

GypWall™

QUIET

—

Twin frame
high performance
acoustic wall system



Al Muhareibi Building
Dubai

GypWall QUIET

GypWall QUIET is a lightweight, non-loadbearing, twin framed acoustic separating wall, often used in developments such as apartments, hotels, hospitals and schools where a high level of acoustic performance is required to either meet or exceed both client and local municipality regulations.



	90 - 120	mins
	58 - 62	R _w dB
	59 - 63	STC dB

Key Benefits



Reduced sound transmission is achieved by a high degree of isolation between the two frameworks and Gyproc SoundBloc



Twin-frame design allows large services, structural steel or concrete columns & beams to easily be accommodated within the partition whilst maintaining room-to-room acoustic performance



Lightweight separating wall giving higher performance compared to blockwork



Achieves increased heights over standard partitions



Satisfies BS 5234: Part 2 requirements up to and including Severe Duty



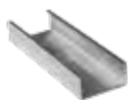
Allows for deflection at the head



Eligible for the SpecSure warranty from Gyproc

System components

Gypframe metal components



Gypframe 'C' Studs

(50 S 50)

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



Gypframe Standard Floor & Ceiling Channels

(52 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)

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)

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 103 FC 50

Fixing Channel

A versatile metal fixing channel used to support medium weight fixtures on walls



Gypframe 103 FC 90

Fixing Channel

A versatile metal fixing channel used to support heavy weight fixtures on walls



Gypframe GFS1 Fixing Strap

Used to support horizontal board joints and within deflection head details



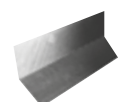
Gypframe GA1 Steel Angle

Used as a fixing mechanism to hold ISOVER Eco APR insulation in place.



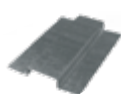
Gypframe GA4 Steel Angle

Widely used in framed construction to provide support, fixing and additional strength to penetrations. Also used as an angle to improve the fire and acoustic performance at deflection heads



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

System components (continued)

Board products (continued)



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



Fixing products



Gyproc Drywall Screws
Corrosion resistant self-tapping steel screws for fixing board to metal framing less than 0.8mm thick



Gyproc Waferhead Screws
Corrosion resistant self-tapping steel screws for fixing metal to metal framing less than 0.8mm thick



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



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



Two rows of Gypframe Floor & Ceiling channels, set out to required dimensions, ensuring a gap between channel, are fixed to the concrete substrate using Gyproc Wedge Anchors (for fire rated systems) or Gyproc Hammer Fix (for non-fire rated systems).



Gypframe 'C' Studs are suitably fixed to abutments.



Gypframe 'C' studs are fitted vertically to a friction fit within the both channel sections to form the twin framework. Studs are fitted to all face the same way.



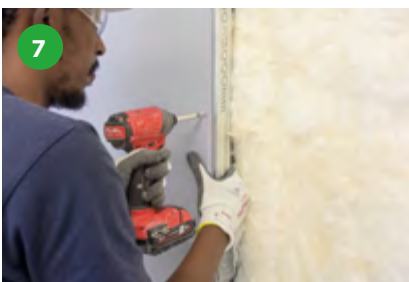
Stud pairs are braced together using appropriate lengths of Gypframe 103 FC 50 Fixing Channel. Use four Gyproc Waferhead Screws per brace, two screws per stud.



The perimeter of each frame is then sealed with Gyproc Sealant to seal airpaths and to provide optimum acoustic performance.



ISOVER Eco APR is added to the partition cavity for increased acoustic performance.



Gyproc plasterboards are fixed with Gyproc Drywall Screws to Gypframe studs. Ensure board joints are staggered between board layers.

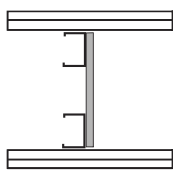


Gypframe GFS1 Fixing Strap to support horizontal board joints in the face layer board.

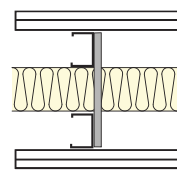


Boards are then taped and jointed using Gyproc Jointing Compound along with Gyproc joint tape and sanded to achieve a smooth finish.

Table 1 - GypWall QUIET 50mm Gypframe 'C' Studs (50 S 50) with cross braces.
Solutions to satisfy the requirements of BS 476: Part 22: 1987, ASTM E119, ANSI / UL 263

1

Two Gypframe 'C' Stud frameworks braced at max. 1200mm centres. Studs at 600mm centres. Linings as in table.

2

Two Gypframe 'C' Stud frameworks braced at max. 1200mm centres. Studs at 600mm centres. 50mm ISOVER Eco APR in the cavity. Linings as in table.

Detail	Partition thickness mm	Board type	Lining thickness mm	Maximum partition heights mm	Sound insulation		Duty rating	Approx. weight kg/m ²
					R _w (R _w +Ctr) dB	STC dB		

90 minutes fire resistance

2	200	SoundBloc	2 x 12.5	6800	60 (51)	61	Severe	48
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120 minutes fire resistance

1	200	FireStop	2 x 12.5	6800	48 (40)	48	Severe	45
2	200	FireStop	2 x 12.5	6800	58 (50)	59	Severe	45
2	200	SoundBloc	2 x 15	7500	63 (55)	63	Severe	57

¹ Based on a limiting deflection of L/240 at 200 Pa. Greater heights can be achieved through the use of Gypframe 'I' Studs. Refer to **Technical performance and principles of system design - Robustness**.

² Increasing cavity width improves acoustic performance, especially at low frequencies (R_w + C_{tr})

NB For increased fixing capability replace above listed boards with equivalent thickness of Gyproc Habito.

NB The fire resistance and sound insulation performances are for imperforate partitions, walls and ceilings incorporating boards with all joints taped and filled, according to Gyproc recommendations. The quoted performances are achieved only if Gyproc components are used throughout, and the company's fixing recommendations are strictly observed. Any variation in the specifications should be checked with the Gyproc Technical Team.

NB For heights between 4200mm and 8000mm, Gypframe Deep Channels should be used at the base and at the head (subject to deflection head criteria).

NB Where tiling, refer to 'Tiling section' on page 304

Design

Planning – key factors

GypWall QUIET comprises twin rows of Gypframe 'C' Studs installed at 600mm centres within Gypframe Floor & Ceiling Channels. For heights up to 2400mm each pair of studs must be cross braced at mid-height. Where multiple braces are required the braces must be located at 1200mm vertical centres staggered by 600mm. The position of services and heavy fixtures should be pre-determined and their installation planned into the frame erection stage.

Fixing floor and ceiling channels

Gypframe Floor & Ceiling Channels must be securely fixed with a row of fixings at 600mm maximum centres. If the floor is uneven, a 38mm thick timber sole plate equal to the width of the channels 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 GypWall CLASSIC - construction details 17, 18 & 19 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.

Door openings

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

Specialist advice should be sought from door manufacturers and Acoustic Consultants to ensure the required acoustic performance is achieved. This becomes more important as acoustic requirements increase.

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 GypWall CLASSIC - construction details 33 to 35 on page 91-92.

Cavity barriers

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

Control joints

Control joints may be required in the partition to relieve stresses induced by expansion and contraction of the structure. Refer to construction detail 15. They should coincide with movement joints within the surrounding structure.

Deflection heads

Partition head deflection designs may be necessary to accommodate deflections in the supporting floor. Deflection heads may also be required to the underside of roof structures subjected to positive and negative pressures. Refer to construction details 2 and 3. When ceilings are not present to one or both sides of the partition, consideration should be given to the potential loss of acoustic performance. Refer to Building acoustics for further information.

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. Cables should be protected by 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. Switch boxes and socket outlets can be supported from Gypframe 103 FC 50 Fixing Channel fixed horizontally between studs, or a high performance socket box detail can be 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 GypWall CLASSIC - construction details 32-34.

Fixtures

Lightweight fixtures can be made directly to the partition board linings. Medium weight fixtures can be made to Gypframe 103 FC 50 Fixing Channel. Heavyweight fixtures (to BS 5234: Part 2) such as wash basins and wall cupboards, can be fixed using plywood secured by Gypframe Service Support Plates. Refer to Service installations for further information.

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 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.

Design (continued)

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 X 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

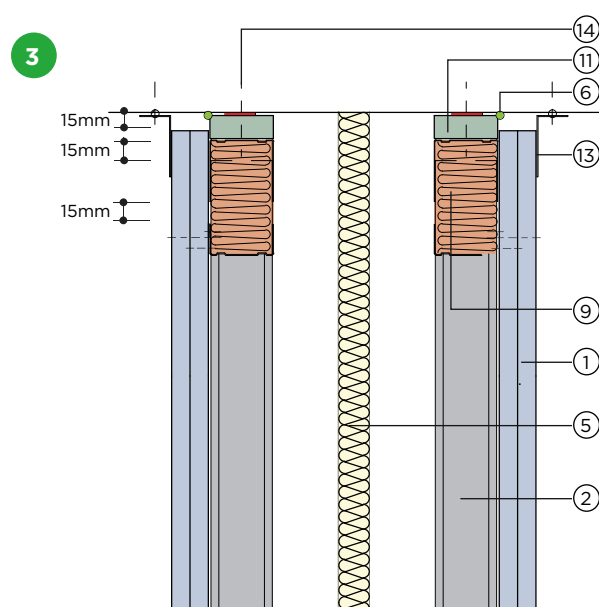
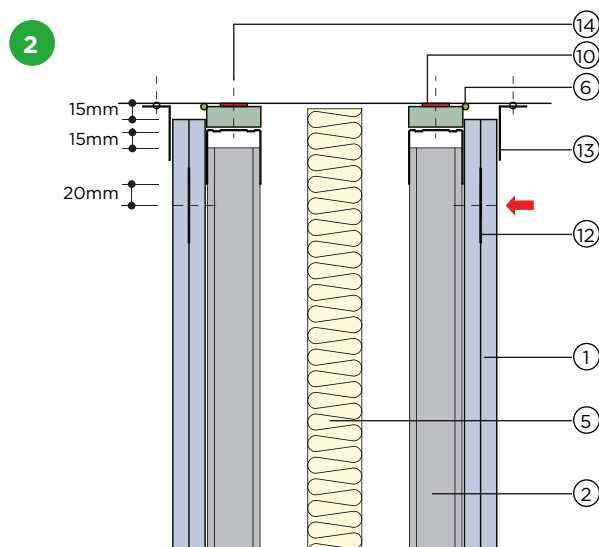
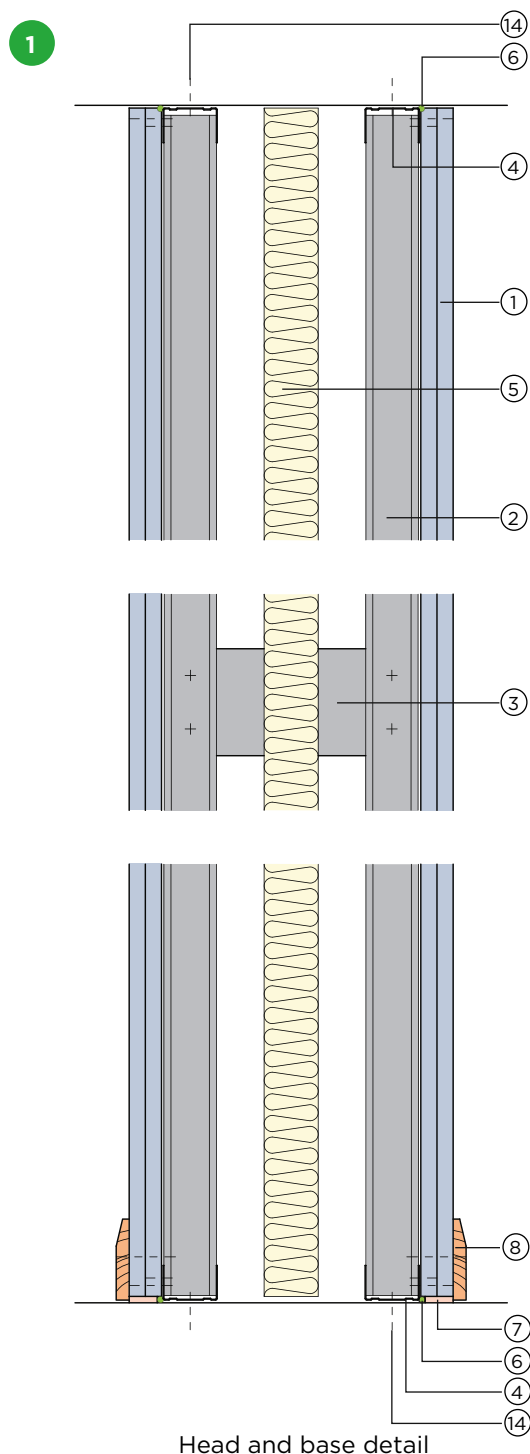
Consideration should be given to specifying plasterboard linings that, in addition to the performances listed in the preceding tables on page 154 (covering fire, acoustic, duty rating etc), actively absorb harmful volatile organic compounds (VOC's) such as formaldehyde, from the atmosphere. Where additional 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 QUIET construction details, refer to the construction details shown on pages 157 to 158. For more typical or example details, please contact the Gyproc Technical Team.

Construction details



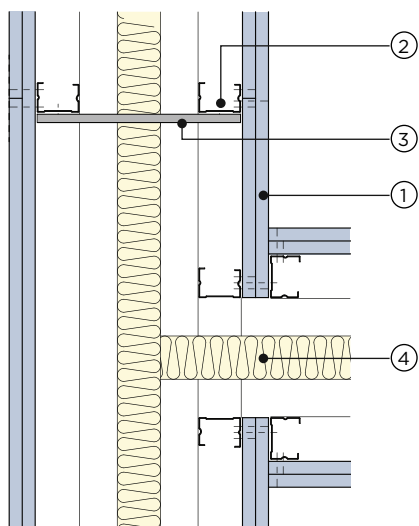
1. Gyproc SoundBloc
2. Gypframe 'C' Stud
3. Gypframe 103 FC 50 Fixing Channel (at 1200mm vertical centres)
4. Gyproc floor and ceiling channel
5. ISOVER Eco APR
6. Gyproc Sealant
7. Bulk fill with Gyproc Jointing Compound (where gap exceeds 5mm)

8. Skirting
9. Stone mineral wool (minimum 33 kg/m³) (by KIMMCO ISOVER) retained by stud nogging
10. Gyproc FireStrip (continuous)
11. Gyproc CoreBoard
12. Gypframe GFS1 Fixing Strap
13. Gypframe GA4 Steel Angle where required
14. 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. 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 3) or alternatively, please contact the Gyproc Technical Team for further guidance.

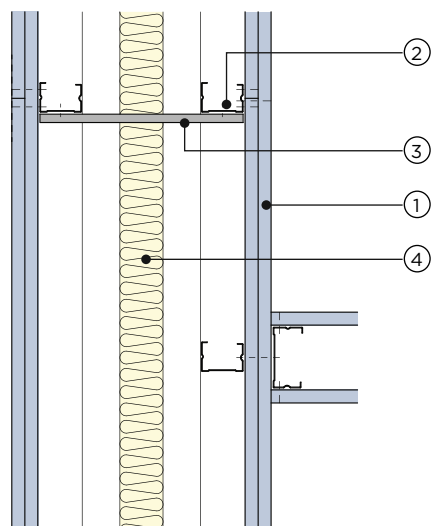
Construction details (continued)

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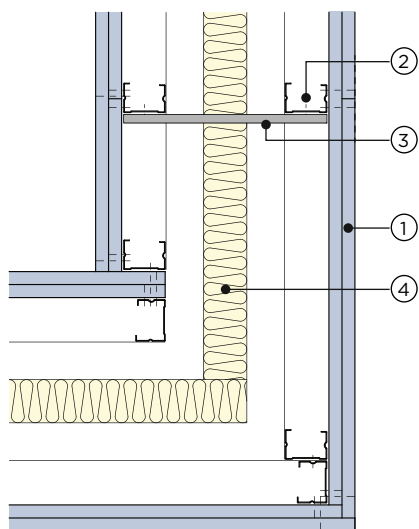


'T' junction detail

6

'T' junction detail with
GypWall CLASSIC partition

7



Internal / external corner detail

1. Gyproc SoundBloc
2. Gypframe 'C' Stud

3. Gypframe 103 FC 50 Fixing Channel
4. ISOVER Eco APR

