE can have a detrimental effect on sound insulation. Include 25mm Isover Acoustic Partition Roll (APR 1200) in the cavity for optimised acoustic performance.

▶ Refer to C02. S01. P30 – Robustness.

## 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.

Where Gypframe AcouStuds are used, services are routed through 50mm x 28mm 'H' shaped push-outs, at the same centres as shown in Partitions Introduction C04. S01. P07 – construction detail 2a for conventional cut-outs. Cables should be protected by conduit, or other suitable precautions taken to prevent abrasion when they pass through the metal frame.

### 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 CURVE design (continued)

### Fixtures

Lightweight fixtures can be made directly to the partition linings.

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

### Board finishing

A superior finish is easily achieved by applying Thistle skim coat plaster finish.

- ▶ Refer to C08. S01. P02 – Finishes.

### Tiling

Tiles up to 32kg/m<sup>2</sup> can be applied to the surface of lightweight partition systems.

- ▶ Refer to C08. S04. P02 – Tiling.



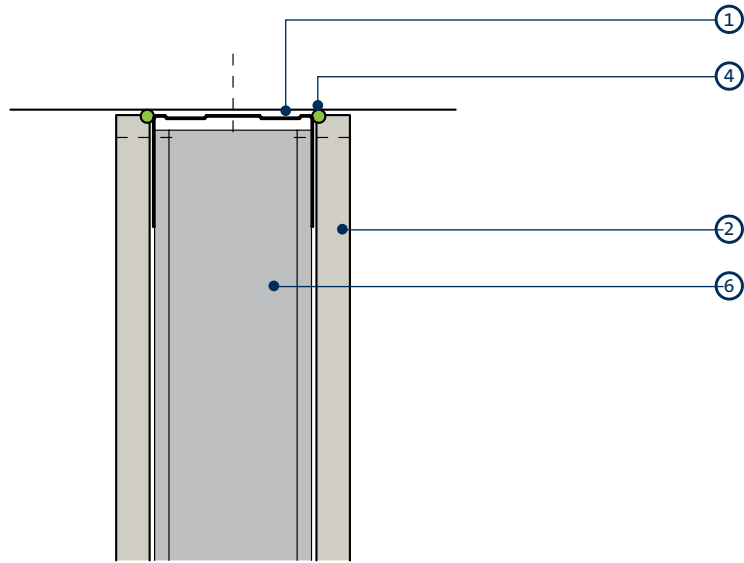
SpecSure®

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



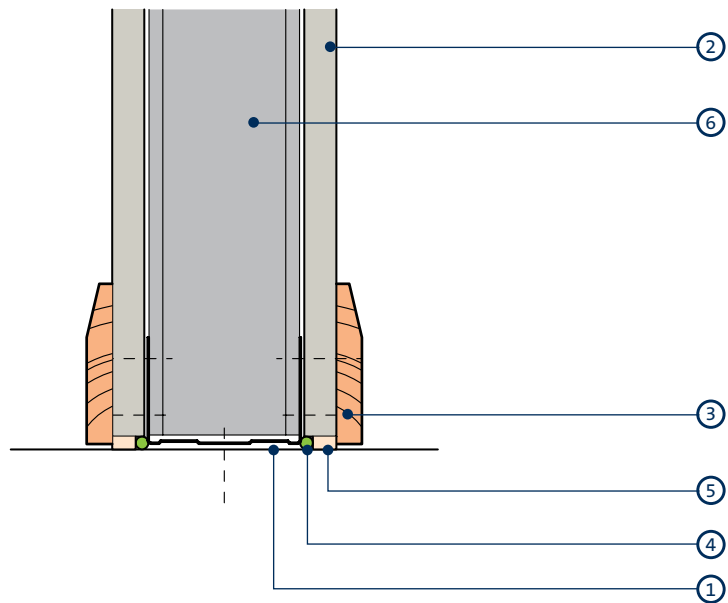
# GypWall CURVE construction details

1



Head

2



Base

1 Gypframe 72 EDCL 80 Curvelyner Channel

2 Gyproc plasterboard or Glasroc F MULTIBOARD or Glasroc H TILEBACKER

3 Skirting

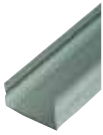
4 Gyproc Sealant

5 Bulk fill with Gyproc jointing materials (where gap exceeds 5mm)

6 Gypframe Studs

## GypWall curve system components

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



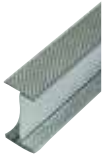
#### Gypframe 'C' Studs (70 S 50, 70 S 60)

Vertical stud providing acoustic and structural performances designed to receive fixing of board to both sides.



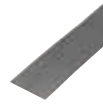
#### Gypframe 72 EDCL 80 Curvelyner Channel

A flexible metal channel with expandable outer flanges for retaining wall studs at floor and ceiling junctions.



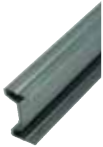
#### Gypframe 'I' Studs (70 I 50, 70 I 70)

Enhanced strength stud that allows for greater partition height, without increasing partition width. Designed to receive fixing of board.



#### Gypframe GFS1 Fixing Strap

Used to support horizontal board joints.



#### Gypframe AcouStud (70 AS 50)

Acoustically enhanced vertical stud designed to receive fixing of board to both sides.

### Board products (► Refer to C10. S03. P02 for details)



#### Glasroc F MULTIBOARD

Non-combustible glass-reinforced gypsum board.



#### Gyproc FireLine<sup>1</sup>

Gypsum plasterboard with fire resistant additive.



#### Glasroc H TILEBACKER

Non-combustible glass-reinforced gypsum board with a water resistant pre-primed acrylic coating to receive tiling.



#### Gyproc SoundBloc F

Gypsum plasterboard with fire resistant additives and a high density core for enhanced sound insulation performance.



#### Gyproc SoundBloc<sup>1</sup>

Gypsum plasterboard with a high density core for enhanced sound insulation performance.



#### Gyproc Duraline<sup>1</sup>

Gypsum plasterboard with fire resistant additives and a high density core for enhanced sound insulation and impact resistance performance.



#### Gyproc WallBoard<sup>1</sup>

Standard gypsum plasterboard.

<sup>1</sup> Also available in a Moisture Resistant (MR) version. MR boards are specified in intermittent wet use areas.

## GypWall CURVE 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 less than 0.8mm thick ('I' studs less than 0.6mm thick).

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



#### Gyproc edge and angle beads

Protecting and enhancing board edges and corners



#### Gyproc Sealant

Used to seal air paths for optimum sound insulation.



#### Gyproc Joint Tape

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

### 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.



#### ThistlePro PureFinish

To provide a plaster skim finish with **ACTIVair** technology. Used to finish most common backgrounds including undercoat plasters and plasterboard. For more information refer to C02. S01. P49.



#### Thistle BoardFinish

To provide a plaster skim finish to Gyproc plasterboards.



#### ThistlePro Magnetic

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.



#### ThistlePro DuraFinish

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

## GypWall curve system components (continued)

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

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**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.

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**Thistle ProTape FT100**

Self-adhesive 100mm wide glass fibre mesh tape.

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

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**Isover Acoustic Partition Roll (APR 1200)**

Glass mineral wool for enhanced acoustic and thermal performance.

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# GypWall curve installation overview

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



Gypframe 72 EDCL 80 Curvellyner Channels are suitably fixed to the floor and soffit, bent by hand to suit the required radius.



Gypframe 'C' Studs are suitably fixed to abutments.



The perimeter of the partition is then sealed on both sides with Cyproc Sealant.



Gypframe studs are fitted and fixed into the Gypframe 72 EDCL 80 Curvellyner Channels at the required centres. If a deflection head is required, the studs should not be fixed into the head channel and alternative temporary support may be required to stabilise the stud at the head whilst boarding proceeds.



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



Isover Acoustic Partition Roll (APR 1200) insulation can also be included within the partition cavity for optimised acoustic performance.



Gyproc plasterboards or Glasroc specialist boards are then fixed to the Gypframe framework with British Gypsum Drywall or Jack-Point Screws. The plasterboards are fixed horizontally, with all joints staggered. Additional studs may be required where multiple layers are specified to account for the difference that arises between inner and outer radii.



For best results Thistle plaster is applied with firm pressure, built out to the required thickness in two applications and trowelled to a smooth matt finish. Good site practice should be followed, as outlined in *BS EN 13914 - 2: Design Considerations and Essential Principles for Internal Plastering*.



## Additional information

For full installation details, refer to the **British Gypsum Site Book**, available to download from [british-gypsum.com](http://british-gypsum.com)