GypWall™
QUIET SF

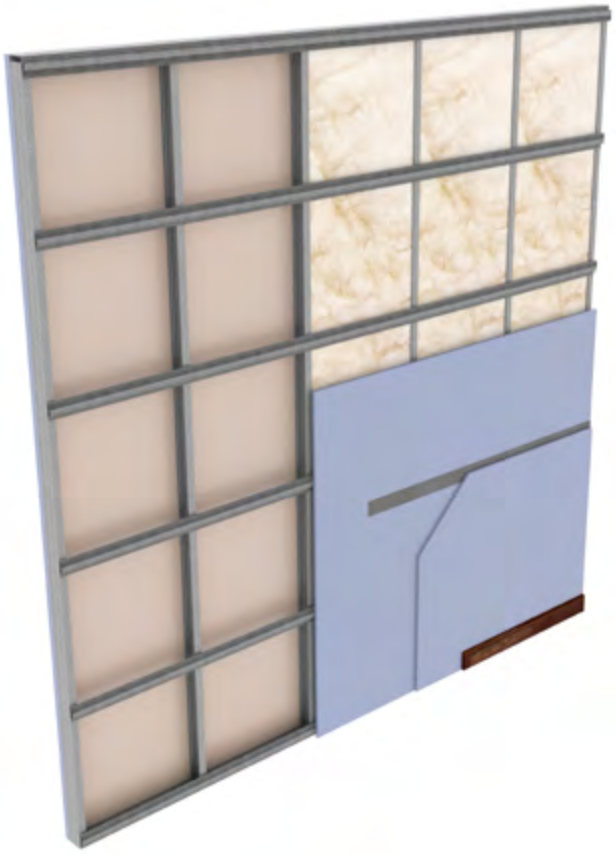
Single frame high performance acoustic separating wall system

Mafraq Hospital
Abu Dhabi

GypWall QUIET SF

Part of Gyproc's QUIET range of partitioning systems, GypWall QUIET SF is a single frame lightweight, non-loadbearing partition, which provides high levels of sound insulation up to and exceeding regulatory requirements for separating walls.

GypWall QUIET SF offers high levels of acoustic performance within a narrow footprint. This makes it the ideal solution for a wide range of buildings where it is important to provide occupants with a comfortable acoustic environment, whilst at the same time maximising available floor area, for example, residential, schools and hospitals.



90 - 120 mins

60 - 64 R_w dB

61 - 66 STC dB

Key Benefits

Very efficient use of floor space due to a high level of acoustic performance being achieved with a minimal partition width

Reduced sound transmission is achieved through the use of Gypframe RB1 Resilient Bar to provide a high degree of isolation between the Gypframe 'C' Studs and the high performance Gyproc plasterboard lining

Uses a unique and innovative performance plasterboard designed specifically for high levels of sound insulation - Gyproc SoundBloc.

Achieves Severe Duty rating in accordance with BS 5234

Eligible for the SpecSure warranty from Gyproc

System components

Gypframe metal components

Gypframe 'C' Studs
(70 S 50, 92 S 50)
Vertical stud providing acoustic and structural performances designed to receive fixing of board after installation of Gypframe RB1 Resilient Bars

Gypframe 'I' Studs
(70 I 70, 100 I 80)
Enhanced strength stud that allows for increased partition height, designed to receive fixing of board after installation of Gypframe RB1 Resilient Bars

Gypframe Standard Floor & Ceiling Channels
(72 C 50, 94 C 50, 102 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

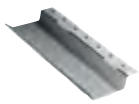
Gypframe Deep Flange Floor & Ceiling Channels
(72 DC 60, 94 DC 60, 102 DC 60)
Floor and ceiling channels with deep flanges for retaining the Gypframe studs at floor and ceiling junctions for partitions 4200mm to 8000mm high. Also used around openings and in deflection heads (maximum 30mm deflection)

Gypframe Extra Deep Flange Floor & Ceiling Channels
(72 EDC 80, 94 EDC 80, 102 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

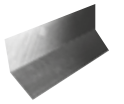
Gypframe GFS1 Fixing Strap
Used to support horizontal board joints and within deflection head details



Gypframe RB1 Resilient Bar
Acoustically engineered channel to separate board fixing from the primary frame. Fixed horizontally to face of studs

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 wall ceiling and encasement framing. Also used as an angle to improve the fire performance at deflection heads



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

Board products

Gyproc SoundBloc [1, 2]
(12.5, 15mm)
Gypsum plasterboard with a high density core for enhanced sound insulation performance

Glasroc X[2]
(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

ACTIV air

M2TECH MOISTURE & MOLD RESISTANT

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

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

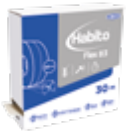
Gyproc FireStrip
Soft extruded linear gap seal for use within fire rated Gyproc system deflection head details

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

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

System components (continued)

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 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). Where Gypframe RB1 Resilient Bars are used to one side only, consider the Gypframe RB1 Resilient Bar dimension of 16mm when setting out.

Gypframe 'C' Studs are suitably fixed to abutments and are fitted vertically to a friction fit within the channel sections to form the framework. Studs are fitted to all face the same way.

The perimeter of the metal framework is then sealed with Gyproc Sealant for optimum sound insulation performance.

ISOVER Eco APR is added to the partition cavity.

Gypframe RB1 Resilient Bars are installed vertically to abutment and door studs to accept perimeter fixings for the Gyproc plasterboard linings.

Gypframe RB1 Resilient Bars are fixed across the stud framing and are joined by nesting them together and fixing to Gypframe 'C' Studs using Gyproc Waferhead Screws. Gypframe RB1 Resilient Bars are fixed through the angled flange with the resilient section hanging downward, with the exception of the uppermost and bottommost bar, which are fixed with the resilient section pointing upwards to provide board fixing at the head and additional robustness at the base.

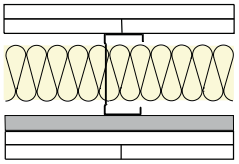
First layer of Gyproc plasterboard is fixed using Gyproc Drywall Screws to Gypframe RB1 Resilient Bars or Gypframe studs.

Gyproc Sealant should be applied to the perimeter of the inner layer immediately prior to fitting the face layer board on the side(s) of the partition where resilient bars are located.

The second layer of Gyproc plasterboard is fixed using Gyproc Drywall Screws to Gypframe RB1 Resilient Bars or studs with all board joints staggered.

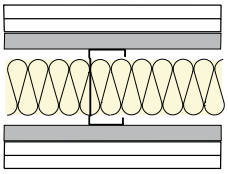
TABLE 1 - GypWall QUIET SF 70mm (70 S 50) and 92mm (92 S 50) Gypframe 'C' Studs. Solutions to satisfy the requirements of BS 476: Part 22: 1987, ASTM E119 & ANSI/UL 263

1



Two layers of board each side of Gypframe 'C' Studs at 600mm centres with Gypframe RB1 Resilient Bar at 600mm centres to one side. 50mm ISOVER Eco APR in the cavity. Linings as in table.

2



Two layers of board each side of Gypframe 'C' Studs at 600mm centres with Gypframe RB1 Resilient Bar at 600mm centres to both sides. 50mm ISOVER Eco APR in the cavity. Linings as in table.

Detail	Partition thickness mm	Board type[2]	Lining thickness mm	Maximum partition heights[1] mm	Stud size mm	Sound insulation R_w (R_w+Ctr) dB	Sound insulation STC dB	Duty rating	Approx. weight kg/m²
90 minutes fire resistance									
1	137	SoundBloc	2 x 12.5	4000	70	60 (47)	61	Severe	48
2	152	SoundBloc	2 x 12.5	3200	70	61 (50)	63	Severe	49
1	159	SoundBloc	2 x 12.5	5000	92	61 (49)	62	Severe	48
2	174	SoundBloc	2 x 12.5	4000	92	62 (52)	63	Severe	49
120 minutes fire resistance									
1	147	SoundBloc	2 x 15	4200	70	62 (51)	64	Severe	56
2	162	SoundBloc	2 x 15	3200	70	64 (52)	65	Severe	57
1	169	SoundBloc	2 x 15	5100	92	62 (52)	61	Severe	56
2	184	SoundBloc	2 x 15	4000	92	64 (54)	66	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] The boards listed and the performances shown include MR versions.

NB For increased fixing capability replace above listed boards with equivalent thinkness 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 Where tiling, refer to 'Tiling section' on page 304.

Design

Planning – key factors
GypWall QUIET SF comprises Gypframe 'C' Studs installed at 600mm centres within Gypframe Floor & Ceiling Channels and Gypframe RB1 Resilient Bars horizontally fixed to one or both sides. 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. For 94mm and above, two rows of staggered fixings are required, each row at 600mm centres and each fixing 25mm in from the flange. Be aware that if working to centre lines on a plan, GypWall QUIET SF systems incorporating Gypframe RB1 Resilient Bar to one side only are not symmetrical. 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 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. Consideration should be given to using a wider twin frame partition to fully encompass the structural steel. Refer to sections GypWall QUIET or GypWall AUDIO for details. Refer to Building acoustics for further information.

Door openings
The designer should consider thickness tolerances of the partition types in relation to the proposed door frame detail. Any openings will require very careful detailing to minimise the loss of acoustic performance of the partition. Consult with an Acoustic Consultant. Specialist heavy acoustic doorsets may require additional support. Refer to construction detail 8 within this section.

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.

Acoustic performance
The partition achieves high levels of sound insulation by virtue of the separation between the board and the stud framing afforded by the Gypframe RB1 Resilient Bars. It is important that, when screw-fixing boards, the screws do not contact the stud framing and also that services, fixtures, etc, do not form a bridge between the lining boards on each side of the partition. For optimum performance all air paths should be sealed. Gyproc Sealant should be applied to the perimeter of the inner layer immediately prior to fitting the face layer board on the side(s) of the partition where resilient bars are located.

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 detail 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 33-34.

Design (continued)

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. In all instances the Gypframe Service Support Plates are fixed to the side without a Gypframe RB1 Resilient Bar.

Medium and heavy weight fixtures can only be made when the lining boards are fixed directly to the stud framing. The installation of fixings may downgrade the acoustic performance of the wall. Refer to Acoustic performance for further information.

Refer to Service installations for further information.

For alternative solutions, where fixtures are required to both sides of a partition, consider using GypWall QUIET.

Board finishing
Refer to Finishing systems on page 298.

Tiling
Tiles up to 32 kg/m^2 can be applied to the surface of Gyproc plasterboard systems. Tiles up to 60 kg/m^2 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.

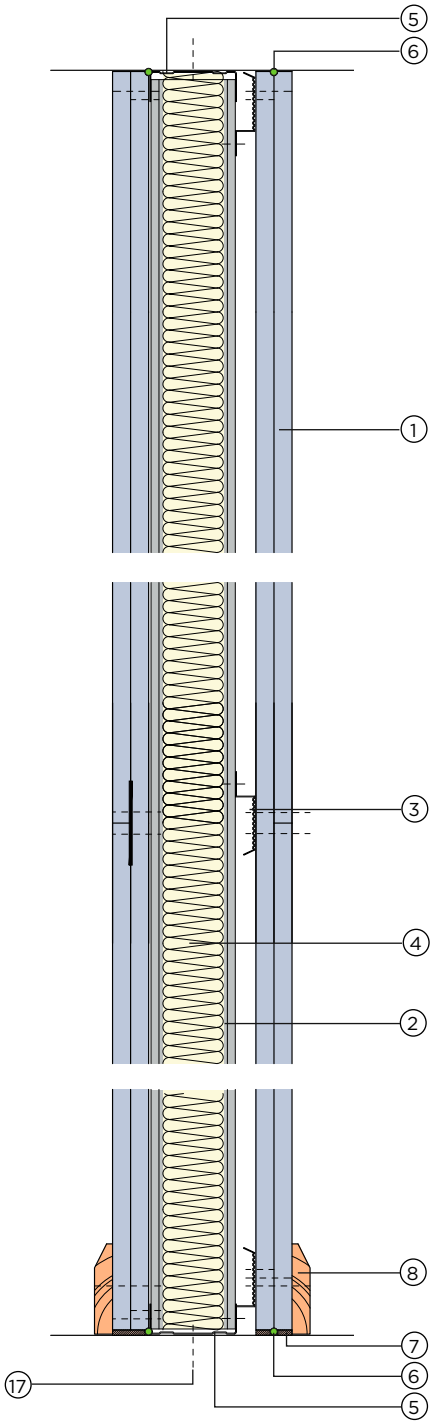
Air quality
Consideration should be given to specifying plasterboard linings that, in addition to the performances listed in the preceding tables on page 142 (covering fire, acoustic, duty rating etc), actively absorb harmful volatile organic compounds (VOC's) such as formaldehyde, from the atmosphere. 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 SF construction details, refer to the construction details shown on pages 145 to 147. For more typical or example details, please contact the Gyproc Technical Team.

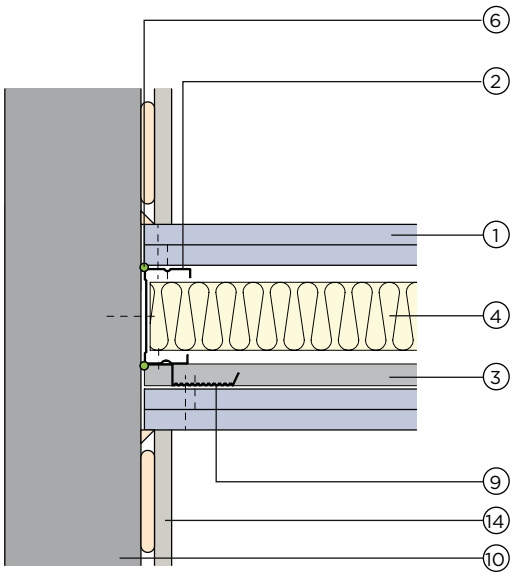
Construction details

1



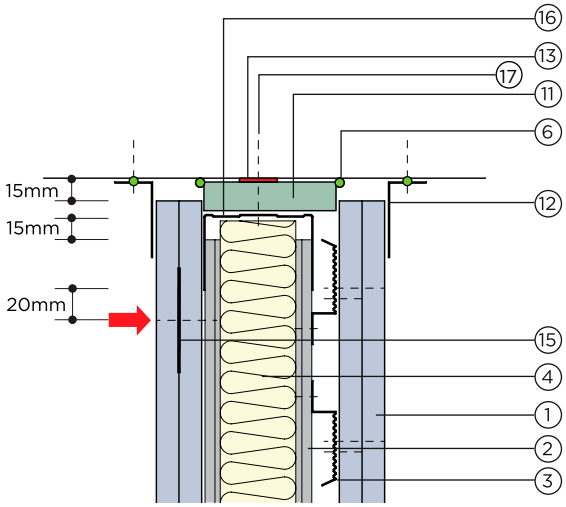
Head and base detail

2



Junction detail with masonry

3



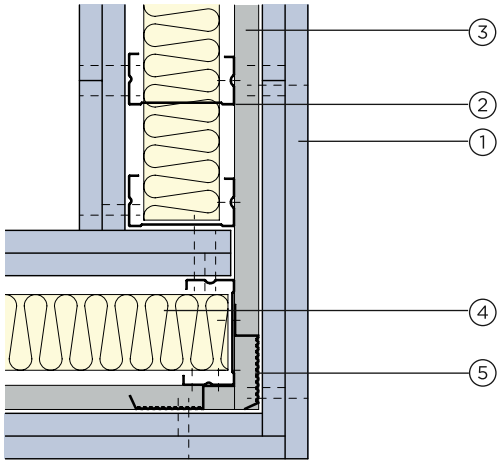
Deflection head detail for 15mm downward movement and 90 minutes fire resistance

1. Gyproc SoundBloc
2. Gypframe 'C' Stud
3. Gypframe RB1 Resilient Bar
4. 50mm ISOVER Eco APR
5. Gypframe Floor & Ceiling Channel
6. Gyproc Sealant
7. Bulk fill with Gyproc Jointing Compound (where gap exceeds 5mm)
8. Skirting
9. Vertical Gypframe RB1 Resilient Bar noggings
10. Blockwork
11. Gyproc CoreBoard (width of Gypframe stud and Gypframe RB1 Resilient Bar)
12. Gypframe GA4 Steel Angle
13. Gyproc FireStrip
14. DriLyner BASIC wall lining system
15. Gypframe GFS1 Fixing Strap
16. Gypframe Deep Flange Floor & Ceiling Channel
17. 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. Where the soffit shows signs of undulation, has small gaps, cracks or holes; we recommend applying Gyproc FireStrip to maintain fire performance.

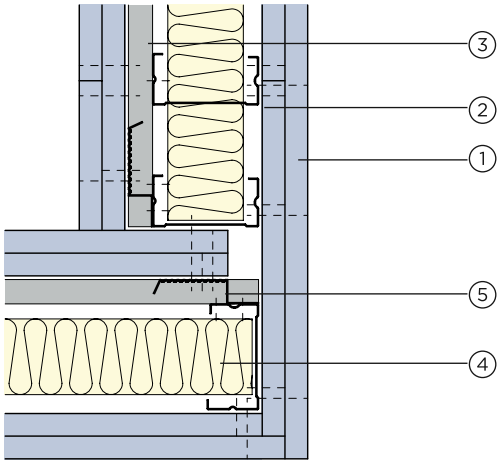
Construction details (continued)

4



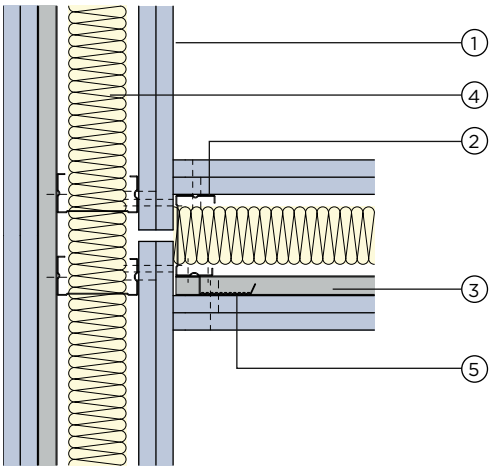
Corner detail - resilient bar to external corner

5



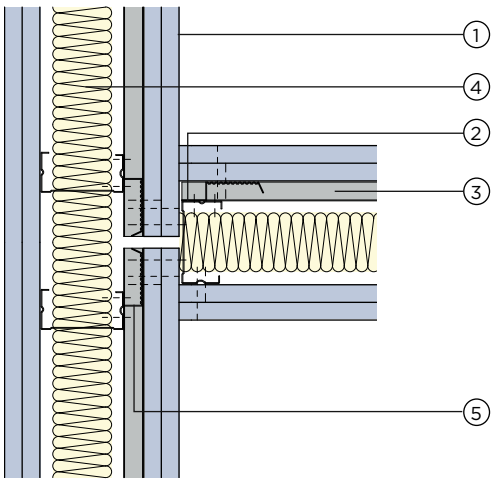
Corner detail - resilient bar to internal corner

6



'T' junction detail (resilient bar on opposite side)

7

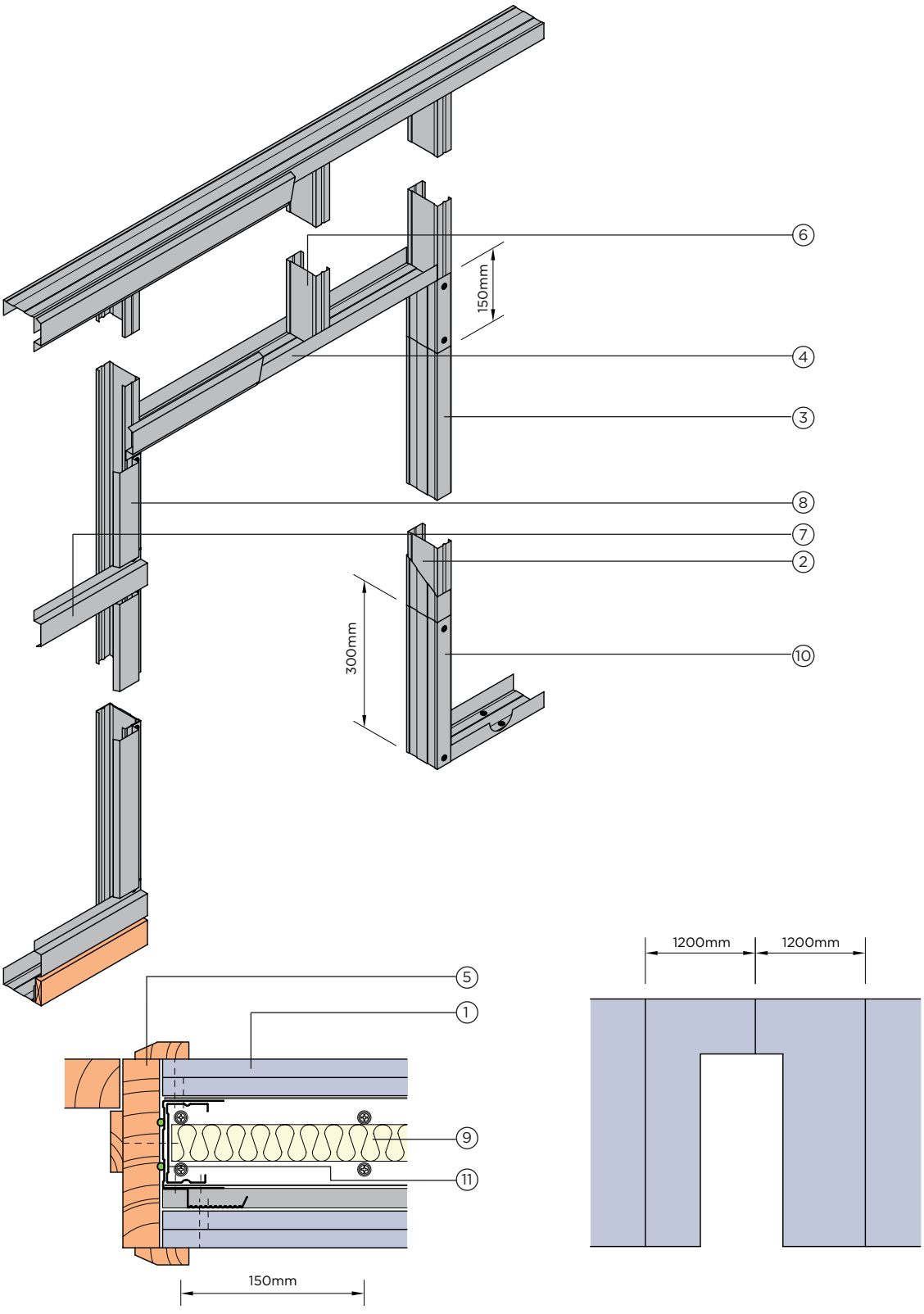


'T' junction detail (resilient bar on abutment side)

1. Gyproc SoundBloc
2. Gypframe 'C' Stud
3. Gypframe RB1 Resilient Bar
4. 50mm ISOVER Eco APR
5. Vertical Gypframe RB1 Resilient Bar nogging

Construction details (continued)

8



Door frame to satisfy BS 5234: Parts 1 & 2: 1992 - Heavy and Severe Duty.
Suitable for door weights upto 60kg, please contact Gyproc Technical Team

1. Gyproc SoundBloc
2. Gypframe 'C' Stud
3. Gypframe Standard Floor & Ceiling Channel
4. Gypframe Standard 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 RB1 Resilient Bar
8. Gypframe RB1 Resilient Bar vertical nogging
9. 50mm ISOVER Eco APR
10. Gypframe Standard Floor & Ceiling Channel cut and extend up studs
11. Gyproc Sealant