

GypWall™

CURVE



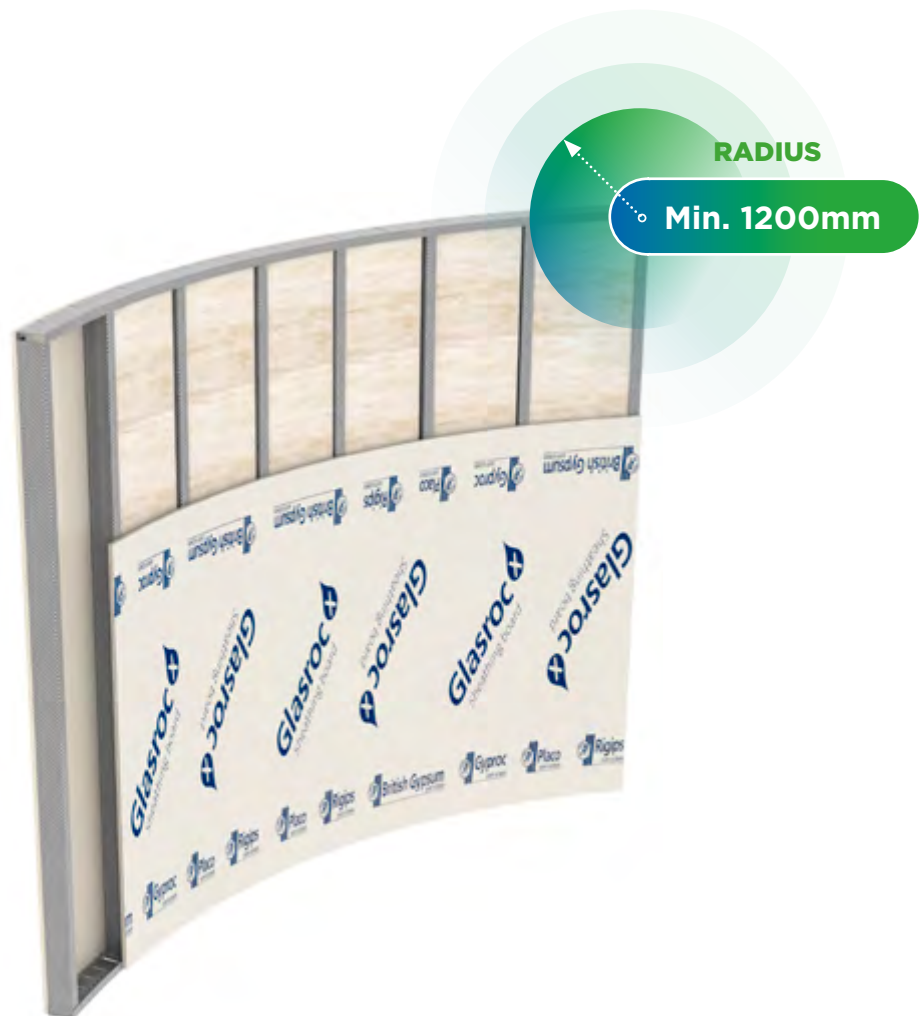
Curved partition and
wall lining system



Capital Gate Hyatt Hotel
Abu Dhabi

GypWall CURVE

GypWall CURVE is a highly cost-effective system designed to provide curved walls and linings. This system can be installed in all types of buildings to deliver design flexibility and aesthetic impact.



Key Benefits



Minimum radius 1200mm



Choice of linings to suit performance requirements and to maintain continuity



Gypframe channel can be easily shaped to radius



Boards can be jointed in the normal way



Eligible for the SpecSure warranty from Gyproc

System components

Gypframe metal components



Gypframe 'C' Studs

(50 S 50, 70 S 50, 92 S 50, 150 S 50)
Vertical stud providing acoustic and structural performances designed to receive fixing of board to both sides



Gypframe 'I' Studs

(70 I 70, 100 I 80, 150 I 90)
Enhanced strength stud that allows for increased partition height, designed to receive fixing of board



Gypframe Standard Floor & Ceiling Channels

(52 C 50, 72 C 50, 94 C 50, 102 C 50, 152 C 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

(52 DC 60, 72 DC 60, 94 DC 60, 102 DC 60, 152 DC 60)
Floor and ceiling channels with deep flanges for retaining the Gypframe studs at floor and ceiling junctions for partitions 4200mm to 8000mm high. Also used around openings and in deflection heads (maximum 30mm deflection)



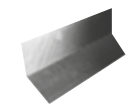
Gypframe Extra Deep Flange Floor & Ceiling Channels

(52 EDC 80, 72 EDC 80, 94 EDC 80, 102 EDC 80, 152 EDC 80)
Floor and ceiling channels with extra deep flanges for retaining the Gypframe studs at floor and ceiling junctions for partitions over 8000mm high. Also used around openings and in deflection heads (maximum 50mm deflection)



Gypframe GFS1 Fixing Strap

Used to support horizontal board joints and within deflection head



Gypframe GA6 Splayed Angle

Steel angle providing framing stability and board support

Board products



Gyproc Regular^{1, 2, 3}

(9, 12.5, 15mm)
Standard gypsum plasterboard



Gyproc DuraLine^{1, 2, 3}

(15mm)
Gypsum plasterboard with fire resistant additives and a high density core for enhanced sound insulation and impact resistance performance



Gyproc FireStop^{1, 2, 3}

(12.5, 15mm)
Gypsum plasterboard with fire resistant additives



Gyproc Habito²

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



Gyproc SoundBloc^{1, 2}

(12.5, 15mm)
Gypsum plasterboard with a high density core for enhanced sound insulation performance



Glasroc X²

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

¹ Moisture resistant (MR) versions of the above boards are specified in intermittent wet use areas, e.g. shower cubicles

² Available with Activ'Air technology

³ Available with M2TECH technology



System components (continued)

Fixing products



Gyproc Drywall Screws

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



Gyproc Habito Screws

Corrosion resistant self-tapping screw with counter sunk cross heads specifically used for fixing Gyproc Habito plasterboard to Gypframe 'C' Stud and 'I' Stud



Gyproc Jack-Point Screws

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



Gyproc Wedge Anchor

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



Gyproc Waferhead Screws

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



Gyproc Waferhead Jack-Point Screws

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



Gyproc Hammer Fix

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

Plasterboard accessories



Gyproc Jointing Compound

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



Gyproc Paper Tape

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



Gyproc FireStrip

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



Gyproc Fibre Tape

Suitable for flat joint reinforcement



Gyproc Sealant

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



Glasroc X Tape

Suitable for internal and semi-exposed applications when used in conjunction with Glasroc X, MR and M2TECH range of boards

System components (continued)

Corners



Habito Flex 83

Adjustable and superior corner reinforcement that uses structural laminate technology for ultimate impact protection



Levelline Flex

Adjustable corner reinforcement that flexes to any angle and gives high levels of impact protection



Gyproc Drywall Corner Bead

Provides corner reinforcement and protection to plasterboards and plasters



Gyproc Drywall Metal Edge Bead

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

Insulation products



ISOVER Eco

Acoustic Partition Roll (APR)

(25, 50, 75 and 100mm)*
Non-combustible glass mineral wool roll for sound insulation in partitions, linings and ceiling systems

Minimum density: 16 kg/m³



KIMMCO ISOVER

Stone mineral wool

(50 and 70mm)*
For fire stopping, where required

Minimum density: 33 kg/m³

* Available in other thickness and density

Installation overview



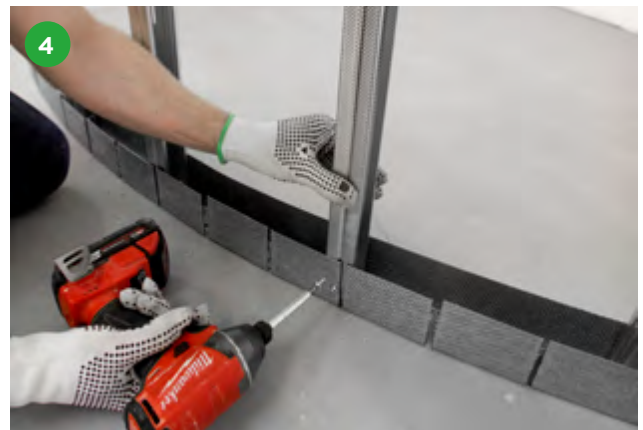
Gypframe Extra Deep Channel is cut and bent on-site to the required radius to achieve a smooth and un-faceted line.



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



Gypframe studs are fitted vertically within channel sections, and to abutments to form the framework.



Gypframe studs are fixed into the channel at both head and base and must all face the same way. If a deflection head is required, the studs should not be fixed into the head channel.



Gyproc plasterboard / Glasroc specialist boards are then fixed to the Gypframe framework with Gyproc Drywall Screws.



Boards are fixed horizontally. Stagger board joints and avoid vertical joints occurring on the apex of the curve.

Design

Table 1 – Minimum bending radii and stud centres

Board type	Thickness mm	Minimum radius ¹ mm	Stud centres mm ²
Glasroc X	12.5	1200	300
Gyproc Regular	9	1800	300
	12.5	3600	300
	15	4800	300
Gyproc SoundBloc	12.5	2900	300
	15	3600	300
Gyproc FireStop	12.5	4800	300
	15	5700	400
Gyproc Habito	12.5	6000	400
	15	7000	400
Gyproc DuraLine	15	5700	400
Aqaroc FC	6	1400	300
	9	3000	300
	12	6000	400
	15	7000	600

¹ Concave or convex.

² For any radius 7000mm or more, studs can be installed at 600mm centres irrespective of board type with the exception of 6mm Aqaroc FC and 9mm Gyproc Regular plasterboard.

NB To help maintain a uniform curve, or to meet specific performance criteria, multiple layer specifications can be used.

Planning – key factors

GypWall CURVE comprises Gypframe 'C' Studs installed within carefully snipped Gypframe Floor & Ceiling Channels. 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 Floor & Ceiling Channels must be securely fixed in two lines at 300mm centres. If the floor is uneven, a 38mm thick timber sole plate equal to the width of the channel should be used.

If the concrete or screeded floor is new and still damp, consideration should be given to the installation of a damp-proof membrane between the floor surface and the channel or sole plate.

Splicing

To extend studs, overlap by 600mm (minimum) and fix together using Gyproc Waferhead Screws. Refer to construction detail 17, 18 & 19 - GypWall CLASSIC on page 85.

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 Building acoustics for further information.

Cavity barriers

Minimum 12.5mm Gyproc plasterboard, screw-fixed into the web of perimeter channels or vertical studs, will provide a satisfactory closure to flame or smoke.

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

Deflection heads

Deflection heads should follow the principles of straight partitions but incorporate multiple layers of Glasroc X to form the firestop above the head channel, cut to required curve. Alternatively, multiple layers of plywood may also be used for 60 minute rated partitions. For higher rated systems, please contact the Gyproc Technical Team.

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. In order to help maintain a uniform curve, or to meet specific performance criteria, multiple layer specifications can be used.

Sound insulation

Reducing the centres of the metal studs within GypWall CURVE can have a detrimental effect on sound insulation. Include 25mm ISOVER Eco APR in the cavity for optimised acoustic performance.

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 Service installations for further information.

Electrical

The installation of electrical services should be carried out in accordance with BS 7671 or other equivalent international standard. The service cut-outs in the studs can be used for routing electrical and other small services. Refer to GypWall CLASSIC - construction detail 1 on page 82. Cables should be protected by

Design (continued)

flexible conduit, or other suitable precautions taken to prevent abrasion when they pass through the metal frame. Service cut-outs should be aligned to allow easy installation of service. If studs require cutting, cut from the same end of each stud to ensure cut-out alignment.

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 GypWall CLASSIC - construction details 33-35 on pages 91-92.

Fixtures

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

Board finishing

Refer to Finishing systems on page 298.

Tiling

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

Mold & moisture protection

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

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

Air quality

Consideration should be given to specifying plasterboard linings that, in addition to the performances listed in the preceding table on pages 72-79 of GypWall CLASSIC (covering fire, acoustic, duty rating etc), actively absorb harmful volatile organic compounds (VOC's) such as formaldehyde, from the atmosphere. Where additional protection against VOC's is required, then Activ'Air versions of the boards listed in these pages should be specified - for example Gyproc SoundBloc Activ'Air.

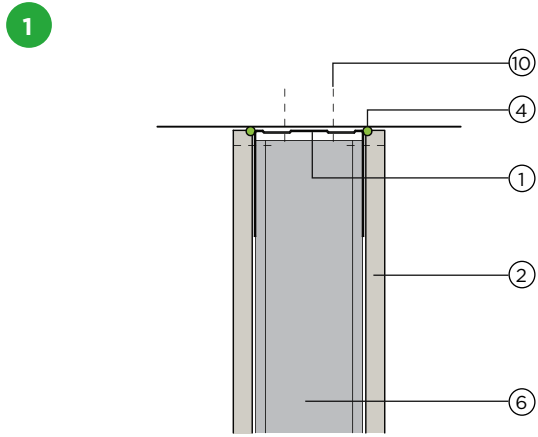
Using Activ'Air versions of any of the plasterboard linings

listed in the performance tables, will not affect the fire, acoustic, height or robustness performances listed.

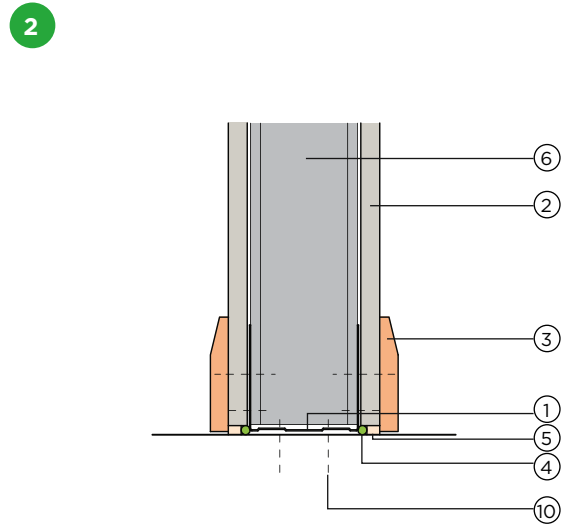
Construction details

For GypWall construction details, refer to the construction details shown on page 102. For more typical or example details, please contact the Gyproc Technical Team.

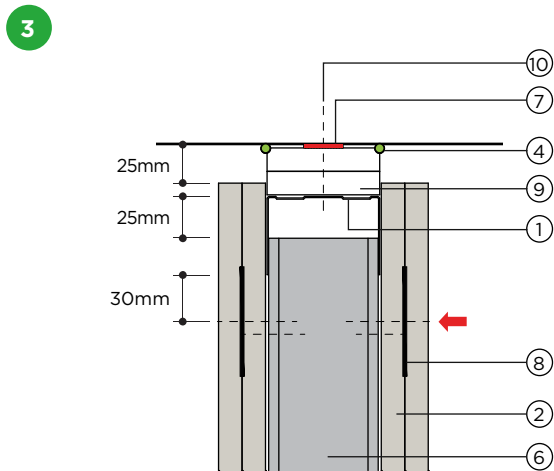
Construction details



Head detail



Base detail



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

- | | |
|--|--|
| 1. Gypframe Channel | 6. Gypframe 'C' Stud |
| 2. Gyproc plasterboard or Glasroc specialist board | 7. Gyproc FireStrip (continuous) |
| 3. Skirting | 8. Gypframe GFS1 Fixing Strap |
| 4. Gyproc Sealant | 9. Two layers of 12.5mm Glasroc X cut to required curve |
| 5. Bulk fill with Gyproc Jointing Compound (where gap exceeds 5mm) | 10. Gyproc Wedge Anchor for fire rated partitions or Gyproc Hammer Fix for non-fire rated partitions |

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. Gyproc FireStrip is used where the soffit shows signs of undulation or where small gaps, cracks or holes are apparent. FireStrip must be continuous to maintain fire performance.

