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The WHITE BOOK

High-Rise Multi-Occupancy sector guide

The comprehensive specification guide for hotels, student and key-worker accommodation

British Gypsum
SAINT-GOBAIN

Welcome to the WHITE BOOK High-Rise Multi-Occupancy (HRMO) sector guide

HRMO buildings vary significantly in the performances required, with clients often demanding specifications that exceed those of national Building Regulations. Expectations of end-users, target market and location of property will all influence the building design.

Acoustic insulation and absorption, sustainable development, aesthetic appeal and partition duty ratings are all vital to this type of construction, however the approach to a solution will change on a project-by-project basis. This is why this document has been laid out by construction type. Select your base framework (steel, timber or concrete) and then choose the most appropriate partition, floor and ceiling solutions to achieve the performances required from the construction. A wide range of acoustic performances have been included to cover requirements from Building Regulations compliance to the exacting standards of for example, an exemplary high-end hotel.

We hope you find this guide a useful addition to your technical library, if you need any further advice please contact the British Gypsum Technical Advice Centre on 0844 800 1991 or email: bgtechnical.enquiries@bpb.com

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1. Background & theory

Leeds Unite Student accommodation.
Image courtesy of Shepherd Construction.

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Section overview

Introduction

High-Rise Multi-Occupancy (HRMO) covers a wide range of building types that between them make up a large proportion of the UK construction market.

Student and key worker accommodation, hotels and care homes are all examples of building types captured within the HRMO sector. This document aims to assist the specifier in choosing the most appropriate British Gypsum products and systems for these applications. In this sector, client requirements often demand specifiactions that exceed Building Regulations, and as such, performance levels vary considerably. This document presents a range of solutions relevant to buildings in the HRMO category with fire, acoustic and robustness performance levels to suit.

For specification assistance for high-rise housing, flats and apartments, refer to British Gypsum's Home**Spec**, available to download from www.british-gypsum.com.

Hotels

***High Rise** Leeds Unite Student accommodation. Image courtesy of Shepherd Construction.*

Student accommodation

SpecSure®

Unique to British Gypsum, the **SpecSure®** lifetime system warranty is designed to give you total confidence that the systems you have chosen will meet the most rigorous of building requirements.

All of our systems are developed using the highest quality components designed to work together, and are specially developed to give you a lifetime of confidence.

SpecSure® is more than just a performance warranty. It means that the British Gypsum systems you specify:

- Have a guaranteed lifetime performance
- Have the technical expertise and experience of the UK's leading drywall specialists behind it
- Have been tested in UKAS-accredited fire, acoustic and structural test laboratories
- Have been site tested to demonstrate installation integrity and simplicity
- Will be supported at every stage of the project by the UK's leading on and off-site technical support personnel
- Will perform to published parameters throughout the life of each system
- Will be repaired or replaced by British Gypsum in the unlikely event of system failure attributed to unsatisfactory product / system performance

Ashburn Hotel, London.

Acoustics

Local Building Regulations requirements, as laid out below, stipulate minimum levels of performance. Individual client requirements may exceed these.

England and Wales

Building Regulations Approved Document E provides guidance on how to provide reasonable standards of sound insulation in rooms for residential purposes, including those in hotels, student halls of residence and key-worker accommodation.

The aim of the standard is to improve the acoustic environment by reducing noise transmission between rooms and within buildings.

Table 1.1: Rooms for residential purposes – performance standards for separating walls, separating floors, and stairs that have a separating function

	Airborne sound insulation $D_{nT,w} + C_{tr}$ dB (minimum values)	Impact sound insulation $L_{nT,w} + C_{tr}$ dB (maximum values)
Purpose-built rooms for residential purposes		
Walls	43	
Floors and stairs	45	62
Rooms for residential purposes formed by material change of use		
Walls	43	
Floors and stairs	45	64

Approved Document E: Resistance to the passage of sound 2003

Table 1.2: Laboratory values for new internal walls[1] and floors within dwelling-houses, flats and rooms for residential purposes, whether purpose-built or formed by material change of use

	Airborne sound insulation dB (minimum values)
Walls	40
Floors and stairs	40

Approved Document E: Resistance to the passage of sound 2003

[1] Walls between a bedroom, or a room containing a WC, and any other room

Tables 1.1 and 1.2 show the performance requirements for rooms for residential purposes. This is the minimum performance requirement for solutions within this sector guide. Clients may specify higher levels of sound insulation for specific projects and it is important to establish requirements at design stage. British Gypsum has worked with a number of clients in this sector to better understand their range of performance requirements. Solutions in this sector guide have been chosen to reflect performance requirements that can be more onerous than regulations require.

Definitions

Sound insulation

R_w

Weighted sound reduction index

The laboratory airborne sound reduction performance of an individual element such as a partition or floor measured in isolation within a laboratory in the absence of flanking transmission. The higher the figure, the better the sound insulation.

STC

Sound Transmission Co-efficient

An alternative single figure rating for sound insulation commonly referenced with specifications of American origin. A laboratory STC performance rating is broadly similar to the R_w figure quoted for British Gypsum laboratory systems. Where it is critical to determine a precise STC specification, contact the British Gypsum Technical Advice Centre.

L_{nw}

Weighted sound reduction index

The laboratory impact sound transmission performance of an individual floor element measured in isolation within a laboratory in the absence of flanking transmission. The lower the figure, the better the floor resists the passage of sound.

$D_{nT,w}$

Weighted standardised level difference

The on-site airborne sound reduction performance between two rooms through the floor construction. The performance is not just dependant on the dividing element itself. It is also dependant on other available transmission paths, e.g. surrounding structure, junction details, penetrations, etc, through which sound can travel. The higher the figure, the better the airborne sound insulation.

$L_{nT,w}$

Weighted standardised impact sound pressure level

The on-site impact sound transference performance between two rooms. The performance is not just dependant on the dividing element itself. It is also dependant on other available transmission paths, e.g. surrounding structure, junction details, penetrations, etc, through which sound can travel. The lower the figure the better the floor resists the passage of impact sound.

C_{tr}

A Spectrum adaptation term

Most constructions, in particular lightweight constructions, do not generally offer very good sound insulation performance at lower frequencies. The C_{tr} figure is a correction factor that considers low frequency sound sources such as modern entertainment systems and was originally introduced to **C**ontrol **tr**affic noise.

Sound absorption

α_w

Sound Absorption Rating

The sound absorption performance of a material. Its ability to reduce reverberation / echoing within a room, hallway, etc, over a range of frequencies.

Sound Absorption Classes

Class A – α_w 0.90, 0.95, 1.00
Class B – α_w 0.80, 0.85
Class C – α_w 0.60, 0.65, 0.70, 0.75
Class D – α_w 0.30, 0.35, 0.40, 0.45, 0.50, 0.55
Class E – α_w 0.15, 0.20, 0.25
Not classified – α_w 0.00, 0.05, 0.10

Prefixes L, M, H refer to absorption predominantly in the low, medium and high frequency ranges, respectively.

Sound insulation rating methods

Sound insulation is the term describing the reduction of sound that passes between two spaces separated by a dividing element. In transmitting between two spaces, the sound energy may pass through the dividing element (direct transmission) and through the surrounding structure (indirect or flanking transmission). In designing for sound insulation, it is important to consider both methods of transmission. The walls or floors, which flank the dividing element, constitute the main paths for flanking transmission, but this can also occur at windows, heating or ventilation ducts, doorways, etc.

The acoustic environment of the room and / or the building and the ability to reduce or eliminate air paths in the vicinity of the sound reducing element, e.g. doorsets, glazing, suspended ceiling cavities, ductwork, etc, will have a significant effect on its performance. For these reasons it is unlikely that figures quoted from laboratory test conditions will be achieved in practice. When the background noise is low, consideration may have to be given to a superior standard of sound insulation performance in conjunction with the adjoining flanking conditions. When combating an insulation problem, it is essential to identify the weakest parts of the composite construction.

The Building Regulations refer to airborne and impact sound performance. Airborne noise is generated by musical instruments, loudspeakers and other sounds that originate in the air. Regulatory requirements for airborne noise apply to separating walls, internal partitions and floors. Impact noise is generated by heavy footsteps and movement of furniture. Regulatory requirements for impact noise apply to separating floors only.

Pre-Completion Testing

Building Regulations Approved Document E requires builders to arrange for appropriate Pre-Completion Testing for sound insulation between rooms for residential purposes, in order to demonstrate compliance.

Pre-Completion Testing is intended as a checking procedure to ensure that the performance standards are met on-site for all separating floor and wall constructions.

Pre-Completion Testing is not required for the division of space, e.g. internal walls / partitions between living spaces in the same occupancy, corridors, stairwells or hallways.

Test requirements

Building Control bodies should consult with developers on likely completion times on-site, and ask for one set of tests to be carried out between the first group of rooms for residential purposes scheduled for completion.

The project team should consult with Building Control to agree an acoustic test schedule.

A test is deemed to have failed if it does not meet either part of the following requirements:

Separating walls: 43 dB $D_{nT,w} + C_{tr}$
Separating floors and stairs: 45 dB $D_{nT,w} + C_{tr}$ for airborne (43 dB $D_{nT,w} + C_{tr}$ in refurbishment) / 62 dB $L_{nT,w}$ for impact (64 dB $L_{nT,w}$ in refurbishment)
As the figures above show, the performance requirements are less onerous for refurbishment projects. It should be noted that all sound insulation tests should be carried out close to completion, at pre-decoration stage. Impact and insulation tests should also be carried out without a soft covering, e.g. carpet or foam-backed vinyl on the floor. In the case of conversion or refurbishment projects, where it is necessary to retain the existing features, e.g. an ornate ceiling in an historic building, it may not be possible to achieve the stipulated regulatory standard. Relaxation of the requirements may be sought from the Building Control body.

Appropriate remedial treatment should be applied following a failed set of tests. Where remedial treatment has been applied, the Building Control body should be satisfied with its efficacy. Normally this would be assessed through additional sound insulation testing. After a failed set of tests, the rate of testing should be increased until the Building Control body is satisfied that the problem has been solved.

On-site performance degradation

It is important to note that laboratory performance figures quoted within this document (R_w / $R_w + C_{tr}$ / L_{nw}) are measured in optimal conditions. On-site performance ($D_{nT,w} + C_{tr}$ / $L_{nT,w}$) will be lower. Flanking sound transmission is the main source of performance degradation of laboratory-based tests compared to actual site performances. Control of flanking paths through good design and workmanship is critical to ensuring the desired on-site performance targets are achieved. This sector guide provides guidance on minimising acoustic transmission at junctions between internal partitions, walls and floors. Each section of this document will provide relevant flanking details.

Applying Thistle Multi-Finish to certain GypWall partition systems

Applying 2mm Thistle Multi-Finish to both sides of certain GypWall partitions has a positive effect on the sound insulation rating. This is effective on partitions that are limited by their high frequency performance (coincidence region).

The application of Thistle Multi-Finish also adds mass to the partition which has a positive effect on the mid-frequency region of the spectrum.

Please refer to HomeSpec for residential requirements and system solutions. Available to download from www.british-gypsum.com

Scottish Regulations

Approved Document E applies to England and Wales only. In Scotland, Section 5 of the Technical Handbook covers the resistance to the transmission of sound.

Section 5 aims to limit the transmission of sound to a level that will not threaten the health of occupants from sound transmission emanating from attached buildings and a differently occupied part of the same building. It also covers sound from within the same room for residential purposes if occupants are in rooms where they would expect to have some degree of peace and quiet.

Section 5 - summary of changes

- A new scope covering all dwellings and residential buildings
- An increase in the sound insulation performance of separating walls and separating floors
- Introduction of Post-Completion Testing
- Guidance for carrying out work to existing buildings, e.g. conversions
- A new standard to reduce noise within buildings (in particular around sleeping areas)

Performance requirements

Separating walls and floors

Table 1.3 – Element of construction

	Airborne site test result D_{nTw} (dB) minimum	Impact site test result L_{nTw} (dB) maximum
Separating walls new-build and conversions (not including traditional buildings)	56	–
Separating walls conversion of traditional buildings	53	–
Separating floors new-build and conversions (not including traditional buildings)	56	56
Separating floors conversion of traditional buildings	53	53

NB The term traditional refers to a building or part of a building of a type constructed before or around 1919 which;
a) uses construction techniques that were commonly in use before 1919 and;
b) utilise permeable components, in a way that promotes the dissipation of moisture from the building fabric.

Internal walls and floors

Internal walls and intermediate floors should achieve a minimum airborne sound insulation level of R_W 43 dB.

Construction details

Example Constructions and Generic Internal Constructions

- The Example Constructions and Generic Internal Constructions document provides guidance on one way of meeting some of the requirements of the functional standards set out in Section 5
- It is acceptable to propose alternative solutions provided they fully satisfy the standards
- The document provides examples of the most commonly used separating wall, separating floor, internal wall and intermediate floor constructions

British Gypsum Proprietary Solutions

- These solutions provide an alternative way of meeting the requirements of Section 5

Fire

Building Regulations covering fire resistance and reaction to fire

The fire resistance performance and reaction to fire performance requirements are based on Approved Document B (Scottish Technical Handbook Section 2 in Scotland). Establish the fire performance required by referring to these documents, giving consideration to type, height, size, use etc, of the building.

Building Regulations Approved Document B (AD B) is one of a series of documents approved by the Secretary of State as practical guidance on meeting the requirements of Schedule 1 and Regulation 7 of Building Regulations 2000 (England and Wales). AD B Volume 1 covers dwelling-houses, and AD B Volume 2 covers buildings other than dwelling houses (including rooms for residential purposes). Scotland is covered by Technical Handbook 2, domestic and non-domestic.

The documents classify the use of a building into purpose groups and specify minimum periods of fire resistance to be achieved by any given building element. The periods of fire resistance may vary according to the use and size of the building. The greater the fire hazard a building presents, the greater the period of fire resistance performance required from the elements within the building. The materials used to form the internal surfaces of the building are also controlled to reduce the risk of fire growth, internal fire spread and associated risks such as flashover and smoke emittance.

As can be seen in the **Tables 1.4** and **1.5**, the use of a sprinkler system can reduce the amount of fire resistance required from a given partition. However, when a sprinkler system is activated, there is a risk of a significant amount of water damage to goods and possessions within an area. If compartmentation is utilised as a fire strategy through the use of partitions, the containment of the fire should reduce the area affected. In addition to this, sprinkler systems can be aesthetically obtrusive, whereas fire resistant partitions and floors already required for room separation and acoustic insulation purposes, and with the use of only slightly different plasterboard materials, will achieve the higher levels of fire performance needed to compensate for the removal of sprinkler systems.

Table 1.4, AD B2 – Specific provisions of test for fire resistance of elements of structure, etc.

Part of building	Minimum provisions when tested to the relevant part of BS476[1] (minutes)			Minimum provisions when tested to the relevant European standard (minutes)[9]	Method of exposure
	Loadbearing capacity[2]	Integrity	Insulation		
1. **Structural** frame, beam or column	See Table 1.5	N/A	N/A	R see Table 1.5	Exposed faces
2. **Loadbearing Wall** (which is not also a wall described in any of the following items)	See Table 1.5	N/A	N/A	R see Table 1.5	Each side separately
3. **Floors**[3]					
a. between a shop and flat above;	60 or see Table 1.5 (whichever is greater)	60 or see Table 1.5 (whichever is greater)	60 or see Table 1.5 (whichever is greater)	REI 60 or see Table 1.5 (whichever is greater)	From underside[4]
b. Any other floor – including compartment floors	See Table 1.5	See Table 1.5	See Table 1.5	REI see Table 1.5	
4. **Roofs**					
a. any part forming an escape route;	30	30	30	REI 30	From underside[4]
b. any roof that performs the function of a floor	See Table 1.5	See Table 1.5	See Table A2	REI see Table 1.5	
5. **External walls**					
a. any part less than 1000mm from any point on the relevant boundary;[5]	See Table 1.5	See Table 1.5	See Table 1.5	REI see Table 1.5	Each side separately
b. any part 1000m or more from the relevant boundary;[5]	See Table 1.5	See Table 1.5	15	REI see Table 1.5 and REI 15	From inside the building
c. any part adjacent to an external escape route	30	30	No provision[6 7]	RE 30	From inside the building
6. **Compartment walls** Separating	60 or see Table 1.5 (whichever is less)	60 or see Table 1.5 (whichever is less)	60 or see Table 1.5 (whichever is less)	REI 60 or see Table 1.5 (whichever is less)	Each side separately
a. a flat from any other part of the building (see Approved Document B)					
b. occupancies (see Approved Document B)					
7. **Compartment walls** (other than in item 6)	See Table 1.5	See Table 1.5	See Table 1.5	REI see Table 1.5	Each side separately
8. **Protected shafts** excluding any firefighting shaft					
a. any glazing described in Section 8 Diagram 32;	N/A	30	No provision[7]	E 30	Each side separately
b. any other part between the shaft and a protected lobby / corridor described in Diagram 32 above;	30	30	30	REI 30	
c. any part not described in (a) or (b) above	See Table 1.5	See Table 1.5	See Table 1.5	REI see Table 1.5	
9. **Enclosure** (which does not form part of a compartment wall or a protected shaft) to a:					
a. protected stairway;	30	30	30[8]	REI 30[8]	Each side separately
b. lift shaft	30	30	30	REI 30	

Source: *Table 1.4, Building Regulations Approved Document B2*

Notes:

1 Part 21 for loadbearing elements, Part 22 for non-loadbearing elements, Part 23 for fire-protecting suspended ceilings, and Part 24 for ventilation ducts, *BS 476-8* results are acceptable for items tested or assessed before 1st January 1988.

2 Applies to loadbearing elements only (see AD B2, B3.11 and Appendix E).

3 Guidance on increasing the fire resistance of existing timber floors is given in BRE Digest 208 **Increasing the fire resistance of existing timber floors** (BRE 1988).

4 A suspended ceiling should only be relied on to contribute to the fire resistance of the floor if the ceiling meets the appropriate provisions given in Table A3.

5 The guidance in Section 12 allows such walls to contain areas which need not be fire-resisting (unprotected areas).

6 Unless needed as part of a wall in item AD B2, 5a or 5b.

7 Except for any limitations on glazed elements given in AD B2, Table A4.

8 See AD B2, Table A4 for permitted extent of uninsulated glazed elements.

9 The national classifications do not automatically equate with the equivalent classifications in the European column, therefore products cannot typically assume a European class unless they have been tested accordingly. 'R' is the European classification of the resistance to fire performance in respect of loadbearing capacity, 'E' is the European classification of the resistance to fire performance in respect of integrity; and 'I' is the European classification of the resistance to fire performance in respect of insulation.

NB Refer to full tables within Approved Document B for additional information

Table 1.5, AD B2 – Minimum periods of fire resistance

Purpose group of building	Minimum periods of fire resistance (minutes) in a:					
	Basement storey[$] including floor over Depth (m) of a lowest basement		Ground or upper storey Height (m) of top floor above ground in a building or separated part of a building			
	More than 10	Not more than 10	Not more than 5	Not more than 18	Not more than 30	More than 30
1. Residential:						
a. Block of flats						
– not sprinklered	90	60	30[*]	60[**†]	90[**]	Not permitted
– sprinklered	90	60	30[*]	60[**†]	90[**]	120[**]
b. Institutional	90	60	30[*]	60	90	120[#]
c. Other residential	90	60	30[*]	60	90	120[#]
2. Office:						
– not sprinklered	90	60	30[*]	60[*]	90	Not permitted
– sprinklered[2]	60	60	30[*]	30[*]	60	120[#]
3. Shop and commercial:						
– not sprinklered	90	60	60[*]	60	90	Not permitted
– sprinklered[2]	60	60	30[*]	60	60	120[#]
4. Assembly and recreation:						
– not sprinklered	90	60	60[*]	60	90	Not permitted
– sprinklered[2]	60	60	30[*]	60	60	120[#]
5. Industrial:						
– not sprinklered	120	90	60[*]	90	120	Not permitted
– sprinklered[2]	90	60	30[*]	60	90	120[#]
6. Storage and other non-residential:						
a. any building or part not described elsewhere:						
– not sprinklered	120	90	60[*]	90	120	Not permitted
– sprinklered[2]	90	60	30[*]	60	90	120[#]
b. car park for light vehicles:						
i. open sided car park[3]	N/A	N/A	15[*+]	15[*+4]	15[*+4]	60
ii. any other car park	90	60	30[*]	60	90	120[#]

Source: *Table 1.5, Building Regulations Approved Document B2*

Single storey building are subject to the periods under the heading 'not more than 5'. If they have basements, the basement storeys are subject to the period appropriate to their depth.

[$] The floor over a basement (or if there is more than 1 basement, the floor over the topmost basement) should meet the provisions for the ground and upper storeys if that period is higher.
[*] Increased to a minimum of 60 minutes for compartment walls separating buildings.
[**] Reduced to 30 minutes for any floors within a flat with more than one storey, but not if the floor contributes to the support of the building.
[#] Reduced to 90 minutes for elements protecting the means of escape.
[+] Increased to 30 minutes for elements protecting the means of escape.
[†] Refer to paragraph 7.9 in AD B2 regarding the acceptability of 30 minutes in flat conversions.

Notes:
1 Refer to Table 1.4 for the specific provisions to test.
2 'Sprinklered' means that the building is fitted throughout with an automatic sprinkler system in accordance with paragraph 0.16.
3 The car park should comply with the relevant provisions in the guidance on requirement AD B2, B3 section 11.
4 For the purposes of meeting the Building Regulations, the following types of steel elements are deemed to have satisfied the minimum period of fire resistance for 15 minutes when tested to the European test method.
i) Beams supporting concrete floors maximum Hp/A=230m-1 operating under full design load.
ii) Free-standing columns maximum Hp/A=180m-1 operating under full design load.
iii) Wind bracing and struts, maximum Hp/A=210m-1 operating under full design load.
Guidance is also available in *BS 5950* Structural use of steelwork in building. Part 8 Code of practice for fire resistant design.

NB Refer to full tables within Approved Document B for additional information.

Sustainability

Sustainable design of HRMO buildings

British Gypsum recognises that manufacturing and construction is often perceived to make heavy demands on the environment. We have committed to minimising our impact on valuable natural resources, striving to provide products and systems that enable customers to build in a more sustainable and responsible way. Delivering sustainable buildings relies on the balancing of social, environmental and economic objectives. Our sustainability programme highlights the importance of environmental management, it focuses on the conservation of the environment and natural resources through a managed programme of waste reduction, pollution prevention, energy efficiency and the manufacture of sustainable construction products and systems. Although environmental management is a key concern our programme also covers the social and economic pillars of sustainability.

Waste hierarchy process

Source: *Environment Agency*

Waste management

In developing a waste management strategy, the waste hierarchy framework has become the cornerstone for sustainable waste management, setting out the order in which options for waste management should be considered based on environmental impact.

Waste costs are usually calculated based on the costs to recycle or send to landfill. There are, however, a number of hidden costs that need to be taken into account including:

- Initial material costs
- Labour cost to load excess material into the building
- Labour cost to remove waste from the building

The total cost of waste is a lot higher than the cost of removal. As a result, British Gypsum works closely with customers to eliminate and reduce waste before it enters the site. Some of the many ways British Gypsum can help as a result of early project involvement include:

1 - Eliminate: Best practice design assistance at specification stage, installer training and value engineering.

2 - Reduce: Designing out waste in specifications, the use of bespoke product sizes and on-site technical support.

3 - Re-use: Reduced board types on-site making off-cuts easier to use.

4 - Recycle: Recycling and reclamation through the British Gypsum Plasterboard Recycling Service.

Environmental Management – ISO 14001: 2004

We have been developing our Environmental Management System in accordance with ISO 14001: 2004 since 2006.

In November 2008, British Gypsum became the first drylining manufacturer to achieve certification across all of its manufacturing and mining operations in the UK. In 2010 the certification was broadened to cover the entire business. The certificate is available on our website. www.british-gypsum.com

This certification emphasises the stringent environmental standards maintained across the business and enables British Gypsum to support customers by clearly demonstrating its use of products supplied to an internationally recognised standard, as advocated by BREEAM, the Code for Sustainable Homes and the BRE Green Guide.

Part of British Gypsum's environmental strategy is to reduce the amount of waste generated in the manufacturing process, optimise the use of recycled and reclaimed raw materials, designing them to minimise unnecessary waste, and to provide facilities to reclaim and recycle post-consumer waste.

Recycled content of plasterboard

British Gypsum's gypsum-based plasterboards and ceiling products have a very high recycled content, as detailed below:

- Plasterboard is a highly recyclable product; new plasterboard may have a recycled content of almost 90% and nearly all plasterboard is 100% recyclable after use. As a result, plasterboard often has the highest recycled content of any construction products in new buildings.
- Although the maximum for recycled plasterboard content into remanufacture is currently at 18% it is possible this figure will improve in the future as new recycling technology and techniques become available.
- The paper liners on our plasterboards are made from between 97% – 100% recycled paper and cardboard (dependant on liner and availability of materials).

Plasterboard Recycling Service

British Gypsum leads the UK drywall industry in recycling plasterboard waste, reducing the pressure on landfill and preserving gypsum reserves. We are the only gypsum company with dedicated plasterboard recycling facilities in the UK.

We have invested heavily to expand the availability of our service, which not only significantly reduces waste handling costs and saves precious raw materials, but also improves site safety for the contractor through better site housekeeping.

We have also been instrumental in the development of the Ashdown Agreement working with the GPDA[1] and WRAP[2], delivering a voluntary commitment by UK plasterboard manufacturers to significantly reduce, and ultimately eliminate, plasterboard manufacturing waste to landfill.

This has lead to the development of the Plasterboard Sustainability Partnership, a cross-industry working group dedicated to improving the sustainability of plasterboard. For further details visit www.plasterboardpartnership.org

[1] Gypsum Products Development Association.
[2] Waste Resources Action Programme.

For more information, please contact the Plasterboard Recycling Service Customer Service Centre - Tel: 0800 633 5040

BREEAM

The Building Research Establishment Environmental Assessment Method (BREEAM)

This methodology was created to ensure that construction projects meet high standards of environmental performance without prescribing specific designs. All compliance requirements are inspected by BRE licensed assessors.

BREEAM building assessments are high on the agenda of stakeholders of hotels, student accommodation and key worker accommodation buildings, offering a key differentiation over competitor's constructions. The desired level of BREEAM rating required will vary from project to project depending upon individual client requirements.

Table 1.6 – BREEAM rating scale

BREEAM rating	Score required (design stage & Post Construction Review)
UNCLASSIFIED	<30
PASS	≥30
GOOD	≥45
VERY GOOD	≥55
EXCELLENT	≥70
OUTSTANDING	≥85

Source: *BREEAM New Construction 2011, Non-Domestic Buildings*

BREEAM New Construction 2011, Non-Domestic Buildings can be used to assess the following building types:

- Student halls of residence
- Key worker accommodation
- Care homes that do not consist of extensive medical facilities (consulting rooms and medical rooms are acceptable)
- Sheltered housing

Note: From 1st of July 2011 the individual BREEAM Scheme documents (Multi-Residential, Healthcare, Education, Offices, etc.) were combined within one framework: BREEAM: New Construction, Non-Domestic Buildings. For latest BREEAM Scheme information refer to www.breglobal.com

Points can be obtained for many of the BREEAM criteria through the incorporation of British Gypsum systems. The table below refers to the key areas.

Table 1.7 – BREEAM issues affected by British Gypsum solutions

Issue reference	Solutions and support	Maximum potential credits
Hea 02 Indoor air quality	• ACTIV*air* products could contribute towards points as part of an indoor air quality and testing plan	2
Hea 05 Acoustic Performance	• 1, 3 or 4 credits available for attaining 3, 5 or 8 dB above Approved Document E requirements for separating walls • Note RD scheme does not cover rooms for residential purposes	1 – 4
Ene 01 Reduction of CO_2 emissions	• Airtightness detailing assistance • External envelope performance improvement	15
Mat 01 Life cycle impacts	• Green Guide ratings are available on www.thegreenguide.org.uk	6
Mat 03 Responsible sourcing of materials	• Gyproc plasterboards, Glasroc specialist boards, Thistle plasters and core products have been certified to BES 6001 'Responsible Sourcing of Construction Products' achieving a 'Very Good' • British Gypsum is fully ISO 14001: 2004 certified across all mining, manufacturing and central functions	3
Mat 04 Insulation	• Green Guide ratings for insulation • 80% recycled content	2
Mat 05 Designing for robustness	• Single layer Severe Duty solutions (GypWall ROBUST and GypWall EXTREME)	1
Wst 01 Construction waste management	• Plasterboard Recycling Service • Reduced waste details • Single board specifications	4

Source: *BREEAM New Construction 2011, Non-Domestic Buildings*

Indoor air quality

We typically spend 80% of our time indoors, in schools, offices, hospitals and our homes. Clean air is something we assume we have in the buildings in which we live, work and learn, yet impurities found in the air can cause health problems and a reduction in our general well-being.

Clean air on the other hand can speed up patient recovery in hospitals, reduce absence at work and increase pupils' concentration at school.

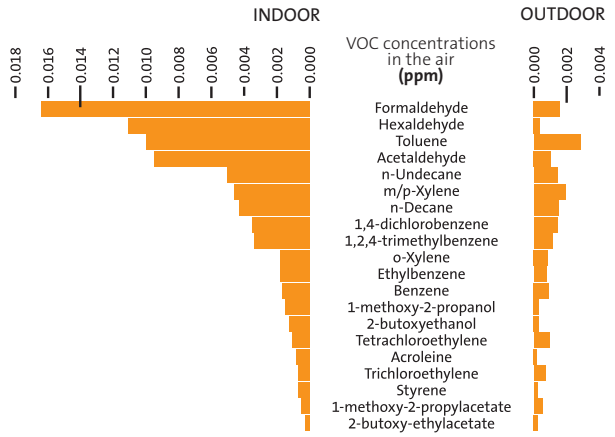
Volatile organic compounds (VOCs)

Although we don't notice them, pollutants called volatile organic compounds (VOCs) including formaldehyde are often present in the air we breathe – naturally emitted from furniture, carpets, paints, varnishes, cleaning products and building materials.

VOCs have an initial boiling point of less than or equal to 250°C. They are emitted as a gas from a liquid or solid and enter the surrounding air. VOCs are numerous and varied. They include both human-made and naturally occurring chemical compounds. Formaldehyde (CH^2O) is both the highest concentration and highest risk VOC. Refer to figure 1 – VOC concentration.

Studies have shown that the air indoors can have concentrations of VOCs many times higher than the outdoor air. The increased focus on the reduction of energy consumption is leading to more airtight buildings, which means the quality of air is becoming even more critical. Refer to figure 1 – VOC concentration. Studies have shown that ventilation systems are only about 30% effective at removing VOCs from the air indoors.

1 VOC concentration comparison, indoor vs outdoor



Source: Indoor Air Quality Observatory (OQAI)

Some of the health problems VOCs can cause

People often complain about health problems after extended periods of time spent indoors. Studies have shown that many of these symptoms can be attributed to VOCs:

- Headaches
- Nausea
- Lack of concentration
- Eye irritation
- Fatigue
- Breathing problems

The World Health Organisation (WHO) concerns about formaldehyde (which is a common VOC) in relation to human health are well published (WHO guidelines for indoor air quality: selected pollutants; 2010). All current regulation focuses on VOC emissions at project handover, and in reducing the VOC content of construction products.

Legislation and guidance

However, academic and evidence based design is increasingly highlighting that the major issue with VOCs is post handover / during building use.

Building regulations and guidance relating to VOCs:

- Building Regulations Approved Document F (ventilation)
- Building Bulletin 101 (education)
- BRE Digest 464 Part 2
- BRE Environmental Assessment Method (BREEAM) (indoor air quality)
- Health Technical Memorandum (HTM)03-01
- Leadership in Energy and Environmental Design (LEED) (indoor air quality)

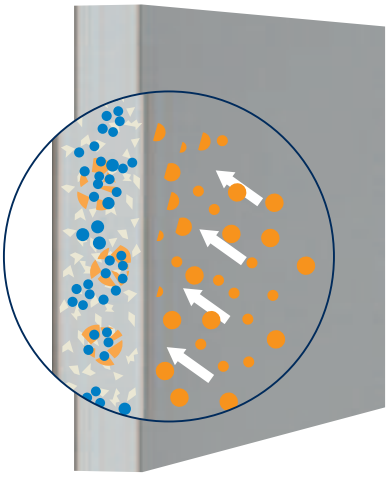
You can't see or smell VOCs. Therefore there is no way of knowing what concentrations you are being exposed to on a daily basis.

ACTIVair technology

ACTIVair is a new technology added to certain British Gypsum products. It is designed specially to decompose formaldehyde into non-harmful inert compounds, thus eliminating the risk of re-emission. It is tested to capture and convert 70% of formaldehyde. Refer to figure 2 – ACTIVair technology.

Improving the indoor air quality is a major consideration amongst clients and building occupants, most notably those concerned with sustainability and health and wellbeing. Good clean air can reduce health problems as well as enhancing our healthy living in both our work and living spaces.

2 ACTIV*air* technology



1. Formaldehyde molecules (●) in the air are absorbed by the plasterboard

2. ACTIV*air* technology (〰) converts them into inert compounds

3. The inert compounds (●) remain locked in the plasterboard

ACTIV*air* technology

ACTIV*air* technology:

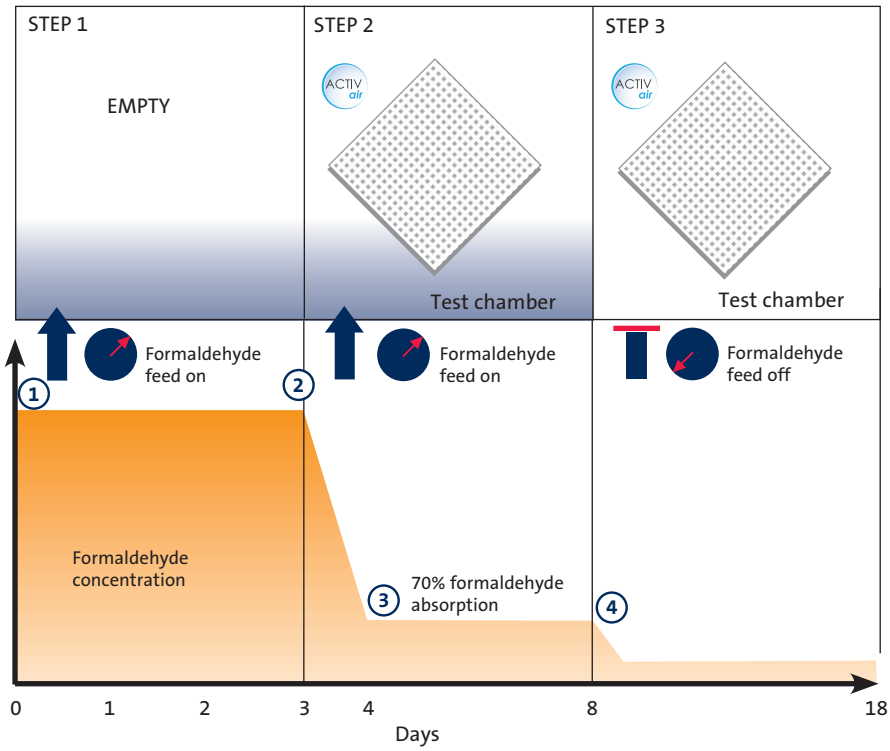
- Decomposes 70% of formaldehyde making indoor spaces healthier[1]
- Uniquely captures and converts formaldehyde, removing the risk of re-emission even if the product is damaged or at end of life
- Will continue to work for at least 50 years
- Works though an emulsion paint finish
- Is fully recyclable through the British Gypsum closed loop Plasterboard Recycling Scheme (PRS) - Plasterboard only
- Has no impact on the installation or performance of the products or systems they are included in with regards to fire, acoustics, thermal or durability compared to standard versions of the products

[1] In a controlled test environment

The effectiveness of **ACTIV*air*** technology has been tested by the accredited Eurofins and VITO laboratories to ISO 16000-23. The test shows that ACTIVair decomposes 70% of the formaldehyde in a controlled test environment. Refer to figure 3 – **ACTIV*air*** test principle.

When using **ACTIV*air*** products aim to have coverage in each room on the walls and/or ceiling equivalent to the m² area of the floor.

3 ACTIV*air* test principle



ACTIV*air* test principle

1 Formaldehyde was fed into the empty test chamber at a constant level
2 On day 3, a sample of a product containing ACTIVair technology was introduced to the test chamber
3 After 24 hours, ACTIVair technology had absorbed 70% of the formaldehyde in the chamber, with a continued in-feed of formaldehyde
4 Formaldehyde feed was stopped on day 8, and levels were further reduced as they continued to be absorbed by ACTIVair technology

Design principles

Strength and robustness performance of partitions

Many high-traffic areas within hotels and student accommodation, such as corridors and entrance halls, are subject to intensive use that can result in significant damage to the surroundings, whilst regular, unplanned maintenance can be costly to income due to rooms being unavailable for occupation. Therefore, when designing internal spaces, the use of durable materials has a significant impact on whole-life costs and leads to more predictable maintenance cycles.

BS 5234 comprises two parts – Part 1 - Design and installation requirements, and Part 2 - Specification for performance requirements for strength and robustness in relation to end use categories. The standard covers performance aspects such as stiffness, crowd pressure, impacts, anchorages and door slamming resistance.

Please note: In order to claim a partition duty, a designated performance level must be achieved for all elements in the test – see **Table 1.8** below for examples of room type in each category. All British Gypsum partitioning systems are fully tested to *BS 5234: Part 2: 1992*.

GypWall CLASSIC systems, incorporating Gyproc SoundBloc or Gyproc FireLine, achieve Heavy Duty to *BS 5234* using a single layer 15mm lining. This provides an extremely cost-effective solution for the majority of situations.

With whole-life costs increasingly being considered, GypWall ROBUST offers additional durability over single layer GypWall CLASSIC systems without the need for additional board layers.

In 2007, British Gypsum launched GypWall EXTREME, the ultimate impact resistant partition for use where additional durability is required above and beyond Severe Duty. It is able to cope with the rigours of intensive, high traffic spaces within buildings where blockwork has traditionally been specified.

Table 1.8 – *BS 5234: Part 2: 1992*

Partition Duty	Category	Examples
Light	Adjacent space only accessible to persons with high incentive to exercise care. Small chance of accident occurring or of misuse	N/A for HRMO projects
Medium	Adjacent space moderately used, primarily by persons with some incentive to exercise care. Some chance of accident occurring or of misuse	Offices
Heavy	Adjacent space frequently used by the public and others with little incentive circulation areas to exercise care. Chances of accident occurring or of misuse	Ancillary
Severe	Adjacent space intensively used by the public and others with little incentive areas to exercise care. Prone to vandalism and abnormal rough use	Major circulation

Source: *BS 5234: Part 2: 1992*

Openings

Apart from separating walls, almost every other partition or wall lining in an HRMO building will contain an opening of some kind, such as a door or window. British Gypsum lightweight metal stud partitions and linings are easily adapted to suit specific requirements for a wide range of openings. It is important to continue the stud centre module (generally 600mm centres) around the opening to maintain plasterboard support centres. Additional vertical studs and horizontal channel and studs are simply installed at the location of the opening to form the perimeter framing, subject to overall dimensions.

Please refer to Construction Details in the relevant structural frame section which include example arrangements for door openings.

Construction details for window openings are available on request from the British Gypsum Technical Advice Centre: Tel. 0844 800 1991.

Services

The design of British Gypsum systems makes the installation of services, such as cables and pipes, straightforward. For example the cavity formed by the metal studs in partitions enables the services to run vertically and the cut-outs within the studs allow the services to run horizontally if required. Sockets can be installed with ease, whether recessed or surface mounted. Please note that the installation of electrical services should be carried out in accordance with *BS 7671: 2011*, Requirements for electrical installations - IEE wiring regulation. Please refer to Construction Details in the relevant structural frame section which include examples for socket fixing.

Please note that when detailing for openings, services and fixtures, care must be taken to ensure that the fire and acoustic performance of the element is not compromised.

On-site safety

All British Gypsum's standard floor and ceiling channels now incorporate folded edges to provide a safer working edge. This was achieved through investment in new tooling that folds the edges of the steel back on itself. The edges pass through additional rolls during manufacture to ensure they do not splay when cut. This new feature ensures easier manual handling of the products and enhances on-site health and safety, whilst remaining fully integrated within British Gypsum's **SpecSure®** lifetime system warranty.

Fixing to British Gypsum partitions and wall linings

HRMO buildings will utilise one of three fixing methodologies; surface mounted to board, surface mounted to noggings or furniture mounted. Furniture mounted solutions are prevalent especially in the hotel sector. For surface mounted to board information refer to the OSM section in this document. For further fixing details for board and noggings surface mounted solutions contact the British Gypsum Technical Advice Centre.

Finishing

A choice for finishing the surface of the plasterboard lining is available, the most popular method being plaster skimming as opposed to a jointing material technique. Within both methods there are further choices which can be made depending upon any criteria needed to be met.

For example, with regards to plaster skimming, Thistle Board Finish or Thistle Multi-Finish could be considered for use in low traffic areas whereas Thistle Durafinish could be considered to provide improved resistance to accidental damage in high traffic areas. With regards to the use of jointing material, there are hand applied options and, if the area is large enough, machine jointing application may provide efficiency benefits. In all jointing cases a series of coats of jointing material in conjunction with jointing tape is applied and finished with a plasterboard primer to prepare the surface ready for decoration.

Ceramic tiling

Tiles can be applied to the plasterboard surface of partitions and wall linings and most commonly this is carried out in areas subject to intermittent moisture conditions. Typical applications within HRMO buildings include toilets, bathrooms and kitchens, and tiles up to 12.5mm thick and weighing 32kg/m^2 (maximum including adhesive and grout) can be applied. Slight modifications to the partition or wall lining system may be required depending upon the system chosen.

For further information, contact the British Gypsum Technical Advice Centre.

Table 1.9 – Board lining requirements

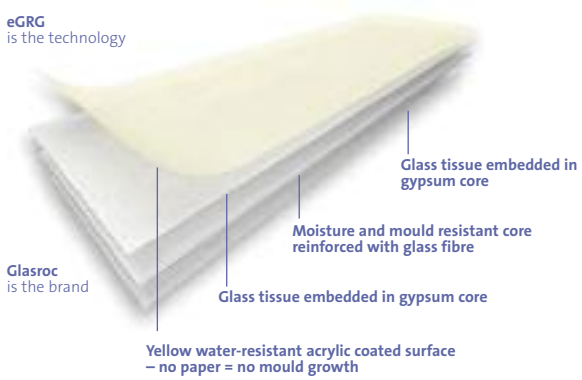
Level of moisture	Typical application	Board
Low	**Residential** Splash backs Kitchens Toilets	Gyproc Moisture Resistant and MR variants
Medium	**Residential** Kitchens Bathrooms	Gyproc Moisture Resistant and MR variants **OR** Glasroc H TILEBACKER
High	**Residential** Shower enclosures **Commercial** Kitchens Changing rooms	Glasroc H TILEBACKER
Extreme	**Commercial** Communal showers Swimming pool halls	Glasroc H TILEBACKER[1]

[1] In extreme moisture environments, the exposed surfaces of Glasroc H TILEBACKER should be treated with a suitable tanking system.

Glenton Road Hotel.

Glasroc H TILEBACKER

Glasroc H TILEBACKER is recommended for use as a tile backing substrate in environments subjected to moisture. The board can be used on both wall lining and lightweight partition systems. In areas of high / extreme moisture and humidity, extra care should be given to detailing at junctions, perimeter sealing and tiling.



Application

In rooms subject to high or intermittent moisture conditions, the range of boards available for tiling offers flexibility of design and peace of mind when installed in both wall linings and lightweight partition systems.

Specifically designed for direct tiling applications, Glasroc H TILEBACKER is the ideal substrate for tiling in environments subjected to moisture, providing protection for shower enclosures, bathrooms, swimming pool halls[1] and adjacent areas.

For areas where intermittent moisture conditions are more common, including kitchens and bathrooms, Gyproc moisture resistant grade boards are suitable.

[1] In conjunction with a suitable tanking system.

Pre-primed for tiling

Glasroc H TILEBACKER is pre-treated with a high quality acrylic primer to the tiling surface. The primer provides additional water resistance whilst also cutting down preparation time before tiling.

Water resistance

The coating acts as a water barrier combined with a moisture and mould-resistant core. It prevents water penetration through the board to the walls behind, providing effective protection against leaks.

Quicker to install

Easy to cut – simply score and snap in one go and it's ready to install. Tests have shown that it's twice as quick to install as other cement tile backing boards on the market.

Performance guaranteed

Glasroc H TILEBACKER can be used within British Gypsum systems that are covered by the **SpecSure®** Lifetime System Warranty.

British Gypsum's Gypframe metal frame system **GypWall CLASSIC**, makes tiling on to a partition wall quicker and easier and won't warp over time. This system can be installed using tiling systems up to 32kg/m^2 on Gypframe studs at 600mm centres.

Timber stud framework is just as simple, however, the studs should be at 400mm centres and fully supported. To line an existing wall use **DriLyner BASIC** or **GypLyner UNIVERSAL**.

Up to a third lighter

Compared to cementitious boards, the lightweight core makes it up to a third lighter – at less than 10kg/m^2 it's much easier to handle and fix around site.

Good fire and acoustics

Glasroc H TILEBACKER has been tested to achieve the high levels of fire and acoustic performance demanded by national Building Regulations.

The sustainable choice

Manufactured by British Gypsum in the UK under ISO 14001: 2004 Environmental Management System, Glasroc H TILEBACKER is made from environmentally friendly sourced gypsum – it does not require expensive landfill disposal like cement-based boards and is fully recyclable via the British Gypsum Plasterboard Recycling Service (PRS)[1].

[1] Available for major housing and commercial projects.

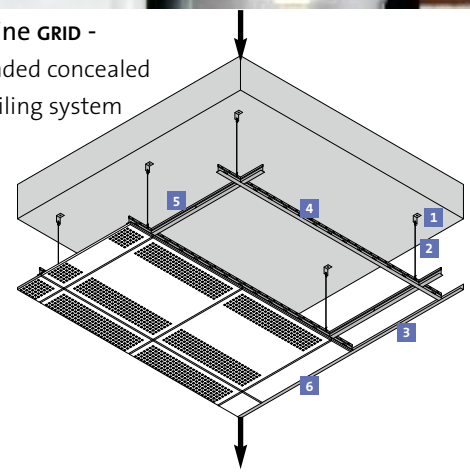
British Gypsum Acoustic Ceilings

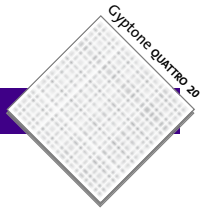
Gyptone tiles

The Gyptone range of suspended ceiling tiles provide an innovative and exciting combination of design and performance, with limitless options for building interiors. Gyptone tiles and planks are pre-finished in white (NCS 0500).

Gyptone QUATTRO 20

CasoLine GRID - suspended concealed grid ceiling system





Typical component list

1 **Gypframe MF12 Soffit Cleat**

2 **Suspension wire (14swg)**

3 **Wall Angle**
CLWA01
32mm x 19mm x 3000mm

4 **E24 Main 'T' section**
CLT2401
24mm x 3600mm

5 **E24 Special Cross 'T' section**
CLT24D101
24mm x 600mm

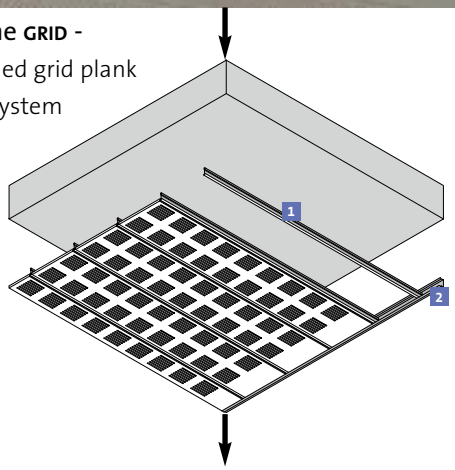
6 **Wall Spring Clip**
CLC02

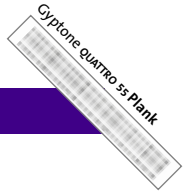
Gyptone planks

The Gyptone range of suspended ceiling planks provide an innovative and exciting combination of design and performance, with limitless options for building interiors. Gyptone tiles and planks are pre-finished in white (NCS 0500).

Gyptone QUATTRO 55 (2400mm)

CasoLine GRID - suspended grid plank ceiling system





Typical component list

1 **Main 'T' section**
CLT15P01 - E15 x 1850mm
CLT15P02 - E15 x 2150mm
CLT15P03 - E15 x 2400mm

2 **E15 Shadowline Moulding**
CLSM04 - 3000mm

Optional **Wafer Head Jack-Point Screws**
13mm

Wall Angle
CLWA01
32mm x 19mm x 3000mm

Gyptone boards

The Gyptone range of boards brings a new creative freedom to ceiling and wall lining design. Their geometric patterns with an integral sound absorbent tissue backing provide high levels of acoustic performance. Boards can also curve to a minimum radius of 1200mm for dramatic ceiling effects.

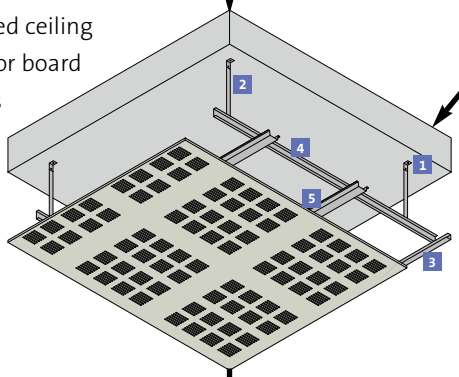
Rigitone boards

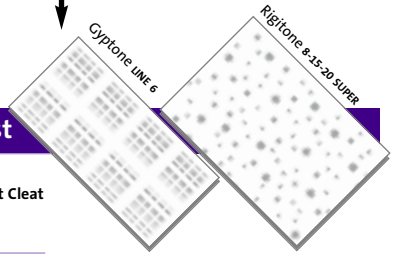
The Rigitone range of boards brings a new creative freedom to ceiling and wall lining design. Their geometric patterns with an integral sound absorbent tissue backing provide high levels of acoustic performance. Boards can also curve to a minimum radius of 1200mm for dramatic ceiling effects.

Gyptone LINE 6

Rigitone 8-15-20 SUPER

CasoLine MF - suspended ceiling system for board solutions





Typical component list

1 **Gypframe MF12 Soffit Cleat**
27 x 37 x 25 x 1.6mm

Gypframe MF11 Nut and Bolt
6.4mm x 12.5mm

Gypframe MF9 Connecting Clip
2.65mm gauge

2 **Gypframe MF8 Strap Hanger**
25 x 0.55mm
25m length

Wafer Head Jack-Point Screws
13mm

OR **Gypframe GA1 Steel Angle**
25 x 25 x 0.55mm
2900mm length

Drywall Screws
25mm for single layer (Gyptone)

3 **Gypframe MF6 Perimeter Channel**
20 x 27 x 30 x 0.50mm
3600mm length

Rigidur Screws
Suitable for fixing Rigitone boards

4 **Gypframe MF7 Primary Support Channel**
15 x 45 x 0.90mm
3600mm length

5 **Gypframe MF5 Ceiling Section**
80 x 26 x 0.50mm
3600mm length

NB Rigitone jointing and installation accessories will be required.

Beautiful ACOUSTICS

British Gypsum Acoustic Ceilings

Sound solutions for a better environment

Just visualise a ceiling that will lift your building to another level of performance and provide stunning distinctive aesthetics that enhance the interior styling.

For further technical advice regarding British Gypsum ceiling systems, contact the British Gypsum Technical Advice Centre, tel: 0844 800 1991
email: bgtechnical.enquiries@bpb.com

weber.therm External Wall Insulation (EWI) systems

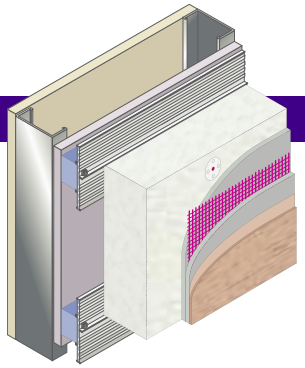
External Wall Insulation is the ideal solution for upgrading the thermal performance of solid masonry and light steel frame external walls whilst minimising disruption to the internal space. weber.therm EWI solutions are appropriate for both new-build and refurbishment scenarios, combining high thermal performance with an attractive range of finishing textures and colours.

Given the constraints of hotel and student accommodation refurbishment projects, where downtime of rentable space is a key consideration, weber.therm EWI solutions offer the perfect solution.

Weber EWI specification support

Weber EWI systems utilise a wide range of components which when used together are covered by a Weber guarantee. Systems suitable for each project are selected according to project specific site conditions and performance requirements.

For product information and project specification support contact Weber on 08703 330070 or visit www.netweber.co.uk.



Light steel frame solutions

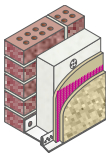
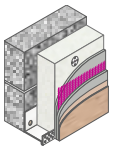
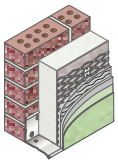
Rail system

Weber has developed the rail system for new residential construction onto light steel frames, providing a drained cavity as a requirement of the NHBC and the ability to withstand high windloads.

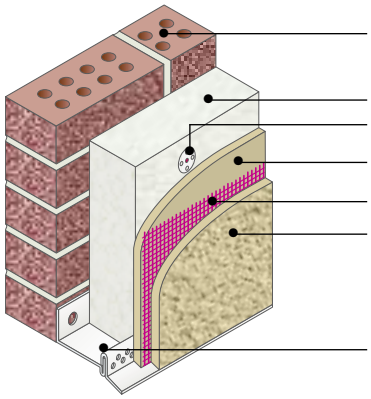
The rail system is also highly suitable for the refurbishment of non-traditional house types.

Masonry solutions

Product selector

System	weber.therm XP	weber.therm XM	weber.therm XL
			
	Lath system also available		
Choice of insulant (range of thickness available to provide required U-value)			
Expanded polystyrene, EPS	✔	✔	✔
Mineral wool, MFD or MFL	✔	✔	✔
Phenolic, PHS	✔	✔	✔
Polyisocyanurate, PIR	✔	✔	✔
Choice of finish (range of colours available to suit requirements)			
Scraped finish	✔	✔	✔
Dry-dash	✔	✔	✔
Brick	–	✔	–
Synthetic finish	–	✔	✔

What is weber.therm XP?



weber.therm XP is the new generation of EWI systems, using specially designed mineral one-coat renders.

Features and benefits

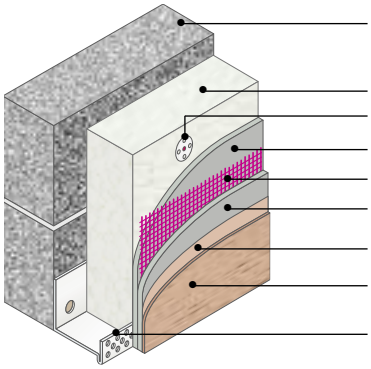
- Machine applied, one-coat process dramatically reduces application and scaffold time over traditional multi-coat systems
- Suitable for new construction and refurbishment of existing buildings including non-traditional housing
- Suitable for all insulation types
- Render finish available in 12 standard and 24 non-standard colours
- BBA approved certificate no. 09/4670
- Energy Saving Trust recommended
- Full specification, technical and application support provided

BBA CERTIFICATE No 09/4670

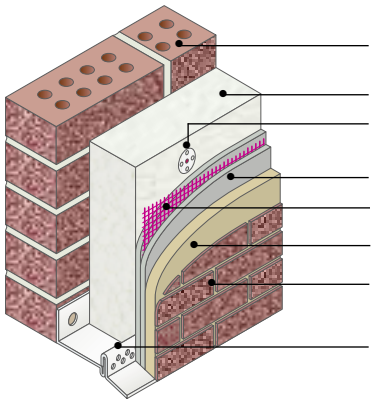
energy saving recommended

What is weber.therm XM?

weber.therm XM with synthetic finish



weber.therm XM with weber.rend RB finish



weber.therm XM is a high performance External Wall Insulation system protected by meshcloth reinforced polymer renders. The system can be finished with synthetic coatings, mineral render, aggregate or brick-effect render.

Features and benefits

- Comprehensive range of colours and textures enable the creation of striking visual effects
- Has a high performance water shedding range of finishes to protect the building fabric
- Lightweight EWI system
- BBA approved certificate no. 91/2691
- NSAI approved certificate no. 09/0338, 30 years design life on existing properties
- NSAI approved certificate no. 06/0260, 60 years design life on new properties
- Full specification, technical and application support provided

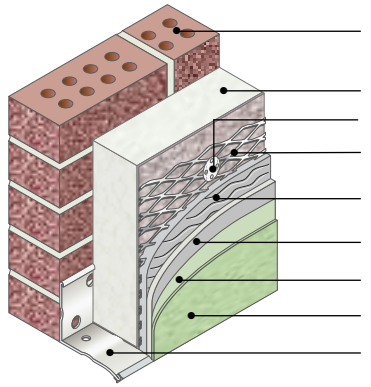
NSAI CERTIFICATE No. 09/0338 & No. 06/0260

BBA CERTIFICATE No 91/2691

energy saving recommended

What is weber.therm XL?

weber.therm XL with synthetic finish



weber.therm XL is a high performance EWI system protected by lath reinforced polymer renders. The system can be finished with synthetic coatings, mineral render or aggregate.

Features and benefits

- Comprehensive range of colours and textures enable the creation of striking visual effects
- Metal lath system for enhanced impact and weather resistance
- BBA approved certificate no. 91/2600
- NSAI approved certificate no. 07/0295, 60 years design life on new properties
- Full specification, technical and application support

NSAI CERTIFICATE No. 07/0295

BBA CERTIFICATE No 91/2600

Gyproc Profilex Access Panels

Gyproc Profilex Access Panels provide a range of solutions to suit all situations in HRMO buildings – from standard panels with budget locks, through to one and two hour fire-rated and sealed panels with tamper-proof locks. For further information, visit www.profilex.co.uk

Gyproc Profilex Access Panels are:

- The only **SpecSure®** guaranteed access panels in the market
- Designed to fit seamlessly into British Gypsum systems
- Clean, uncluttered lines at eye level in the corridors (no architraves or hinges sticking out)
- Quick and simple to install, requiring minimum time resource and low skill levels rather than the skilled carpentry operatives required to fit doors and architraves
- The ideal solution for access from communal corridors into bathroom pods in high-rise multi-occupancy buildings
- All our standard Gyproc Profilex Access Panels can be upgraded with tamper proof or high security (Euro Profile) cylinder locks and can be supplied either primed for on site decoration, or pre-finished in a variety of colours and gloss levels

A range of standard panels are available, including:

- Non-fire-rated panels for both walls and ceilings
  - Constructed from 1.2mm zinc-coated mild steel, with a choice of frame types
- 1 hour fire wall panels
  - Constructed from 1.2mm zinc-coated mild steel, incorporating 6mm Glasroc F MULTIBOARD, with a choice of frame types
- 1 hour fire-rated ceiling panels
  - Constructed from 1.2mm zinc-coated mild steel, incorporating 60kg/m^3 stone mineral wool, with a choice of frame types
- 2 Hour fire-rated panels
  - Widely specified in British Gypsum **ShaftWall** systems where extreme fire resistance is required
- Gyproc sealed panels
  - The panels are fitted with an EPDM gasket to provide a sealed panel in high humidity, dust-free or clean environment applications

A range of bespoke panels are available to suit individual site requirements, e.g. circular panels, double door panels.

As part of our bespoke service we are able to offer:

- An integrated approach to designing the panels to meet your specific needs
- Technical support, including CAD drawings
- On-site support to aid with design choices or post installation advice
- 10 day lead-time for all bespoke panels

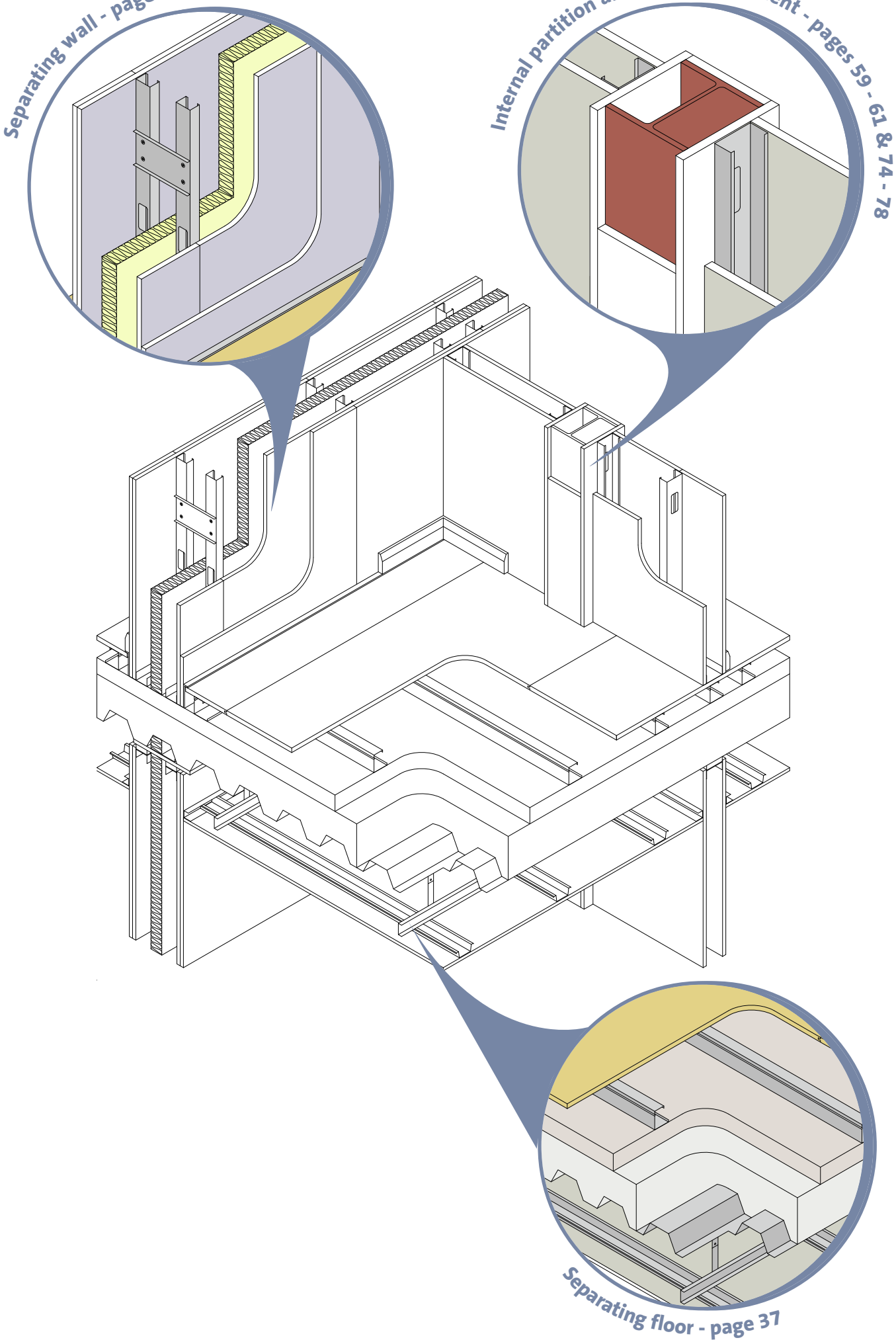
PROFILEX
ACCESS PANEL SOLUTIONS

2. Steel frame solutions

Nottingham Business School.

Contents

Section overview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Separating floor - page 37

Introduction

Steel frame is very popular as a structural element for many HRMO sector buildings. There are many benefits to utilising a steel super-structure, for example:

- Allows intricate architectural design
- Potential reduction of build height as a result of running services through webs
- High strength to weight ratio
- Construction speed
- Limited effect on building plan as a result of adverse weather conditions

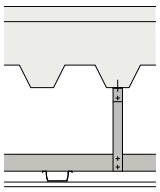
British Gypsum has a range of internal partitions, ceilings, floors, separating walls and steel encasement specifications suitable for integration within a steel frame structure.

This section will lead you through the process of selecting an appropriate specification for your needs based on relevant performance criteria such as fire resistance, acoustic insulation or absorption, robustness, and thermal performance. Having chosen British Gypsum to suit the requirements of the project, relevant construction details are provided to give guidance on its integration within the building.

Separating floors

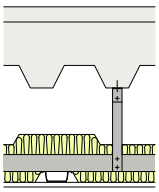
Steel-supported concrete floor

1



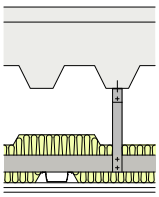
CasoLine MF ceiling suspended beneath floor to give a 240mm cavity. Ceiling lining as in table.

2



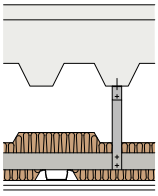
CasoLine MF ceiling suspended beneath floor to give a 240mm cavity. Ceiling lining as in table.

3



CasoLine MF ceiling suspended beneath floor to give a 240mm cavity, with 100mm Isover General Purpose Roll in void. Ceiling lining as in table.

4



CasoLine MF ceiling suspended beneath floor to give a 240mm cavity, with 100mm stone mineral wool in void. Ceiling lining as in table.

Table 2.1a – CasoLine MF ceiling system to the underside of concrete / trapezoidal deck to satisfy the requirements of *BS 476: Part 21: 1987*

Detail	Board type	Available with ACTIV*air* technology[3]	Ceiling lining thickness mm	Approx. ceiling weight kg/m²	Sound insulation[1] Airborne R_w ($R_w + C_{tr}$) dB	Sound insulation[1] Impact L_{nw} dB	System reference
BS 30 minutes fire resistance[2]							
1	Gyproc WallBoard		1 x 12.5	10	56 (50)	68	C100016
2	Gyproc SoundBloc	ACTIV air	1 x 12.5	13	61 (51)	60	C100018
3	Gyproc SoundBloc	ACTIV air	2 x 12.5	23	64 (55)	57	C100019
BS 60 minutes fire resistance							
4	Gyproc FireLine		2 x 15	25	64 (55)	57	C106051 / C100019

Table 2.1b – CasoLine MF ceiling system to the underside of concrete / trapezoidal deck to satisfy the requirements of *BS EN 1364-2: 1999*

Detail	Board type	Ceiling lining thickness mm	Approx. ceiling weight kg/m²	Sound insulation[1] Airborne R_w ($R_w + C_{tr}$) dB	Sound insulation[1] Impact L_{nw} dB	System reference
EN 30 minutes fire resistance						
4	Gyproc FireLine	2 x 12.5	22	64 (55)	57	C106046 / C100019
EN 60 minutes fire resistance						
4	Glasroc F FIRECASE	2 x 15	28	64 (55)	57	G106040 / C100019

[1] Based on floor substrate achieving 35 R_w dB (airborne) and 91 L_{nw} dB (impact).
[2] Single layer ceiling specification based on 30 minute fire resistance contribution from floor substrate.
[3] These systems have an **ACTIV*air*** board option available for formaldehyde control to improve indoor air quality. Alternatively, all systems can be skim finished with Thistle PureFinish which contains **ACTIV*air*** technology. Refer to the indoor air quality section in Background & theory.

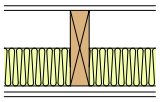
Internal floors

Steel-supported concrete floor

Typically concrete floors provide sufficient performance to meet acoustic requirements without contribution from the ceiling. Should the project require enhanced performance, an appropriate system can be selected from **Table 2.1**.

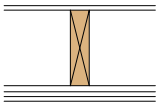
Steel-supported timber joist floor

1



22mm t&g timber-based flooring over minimum 195mm x 38mm timber joists at 600mm centres. Gypframe RB2 SureFix Bars fixed to underside of joists at 450mm centres and at perimeter. Ceiling lining as in table fixed to the bars only. 100mm Isover Acoustic Partition Roll (APR 1200) in the cavity.

2



22mm t&g timber-based flooring over minimum 195mm x 38mm timber joists at 600mm centres. Gypframe RB1 Resilient Bar fixed to underside of joists at 450mm centres and at perimeter. Ceiling lining as in table fixed to the bars only.

Table 2.2a – Gypframe RB1 and Gypframe RB2 solutions to the underside of steel-supported timber joist to satisfy the requirements of *BS 476: Part 21: 1987*

Detail	Board type	Ceiling lining thickness mm	Maximum loadbearing ratio	Approx. ceiling weight kg/m²	Sound insulation Airborne R_w dB	System reference
BS **30 minutes fire resistance**						
1	Gyproc WallBoard	1 x 12.5	100%	10	41	C206006
BS **60 minutes fire resistance**						
2	Gyproc FireLine	2 x 12.5	100%	22	45	C016031

Table 2.2b – Gypframe RB1 and Gypframe RB2 solutions to the underside of steel-supported timber joist to satisfy the requirements of *BS EN 1365-2: 2000*

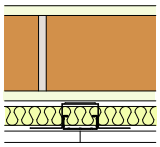
Detail	Board type	Ceiling lining thickness mm	Maximum loadbearing ratio	Approx. ceiling weight kg/m²	Sound insulation Airborne R_w dB	System reference
EN **30 minutes fire resistance**						
1	Gyproc WallBoard	1 x 12.5	100%	10	41	C206006
EN **60 minutes fire resistance**						
2	Gyproc FireLine	2 x 12.5	100%	22	45	C016031

Separating walls

Masonry separating walls

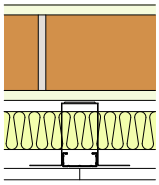
GypLyner UNIVERSAL

1



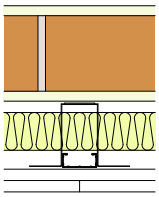
Solid masonry wall of mass 200kg/m² with Gyproc SoundCoat Plus or Thistle plaster each side. Lined one side with **GypLyner UNIVERSAL** system incorporating 25mm Isover Acoustic Partition Roll (APR 1200) within 35mm cavity, linings as in table.

2



Solid masonry wall of mass 200kg/m² with Gyproc SoundCoat Plus or Thistle plaster each side. Lined one side with **GypLyner UNIVERSAL** system incorporating 50mm Isover Acoustic Partition Roll (APR 1200) within 85mm cavity, linings as in table.

3



Solid masonry wall of mass 200kg/m² with Gyproc SoundCoat Plus or Thistle plaster each side. Lined one side with **GypLyner UNIVERSAL** system incorporating 50mm Isover Acoustic Partition Roll (APR 1200) within 85mm cavity, linings as in table.

Table 2.3 – GypLyner UNIVERSAL linings to masonry construction to satisfy the requirements of *BS 476: Part 21: 1987*

Detail	Board type	Available with ACTIV*air* technology[2]	Wall lining thickness mm	System cavity size including insulation dB	Performance of base wall R_w ($R_w + C_{tr}$) dB	Sound insulation: Airborne R_w ($R_w + C_{tr}$) R_w ($R_w + C_{tr}$) dB	Sound insulation: Improvement over base wall	System reference
BS	**120 minutes fire resistance[1]**							
1	Gyproc SoundBloc	ACTIV air	2 x 12.5	35	47 (44)	60 (55)	+13 (+11)	B226003
2	Gyproc SoundBloc	ACTIV air	1 x 12.5	85	47 (44)	64 (56)	+17 (+12)	B226007
3	Gyproc SoundBloc	ACTIV air	2 x 12.5	85	47 (44)	66 (59)	+19 (+15)	B226005

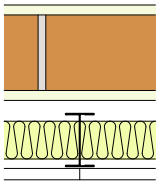
[1] The fire resistance quoted is that provided by the masonry wall without contribution from the lining.

[2] These systems have an **ACTIV*air*** board option available for formaldehyde control to improve indoor air quality. Alternatively, all systems can be skim finished with Thistle PureFinish which contains **ACTIV*air*** technology. Refer to the indoor air quality section in Background & theory.

Masonry separating walls

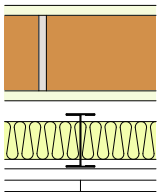
GypLyner IWL

1



Solid masonry wall of mass 180kg/m² with Gyproc SoundCoat Plus or Thistle plaster. Lined one side with **GypLyner IWL** system incorporating 50mm Isover Steel Frame Infill Batt (minimum 10mm stand-off from face of masonry), linings as in table.

2



Solid masonry wall of mass 180kg/m² with Gyproc SoundCoat Plus or Thistle plaster. Lined one side with **GypLyner IWL** system incorporating 50mm Isover Steel Frame Infill Batt (minimum 10mm stand-off from face of masonry), linings as in table.

Table 2.4a – GypLyner IWL lining to masonry construction to satisfy the requirements of *BS 476: Part 21: 1987*

Detail	Board type	Wall lining thickness mm	Minimum system cavity size including insulation mm	Performance of base wall R_w (R_w +C_{tr}) dB	Sound insulation		System reference
					Airborne R_w (R_w +C_{tr}) dB	Improvement over base wall R_w (R_w +C_{tr}) dB	
BS	**120 minutes fire resistance**[1]						
1	Gyproc WallBoard	1 x 15	58	45 (42)	59 (51)	+14 (+9)	B216002
2	Gyproc WallBoard	2 x 12.5	58	45 (42)	61 (54)	+16 (+12)	B216031

A range of studs are available for use within the **GypWall IWL** system depending on height requirements. See **Table 2.4b** below.

Table 2.4b – GypLyner IWL maximum heights for Gypframe 'I' Studs at 600mm centres

Gypframe 'I' Stud	Maximum height (mm)[2]	
	Single layer 15mm Gyproc WallBoard	Double layer 12.5mm Gyproc WallBoard
48 I 50	2400	2700
60 I 50	2700	3000
60 I 70	3300	3600
70 I 70	3900	4200

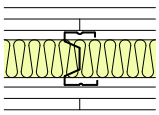
[1] The fire resistance quoted is that provided by the masonry wall without contribution from the lining.
[2] Based on a limiting deflection of L/240 at 200 Pa.

NB For heights between 4200mm and 8000mm, Gypframe Deep Flange Floor & Ceiling Channel should be used at base and at head (subject to deflection criteria).

Steel frame separating walls

Single frame solutions – 70mm Gypframe AcouStud

1



70mm Gypframe 70 AS 50 AcouStuds at 600mm centres, 50mm Isover Acoustic Partition Roll (APR 1200). Linings as in table.

Table 2.5a – GypWall CLASSIC partitions to satisfy the requirements of *BS 476-22: 1987*

Detail	Partition thickness mm	Board type	Available with ACTIV*air* technology[3]	Lining thickness mm	Approx. weight kg/m²	Max. partition height[1] mm	Sound insulation Airborne R_w ($R_w + C_{tr}$) dB		Duty rating	System reference	
							Any finish[4]	Skim finish[5]		Any finish[4]	Skim finish[5]
BS	**90 minutes fire resistance**										
1	132	Gyproc SoundBloc		2 x 15	52	5000	58 (52)	59 (52)	Severe	A206A231	A206A231S

Table 2.5b – GypWall CLASSIC partitions to satisfy the requirements of *BS EN 1364-1: 1999*

Detail	Partition thickness mm	Board type	Available with ACTIV*air* technology[3]	Lining thickness mm	Approx. weight kg/m²	Max. partition height[2] mm	Sound insulation Airborne R_w ($R_w + C_{tr}$) dB		Duty rating	System reference	
							Any finish[4]	Skim finish[5]		Any finish[4]	Skim finish[5]
EN	**90 minutes fire resistance**										
1	132	Gyproc SoundBloc		2 x 15	52	4000	58 (52)	59 (52)	Severe	A206A231	A206A231S

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

[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 the more onerous.

[3] These systems have an **ACTIV*air*** board option available for formaldehyde control to improve indoor air quality. Alternatively, all systems can be skim finished with Thistle PureFinish which contains **ACTIV*air*** technology. Refer to the indoor air quality section in Background & theory.

[4] Sound insulation performance for partitions finished using jointing or plaster skim.

[5] Sound insulation performance for partitions finished with a 2mm skim finish of Thistle Multi-Finish.

NB For 120 minutes fire resistance whilst maintaining sound insulation performance, use Gyproc DuraLine in lieu of Gyproc SoundBloc.

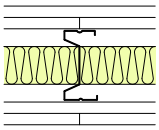
NB The fire resistance and sound insulation performances are for imperforate partitions, walls and ceilings incorporating boards with all joints taped and filled, or skimmed according to British Gypsum's recommendations. The quoted performances are achieved only if British Gypsum components are used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

NB For heights between 4200mm and 8000mm, Gypframe Deep Flange Floor & Ceiling Channel should be used at base and at head (subject to deflection criteria).

Steel frame separating walls

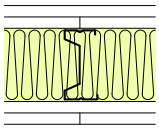
Single frame solutions – 92mm Gypframe AcouStud

1



92mm Gypframe 92 AS 50 AcouStuds at 600mm centres, 50mm Isover Acoustic Partition Roll (APR 1200). Linings as in table.

2



92mm Gypframe 92 AS 50 AcouStuds at 600mm centres, 100mm Isover Modular Roll. Linings as in table.

Table 2.6a – GypWall CLASSIC partitions to satisfy the requirements of *BS 476-22: 1987*

Detail	Partition thickness mm	Board type	Available with ACTIV*air* technology[3]	Lining thickness mm	Approx. weight kg/m²	Max. partition height[1] mm	Sound insulation Airborne R_w ($R_w + C_{tr}$) dB		Duty rating	System reference	
							Any finish[4]	Skim finish[5]		Any finish[4]	Skim finish[5]
BS 60 minutes fire resistance											
1	144	Gyproc SoundBloc	ACTIV air	2 x 12.5	52	5800	58 (53)	59 (53)	Severe	A206A291	A206A291S
2	144	Gyproc SoundBloc	ACTIV air	2 x 12.5	52	5800	59 (54)	60 (54)	Severe	A206A292	A206A292S

Table 2.6b – GypWall CLASSIC partitions to satisfy the requirements of *BS EN 1364-1: 1999*

Detail	Partition thickness mm	Board type	Available with ACTIV*air* technology[3]	Lining thickness mm	Approx. weight kg/m²	Max. partition height[2] mm	Sound insulation Airborne R_w ($R_w + C_{tr}$) dB		Duty rating	System reference	
							Any finish[4]	Skim finish[5]		Any finish[4]	Skim finish[5]
EN 60 minutes fire resistance											
1	144	Gyproc SoundBloc	ACTIV air	2 x 12.5	52	5000	58 (53)	59 (53)	Severe	A206A291	A206A291S
2	144	Gyproc SoundBloc	ACTIV air	2 x 12.5	52	5000	59 (54)	60 (54)	Severe	A206A292	A206A292S

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

[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 the more onerous.

[3] These systems have an **ACTIV*air*** board option available for formaldehyde control to improve indoor air quality. Alternatively, all systems can be skim finished with Thistle PureFinish which contains **ACTIV*air*** technology. Refer to the indoor air quality section in Background & theory.

[4] Sound insulation performance for partitions finished using jointing or plaster skim.

[5] Sound insulation performance for partitions finished with a 2mm skim finish of Thistle Multi-Finish.

NB For 90 minutes fire resistance whilst maintaining sound insulation performance, use 15mm Gyproc SoundBloc in lieu of 12.5mm Gyproc SoundBloc.

NB For 120 minutes fire resistance whilst maintaining sound insulation performance, use Gyproc DuraLine in lieu of Gyproc SoundBloc.

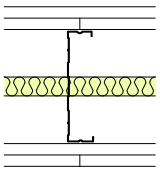
NB The fire resistance and sound insulation performances are for imperforate partitions, walls and ceilings incorporating boards with all joints taped and filled, or skimmed according to British Gypsum's recommendations. The quoted performances are achieved only if British Gypsum components are used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

NB For heights between 4200mm and 8000mm, Gypframe Deep Flange Floor & Ceiling Channel should be used at base and at head (subject to deflection criteria).

Steel frame separating walls

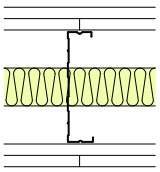
Single frame solutions – 146mm stud

1



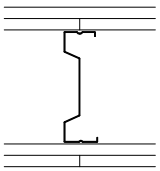
146mm Gypframe 146 S 50 'C' Studs at 600mm centres, 25mm Isover Acoustic Partition Roll (APR 1200). Linings as in table.

2



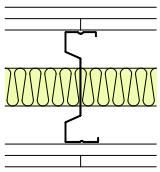
146mm Gypframe 146 S 50 'C' Studs at 600mm centres, 50mm Isover Acoustic Partition Roll (APR 1200). Linings as in table.

3



146mm Gypframe 146 AS 50 AcouStuds at 600mm centres. Linings as in table.

4



146mm Gypframe 146 AS 50 AcouStuds at 600mm centres, 50mm Isover Acoustic Partition Roll (APR 1200). Linings as in table.

Table 2.7a – GypWall CLASSIC partitions to satisfy the requirements of *BS 476-22: 1987*

Detail	Partition thickness mm	Board type	Available with ACTIV*air* technology[3]	Lining thickness mm	Approx. weight kg/m²	Max. partition height[1] mm	Sound insulation Airborne R_w ($R_w + C_{tr}$) dB		Duty rating		System reference	
							Any finish[4]	Skim finish[5]		Any finish[4]		Skim finish[5]
BS 90 minutes fire resistance												
1	208	Gyproc SoundBloc	ACTIV air	2 x 15	51	7900	58 (52)		Severe	A206211		
2	208	Gyproc SoundBloc	ACTIV air	2 x 15	52	7900	59 (53)	60 (53)	Severe	A206243		A206243S
3	208	Gyproc SoundBloc	ACTIV air	2 x 15	51	8100	59 (54)	60 (54)	Severe	A206A179		A206A179S
4	208	Gyproc SoundBloc	ACTIV air	2 x 15	52	8100	61 (56)	62 (56)	Severe	A206A243		A206A243S

Table 2.7b – GypWall CLASSIC partitions to satisfy the requirements of *BS EN 1364-1: 1999*

Detail	Partition thickness mm	Board type	Available with ACTIV*air* technology[3]	Lining thickness mm	Approx. weight kg/m²	Max. partition height[2] mm	Sound insulation Airborne R_w ($R_w + C_{tr}$) dB		Duty rating		System reference	
							Any finish[4]	Skim finish[5]		Any finish[4]		Skim finish[5]
EN 90 minutes fire resistance												
1	208	Gyproc SoundBloc	ACTIV air	2 x 15	51	4000	58 (52)		Severe	A206211		
2	208	Gyproc SoundBloc	ACTIV air	2 x 15	52	4000	59 (53)	60 (53)	Severe	A206243		A206243S
3	208	Gyproc SoundBloc	ACTIV air	2 x 15	51	4000	59 (54)	60 (54)	Severe	A206A179		A206A179S
4	208	Gyproc SoundBloc	ACTIV air	2 x 15	52	4000	61 (56)	62 (56)	Severe	A206A243		A206A243S

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

[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 the more onerous.

[3] These systems have an **ACTIV*air*** board option available for formaldehyde control to improve indoor air quality. Alternatively, all systems can be skim finished with Thistle PureFinish which contains **ACTIV*air*** technology. Refer to the indoor air quality section in Background & theory.

[4] Sound insulation performance for partitions finished using jointing or plaster skim.

[5] Sound insulation performance for partitions finished with a 2mm skim finish of Thistle Multi-Finish.

NB For 120 minutes fire resistance whilst maintaining sound insulation performance, use Gyproc DuraLine in lieu of Gyproc SoundBloc.

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 components are used throughout, and the company's fixing recommendations are strictly observed. Any variation in the specifications should be checked with British Gypsum.

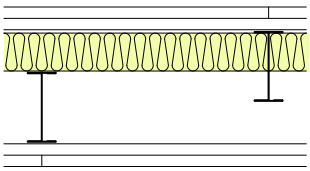
NB For heights between 4200mm and 8000mm, Gypframe Deep Flange Floor & Ceiling Channel should be used at base and at head (subject to deflection criteria).

NB For heights over 8000mm, Gypframe Extra Deep Flange Floor & Ceiling Channel should be used at head and base.

Steel frame separating walls

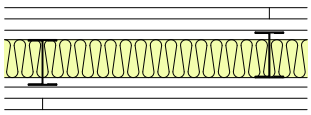
Single frame solutions – Staggered stud

1



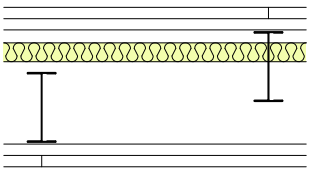
Staggered rows of 92mm Gypframe 92 I 90 'I' Studs at 600mm centres, 50mm Isover Acoustic Partition Roll (APR 1200). Linings as in table.

2



Staggered rows of 60mm Gypframe 60 I 70 'I' Studs at 600mm centres, 50mm Isover Acoustic Partition Roll (APR 1200). Linings as in table.

3



Staggered rows of 92mm Gypframe 92 I 90 'I' Studs at 600mm centres, 25mm Isover Acoustic Partition Roll (APR 1200). Linings as in table.

Table 2.8a – GypWall STAGGERED partitions to satisfy the requirements of *BS 476-22: 1987*

Detail	Partition thickness mm	Board type	Available with ACTIV*air* technology[3]	Lining thickness mm	Approx. weight kg/m²	Max. partition height[1] mm	Sound insulation Airborne R_w ($R_w + C_{tr}$) dB		Duty rating		System reference	
							Any finish[4]	Skim finish[5]		Any finish[4]		Skim finish[5]
BS 60 minutes fire resistance												
1	198	Gyproc SoundBloc		2 x 12.5	44	5700	62 (53)		Severe	A233027		
BS 90 minutes fire resistance												
2	132	Gyproc SoundBloc		2 x 15	53	3900	61 (53)		Severe	A233023		
3	208	Gyproc SoundBloc		2 x 15	53	6000	62 (54)	63 (54)	Severe	A233008		A233008S
1	208	Gyproc SoundBloc		2 x 15	53	6000	63 (55)		Severe	A233028		

Table 2.8b – GypWall STAGGERED partitions to satisfy the requirements of *BS EN 1364-1: 1999*

Detail	Partition thickness mm	Board type	Available with ACTIV*air* technology[3]	Lining thickness mm	Approx. weight kg/m²	Max. partition height[2] mm	Sound insulation Airborne R_w ($R_w + C_{tr}$) dB		Duty rating		System reference	
							Any finish[4]	Skim finish[5]		Any finish[4]		Skim finish[5]
EN 60 minutes fire resistance												
1	198	Gyproc SoundBloc		2 x 12.5	44	5700	62 (53)		Severe	A233027		
EN 90 minutes fire resistance												
2	132	Gyproc SoundBloc		2 x 15	53	3900	61 (53)		Severe	A233023		
3	208	Gyproc SoundBloc		2 x 15	53	5000	62 (54)	63 (54)	Severe	A233008		A233008S
1	208	Gyproc SoundBloc		2 x 15	53	5000	63 (55)		Severe	A233028		

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

[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 the more onerous.

[3] These systems have an **ACTIV*air*** board option available for formaldehyde control to improve indoor air quality. Alternatively, all systems can be skim finished with Thistle PureFinish which contains **ACTIV*air*** technology. Refer to the indoor air quality section in Background & theory.

[4] Sound insulation performance for partitions finished using jointing or plaster skim.

[5] Sound insulation performance for partitions finished with a 2mm skim finish of Thistle Multi-Finish.

NB For 120 minutes fire resistance whilst maintaining sound insulation performance, use Gyproc DuraLine in lieu of Gyproc SoundBloc.

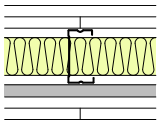
NB The fire resistance and sound insulation performances are for imperforate partitions, walls and ceilings incorporating boards with all joints taped and filled, or skimmed according to British Gypsum's recommendations. The quoted performances are achieved only if British Gypsum components are used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

NB For heights between 4200mm and 8000mm, Gypframe Deep Flange Floor & Ceiling Channel should be used at base and at head (subject to deflection criteria).

Steel frame separating walls

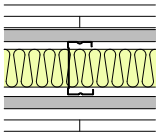
Single frame solutions – Gypframe 'C' Stud with Gypframe RB1 Resilient Bar

1



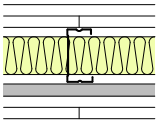
70mm Gypframe 70 S 50 'C' Studs at 600mm centres with Gypframe RB1 Resilient Bar at 600mm centres to one side. 50mm Isover Acoustic Partition Roll (APR 1200). Linings as in table.

2



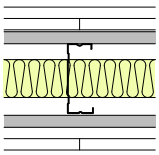
70mm Gypframe 70 S 50 'C' Studs at 600mm centres with Gypframe RB1 Resilient Bar at 600mm centres to both sides. 50mm Isover Acoustic Partition Roll (APR 1200). Linings as in table.

3



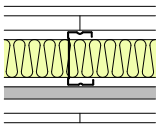
92mm Gypframe 92 S 50 'C' Studs at 600mm centres with Gypframe RB1 Resilient Bar at 600mm centres to one side. 50mm Isover Acoustic Partition Roll (APR 1200). Linings as in table.

4



92mm Gypframe 92 S 50 'C' Studs at 600mm centres with Gypframe RB1 Resilient Bar at 600mm centres to both sides. 50mm Isover Acoustic Partition Roll (APR 1200). Linings as in table.

5



70mm Gypframe 70 S 50 'C' Studs at 600mm centres with Gypframe RB1 Resilient Bar at 600mm centres to one side. 50mm Isover Acoustic Partition Roll (APR 1200). Linings as in table.

Table 2.9a – GypWall QUIET SF partitions to satisfy the requirements of *BS 476-22: 1987*

Detail	Partition thickness mm	Board type	Available with ACTIV*air* technology[2]	Lining thickness mm	Approx. weight kg/m²	Max. partition height[1] mm	Sound insulation Airborne R_w ($R_w + C_{tr}$) dB	Duty rating	System reference
BS 60 minutes fire resistance									
1	137	Gyproc SoundBloc	✓	2 x 12.5	43	4000	61 (53)	Severe	A316008
2	152	Gyproc SoundBloc	✓	2 x 12.5	43	3200	62 (55)	Severe	A316012
3	159	Gyproc SoundBloc	✓	2 x 12.5	43	5000	61 (53)	Severe	A316014
4	174	Gyproc SoundBloc	✓	2 x 12.5	43	4000	63 (55)	Severe	A316015
BS 90 minutes fire resistance									
1	147	Gyproc SoundBloc	✓	2 x 15	51	4200	62 (54)	Severe	A316009
5	150	Gyproc Plank + Gyproc WallBoard		19 + 12.5	49	3700	61 (53)	Severe	A316010
5	150	Gyproc Plank + Gyproc SoundBloc	✓	19 + 12.5	54	3700	63 (54)	Severe	A316011
2	162	Gyproc SoundBloc	✓	2 x 15	51	3200	65 (57)	Severe	A316013

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

[2] These systems have an **ACTIV*air*** board option available for formaldehyde control to improve indoor air quality. Alternatively, all systems can be skim finished with Thistle PureFinish which contains **ACTIV*air*** technology. Refer to the indoor air quality section in Background & theory.

NB For 120 minutes fire resistance whilst maintaining sound insulation performance, use Gyproc DuraLine in lieu of Gyproc SoundBloc (excluding Detail 5).

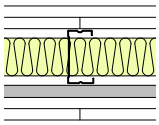
NB The fire resistance and sound insulation performances are for imperforate partitions, walls and ceilings incorporating boards with all joints taped and filled, or skimmed according to British Gypsum's recommendations. The quoted performances are achieved only if British Gypsum components are used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

NB For heights between 4200mm and 8000mm, Gypframe Deep Flange Floor & Ceiling Channel should be used at base and at head (subject to deflection criteria).

Steel frame separating walls

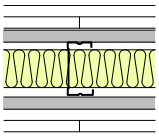
Single frame solutions – Gypframe 'C' Stud with Gypframe RB1 Resilient Bar

1



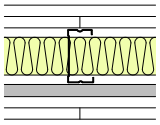
70mm Gypframe 70 S 50 'C' Studs at 600mm centres with Gypframe RB1 Resilient Bar at 600mm centres to one side. 50mm Isover Acoustic Partition Roll (APR 1200). Linings as in table.

2



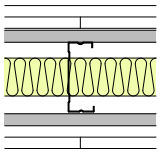
70mm Gypframe 70 S 50 'C' Studs at 600mm centres with Gypframe RB1 Resilient Bar at 600mm centres to both sides. 50mm Isover Acoustic Partition Roll (APR 1200). Linings as in table.

3



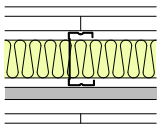
92mm Gypframe 92 S 50 'C' Studs at 600mm centres with Gypframe RB1 Resilient Bar at 600mm centres to one side. 50mm Isover Acoustic Partition Roll (APR 1200). Linings as in table.

4



92mm Gypframe 92 S 50 'C' Studs at 600mm centres with Gypframe RB1 Resilient Bar at 600mm centres to both sides. 50mm Isover Acoustic Partition Roll (APR 1200). Linings as in table.

5



70mm Gypframe 70 S 50 'C' Studs at 600mm centres with Gypframe RB1 Resilient Bar at 600mm centres to one side. 50mm Isover Acoustic Partition Roll (APR 1200). Linings as in table.

Table 2.9b – GypWall QUIET SF partitions to satisfy the requirements of *BS EN 1364-1: 1999*

Detail	Partition thickness mm	Board type	Available with ACTIV*air* technology[2]	Lining thickness mm	Approx. weight kg/m²	Max. partition height[1] mm	Sound insulation Airborne R_w ($R_w + C_{tr}$) dB	Duty rating	System reference
EN 60 minutes fire resistance									
1	137	Gyproc SoundBloc		2 x 12.5	43	4000	61 (53)	Severe	A316008
2	152	Gyproc SoundBloc		2 x 12.5	43	3200	62 (55)	Severe	A316012
3	159	Gyproc SoundBloc		2 x 12.5	43	5000	61 (53)	Severe	A316014
4	174	Gyproc SoundBloc		2 x 12.5	43	4000	63 (55)	Severe	A316015
EN 90 minutes fire resistance									
1	147	Gyproc SoundBloc		2 x 15	51	4200	62 (54)	Severe	A316009
5	150	Gyproc Plank + Gyproc SoundBloc		19 + 12.5	54	3700	63 (54)	Severe	A316011
2	162	Gyproc SoundBloc		2 x 15	51	3200	65 (57)	Severe	A316013

[1] 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 the more onerous.

[2] These systems have an **ACTIV*air*** board option available for formaldehyde control to improve indoor air quality. Alternatively, all systems can be skim finished with Thistle PureFinish which contains **ACTIV*air*** technology. Refer to the indoor air quality section in Background & theory.

NB For 120 minutes fire resistance whilst maintaining sound insulation performance, use Gyproc DuraLine in lieu of Gyproc SoundBloc (excluding Detail 5).

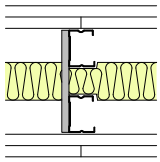
NB The fire resistance and sound insulation performances are for imperforate partitions, walls and ceilings incorporating boards with all joints taped and filled, or skimmed according to British Gypsum's recommendations. The quoted performances are achieved only if British Gypsum components are used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

NB For heights between 4200mm and 8000mm, Gypframe Deep Flange Floor & Ceiling Channel should be used at base and at head (subject to deflection criteria).

Steel frame separating walls

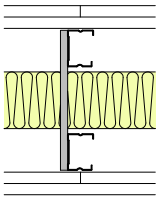
Twin frame solutions – 48mm Gypframe 'C' Studs

1



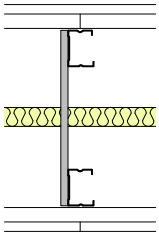
Two rows of 48mm Gypframe 48 S 50 'C' Studs at 600mm centres, braced at 1200mm centres max. 50mm Isover Acoustic Partition Roll (APR 1200). Width between frames 40mm (min). Linings as in table.

2



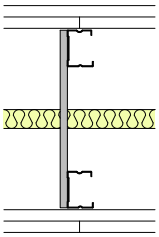
Two rows of 48mm Gypframe 48 S 50 'C' Studs at 600mm centres, braced at 1200mm centres max. 75mm Isover Acoustic Slab. Width between frames 90mm (min). Linings as in table.

3



Two rows of 48mm Gypframe 48 S 50 'C' Studs at 600mm centres, braced at 1200mm centres max. 25mm Isover Acoustic Partition Roll (APR 1200). Width between frames 137mm (min). Linings as in table.

4



Two rows of 48mm Gypframe 48 S 50 'C' Studs at 600mm centres, braced at 1200mm centres max. 25mm Isover Acoustic Partition Roll (APR 1200). Width between frames 140mm (min). Linings as in table.

Table 2.10a – GypWall QUIET partitions to satisfy the requirements of *BS 476-22: 1987*

Detail	Partition thickness mm	Board type	Available with ACTIV*air* technology[2]	Lining thickness mm	Approx. weight kg/m²	Max. partition height[1] mm	Sound insulation Airborne R_w ($R_w + C_{tr}$) dB		Duty rating	System reference	
							Any finish[3]	Skim finish[4]		Any finish[3]	Skim finish[4]
BS 90 minutes fire resistance											
1	200	Gyproc SoundBloc	✓	2 x 15	55	7500	62 (56)	63 (56)	Severe	A216009	A216009S
2	250	Gyproc SoundBloc	✓	2 x 15	55	7500	63 (57)	64 (57)	Severe	A216011	A216011S
3	300	Gyproc Plank + Gyproc SoundBloc	✓	19 + 12.5	55	6200	62 (52)		Severe	A216002	
4	300	Gyproc SoundBloc	✓	2 x 15	55	7500	63 (57)	64 (57)	Severe	A216008	A216008S
BS 120 minutes fire resistance											
1	200	Gyproc FireLine		2 x 15	52	7500	60 (53)	61 (53)	Severe	A216010	A216010S

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

[3] These systems have an **ACTIV*air*** board option available for formaldehyde control to improve indoor air quality. Alternatively, all systems can be skim finished with Thistle PureFinish which contains **ACTIV*air*** technology. Refer to the indoor air quality section in Background & theory.

[3] Sound insulation performance for partitions finished using jointing or plaster skim.

[4] Sound insulation performance for partitions finished with a 2mm skim finish of Thistle Multi-Finish.

NB For 120 minutes fire resistance whilst maintaining sound insulation performance, use Gyproc DuraLine in lieu of Gyproc SoundBloc (excluding Detail 3).

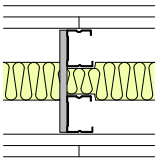
NB The fire resistance and sound insulation performances are for imperforate partitions, walls and ceilings incorporating boards with all joints taped and filled, or skimmed according to British Gypsum's recommendations. The quoted performances are achieved only if British Gypsum components are used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

NB For heights between 4200mm and 8000mm, Gypframe Deep Flange Floor & Ceiling Channel should be used at base and at head (subject to deflection criteria).

Steel frame separating walls

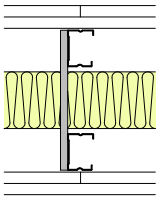
Twin frame solutions – 48mm Gypframe 'C' Studs

1



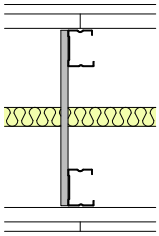
Two rows of 48mm Gypframe 48 S 50 'C' Studs at 600mm centres, braced at 1200mm centres max. 50mm Isover Acoustic Partition Roll (APR 1200). Width between frames 40mm (min). Linings as in table.

2



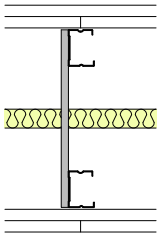
Two rows of 48mm Gypframe 48 S 50 'C' Studs at 600mm centres, braced at 1200mm centres max. 75mm Isover Acoustic Slab. Width between frames 90mm (min). Linings as in table.

3



Two rows of 48mm Gypframe 48 S 50 'C' Studs at 600mm centres, braced at 1200mm centres max. 25mm Isover Acoustic Partition Roll (APR 1200). Width between frames 137mm (min). Linings as in table.

4



Two rows of 48mm Gypframe 48 S 50 'C' Studs at 600mm centres, braced at 1200mm centres max. 25mm Isover Acoustic Partition Roll (APR 1200). Width between frames 140mm (min). Linings as in table.

Table 2.10b – GypWall QUIET partitions to satisfy the requirements of *BS EN 1364-1: 1999*

Detail	Partition thickness mm	Board type	Available with ACTIV*air* technology[2]	Lining thickness mm	Approx. weight kg/m²	Max. partition height[1] mm	Sound insulation Airborne R_w ($R_w + C_{tr}$) dB		Duty rating		System reference	
							Any finish[3]	Skim finish[4]		Any finish[3]		Skim finish[4]
EN 60 minutes fire resistance												
1	200	Gyproc SoundBloc	✓	2 x 15	55	6200	62 (56)	63 (56)	Severe	A216009		A216009S
2	250	Gyproc SoundBloc	✓	2 x 15	55	6200	63 (57)	64 (57)	Severe	A216011		A216011S
3	300	Gyproc Plank + Gyproc SoundBloc	✓	19 + 12.5	55	6200	62 (52)		Severe	A216002		
4	300	Gyproc SoundBloc	✓	2 x 15	55	6200	63 (57)	64 (57)	Severe	A216008		A216008S
EN 90 minutes fire resistance												
1	200	Gyproc SoundBloc	✓	2 x 15	55	5000	62 (56)	63 (56)	Severe	A216009		A216009S
2	250	Gyproc SoundBloc	✓	2 x 15	55	5000	63 (57)	64 (57)	Severe	A216011		A216011S
3	300	Gyproc Plank + Gyproc SoundBloc	✓	19 + 12.5	55	5000	62 (52)		Severe	A216002		
4	300	Gyproc SoundBloc	✓	2 x 15	55	5000	63 (57)	64 (57)	Severe	A216008		A216008S
EN 120 minutes fire resistance												
1	200	Gyproc FireLine		2 x 15	52	7500	60 (53)	61 (53)	Severe	A216010		A216010S

[1] 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 the more onerous.

[2] These systems have an **ACTIV*air*** board option available for formaldehyde control to improve indoor air quality. Alternatively, all systems can be skim finished with Thistle PureFinish which contains **ACTIV*air*** technology. Refer to the indoor air quality section in Background & theory.

[3] Sound insulation performance for partitions finished using jointing or plaster skim.

[4] Sound insulation performance for partitions finished with a 2mm skim finish of Thistle Multi-Finish.

NB For 120 minutes fire resistance whilst maintaining sound insulation performance, use Gyproc DuraLine in lieu of Gyproc SoundBloc (excluding Detail 3).

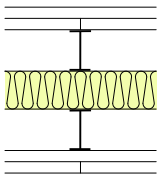
NB The fire resistance and sound insulation performances are for imperforate partitions, walls and ceilings incorporating boards with all joints taped and filled, or skimmed according to British Gypsum's recommendations. The quoted performances are achieved only if British Gypsum components are used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

NB For heights between 4200mm and 8000mm, Gypframe Deep Flange Floor & Ceiling Channel should be used at base and at head (subject to deflection criteria).

Steel frame separating walls

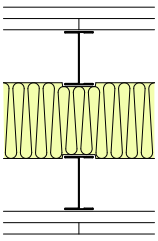
Twin frame solutions – Gypframe 'I' Studs

1



Two rows of 48mm Gypframe 48 I 50 'I' Studs at 600mm centres, 50mm Isover Acoustic Partition Roll (APR 1200). Width between frames 40mm (min). Linings as in table.

2



Two rows of 60mm Gypframe 60 I 50 'I' Studs at 600mm centres, 100mm Isover Acoustic Partition Roll (APR 1200). Width between frames 66mm (min). Linings as in table.

Table 2.11a – GypWall QUIET IWL partitions to satisfy the requirements of *BS 476-22: 1987*

Detail	Partition thickness mm	Board type	Available with ACTIV*air* technology[4]	Lining thickness mm	Approx. weight kg/m²	Max. partition height[1] mm	Sound insulation Airborne R_w ($R_w + C_{tr}$) dB	Duty rating	System reference
BS 90 minutes fire resistance									
1	200	Gyproc SoundBloc	✓	2 x 15	55	2800	66 (58)	Severe	A216014
2	250	Gyproc SoundBloc	✓	2 x 15	55	3300	70 (62)	Severe	A216013

A range of studs are available for use within the GypWall QUIET IWL system depending on height requirements. See Table 2.11b below.

Table 2.11b – GypLyner QUIET IWL maximum heights for Gypframe 'I' Studs at 600mm centres

Gypframe 'I' Stud	Maximum height for double layer 15mm boards (mm)[1]
48 I 50	2800
60 I 50	3300
60 I 70	3900
70 I 70	4300[2]

Table 2.11c – GypWall QUIET IWL partitions to satisfy the requirements of *BS EN 1364-1: 1999*

Detail	Partition thickness mm	Board type	Available with ACTIV*air* technology[4]	Lining thickness mm	Approx. weight kg/m²	Max. partition height[3] mm	Sound insulation Airborne R_w ($R_w + C_{tr}$) dB	Duty rating	System reference
EN 90 minutes fire resistance									
1	200	Gyproc SoundBloc	✓	2 x 15	55	2800	66 (58)	Severe	A216014
2	250	Gyproc SoundBloc	✓	2 x 15	55	3300	70 (62)	Severe	A216013

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

[2] Limited to 4000mm to EN fire resistance.

[3] 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 the more onerous.

[4] These systems have an **ACTIV*air*** board option available for formaldehyde control to improve indoor air quality. Alternatively, all systems can be skim finished with Thistle PureFinish which contains **ACTIV*air*** technology. Refer to the indoor air quality section in Background & theory.

NB For 120 minutes fire resistance whilst maintaining sound insulation performance, use Gyproc DuraLine in lieu of Gyproc SoundBloc.

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 components are used throughout, and the company's fixing recommendations are strictly observed. Any variation in the specifications should be checked with British Gypsum.

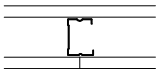
NB For heights between 4200mm and 8000mm, Gypframe Deep Flange Floor & Ceiling Channel should be used at base and at head (subject to deflection criteria).

Internal partitions

Steel frame internal partitions

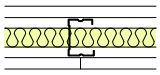
48mm Gypframe 'C' Stud solutions

1



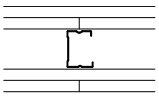
48mm Gypframe 48 S 50 'C' Studs at 600mm centres. Linings as in table.

2



48mm Gypframe 48 S 50 'C' Studs at 600mm centres, 25mm Isover Acoustic Partition Roll (APR 1200) in the cavity. Linings as in table.

3



48mm Gypframe 48 S 50 'C' Studs at 600mm centres. Linings as in table.

Table 2.12a – GypWall CLASSIC partitions to satisfy the requirements of *BS 476-22: 1987*

Detail	Partition thickness mm	Board type	Available with ACTIV*air* technology[4]	Lining thickness mm	Approx. weight kg/m²	Max. partition height[1] mm	Sound insulation Airborne R_w ($R_w + C_{tr}$) dB		Duty rating	System reference	
							Any finish[5]	Skim finish[6]		Any finish[5]	Skim finish[6]
BS 30 minutes fire resistance											
1	80	Gyproc WallBoard		1 x 15	21	2800	36		Medium	A206002	
2	80	Gyproc WallBoard		1 x 15	21	2800	42		Medium	A206034	
2	80	Gyproc SoundBloc	ACTIV air	1 x 15	26	2800	44	45	Medium	A206185	A206185S
BS 60 minutes fire resistance											
1	80	Gyproc SoundBloc F		1 x 15	27	2800	39		Heavy	A206299	
2	80	Gyproc FireLine		1 x 15	24	2800	42		Heavy	A206098	
2	80	Gyproc SoundBloc F		1 x 15	27	2800	44	45	Heavy	A206300	A206300S
3	100	Gyproc SoundBloc	ACTIV air	2 x 12.5	43	3400	46		Severe	A206154	
BS 120 minutes fire resistance											
3	100	Gyproc FireLine		2 x 12.5	40	3400	42		Severe	A206067	

Greater heights can be achieved through the use of Gypframe 'I' Studs, refer to Table 2.12b below.

Table 2.12b – GypLyner CLASSIC maximum heights for Gypframe 48 I 50 'I' Studs at 600mm centres

Board lining each side (mm)	Maximum height (mm)[1]	Board lining each side (mm)	Maximum height (mm)[1]
1 x 15	3100[2]	2 x 12.5	3700[2]

Table 2.12c – GypWall CLASSIC partitions to satisfy the requirements of *BS EN 1364-1: 1999*

Detail	Partition thickness mm	Board type	Available with ACTIV*air* technology[4]	Lining thickness mm	Approx. weight kg/m²	Max. partition height[3] mm	Sound insulation Airborne R_w dB		Duty rating	System reference	
							Any finish[5]	Skim finish[6]		Any finish[5]	Skim finish[6]
EN 30 minutes fire resistance											
1	80	Gyproc WallBoard		1 x 15	21	2800	36		Medium	A206002	
2	80	Gyproc SoundBloc	ACTIV air	1 x 15	26	2800	44	45	Medium	A206185	A206185S
2	100	Gyproc WallBoard		2 x 12.5	35	3400	42		Severe	A206003	
EN 60 minutes fire resistance											
1	80	Gyproc SoundBloc F		1 x 15	27	2800	39		Heavy	A206299	
2	80	Gyproc FireLine		1 x 15	24	2800	42		Heavy	A206098	
2	80	Gyproc SoundBloc F		1 x 15	27	2800	44	45	Heavy	A206300	A206300S
3	100	Gyproc SoundBloc	ACTIV air	2 x 12.5	43	3000	46		Severe	A206154	
EN 120 minutes fire resistance											
3	100	Gyproc FireLine		2 x 12.5	40	3000	42		Severe	A206067	

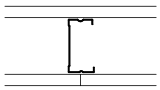
[1] Based on a limiting deflection of L/240 at 200 Pa. [2] Limited to 3000mm to EN fire resistance.
[3] The maximum heights quoted are limited by the fire state field of application or by limiting deflection of L/240 at 200 Pa, whichever is the more onerous.
[4] These systems have an **ACTIV*air*** board option available for formaldehyde control to improve indoor air quality. Alternatively, all systems can be skim finished with Thistle PureFinish which contains **ACTIV*air*** technology. Refer to the indoor air quality section in Background & theory.
[5] Sound insulation performance for partitions finished using jointing or plaster skim.
[6] Sound insulation performance for partitions finished with a 2mm skim finish of Thistle Multi-Finish.

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 components are used throughout, and the company's fixing recommendations are strictly observed. Any variation in the specifications should be checked with British Gypsum.

Steel frame internal partitions

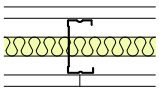
70mm Gypframe 'C' Stud solutions

1



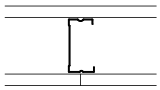
GypWall CLASSIC - 70mm Gypframe 70 S 50 'C' Studs at 600mm centres. Linings as in table.

2



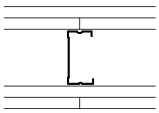
GypWall CLASSIC - 70mm Gypframe 70 S 50 'C' Studs at 600mm centres, 25mm Isover Acoustic Partition Roll (APR 1200). Linings as in table.

3



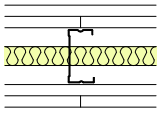
GypWall ROBUST - 70mm Gypframe 70 S 60 'C' Studs at 600mm centres. Linings as in table.

4



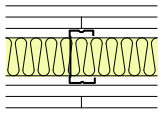
GypWall CLASSIC - 70mm Gypframe 70 S 50 'C' Studs at 600mm centres. Linings as in table.

5



GypWall CLASSIC - 70mm Gypframe 70 S 50 'C' Studs at 600mm centres, 25mm Isover Acoustic Partition Roll (APR 1200). Linings as in table.

6



GypWall CLASSIC - 70mm Gypframe 70 S 50 'C' Studs at 600mm centres, 50mm Isover Acoustic Partition Roll (APR 1200). Linings as in table.

Table 2.13a – GypWall CLASSIC and GypWall ROBUST partitions to satisfy the requirements of *BS 476-22: 1987*

Detail	Partition thickness mm	Board type	Available with ACTIV*air* technology[2]	Lining thickness mm	Approx. weight kg/m²	Max. partition height[1] mm	Sound insulation Airborne R_w ($R_w + C_{tr}$) dB		Duty rating		System reference	
							Any finish[3]	Skim finish[4]		Any finish[3]		Skim finish[4]
BS 30 minutes fire resistance												
1	97	Gyproc WallBoard		1 x 12.5	18	3600	36		Medium	A206013		
1	97	Gyproc SoundBloc	ACTIV air	1 x 12.5	22	3600	40		Medium	A206164		
2	97	Gyproc SoundBloc	ACTIV air	1 x 12.5	22	3600	45		Medium	A206196		
1	102	Gyproc WallBoard		1 x 15	22	3800	38	39	Medium	A206014		A206014S
1	102	Gyproc SoundBloc	ACTIV air	1 x 15	26	3800	42		Heavy	A206165		
2	102	Gyproc SoundBloc	ACTIV air	1 x 15	26	3800	47	48	Heavy	A206197		A206197S
BS 60 minutes fire resistance												
1	102	Gyproc FireLine		1 x 15	24	3800	37		Heavy	A206078		
1	102	Gyproc SoundBloc F		1 x 15	27	3800	42		Heavy	A206301		
3	102	Gyproc DuraLine	ACTIV air	1 x 15	29	4000	42	43	Severe	Q606043		Q606043S
2	102	Gyproc FireLine		1 x 15	24	3800	43	44	Heavy	A206110		A206110S
2	102	Gyproc SoundBloc F		1 x 15	27	3800	47	48	Heavy	A206302		A206302S
4	122	Gyproc WallBoard		2 x 12.5	35	4600	45		Severe	A206015		
4	122	Gyproc SoundBloc	ACTIV air	2 x 12.5	43	4600	49		Severe	A206166		
6	122	Gyproc WallBoard		2 x 12.5	36	4600	50		Severe	A206142		
5	122	Gyproc SoundBloc	ACTIV air	2 x 12.5	43	4600	52		Severe	A206198		
6	122	Gyproc SoundBloc	ACTIV air	2 x 12.5	44	4600	53		Severe	A206230		
BS 120 minutes fire resistance												
4	122	Gyproc FireLine		2 x 12.5	40	4600	46		Severe	A206079		
6	122	Gyproc FireLine		2 x 12.5	41	4600	50		Severe	A206144		

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

[2] These systems have an **ACTIV*air*** board option available for formaldehyde control to improve indoor air quality. Alternatively, all systems can be skim finished with Thistle PureFinish which contains **ACTIV*air*** technology. Refer to the indoor air quality section in Background & theory.

[3] Sound insulation performance for partitions finished using jointing or plaster skim.

[4] Sound insulation performance for partitions finished with a 2mm skim finish of Thistle Multi-Finish.

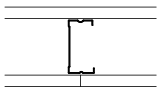
NB For heights between 4200mm and 8000mm, Gypframe Deep Flange Floor & Ceiling Channel should be used at base and at head (subject to deflection criteria).

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 components are used throughout, and the company's fixing recommendations are strictly observed. Any variation in the specifications should be checked with British Gypsum.

Steel frame internal partitions

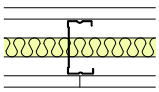
70mm Gypframe 'C' Stud solutions

1



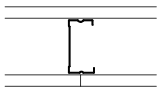
GypWall CLASSIC - 70mm Gypframe 70 S 50 'C' Studs at 600mm centres. Linings as in table.

2



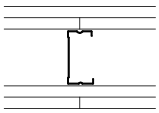
GypWall CLASSIC - 70mm Gypframe 70 S 50 'C' Studs at 600mm centres, 25mm Isover Acoustic Partition Roll (APR 1200). Linings as in table.

3



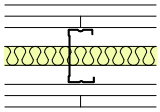
GypWall ROBUST - 70mm Gypframe 70 S 60 'C' Studs at 600mm centres. Linings as in table.

4



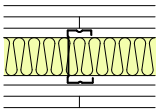
GypWall CLASSIC - 70mm Gypframe 70 S 50 'C' Studs at 600mm centres. Linings as in table.

5



GypWall CLASSIC - 70mm Gypframe 70 S 50 'C' Studs at 600mm centres, 25mm Isover Acoustic Partition Roll (APR 1200). Linings as in table.

6



GypWall CLASSIC - 70mm Gypframe 70 S 50 'C' Studs at 600mm centres, 50mm Isover Acoustic Partition Roll (APR 1200). Linings as in table.

Table 2.13b – GypWall CLASSIC and GypWall ROBUST partitions to satisfy the requirements of *BS EN 1364-1: 1999*

Detail	Partition thickness mm	Board type	Available with ACTIV*air* technology[2]	Lining thickness mm	Approx. weight kg/m²	Max. partition height[1] mm	Sound insulation Airborne R_w ($R_w + C_{tr}$) dB		Duty rating		System reference	
							Any finish[3]	Skim finish[4]		Any finish[3]		Skim finish[4]
EN 30 minutes fire resistance												
1	97	Gyproc WallBoard		1 x 12.5	18	3600	36		Medium	A206013		
1	97	Gyproc SoundBloc	ACTIV air	1 x 12.5	22	3600	40		Medium	A206164		
2	97	Gyproc SoundBloc	ACTIV air	1 x 12.5	22	3600	45		Medium	A206196		
1	102	Gyproc WallBoard		1 x 15	22	3800	38	39	Medium	A206014		A206014S
1	102	Gyproc SoundBloc	ACTIV air	1 x 15	26	3800	42		Heavy	A206165		
2	102	Gyproc SoundBloc	ACTIV air	1 x 15	26	3800	47	48	Heavy	A206197		A206197S
4	122	Gyproc WallBoard		2 x 12.5	35	4600	45		Severe	A206015		
6	122	Gyproc WallBoard		2 x 12.5	36	4600	50		Severe	A206142		
5	122	Gyproc SoundBloc	ACTIV air	2 x 12.5	43	4600	52		Severe	A206198		
6	122	Gyproc SoundBloc	ACTIV air	2 x 12.5	44	4600	53		Severe	A206230		
EN 60 minutes fire resistance												
1	102	Gyproc FireLine		1 x 15	24	3800	37		Heavy	A206078		
1	102	Gyproc SoundBloc F		1 x 15	27	3800	42		Heavy	A206301		
3	102	Gyproc DuraLine	ACTIV air	1 x 15	29	4000	42	43	Severe	Q606043		Q606043S
2	102	Gyproc FireLine		1 x 15	24	3800	43	44	Heavy	A206110		A206110S
2	102	Gyproc SoundBloc F		1 x 15	27	3800	47	48	Heavy	A206302		A206302S
4	122	Gyproc SoundBloc	ACTIV air	2 x 12.5	43	4600	49		Severe	A206166		
6	122	Gyproc WallBoard		2 x 12.5	36	4000	50		Severe	A206142		
5	122	Gyproc SoundBloc	ACTIV air	2 x 12.5	43	4000	52		Severe	A206198		
6	122	Gyproc SoundBloc	ACTIV air	2 x 12.5	44	4000	53		Severe	A206230		
EN 90 minutes fire resistance												
4	122	Gyproc FireLine		2 x 12.5	40	4600	46		Severe	A206079		
6	122	Gyproc FireLine		2 x 12.5	41	4600	50		Severe	A206144		
EN 120 minutes fire resistance												
6	122	Gyproc FireLine		2 x 12.5	41	4000	50		Severe	A206144		

[1] 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 the more onerous.

[2] These systems have an **ACTIV*air*** board option available for formaldehyde control to improve indoor air quality. Alternatively, all systems can be skim finished with Thistle PureFinish which contains **ACTIV*air*** technology. Refer to the indoor air quality section in Background & theory.

[3] Sound insulation performance for partitions finished using jointing or plaster skim.

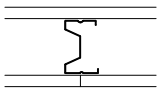
[4] Sound insulation performance for partitions finished with a 2mm skim finish of Thistle Multi-Finish.

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 components are used throughout, and the company's fixing recommendations are strictly observed. Any variation in the specifications should be checked with British Gypsum.

Steel frame internal partitions

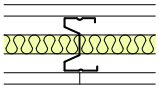
70mm Gypframe AcouStud solutions

1



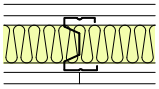
GypWall CLASSIC - 70mm Gypframe 70 AS 50 AcouStuds at 600mm centres. Linings as in table.

2



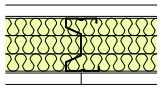
GypWall CLASSIC - 70mm Gypframe 70 AS 50 AcouStuds at 600mm centres, 25mm Isover Acoustic Partition Roll (APR 1200). Linings as in table.

3



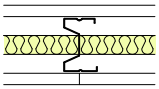
GypWall CLASSIC - 70mm Gypframe 70 AS 50 AcouStuds at 600mm centres, 50mm Isover Acoustic Partition Roll (APR 1200). Linings as in table.

4



GypWall CLASSIC - 70mm Gypframe 70 AS 50 AcouStuds at 600mm centres, 3 x 25mm Isover Acoustic Partition Roll (APR 1200). Linings as in table.

5



GypWall ROBUST - 70mm Gypframe 70 AS 50 AcouStuds at 600mm centres, 25mm Isover Acoustic Partition Roll (APR 1200). Linings as in table.

Table 2.14a – GypWall CLASSIC and GypWall ROBUST partitions to satisfy the requirements of *BS 476-22: 1987*

Detail	Partition thickness mm	Board type	Available with ACTIV*air* technology[2]	Lining thickness mm	Approx. weight kg/m²	Max. partition height[1] mm	Sound insulation Airborne R_w ($R_w + C_{tr}$) dB		Duty rating		System reference	
							Any finish[3]	Skim finish[4]		Any finish[3]		Skim finish[4]
BS 30 minutes fire resistance												
1	97	Gyproc SoundBloc	ACTIV air	1 x 12.5	22	3800	41		Medium	A206A164		
2	97	Gyproc SoundBloc	ACTIV air	1 x 12.5	22	3800	48		Medium	A206A196		
3	97	Gyproc SoundBloc	ACTIV air	1 x 12.5	23	3800	49	50	Medium	A206A228		A206A228S
1	102	Gyproc SoundBloc	ACTIV air	1 x 15	26	4000	42		Heavy	A206A165		
4	102	Gyproc SoundBloc	ACTIV air	1 x 15	26	4000	50	51	Heavy	A206A252		A206A252S
BS 60 minutes fire resistance												
1	102	Gyproc SoundBloc F		1 x 15	27	4000	42		Heavy	A206A301		
2	102	Gyproc FireLine		1 x 15	24	4000	43	44	Heavy	A206A110		A206A110S
3	102	Gyproc FireLine		1 x 15	24	4000	44	45	Heavy	A206A141		A206A141S
2	102	Gyproc SoundBloc F		1 x 15	27	4000	48		Heavy	A206A302		
5	102	Gyproc DuraLine	ACTIV air	1 x 15	29	4000	48	49	Severe	Q606A044		Q606A044S
4	102	Gyproc SoundBloc F		1 x 15	27	4000	50	51	Heavy	A206A304		A206A304S

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

[2] These systems have an **ACTIV*air*** board option available for formaldehyde control to improve indoor air quality. Alternatively, all systems can be skim finished with Thistle PureFinish which contains **ACTIV*air*** technology. Refer to the indoor air quality section in Background & theory.

[3] Sound insulation performance for partitions finished using jointing or plaster skim.

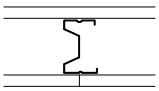
[4] Sound insulation performance for partitions finished with a 2mm skim finish of Thistle Multi-Finish.

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 components are used throughout, and the company's fixing recommendations are strictly observed. Any variation in the specifications should be checked with British Gypsum.

Steel frame internal partitions

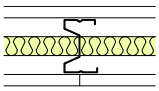
70mm Gypframe AcouStud solutions

1



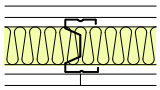
GypWall CLASSIC - 70mm Gypframe 70 AS 50 AcouStuds at 600mm centres. Linings as in table.

2



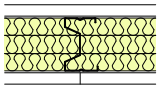
GypWall CLASSIC - 70mm Gypframe 70 AS 50 AcouStuds at 600mm centres, 25mm Isover Acoustic Partition Roll (APR 1200). Linings as in table.

3



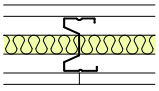
GypWall CLASSIC - 70mm Gypframe 70 AS 50 AcouStuds at 600mm centres, 50mm Isover Acoustic Partition Roll (APR 1200). Linings as in table.

4



GypWall CLASSIC - 70mm Gypframe 70 AS 50 AcouStuds at 600mm centres, 3 x 25mm Isover Acoustic Partition Roll (APR 1200). Linings as in table.

5



GypWall ROBUST - 70mm Gypframe 70 AS 50 AcouStuds at 600mm centres, 25mm Isover Acoustic Partition Roll (APR 1200). Linings as in table.

Table 2.14b – GypWall CLASSIC and GypWall ROBUST partitions to satisfy the requirements of *BS EN 1364-1: 1999*

Detail	Partition thickness mm	Board type	Available with ACTIV*air* technology[2]	Lining thickness mm	Approx. weight kg/m²	Max. partition height[1] mm	Sound insulation Airborne R_w ($R_w + C_{tr}$) dB		Duty rating		System reference	
							Any finish[3]	Skim finish[4]		Any finish[3]		Skim finish[4]
EN 30 minutes fire resistance												
1	97	Gyproc SoundBloc	ACTIV air	1 x 12.5	22	3800	41		Medium	A206A164		
2	97	Gyproc SoundBloc	ACTIV air	1 x 12.5	22	3800	48		Medium	A206A196		
3	97	Gyproc SoundBloc	ACTIV air	1 x 12.5	23	3800	49	50	Medium	A206A228		A206A228S
1	102	Gyproc SoundBloc	ACTIV air	1 x 15	26	4000	42		Heavy	A206A165		
4	102	Gyproc SoundBloc	ACTIV air	1 x 15	26	4000	50	51	Heavy	A206A252		A206A252S
EN 60 minutes fire resistance												
1	102	Gyproc SoundBloc F		1 x 15	27	4000	42		Heavy	A206A301		
2	102	Gyproc FireLine		1 x 15	24	4000	43	44	Heavy	A206A110		A206A110S
3	102	Gyproc FireLine		1 x 15	24	4000	44	45	Heavy	A206A141		A206A141S
2	102	Gyproc SoundBloc F		1 x 15	27	4000	48		Heavy	A206A302		
5	102	Gyproc DuraLine	ACTIV air	1 x 15	29	4000	48	49	Severe	Q606A044		Q606A044S
4	102	Gyproc SoundBloc F		1 x 15	27	3000	50	51	Heavy	A206A304		A206A304S

[1] 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 the more onerous.

[2] These systems have an **ACTIV*air*** board option available for formaldehyde control to improve indoor air quality. Alternatively, all systems can be skim finished with Thistle PureFinish which contains **ACTIV*air*** technology. Refer to the indoor air quality section in Background & theory.

[3] Sound insulation performance for partitions finished using jointing or plaster skim.

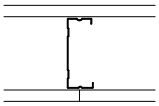
[4] Sound insulation performance for partitions finished with a 2mm skim finish of Thistle Multi-Finish.

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 components are used throughout, and the company's fixing recommendations are strictly observed. Any variation in the specifications should be checked with British Gypsum.

Steel frame internal partitions

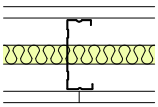
92mm Gypframe 'C' Stud solutions

1



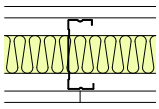
GypWall CLASSIC – 92mm Gypframe 92 S 50 'C' Studs at 600mm centres. Linings as in table.

2



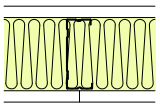
GypWall CLASSIC – 92mm Gypframe 92 S 50 'C' Studs at 600mm centres, 25mm Isover Acoustic Partition Roll (APR 1200). Linings as in table.

3



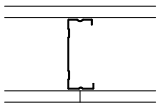
GypWall CLASSIC – 92mm Gypframe 92 S 50 'C' Studs at 600mm centres, 50mm Isover Acoustic Partition Roll (APR 1200). Linings as in table.

4



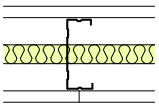
GypWall CLASSIC – 92mm Gypframe 92 S 50 'C' Studs at 600mm centres, 100mm Isover Modular Roll. Linings as in table.

5



GypWall ROBUST – 92mm Gypframe 92 S 60 'C' Studs at 600mm centres. Linings as in table.

6



GypWall ROBUST – 92mm Gypframe 92 S 60 'C' Studs at 600mm centres, 25mm Isover Acoustic Partition Roll (APR 1200). Linings as in table.

Table 2.15a – GypWall CLASSIC and GypWall ROBUST partitions to satisfy the requirements of *BS 476-22: 1987*

Detail	Partition thickness mm	Board type	Available with ACTIV*air* technology[3]	Lining thickness mm	Approx. weight kg/m²	Max. partition height[1] mm	Sound insulation Airborne R_w ($R_w + C_{tr}$) dB		Duty rating	System reference	
							Any finish[4]	Skim finish[5]		Any finish[4]	Skim finish[5]
BS 30 minutes fire resistance											
1	124	Gyproc SoundBloc	ACTIV air	1 x 15	27	4700	44	45	Heavy	A206261	A206261S
3	124	Gyproc SoundBloc	ACTIV air	1 x 15	27	4700	50	51	Heavy	A206263	A206263S
BS 60 minutes fire resistance											
1	124	Gyproc FireLine		1 x 15	25	4700	40	41	Heavy	A206265	A206265S
1	124	Gyproc SoundBloc F		1 x 15	27	4700	44	45	Heavy	A206305	A206305S
2	124	Gyproc FireLine		1 x 15	25	4700	44[2]	45	Heavy	A206266	A206266S
5	124	Gyproc DuraLine	ACTIV air	1 x 15	29	4900	45	46	Severe	A206257	A206257S
4	124	Gyproc FireLine		1 x 15	25	4700	46	48	Heavy	A206268	A206268S
6	124	Gyproc DuraLine	ACTIV air	1 x 15	30	4900	48[2]	49	Severe	A206258	A206258S
2	124	Gyproc SoundBloc F		1 x 15	27	4700	49	50	Heavy	A206306	A206306S
3	124	Gyproc SoundBloc F		1 x 15	27	4700	50	51	Heavy	A206309	A206309S
4	124	Gyproc SoundBloc F		1 x 15	27	4700	51	52	Heavy	A206308	A206308S

[1] Based on a limiting deflection of L/240 at 200 Pa.
[2] Increasing insulation to 50mm Isover Acoustic Partition Roll (APR 1200) will not improve this system performance.
[3] These systems have an **ACTIV*air*** board option available for formaldehyde control to improve indoor air quality. Alternatively, all systems can be skim finished with Thistle PureFinish which contains **ACTIV*air*** technology. Refer to the indoor air quality section in Background & theory.
[4] Sound insulation performance for partitions finished using jointing or plaster skim.
[5] Sound insulation performance for partitions finished with a 2mm skim finish of Thistle Multi-Finish.

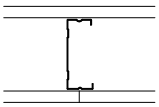
NB For heights between 4200mm and 8000mm, Gypframe Deep Flange Floor & Ceiling Channel should be used at base and at head (subject to deflection criteria).

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 components are used throughout, and the company's fixing recommendations are strictly observed. Any variation in the specifications should be checked with British Gypsum.

Steel frame internal partitions

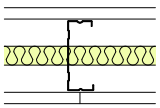
92mm Gypframe 'C' Stud solutions

1



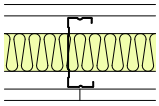
GypWall CLASSIC – 92mm Gypframe 92 S 50 'C' Studs at 600mm centres. Linings as in table.

2



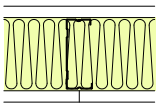
GypWall CLASSIC – 92mm Gypframe 92 S 50 'C' Studs at 600mm centres, 25mm Isover Acoustic Partition Roll (APR 1200). Linings as in table.

3



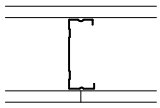
GypWall CLASSIC – 92mm Gypframe 92 S 50 'C' Studs at 600mm centres, 50mm Isover Acoustic Partition Roll (APR 1200). Linings as in table.

4



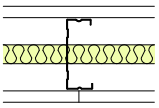
GypWall CLASSIC – 92mm Gypframe 92 S 50 'C' Studs at 600mm centres, 100mm Isover Modular Roll. Linings as in table.

5



GypWall ROBUST – 92mm Gypframe 92 S 60 'C' Studs at 600mm centres. Linings as in table.

6



GypWall ROBUST – 92mm Gypframe 92 S 60 'C' Studs at 600mm centres, 25mm Isover Acoustic Partition Roll (APR 1200). Linings as in table.

Table 2.15b – GypWall CLASSIC and GypWall ROBUST partitions to satisfy the requirements of *BS EN 1364-1: 1999*

Detail	Partition thickness mm	Board type	Available with ACTIV*air* technology[3]	Lining thickness mm	Approx. weight kg/m²	Max. partition height[1] mm	Sound insulation Airborne R_w ($R_w + C_{tr}$) dB		Duty rating	System reference	
							Any finish[3]	Skim finish[4]		Any finish[3]	Skim finish[4]
EN 30 minutes fire resistance											
1	124	Gyproc SoundBloc	ACTIV air	1 x 15	27	4000	44	45	Heavy	A206261	A206261S
3	124	Gyproc SoundBloc	ACTIV air	1 x 15	27	4000	50	51	Heavy	A206263	A206263S
EN 60 minutes fire resistance											
1	124	Gyproc FireLine		1 x 15	25	4000	40	41	Heavy	A206265	A206265S
1	124	Gyproc SoundBloc F		1 x 15	27	4000	44	45	Heavy	A206305	A206305S
2	124	Gyproc FireLine		1 x 15	25	4000	44[2]	45[2]	Heavy	A206266	A206266S
5	124	Gyproc DuraLine	ACTIV air	1 x 15	29	4000	45	46	Severe	A206257	A206257S
4	124	Gyproc FireLine		1 x 15	25	4000	46	48	Heavy	A206268	A206268S
6	124	Gyproc DuraLine	ACTIV air	1 x 15	30	4000	48[2]	49[2]	Severe	A206258	A206258S
2	124	Gyproc SoundBloc F		1 x 15	27	4000	49	50	Heavy	A206306	A206306S
3	124	Gyproc SoundBloc F		1 x 15	27	4000	50	51	Heavy	A206309	A206309S
4	124	Gyproc SoundBloc F		1 x 15	27	4000	51	52	Heavy	A206308	A206308S

[1] 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 the more onerous.

[2] Increasing insulation to 50mm Isover Acoustic Partition Roll (APR 1200) will not improve this system performance.

[3] These systems have an **ACTIV*air*** board option available for formaldehyde control to improve indoor air quality. Alternatively, all systems can be skim finished with Thistle PureFinish which contains **ACTIV*air*** technology. Refer to the indoor air quality section in Background & theory.

[4] Sound insulation performance for partitions finished using jointing or plaster skim.

[5] Sound insulation performance for partitions finished with a 2mm skim finish of Thistle Multi-Finish.

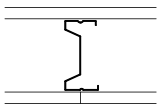
NB For heights between 4200mm and 8000mm, Gypframe Deep Flange Floor & Ceiling Channel should be used at base and at head (subject to deflection criteria).

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 components are used throughout, and the company's fixing recommendations are strictly observed. Any variation in the specifications should be checked with British Gypsum.

Steel frame internal partitions

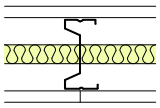
92mm Gypframe AcouStud solutions

1



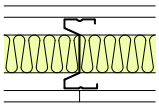
GypWall CLASSIC - 92mm Gypframe 92 AS 50 AcouStuds at 600mm centres. Linings as in table.

2



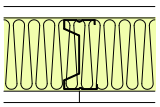
GypWall CLASSIC - 92mm Gypframe 92 AS 50 AcouStuds at 600mm centres, 25mm Isover Acoustic Partition Roll (APR 1200). Linings as in table.

3



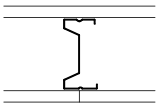
GypWall CLASSIC - 92mm Gypframe 92 AS 50 AcouStuds at 600mm centres, 50mm Isover Acoustic Partition Roll (APR 1200). Linings as in table.

4



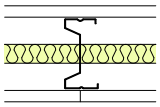
GypWall CLASSIC - 92mm Gypframe 92 AS 50 AcouStuds at 600mm centres, 100mm Isover Modular Roll. Linings as in table.

5



GypWall ROBUST - 92mm Gypframe 92 AS 50 AcouStuds at 600mm centres. Linings as in table.

6



GypWall ROBUST - 92mm Gypframe 92 AS 50 AcouStuds at 600mm centres, 25mm Isover Acoustic Partition Roll (APR 1200). Linings as in table.

Table 2.16a – GypWall CLASSIC and GypWall ROBUST partitions to satisfy the requirements of *BS 476-22: 1987*

Detail	Partition thickness mm	Board type	Available with ACTIV*air* technology[3]	Lining thickness mm	Approx. weight kg/m²	Max. partition height[1] mm	Sound insulation Airborne R_w ($R_w + C_{tr}$) dB		Duty rating	System reference	
							Any finish[4]	Skim finish[5]		Any finish[4]	Skim finish[5]
BS 30 minutes fire resistance											
1	124	Gyproc SoundBloc		1 x 15	27	4900	45	46	Heavy	A206A281	A206A281S
3	124	Gyproc SoundBloc		1 x 15	27	4900	51	52	Heavy	A206A283	A206A283S
BS 60 minutes fire resistance											
1	124	Gyproc FireLine		1 x 15	24	4900	41	42	Heavy	A206A285	A206A285S
2	124	Gyproc FireLine		1 x 15	24	4900	44[2]	45	Heavy	A206A286	A206A286S
1	124	Gyproc SoundBloc F		1 x 15	27	4900	45	46	Heavy	A206A305	A206A305S
5	124	Gyproc DuraLine		1 x 15	29	4900	45	46	Severe	A206A277	A206A277S
4	124	Gyproc FireLine		1 x 15	24	4900	46	48	Heavy	A206A288	A206A288S
2	124	Gyproc SoundBloc F		1 x 15	27	4900	50	51	Heavy	A206A306	A206A306S
6	124	Gyproc DuraLine		1 x 15	30	4900	50	51	Severe	A206A278	A206A278S
3	124	Gyproc SoundBloc F		1 x 15	27	4900	51	52	Heavy	A206A309	A206A309S
4	124	Gyproc SoundBloc F		1 x 15	27	4900	52	54	Heavy	A206A308	A206A308S

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

[2] Increasing insulation to 50mm Isover Acoustic Partition Roll (APR 1200) will not improve this system performance.

[3] These systems have an **ACTIV*air*** board option available for formaldehyde control to improve indoor air quality. Alternatively, all systems can be skim finished with Thistle PureFinish which contains **ACTIV*air*** technology. Refer to the indoor air quality section in Background & theory.

[4] Sound insulation performance for partitions finished using jointing or plaster skim.

[5] Sound insulation performance for partitions finished with a 2mm skim finish of Thistle Multi-Finish.

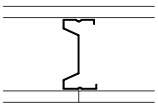
NB For heights between 4200mm and 8000mm, Gypframe Deep Flange Floor & Ceiling Channel should be used at base and at head (subject to deflection criteria).

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 components are used throughout, and the company's fixing recommendations are strictly observed. Any variation in the specifications should be checked with British Gypsum.

Steel frame internal partitions

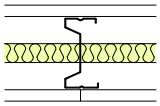
92mm Gypframe AcouStud solutions

1



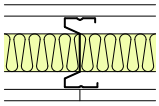
GypWall CLASSIC - 92mm Gypframe 92 AS 50 AcouStuds at 600mm centres. Linings as in table.

2



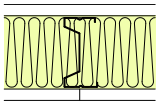
GypWall CLASSIC - 92mm Gypframe 92 AS 50 AcouStuds at 600mm centres, 25mm Isover Acoustic Partition Roll (APR 1200). Linings as in table.

3



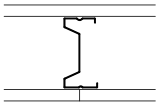
GypWall CLASSIC - 92mm Gypframe 92 AS 50 AcouStuds at 600mm centres, 50mm Isover Acoustic Partition Roll (APR 1200). Linings as in table.

4



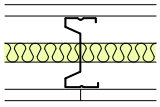
GypWall CLASSIC - 92mm Gypframe 92 AS 50 AcouStuds at 600mm centres, 100mm Isover Modular Roll. Linings as in table.

5



GypWall ROBUST - 92mm Gypframe 92 AS 50 AcouStuds at 600mm centres. Linings as in table.

6



GypWall ROBUST - 92mm Gypframe 92 AS 50 AcouStuds at 600mm centres, 25mm Isover Acoustic Partition Roll (APR 1200). Linings as in table.

Table 2.16b – GypWall CLASSIC and GypWall ROBUST partitions to satisfy the requirements of *BS EN 1364-1: 1999*

Detail	Partition thickness mm	Board type	Available with ACTIV*air* technology[3]	Lining thickness mm	Approx. weight kg/m²	Max. partition height[1] mm	Sound insulation Airborne R_w ($R_w + C_{tr}$) dB		Duty rating	System reference	
							Any finish[4]	Skim finish[5]		Any finish[4]	Skim finish[5]
EN 30 minutes fire resistance											
1	124	Gyproc SoundBloc	ACTIV air	1 x 15	27	4000	45	46	Heavy	A206A281	A206A281S
3	124	Gyproc SoundBloc	ACTIV air	1 x 15	27	4000	51	52	Heavy	A206A283	A206A283S
EN 60 minutes fire resistance											
1	124	Gyproc FireLine		1 x 15	24	4000	41	42	Heavy	A206A285	A206A285S
2	124	Gyproc FireLine		1 x 15	24	4000	44[2]	45	Heavy	A206A286	A206A286S
1	124	Gyproc SoundBloc F		1 x 15	27	4000	45	46	Heavy	A206A305	A206A305S
5	124	Gyproc DuraLine	ACTIV air	1 x 15	29	4000	45	46	Severe	A206A277	A206A277S
4	124	Gyproc FireLine		1 x 15	24	4000	46	48	Heavy	A206A288	A206A288S
2	124	Gyproc SoundBloc F		1 x 15	27	4000	50	51	Heavy	A206A306	A206A306S
6	124	Gyproc DuraLine	ACTIV air	1 x 15	30	4000	50	51	Severe	A206A278	A206A278S
3	124	Gyproc SoundBloc F		1 x 15	27	4000	51	52	Heavy	A206A309	A206A309S
4	124	Gyproc SoundBloc F		1 x 15	27	4000	52	54	Heavy	A206A308	A206A308S

[1] 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 the more onerous.
[2] Increasing insulation to 50mm Isover Acoustic Partition Roll (APR 1200) will not improve this system performance.
[3] These systems have an **ACTIV*air*** board option available for formaldehyde control to improve indoor air quality. Alternatively, all systems can be skim finished with Thistle PureFinish which contains **ACTIV*air*** technology. Refer to the indoor air quality section in Background & theory.
[4] Sound insulation performance for partitions finished using jointing or plaster skim.
[5] Sound insulation performance for partitions finished with a 2mm skim finish of Thistle Multi-Finish.

NB For heights between 4200mm and 8000mm, Gypframe Deep Flange Floor & Ceiling Channel should be used at base and at head (subject to deflection criteria).

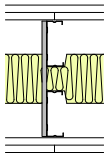
NB The fire resistance and sound insulation performances are for imperforate partitions, walls and ceilings incorporating boards with all joints taped and filled, or skimmed according to British Gypsum's recommendations. The quoted performances are achieved only if British Gypsum components are used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

Enhanced performance partitions

Where enhanced sound insulation is required between rooms, such as conference rooms and circulation areas or music rooms and corridors, it may be necessary to specify a partition with a performance beyond that attainable by separating wall solutions. **GypWall AUDIO** solutions can achieve up to 80 R_w (71 $R_w + C_{tr}$) dB.

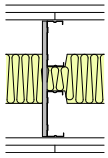
Twin frame solutions – 92mm Gypframe 'C' Studs

1



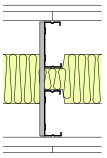
Two rows of 92mm Gypframe 92 S 10 'C' Studs at 600mm centres, braced as in table, width between frames 62mm (min), 100mm Isover Spacesaver Ready-Cut in the cavity. Linings as in table.

2



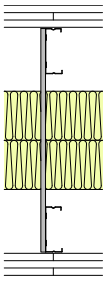
Two rows of 92mm Gypframe 92 S 10 'C' Studs at 600mm centres, braced as in table, width between frames 52mm (min), 100mm Isover Spacesaver Ready-Cut in the cavity. Linings as in table.

3



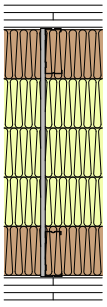
Two rows of 92mm Gypframe 92 S 10 'C' Studs at 600mm centres, braced as in table, width between frames 49mm (min), 100mm Isover Spacesaver Ready-Cut in the cavity. Linings as in table.

4



Two rows of 92mm Gypframe 92 S 10 'C' Studs at 600mm centres, braced as in table, width between frames 286mm (min), 2 x 100mm Isover Spacesaver Ready-Cut in the cavity. Linings as in table.

5



Two rows of 92mm Gypframe 92 S 10 'C' Studs at 600mm centres, braced as in table, width between frames 536mm (min), 3 x 100mm Isover Spacesaver Ready-Cut and 2 x 100mm stone mineral wool in the cavity. Linings as in table.

Table 2.17a – GypWall AUDIO partitions to satisfy the requirements of *BS 476-22: 1987*

Detail	Partition thickness mm	Board type	Available with ACTIV*air* technology[3]	Lining thickness mm	Approx. weight kg/m²	Max. partition height[1] mm		Sound insulation Airborne R_w ($R_w + C_{tr}$) dB[2]	Duty rating	System reference
						Gypframe 99 FC 50 Fixing Channel braces at 3600mm centres	Gypframe GAB3 Acoustic Braces at 3300mm centres			
BS **60 minutes fire resistance**										
1	300	Gyproc SoundBloc	ACTIV air	2 x 12.5	47	8000	8000	67 (56)	Severe	A326001
BS **90 minutes fire resistance**										
2	300	Gyproc SoundBloc	ACTIV air	2 x 15	55	8000	8000	69 (60)	Severe	A326002
BS **120 minutes fire resistance**										
3	300	Gyproc Plank + Gyproc FireLine		19 + 12.5	57	8000	8000	67 (57)	Severe	A326006
4	550	Gyproc SoundBloc	ACTIV air	3 x 15	80	9000	9500	76 (68)	Severe	A326013
5	800	Gyproc SoundBloc	ACTIV air	3 x 15	80	9500	9000	80 (71)	Severe	A326019

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

[2] Low frequency performance data available on request.

[3] These systems have an **ACTIV*air*** board option available for formaldehyde control to improve indoor air quality. Alternatively, all systems can be skim finished with Thistle PureFinish which contains **ACTIV*air*** technology. Refer to the indoor air quality section in Background & theory.

NB It is possible to provide fire protection to structural steel by enclosing within a British Gypsum twin frame partition system.
Refer to **Fire protection encasement of structural steel, Table 2.35.**

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 components are used throughout, and the company's fixing recommendations are strictly observed. Any variation in the specifications should be checked with British Gypsum.

NB For heights between 4200mm and 8000mm, Gypframe Deep Flange Floor & Ceiling Channel should be used at base and at head (subject to deflection criteria).

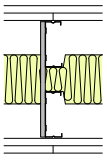
NB For heights over 8000mm, Gypframe Extra Deep Flange Floor & Ceiling Channel should be used at base and at head.

Enhanced performance partitions

Where enhanced sound insulation is required between rooms, such as conference rooms and circulation areas or music rooms and corridors, it may be necessary to specify a partition with a performance beyond that attainable by separating wall solutions. **GypWall AUDIO** solutions can achieve up to 80 R_w (71 $R_w + C_{tr}$) dB.

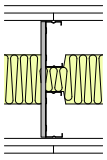
Twin frame solutions – 92mm Gypframe 'C' Studs

1



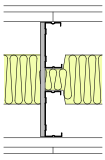
Two rows of 92mm Gypframe 92 S 10 'C' Studs at 600mm centres, braced as in table, width between frames 62mm (min), 100mm Isover Spacesaver Ready-Cut in the cavity. Linings as in table.

2



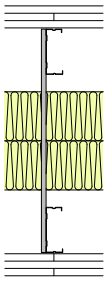
Two rows of 92mm Gypframe 92 S 10 'C' Studs at 600mm centres, braced as in table, width between frames 52mm (min), 100mm Isover Spacesaver Ready-Cut in the cavity. Linings as in table.

3



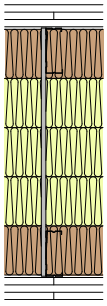
Two rows of 92mm Gypframe 92 S 10 'C' Studs at 600mm centres, braced as in table, width between frames 49mm (min), 100mm Isover Spacesaver Ready-Cut in the cavity. Linings as in table.

4



Two rows of 92mm Gypframe 92 S 10 'C' Studs at 600mm centres, braced as in table, width between frames 286mm (min), 2 x 100mm Isover Spacesaver Ready-Cut in the cavity. Linings as in table.

5



Two rows of 92mm Gypframe 92 S 10 'C' Studs at 600mm centres, braced as in table, width between frames 536mm (min), 3 x 100mm Isover Spacesaver Ready-Cut and 2 x 100mm stone mineral wool in the cavity. Linings as in table.

Table 2.17b – GypWall AUDIO partitions to satisfy the requirements of *BS EN 1364-1: 1999*

Detail	Partition thickness mm	Board type	Available with ACTIV*air* technology[3]	Lining thickness mm	Approx. weight kg/m²	Max. partition height[1] mm		Sound insulation Airborne R_w ($R_w + C_{tr}$) dB[2]	Duty rating	System reference
						Gypframe 99 FC 50 Fixing Channel braces at 3600mm centres	Gypframe GAB3 Acoustic Braces at 3300mm centres			
EN **60 minutes fire resistance**										
1	300	Gyproc SoundBloc	ACTIV air	2 x 12.5	47	8000	8000	67 (56)	Severe	A326001
3	300	Gyproc Plank + Gyproc FireLine		19 + 12.5	57	8000	8000	67 (57)	Severe	A326006
2	300	Gyproc SoundBloc	ACTIV air	2 x 15	55	8000	8000	69 (60)	Severe	A326002
EN **120 minutes fire resistance**										
4	550	Gyproc SoundBloc	ACTIV air	3 x 15	80	9000	9500	76 (68)	Severe	A326013
5	800	Gyproc SoundBloc	ACTIV air	3 x 15	80	9500	9000	80 (71)	Severe	A326019

[1] 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 the more onerous.

[2] Low frequency performance data available on request.

[3] These systems have an **ACTIV*air*** board option available for formaldehyde control to improve indoor air quality. Alternatively, all systems can be skim finished with Thistle PureFinish which contains **ACTIV*air*** technology. Refer to the indoor air quality section in Background & theory.

NB It is possible to provide fire protection to structural steel by enclosing within a British Gypsum twin frame partition system. Refer to **Fire protection encasement of structural steel, Table 2.35.**

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 components are used throughout, and the company's fixing recommendations are strictly observed. Any variation in the specifications should be checked with British Gypsum.

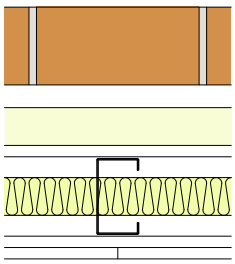
NB For heights between 4200mm and 8000mm, Gypframe Deep Flange Floor & Ceiling Channel should be used at base and at head (subject to deflection criteria).

NB For heights over 8000mm, Gypframe Extra Deep Flange Floor & Ceiling Channel should be used at base and at head.

External walls

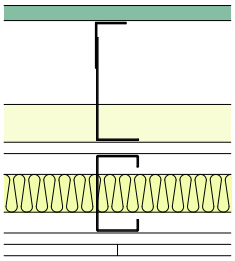
Fire performance – loadbearing steel frame wall

1



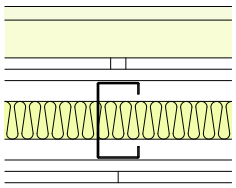
103mm brickwork, 50mm low emissivity clear cavity, low emissivity faced insulation, Isover Steel Frame Infill Batts (thickness as in table) between Metsec 100 M 12 studs at 600mm centres. Lined with 2 x 15mm Gyproc WallBoard.

2



Rainscreen cladding, well-vented cavity, low emissivity faced insulation, Isover Steel Frame Infill Batts (thickness as in table) between Metsec 100 M 12 studs at 600mm centres. Lined with 2 x 15mm Gyproc WallBoard.

3



Weber EWI render system (unbridged), 12.5mm sheathing board, Isover Steel Frame Infill Batts (thickness as in table) between Metsec 100 M 12 studs at 600mm centres. Lined with 2 x 15mm Gyproc WallBoard.

Table 2.18 – Loadbearing steel frame system – solutions to satisfy the requirements of *BS 476: Part 21: 1987* including thermal performance

Detail	Isover Steel Frame Infill Batt between studs mm	Combined R-value of insulation external side of studs and low emissivity cavity (where applicable) m^2K/W	U-value W/m^2K	Metsec system reference[2]
BS	**60 minutes fire resistance (67% load bearing ratio)[1]**			
1	50	2.92	0.24	MFD380
1	100	2.92	0.21	MFD380
2	50	3.57	0.28	MFD383
2	100	3.57	0.25	MFD383
3	50	2.68	0.27	MFD395
3	100	2.68	0.23	MFD395

[1] Exposed to fire on the room side. Estimated 90 minutes in non-axial loaded wall situations (non-loadbearing *BS 476: Part 22*).

[2] Performance data applies to loadbearing construction details. Contact Metsec for all performance substantiation, tel: 0121 6016000 email: framing@metsec.com

NB A vapour control layer may be required depending on construction.

NB In non-axial loaded Metsec stud walls, e.g. infill panels, the plasterboard specifications shown in **Table 2.18** are estimated to provide 90 minutes fire protection to the structural steel subject to a maximum A/V factor of $260m^{-1}$. Refer to **Table 2.19** for other plasterboard specifications for the protection of structural steel.

Fire performance – non-loadbearing steel frame infill panel

Where it is necessary to provide fire protection to structural steel within an external metal frame cavity, refer to **Table 2.19** for the appropriate Gyproc plasterboard specification.

Table 2.19 – GypLyner IWL fire protection to structural steel within system cavity. Solutions to satisfy the requirements of *DD ENV 13381-2: 2002* and *BS 476: Part 21: 1987*

Board type	Lining thickness mm	Fire protection mins	Section factor [1] A/V (Hp/A) m^{-1}
BS EN			
Gyproc FireLine	1 x 12.5	30	Up to 300
Gyproc FireLine	1 x 12.5	60	Up to 165 (BS only)
Gyproc DuraLine[2]	1 x 15	30	Up to 300
Gyproc DuraLine[2]	1 x 15	60	Up to 195 (BS only)
Gyproc WallBoard or Gyproc SoundBloc[2]	2 x 12.5	30	Up to 300
Gyproc FireLine	2 x 12.5	60	Up to 300
Gyproc FireLine	2 x 12.5	90	Up to 200 (BS only)
Gyproc FireLine	2 x 15	90	Up to 300

[1] Based on four-sided exposure. Protection is afforded to universal column sections as described in *BS 4: Part 1*. Based on critical temperature 550°C (information on other critical temperatures is available). No vertical joints aligning with the columns and boards not fixed to the column to maintain air space (10mm for BS or 50mm for EN).

[2] These systems have an **ACTIV*air*** board option available for formaldehyde control to improve indoor air quality. Alternatively, all systems can be skim finished with Thistle PureFinish which contains **ACTIV*air*** technology. Refer to the indoor air quality section in Background & theory.

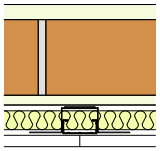
NB A vapour control layer may be required depending on construction.

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 components are used throughout, and the company's fixing recommendations are strictly observed. Any variation in the specifications should be checked with British Gypsum.

Acoustic upgrade to masonry construction

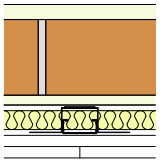
GypLyner UNIVERSAL

1



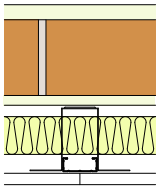
Externally rendered solid masonry wall of mass 200kg/m² with Gyproc SoundCoat Plus or Thistle plaster to the inside. Lined internally with **GypLyner UNIVERSAL** system incorporating 25mm Isover Acoustic Partition Roll (APR 1200) within 35mm cavity. Linings as in table.

2



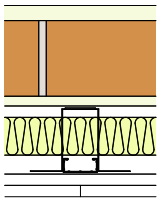
Externally rendered solid masonry wall of mass 200kg/m² with Gyproc SoundCoat Plus or Thistle plaster to the inside. Lined internally with **GypLyner UNIVERSAL** system incorporating 25mm Isover Acoustic Partition Roll (APR 1200) within 35mm cavity. Linings as in table.

3



Externally rendered solid masonry wall of mass 200kg/m² with Gyproc SoundCoat Plus or Thistle plaster to the inside. Lined internally with **GypLyner UNIVERSAL** system incorporating 50mm Isover Acoustic Partition Roll (APR 1200) within 85mm cavity. Linings as in table.

4



Externally rendered solid masonry wall of mass 200kg/m² with Gyproc SoundCoat Plus or Thistle plaster to the inside. Lined internally with **GypLyner UNIVERSAL** system incorporating 50mm Isover Acoustic Partition Roll (APR 1200) within 85mm cavity. Linings as in table.

Table 2.20 – GypLyner UNIVERSAL linings to upgrade the sound insulation of external solid masonry walls

Detail	Board type	Available with ACTIV*air* technology[2]	Wall lining thickness mm	System cavity size including insulation mm	Performance of base wall R_w ($R_w + C_{tr}$) dB	Sound insulation: Airborne R_w ($R_w + C_{tr}$) dB ($R_w + C_{tr}$) dB	Sound insulation: Improvement over base wall R_w	System reference
BS 120 minutes fire resistance[1]								
1	Gyproc SoundBloc	✓	1 x 12.5	35	47 (44)	57 (50)	+10 (+6)	B226008
2	Gyproc SoundBloc	✓	2 x 12.5	35	47 (44)	60 (55)	+13 (+11)	B226003
3	Gyproc SoundBloc	✓	1 x 12.5	85	47 (44)	64 (56)	+17 (+12)	B226007
4	Gyproc SoundBloc	✓	2 x 12.5	85	47 (44)	66 (59)	+19 (+15)	B226005

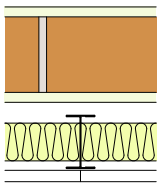
[1] The fire resistance quoted is that provided by the masonry wall to satisfy the requirements of *BS 476: Part 21: 1987* without contribution from the lining.

[2] These systems have an **ACTIV*air*** board option available for formaldehyde control to improve indoor air quality. Alternatively, all systems can be skim finished with Thistle PureFinish which contains **ACTIV*air*** technology. Refer to the indoor air quality section in Background & theory.

Acoustic upgrade to masonry construction

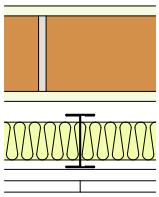
GypLyner IWL

1



Solid masonry wall of mass 180kg/m² with Gyproc SoundCoat Plus or Thistle plaster. Lined one side with **GypLyner IWL** system incorporating 50mm Isover Steel Frame Infill Batt (minimum 10mm stand-off from face of masonry). Linings as in table.

2



Solid masonry wall of mass 180kg/m² with Gyproc SoundCoat Plus or Thistle plaster. Lined one side with **GypLyner IWL** system incorporating 50mm Isover Steel Frame Infill Batt (minimum 10mm stand-off from face of masonry). Linings as in table.

Table 2.21a – GypLyner IWL lining to upgrade the sound insulation of external solid masonry walls

Detail	Board type	Wall lining thickness mm	System cavity size including insulation mm	Performance of base wall R_w ($R_w + C_{tr}$) dB	Sound insulation		System reference
					Airborne R_w ($R_w + C_{tr}$) dB	Improvement over base wall R_w ($R_w + C_{tr}$) dB	
BS	**120 minutes fire resistance**[1]						
1	Gyproc WallBoard	1 x 15	58	45 (42)	59 (51)	+14 (+9)	B216002
2	Gyproc WallBoard	2 x 12.5	58	45 (42)	61 (54)	+16 (+12)	B216031

A range of studs are available for use within the **GypWall IWL** system depending on height requirements. See **Table 2.21b** below.

Table 2.21b – GypLyner IWL maximum heights for Gypframe 'I' Studs at 600mm centres

Gypframe 'I' Stud	Maximum height mm[2]	
	Single layer 15mm Gyproc WallBoard	Double layer 12.5mm Gyproc WallBoard
48 I 50	2400	2700
60 I 50	2700	3000
60 I 70	3300	3600
70 I 70	3900	4200

[1] The fire resistance quoted is that provided by the masonry wall to satisfy the requirements of *BS 476: Part 21: 1987* without contribution from the lining.
[2] Based on a limiting deflection of L/240 at 200 Pa.

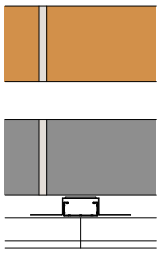
NB For heights between 4200mm and 8000mm, Gypframe Deep Flange Floor & Ceiling Channel should be used at base and at head (subject to deflection criteria).

NB Where it is necessary to provide fire protection to structural steel within a **GypLyner IWL** external lining refer to **Table 2.19** for the appropriate Gyproc plasterboard specification.

Thermal insulation to external wall constructions

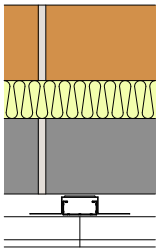
GypLyner UNIVERSAL

1



Brick outer leaf, 50mm clear cavity, inner leaf as in table, GypLyner UNIVERSAL system with 25mm cavity. Lining as in table.

2



Brick outer leaf, 50mm Isover CWS, inner leaf as in table, GypLyner UNIVERSAL system with 25mm cavity. Lining as in table.

Table 2.22 – GypLyner UNIVERSAL U-values for external masonry walls

Detail	Overall wall thickness mm	Thermal laminate type	Thermal laminate thickness (mm)	U-value (W/m^2K)
Inner leaf – Medium density block (λ = 0.47 W/mK)				
1	338	Gyproc ThermaLine SUPER	60	0.31
1	348	Gyproc ThermaLine SUPER	70	0.27
1	368	Gyproc ThermaLine SUPER	90	0.22
2	313	Gyproc ThermaLine PLUS	35	0.34
Inner leaf – Aircrete block (λ = 0.11 W/mK)				
1	338	Gyproc ThermaLine SUPER	60	0.26
1	368	Gyproc ThermaLine SUPER	90	0.19
2	305	Gyproc ThermaLine PLUS	27	0.31
2	318	Gyproc ThermaLine PLUS	40	0.28

Thermal insulation to external wall constructions

GypLyner IWL

Table 2.23a – GypLyner IWL U-values[1] for external claddings with lining / insulation combinations – based on a well-vented external cladding cavity

External cladding	Board type	Lining thickness mm	Isover Steel Frame Infill Batts	U-value (W/m²K)
Curtain walling / concrete cladding / panels / brickwork / blockwork, etc.	Gyproc ThermaLine SUPER	50	50mm (with Gypframe 48 I 50 'I' Studs)	0.33
	Gyproc ThermaLine SUPER	60	50mm (with Gypframe 48 I 50 'I' Studs)	0.28
	Gyproc ThermaLine SUPER	70	50mm (with Gypframe 48 I 50 'I' Studs)	0.25
	Gyproc ThermaLine SUPER	70	75mm (with Gypframe 70 I 70 'I' Studs)	0.22
	Gyproc ThermaLine SUPER	70	100mm (with Gypframe 92 I 90 'I' Studs)	0.21
	Gyproc ThermaLine SUPER	70	2 x 75mm (with Gypframe 146 I 80 'I' Studs)	0.17

A range of studs are available for use within the **GypWall IWL** system depending on height requirements. See **Table 2.23b** below

Table 2.23b – GypLyner IWL maximum heights for Gypframe 'I' Studs at 600mm centres

Gypframe 'I' Stud	Maximum height mm[2]				
	12.5mm boards Single layer	12.5mm boards Double layer	15mm boards Single layer	15mm plasterboards Double layer	Gyproc ThermaLine laminates
48 I 50	2400	2700	2400	2800	2400
60 I 50	2400	3000	2700	3300	2400
60 I 70	3000	3600	3300	3900	3000
70 I 70	3600	4200	3900	4300	3600
92 I 90	5100	5700	5400	6000	5100
146 I 80	6900	7200	7200	7500	6900

[1] U-values are calculated by proportional area method. Contact the British Gypsum Technical Advice Centre for U-value calculations for specific construction types.

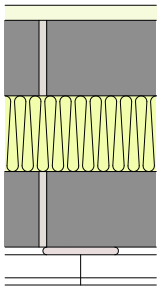
[2] Based on a limiting deflection of L/240 at 200 Pa.

NB For heights between 4200mm and 8000mm, Gypframe Deep Flange Floor & Ceiling Channel should be used at base and at head (subject to deflection criteria).

Thermal insulation to external wall constructions

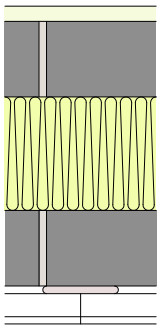
DriLyner BASIC and DriLyner TL

1



20mm render, 100mm block (type as in table), 100mm Isover Hi-Cav 32 full-fill, 100mm block (type as in table). Lining system as in table.

2



20mm render, 100mm block (type as in table), 150mm Isover Hi-Cav 32 full-fill, 100mm block (type as in table). Lining system as in table.

Table 2.24 – DriLyner U-values (W/m^2K) for external masonry cavity walls

Lining system	Aircrete block (λ = 0.11 W/mK)		Medium dense block (λ = 0.47 W/mK)		Dense block (λ = 1.28 W/mK)	
	1	2	1	2	1	2
DriLyner BASIC – 12.5mm Gyproc WallBoard	0.20	0.16	0.26	0.20	0.27	0.21
DriLyner TL – 30mm Gyproc ThermaLine SUPER	0.17	0.14	0.21	0.17	0.22	0.18
DriLyner TL – 40mm Gyproc ThermaLine SUPER	0.16	0.13	0.19	0.15	0.20	0.16
DriLyner TL – 50mm Gyproc ThermaLine SUPER	0.15	0.12	0.17	0.14	0.18	0.15
DriLyner TL – 60mm Gyproc ThermaLine SUPER	0.13	0.12	0.16	0.13	0.16	0.14
DriLyner TL – 70mm Gyproc ThermaLine SUPER	0.13	0.11	0.15	0.12	0.15	0.13
DriLyner TL – 80mm Gyproc ThermaLine SUPER	0.12	0.10	0.14	0.12	0.14	0.12
DriLyner TL – 90mm Gyproc ThermaLine SUPER	0.11	0.10	0.13	0.11	0.13	0.11

NB U-values shown in the table above are based on the same block type being used for inner and outer leaves with appropriate wall-tie correction factors taken from BRE BR443 U-value conventions. For other permutations, contact the British Gypsum Technical Advice Centre at bgtechnical.enquiries@bpb.com

Lift shafts

Fire protection to lift shafts

ShaftWall

In situations where it is necessary to install a fire-rated partition in confined spaces where access is limited to one side, for example lift shaft enclosures and stairwells, British Gypsum's **ShaftWall** system is recommended. The system provides a protective structure which can be incorporated at an early stage of the construction without the need for scaffolding.

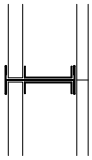
For situations where a non-combustible lining is required, such as the London Underground or smoke ducts, British Gypsum's **ShaftWall** system using Glasroc F FIRECASE is appropriate.

The following tables provide technical performance data including laboratory sound insulation performance. For projects where it is necessary for the **ShaftWall** to meet separating wall requirements (43 $D_{nT,w}$ + C_{tr} dB) an additional lining of **GypLyner UNIVERSAL IWL** could be considered. For further guidance contact the British Gypsum Technical Advice Centre at bgtechnical.enquiries@bpb.com

Fire protection to lift shafts

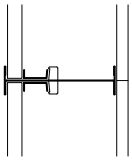
ShaftWall

1



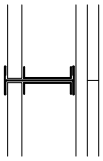
Gypframe 60, 70 or 92mm 'I' Stud framework with Gyproc CoreBoard between studs, secured by Gypframe Retaining Channel. 25mm Isover Acoustic Partition Roll (APR 1200) in cavity (optional). Lining boards to non-shaft side, see table.

2



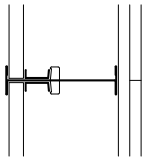
Gypframe 146 TI 90 Tabbed 'I' Stud framework with Gyproc CoreBoard between studs, secured by Gypframe Retaining Channel. 25mm Isover Acoustic Partition Roll (APR 1200) in cavity (optional). Lining boards to non-shaft side, see table.

3



Gypframe 60, 70 or 92mm 'I' Stud framework with Gyproc CoreBoard between studs, secured by Gypframe Retaining Channel. 25mm Isover Acoustic Partition Roll (APR 1200) in cavity (optional). Lining boards to non-shaft side, see table.

4



Gypframe 146 TI 90 Tabbed 'I' Stud framework with Gyproc CoreBoard between studs, secured by Gypframe Retaining Channel. 25mm Isover Acoustic Partition Roll (APR 1200) in cavity (optional). Lining boards to non-shaft side, see table.

Table 2.25a – ShaftWall (vertical elements) solutions to satisfy the requirements of *BS 476: Part 22: 1987*

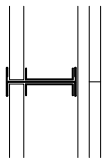
Detail	Partition thickness mm	Lining boards to non-shaft side[1]		Maximum partition height[2] mm	Stud size mm	Sound insulation R_w[3]		Duty rating[5]	Approx. weight kg/m²	System reference
		Board type	Lining thickness mm			No insulation dB	Sealed structure[4] plus 25mm Isover Acoustic Partition Roll (APR 1200) dB			
BS 60 minutes fire resistance[6]										
1	77	Gyproc FireLine	1 x 15	4200	60	39	42	Heavy	30	A306001/010
1	87	Gyproc FireLine	1 x 15	4200	70	39	42	Heavy	30	A306001/010
1	109	Gyproc FireLine	1 x 15	6000	92	40	43	Heavy	31	A306004/011
2	163	Gyproc FireLine	1 x 15	7700	146	43	46	Heavy	33	A306007
BS 90 minutes fire resistance[6]										
3	87	Gyproc FireLine	2 x 12.5	4400	60	40	44	Severe	39	A306002/012
3	97	Gyproc FireLine	2 x 12.5	4400	70	40	44	Severe	39	A306002/012
3	119	Gyproc FireLine	2 x 12.5	6400	92	45	47	Severe	40	A306005/014
4	173	Gyproc FireLine	2 x 12.5	7900	146	48	52	Severe	42	A306008/020
BS 120 minutes fire resistance[6]										
3	92	Gyproc FireLine	2 x 15	4500	60	42	45	Severe	43	A306003/023
3	102	Gyproc FireLine	2 x 15	4500	70	42	45	Severe	43	A306003/023
3	124	Gyproc FireLine	2 x 15	6700	92	44	46	Severe	44	A306006/025
4	178	Gyproc FireLine	2 x 15	7900	146	48	50	Severe	46	A306009/028

[1] For improved durability and impact resistance, the outer layer of Gyproc FireLine can be replaced with a layer of 15mm Gyproc DuraLine. On single layer linings this will improve duty rating to Severe Duty.
[2] Based on a limiting deflection of L/240 at 200 Pa.
[3] The acoustic performance figures quoted include **ShaftWall** partitions with deflection heads.
[4] Gyproc CoreBoard and first layer of lining board are bedded onto Gyproc Sealant, as required for pressurised air shafts, in addition to normal sealing.
[5] Estimated rating from non-shaft side only.
[6] The temperature of exposed metal may exceed the requirements of *BS 476: Part 22: 1987* within the fire test period, and therefore relaxation should be sought from the approving authority on the basis that no combustible materials are likely to be stored adjacent to the structure. In situations where the full period of insulation is required, contact the British Gypsum Technical Advice Centre for further guidance.

NB The fire resistance and sound insulation performances are for imperforate partitions, but incorporating deflection heads, with all joints taped and filled, or skimmed according to British Gypsum's recommendations. The quoted performances are achieved only if British Gypsum components are used throughout, and the company's fixing recommendations are strictly observed. Any variation in the specifications should be checked with British Gypsum.

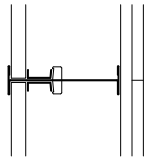
NB Gypframe Extra Deep Flange Floor & Ceiling Channel or 'J' Channel should be used at the head. For the base, Gypframe Floor & Ceiling Channel should be used for heights up to 4200mm, Gypframe Deep Flange Floor & Ceiling Channel should be used for heights between 4200mm and 8000mm.

1



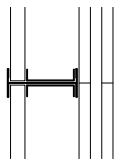
Gypframe 60, 70 or 92mm 'I' Stud framework with Gyproc CoreBoard between studs, secured by Gypframe Retaining Channel. 25mm Isover Acoustic Partition Roll (APR 1200) in cavity (optional). Lining boards to non-shaft side, see table.

2



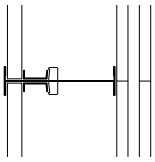
Gypframe 146 TI 90 Tabbed 'I' Stud framework with Gyproc CoreBoard between studs, secured by Gypframe Retaining Channel. 25mm Isover Acoustic Partition Roll (APR 1200) in cavity (optional). Lining boards to non-shaft side, see table.

3



Gypframe 60, 70 or 92mm 'I' Stud framework with Gyproc CoreBoard between studs, secured by Gypframe Retaining Channel. 25mm Isover Acoustic Partition Roll (APR 1200) in cavity (optional). Lining boards to non-shaft side, see table.

4



Gypframe 146 TI 90 Tabbed 'I' Stud framework with Gyproc CoreBoard between studs, secured by Gypframe Retaining Channel. 25mm Isover Acoustic Partition Roll (APR 1200) in cavity (optional). Lining boards to non-shaft side, see table.

Table 2.25b – ShaftWall (vertical elements) solutions to satisfy the requirements of *BS EN 1364-1: 1999*

Detail	Partition thickness mm	Lining boards to non-shaft side[1]		Maximum partition height[2] mm	Stud size mm	Sound insulation R_w[3]		Duty rating[5]	Approx. weight kg/m²	System reference
		Board type	Lining thickness mm			No insulation dB	Sealed structure[4] plus 25mm Isover Acoustic Partition Roll (APR 1200) dB			
EN	**60 minutes fire resistance**									
1	87	Gyproc FireLine	2 x 12.5	4400	60	40	44	Severe	39	A306002/012
1	97	Gyproc FireLine	2 x 12.5	4400	70	40	44	Severe	39	A306002/012
1	119	Gyproc FireLine	2 x 12.5	6000	92	45	47	Severe	40	A306005/014
2	173	Gyproc FireLine	2 x 12.5	6000	146	48	52	Severe	42	A306008/020
EN	**90 minutes fire resistance**									
1	92	Gyproc FireLine	2 x 15	4500	60	42	45	Severe	43	A306003/023
1	102	Gyproc FireLine	2 x 15	4500	70	42	45	Severe	43	A306003/023
1	124	Gyproc FireLine	2 x 15	6000	92	44	46	Severe	44	A306006/025
2	178	Gyproc FireLine	2 x 15	6000	146	48	50	Severe	46	A306009/028
EN	**120 minutes fire resistance**									
3	107	Gyproc FireLine	3 x 15	4500	60	43	45	Severe	55	A306030/035
3	117	Gyproc FireLine	3 x 15	4500	70	43	45	Severe	55	A306030/035
3	139	Gyproc FireLine	3 x 15	6000	92	45	46	Severe	56	A306031/036
4	193	Gyproc FireLine	3 x 15	6000	146	49	50	Severe	58	A306032/033

[1] For improved durability and impact resistance, the outer layer of Gyproc FireLine can be replaced with a layer of 15mm Gyproc DuraLine.
[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 the more onerous.
[3] The acoustic performance figures quoted include **ShaftWall** partitions with deflection heads.
[4] Gyproc CoreBoard and first layer of lining board are bedded onto Gyproc Sealant, as required for pressurised air shafts, in addition to normal sealing.
[5] Estimated rating from non-shaft side only.

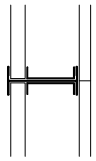
NB The fire resistance and sound insulation performances are for imperforate partitions, but incorporating deflection heads, with all joints taped and filled, or skimmed according to British Gypsum's recommendations. The quoted performances are achieved only if British Gypsum components are used throughout, and the company's fixing recommendations are strictly observed. Any variation in the specifications should be checked with British Gypsum.

NB Gypframe Extra Deep Flange Floor & Ceiling Channel or 'J' Channel should be used at the head. For the base, Gypframe Floor & Ceiling Channel should be used for heights up to 4200mm, Gypframe Deep Flange Floor & Ceiling Channel should be used for heights between 4200mm and 8000mm.

Fire protection to lift shafts

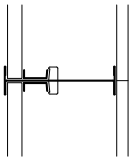
Non-combustible ShaftWall

1



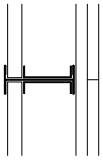
Gypframe 60, 70 or 92mm 'I' Stud framework with 20mm Glasroc F FIRECASE between studs, secured by Gypframe Retaining Channel. 25mm Isover Acoustic Partition Roll (APR 1200) in cavity (optional). Lining boards to non-shaft side, see table.

2



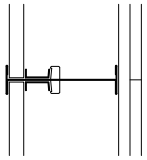
Gypframe 146 TI 90 Tabbed 'I' Stud framework with 20mm Glasroc F FIRECASE between studs, secured by Gypframe Retaining Channel. 25mm Isover Acoustic Partition Roll (APR 1200) in cavity (optional). Lining boards to non-shaft side, see table.

3



Gypframe 60, 70 or 92mm 'I' Stud framework with 20mm Glasroc F FIRECASE between studs, secured by Gypframe Retaining Channel. 25mm Isover Acoustic Partition Roll (APR 1200) in cavity (optional). Lining boards to non-shaft side, see table.

4



Gypframe 146 TI 90 Tabbed 'I' Stud framework with 20mm Glasroc F FIRECASE between studs, secured by Gypframe Retaining Channel. 25mm Isover Acoustic Partition Roll (APR 1200) in cavity (optional). Lining boards to non-shaft side, see table.

Table 2.26a – ShaftWall (vertical elements) non-combustible solutions to satisfy the requirements of *BS 476: Part 22: 1987*

Detail	Partition thickness mm	Lining boards to non-shaft side[1]		Maximum partition height[2] mm	Stud size mm	Sound insulation R_w[3]		Duty rating[5]	Approx. weight kg/m²	System reference
		Board type	Lining thickness mm			No insulation dB	Sealed structure[4] plus 25mm Isover Acoustic Partition Roll (APR 1200) dB			
BS	**60 minutes fire resistance[6]**									
1	77	Glasroc F FIRECASE	1 x 15	4200	60	38	41	Heavy	32	G306001/010
1	87	Glasroc F FIRECASE	1 x 15	4200	70	38	41	Heavy	32	G306001/010
1	109	Glasroc F FIRECASE	1 x 15	6000	92	39	42	Heavy	33	G306004/011
2	163	Glasroc F FIRECASE	1 x 15	7700	146	42	45	Heavy	35	G306007
BS	**90 minutes fire resistance[6]**									
3	92	Glasroc F FIRECASE	2 x 15	4500	60	41	44	Severe	46	G306003/023
3	102	Glasroc F FIRECASE	2 x 15	4500	70	41	44	Severe	46	G306003/023
3	124	Glasroc F FIRECASE	2 x 15	6400	92	43	45	Severe	47	G306006/025
4	178	Glasroc F FIRECASE	2 x 15	7900	146	47	49	Severe	49	G306009/028
BS	**120 minutes fire resistance[6]**									
3	92	Glasroc F FIRECASE	2 x 15	4500	60	41	44	Severe	46	G306003/023
3	102	Glasroc F FIRECASE	2 x 15	4500	70	41	44	Severe	46	G306003/023
3	124	Glasroc F FIRECASE	2 x 15	6700	92	43	45	Severe	47	G306006/025
4	178	Glasroc F FIRECASE	2 x 15	7900	146	47	49	Severe	49	G306009/028

[1] For a non-combustible solution on the shaft side only the Glasroc F FIRECASE on the non-shaft side can be replaced with 15mm Gyproc FireLine or 15mm Gyproc DuraLine.

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

[3] The acoustic performance figures quoted include **ShaftWall** partitions with deflection heads.

[4] 20mm Glasroc F FIRECASE and first layer of lining board are bedded onto Gyproc Sealant, as required for pressurised air shafts, in addition to normal sealing.

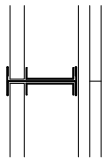
[5] Estimated rating from non-shaft side only.

[6] The temperature of exposed metal may exceed the requirements of *BS 476: Part 22: 1987* within the fire test period, and therefore relaxation should be sought from the approving authority on the basis that no combustible materials are likely to be stored adjacent to the structure. In situations where the full period of insulation is required, contact the British Gypsum Technical Advice Centre for further guidance.

NB The fire resistance and sound insulation performances are for imperforate partitions, but incorporating deflection heads, with all joints taped and filled, or skimmed according to British Gypsum's recommendations. The quoted performances are achieved only if British Gypsum components are used throughout, and the company's fixing recommendations are strictly observed. Any variation in the specifications should be checked with British Gypsum.

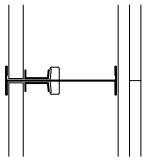
NB Gypframe Extra Deep Flange Floor & Ceiling Channel or 'J' Channel should be used at the head. For the base, Gypframe Floor & Ceiling Channel should be used for heights up to 4200mm, Gypframe Deep Flange Floor & Ceiling Channel should be used for heights between 4200mm and 8000mm.

1



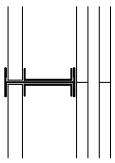
Gypframe 60, 70 or 92mm 'T' Stud framework with 20mm Glasroc F FIRECASE between studs, secured by Gypframe Retaining Channel. 25mm Isover Acoustic Partition Roll (APR 1200) in cavity (optional). Lining boards to non-shaft side, see table.

2



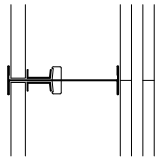
Gypframe 60, 70 or 92mm 'T' Stud framework with 20mm Glasroc F FIRECASE between studs, secured by Gypframe Retaining Channel. 25mm Isover Acoustic Partition Roll (APR 1200) in cavity (optional). Lining boards to non-shaft side, see table.

3



Gypframe 60, 70 or 92mm 'T' Stud framework with 20mm Glasroc F FIRECASE between studs, secured by Gypframe Retaining Channel. 25mm Isover Acoustic Partition Roll (APR 1200) in cavity (optional). Lining boards to non-shaft side, see table.

4



Gypframe 146 TI 90 Tabbed 'T' Stud framework with 20mm Glasroc F FIRECASE between studs, secured by Gypframe Retaining Channel. 25mm Isover Acoustic Partition Roll (APR 1200) in cavity (optional). Lining boards to non-shaft side, see table.

Table 2.26b – ShaftWall (vertical elements) non-combustible solutions to satisfy the requirements of *BS EN 1364-1: 1999*

Detail	Partition thickness mm	Lining boards to non-shaft side[1]		Maximum partition height[2] mm	Stud size mm	Sound insulation R_w[3]		Duty rating[5]	Approx. weight kg/m²	System reference
		Board type	Lining thickness mm			No insulation dB	Sealed structure[4] plus 25mm Isover Acoustic Partition Roll (APR 1200) dB			
EN 60 minutes fire resistance										
1	92	Glasroc F FIRECASE	2 x 15	4500	60	41	44	Severe	46	G306003/023
1	102	Glasroc F FIRECASE	2 x 15	4500	70	41	44	Severe	46	G306003/023
1	124	Glasroc F FIRECASE	2 x 15	6000	92	43	45	Severe	47	G306006/025
2	178	Glasroc F FIRECASE	2 x 15	6000	146	47	49	Severe	49	G306009/028
EN 90 minutes fire resistance										
1	92	Glasroc F FIRECASE	2 x 15	4500	60	41	44	Severe	46	G306003/023
1	102	Glasroc F FIRECASE	2 x 15	4500	70	41	44	Severe	46	G306003/023
1	124	Glasroc F FIRECASE	2 x 15	6000	92	43	45	Severe	47	G306006/025
2	178	Glasroc F FIRECASE	2 x 15	6000	146	47	49	Severe	49	G306009/028
EN 120 minutes fire resistance										
3	107	Glasroc F FIRECASE	3 x 15	4500	60	42	44	Severe	59	G306030/035
3	117	Glasroc F FIRECASE	3 x 15	4500	70	42	44	Severe	59	G306030/035
3	139	Glasroc F FIRECASE	3 x 15	6000	92	44	45	Severe	60	G306031/036
4	193	Glasroc F FIRECASE	3 x 15	6000	146	48	49	Severe	62	G306032/033

[1] For a non-combustible solution on the shaft side only the Glasroc F FIRECASE on the non-shaft side can be replaced with 15mm Gyproc FireLine or 15mm Gyproc DuraLine.

[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 the more onerous.

[3] The acoustic performance figures quoted include **ShaftWall** partitions with deflection heads.

[4] 20mm Glasroc F FIRECASE and first layer of lining board are bedded onto Gyproc Sealant, as required for pressurised air shafts, in addition to normal sealing.

[5] Estimated rating from non-shaft side only.

NB The fire resistance and sound insulation performances are for imperforate partitions, but incorporating deflection heads, with all joints taped and filled, or skimmed according to British Gypsum's recommendations. The quoted performances are achieved only if British Gypsum components are used throughout, and the company's fixing recommendations are strictly observed. Any variation in the specifications should be checked with British Gypsum.

NB Gypframe Extra Deep Flange Floor & Ceiling Channel or 'J' Channel should be used at the head. For the base, Gypframe Floor & Ceiling Channel should be used for heights up to 4200mm, Gypframe Deep Flange Floor & Ceiling Channel should be used for heights between 4200mm and 8000mm.

Fire protection encasement of structural steel

FireCase

The FireCase frameless encasement system provides a high quality cladding to structural steel, and offers up to 120 minutes fire protection (180 minutes can be achieved using Glasroc F FIRECASE in a framed solution - refer to **GypLyner ENCASE** for details). The system affords protection to universal steel columns and beams. The Glasroc F FIRECASE lining provides a smooth, robust surface with no requirement to joint or apply a decorative treatment. The **FireCase** frameless encasement system can be finished if required, to blend seamlessly with other British Gypsum systems.

Additional fire benefits

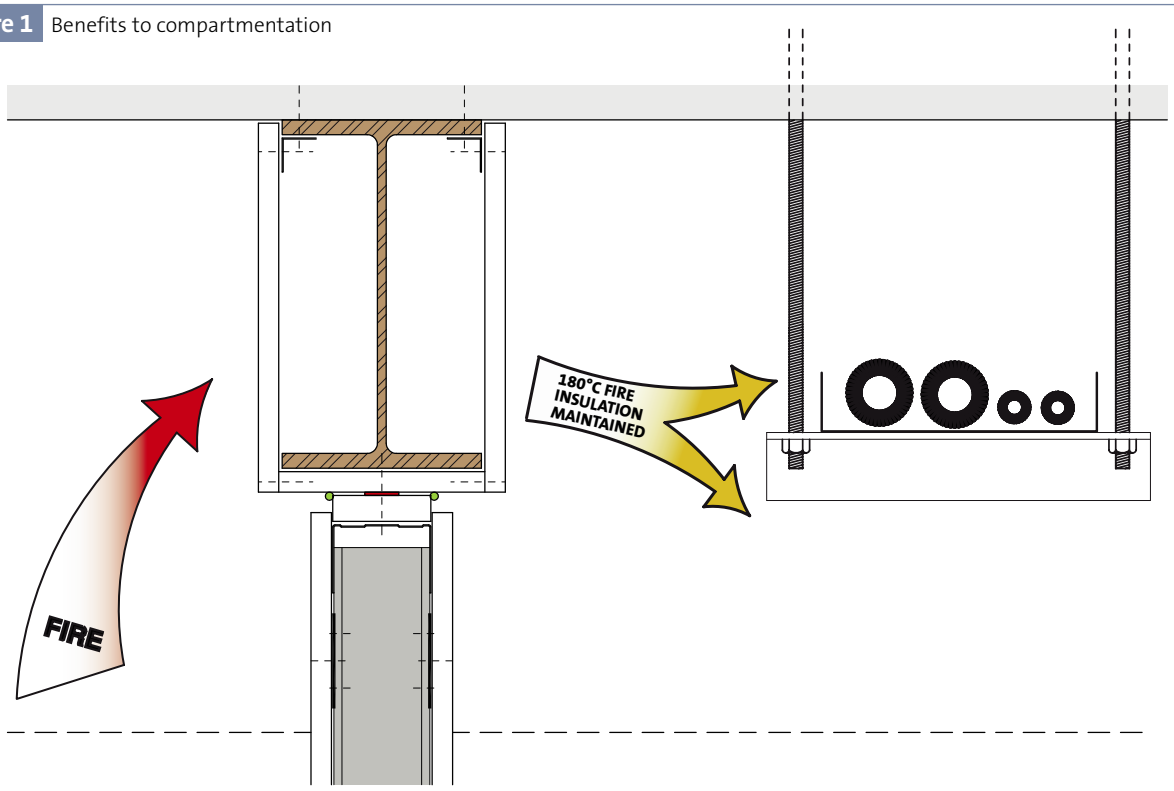
Glasroc F FIRECASE board is non-combustible and the surfaces are therefore designated Class 0 for the purposes of Building Regulations Approved Document B.

Glasroc F FIRECASE is manufactured to stringent factory tolerances, giving the client peace of mind that the correct thickness of fire protection has been applied, ensuring life safety in the event of a fire.

Using the **FireCase** frameless encasement system will eliminate any potential problems with compartmentation. Unlike some alternative fire protection technologies, e.g. paint, using the **FireCase** frameless encasement system will ensure that there are no potential problems with fire insulation failure through the steelwork. Refer to **Figure 1 - Benefits to compartmentation.**

The **FireCase** frameless encasement system is fully compatible with other British Gypsum systems and supports flexibility during changes to building use. British Gypsum partition systems can be directly fixed to the Glasroc F FIRECASE board linings allowing changes to be made without compromising the structural fire protection. Refer to **Construction details 1 and 3** on page 73.

Figure 1 Benefits to compartmentation



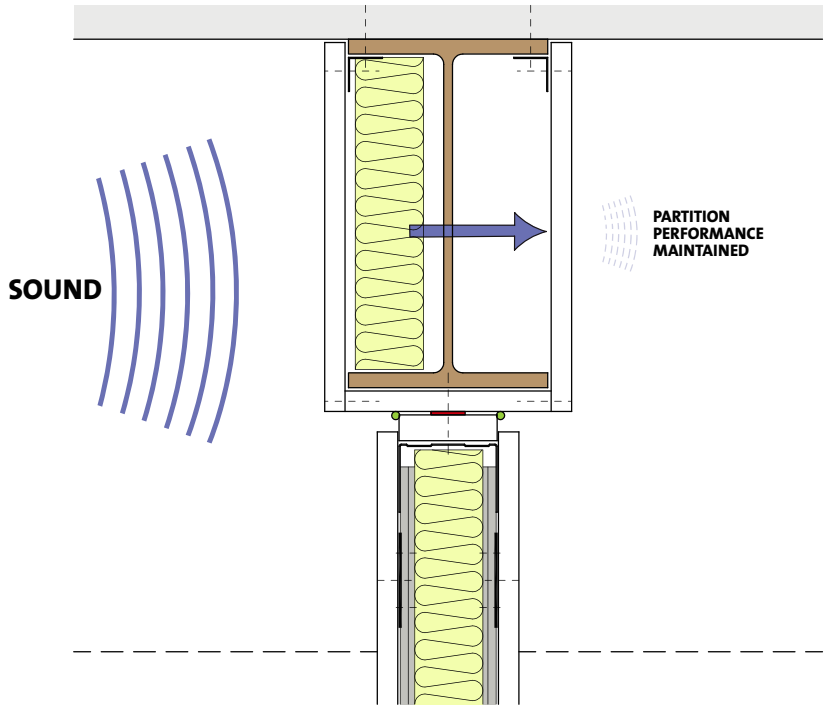
Other benefits

Unlike some alternative fire protection technologies, e.g. paint, using the **FireCase** frameless encasement system will give acoustic benefits by reducing sound transmission through the steelwork. For further sound insulation enhancement, Isover insulation can be incorporated into the system. Refer to **Figure 2 - Benefits to acoustics.**

Glasroc F FIRECASE has an operational tolerance from below freezing to +49˚C, whereas alternative technologies are commonly +5˚C to + 30˚C. Using Glasroc F FIRECASE reduces potential problems with the build programme in UK winter conditions.

The **FireCase** frameless encasement system allows other trades to work in close proximity and simultaneously. Some alternative technologies require areas of the site to be closed off due to the containment of overspray and fumes. The **FireCase** frameless encasement system is fixed directly around the steel columns and beams, saving valuable floor space throughout a building. Due to the **FireCase** system providing both fire and acoustic performance there is no need for the expansion cavity required by some combined instumescent paint and drylining solutions.

Figure 2 Benefits to acoustics



NB The **FireCase** frameless encasement system will help to minimise sound transmission into the building structure and can be detailed so as to not downgrade the performance of the adjoining partition systems.

FireCase lining selection

The **FireCase** frameless encasement system is suitable for protecting structural steel sections with a section factor A/V (Hp/A) up to 260m^{-1}, calculated on the basis of box protection required, e.g. four-sided. A range of common steel sizes are shown in **Tables 2.27 - 2.29**.

To determine the thickness of cladding required to protect the steel, based on a critical temperature of 550˚C, the designer should follow the procedure below:

1. Establish the level of fire resistance required and to which standard, e.g. 90 minutes to *BS 476: Part 20: 1987*.
2. Ascertain the number of sides of the section which require protection, e.g. four-sided.
3. Identify the section factor A/V (Hp/A) of the steelwork – refer to **Tables 2.27 - 2.29**, e.g. four-sided protection to Universal Column, serial size. 254 x 254mm, mass / metre 73kgm^{-1} = 110m^{-1}.
4. Refer to **Tables 2.30a or 2.30b** to identify the thickness of Glasroc F FIRECASE as required for the relevant level of fire protection and section factor, e.g. 20mm Glasroc F FIRECASE.

Table 2.27 – Section factor A/V (Hp/A) of Universal Beams

Serial size mm	Mass / metre kgm^{-1}	three-sided m^{-1}	four-sided m^{-1}
914 x 419	388	45	55
	343	50	60
914 x 305	289	60	65
	253	65	75
	224	75	85
	201	80	95
838 x 292	226	70	80
	194	80	90
	176	90	100
762 x 267	197	70	85
	173	80	95
	147	95	110
686 x 254	170	75	90
	152	85	95
	140	90	105
	125	100	115
610 x 305	238	50	60
	179	70	80
	149	80	95
610 x 229	140	80	95
	125	90	105
	113	100	115
	101	110	130
533 x 210	122	85	95
	109	95	110
	101	100	115
	92	110	125
	82	120	140
457 x 191	98	90	105
	89	100	115
	82	105	125
	74	115	135
	67	130	150
457 x 152	82	105	120
	74	115	130
	67	125	145
	60	140	160
	52	160	180
406 x 178	74	105	125
	67	115	140
	60	130	155
	54	145	170
406 x 140	46	160	185
	39	190	220
356 x 171	67	105	125
	57	125	145
	51	135	165
	45	155	185
356 x 127	39	170	195
	33	195	225
305 x 165	54	115	140
	46	130	160
	40	150	180
305 x 127	48	125	145
	42	140	160
	37	155	180
305 x 102	33	175	200
	28	200	225
	25	225	260
254 x 146	43	120	150
	37	140	170
	31	160	200
254 x 102	28	170	200
	25	190	220
	22	215	250
203 x 133	30	145	180
	25	165	210
203 x 102	23	175	210
178 x 102	19	190	230
152 x 89	16	190	235
127 x 76	13	195	240

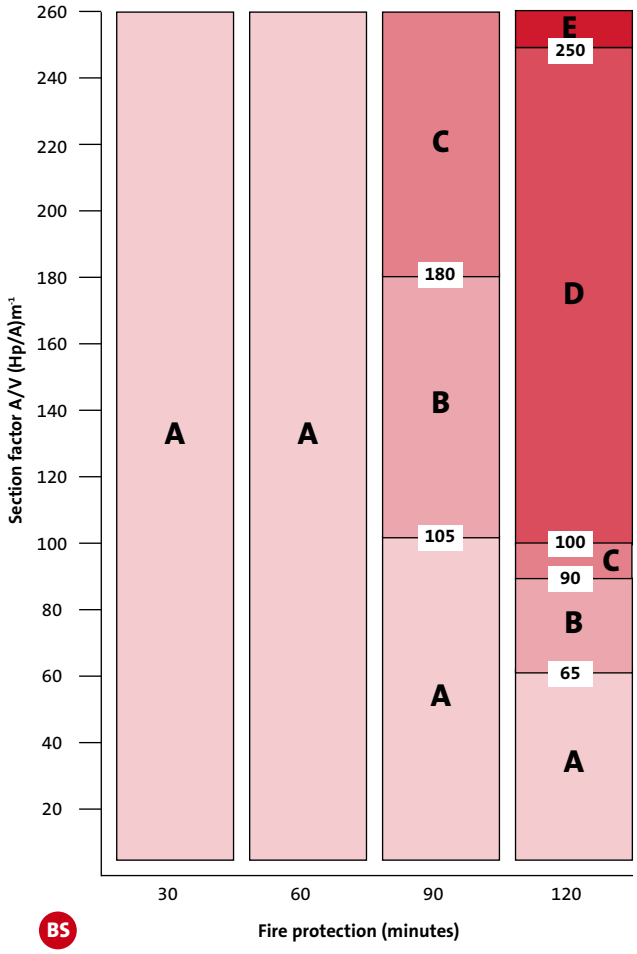
Table 2.28 – Section factor A/V (Hp/A) of Universal Columns

Serial size mm	Mass / metre kgm^{-1}	three-sided m^{-1}	four-sided m^{-1}
356 x 406	634	15	20
	551	20	25
	467	20	30
	393	25	35
	340	30	35
	287	30	45
	235	40	50
356 x 368	202	45	60
	177	50	65
	153	55	75
	129	65	90
305 x 305	283	30	40
	240	35	45
	198	40	50
	158	50	65
	137	55	70
	118	60	85
	97	75	100
254 x 254	167	40	50
	132	50	65
	107	60	75
	89	70	90
	73	80	110
203 x 203	86	60	80
	71	70	95
	60	80	110
	52	95	125
	46	105	140
152 x 152	37	100	135
	30	120	160
	23	155	205

Table 2.29 – Section factor A/V (Hp/A) of Universal Joists

Serial size mm	Mass / metre kgm^{-1}	three-sided m^{-1}	four-sided m^{-1}
254 x 203	82	70	90
254 x 114	37	130	155
203 x 152	52	85	105
152 x 127	37	90	120
127 x 114	30	100	130
127 x 114	27	110	140
114 x 114	27	100	135
102 x 102	23	105	140
89 x 89	19	105	145
76 x 76	13	140	185

Table 2.30a – Solutions to satisfy the 550°C criteria when tested in accordance with *BS 476: Part 20: 1987*



System references D120001 (screwed system)
D120002 (stapled system)

Key - Thickness of Glasroc F FIRECASE required

A = 15mm

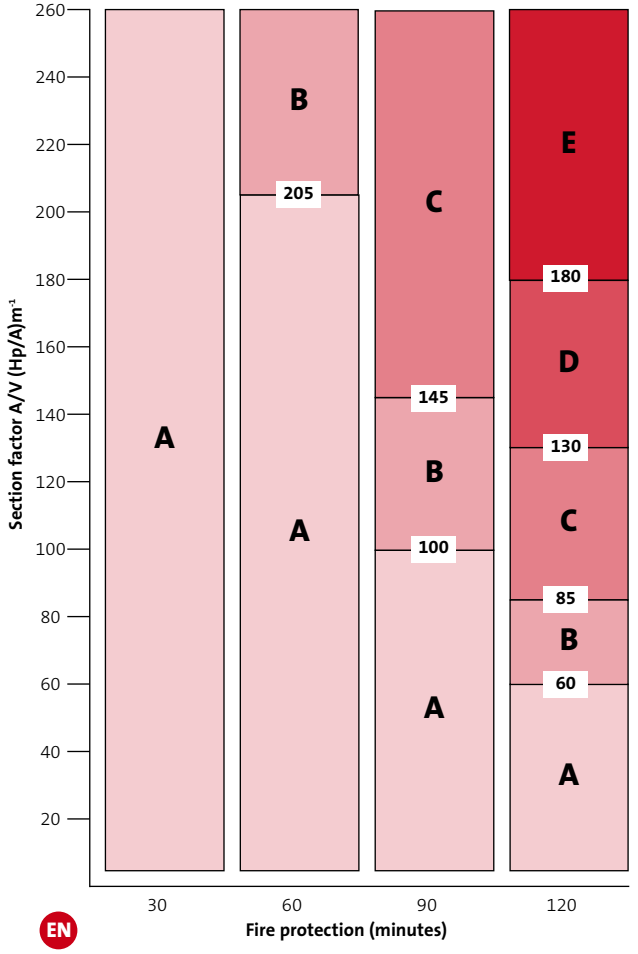
B = 20mm

C = 25mm

D = 30mm

E = 35mm (15mm + 20mm)

Table 2.30b – Solutions to satisfy the 550°C criteria when tested in accordance with *ENV 13381-4: 2002* (four-sided columns only)



System references D120001 (screwed system)
D120002 (stapled system)

Key - Thickness of Glasroc F FIRECASE required

A = 15mm

B = 20mm

C = 25mm

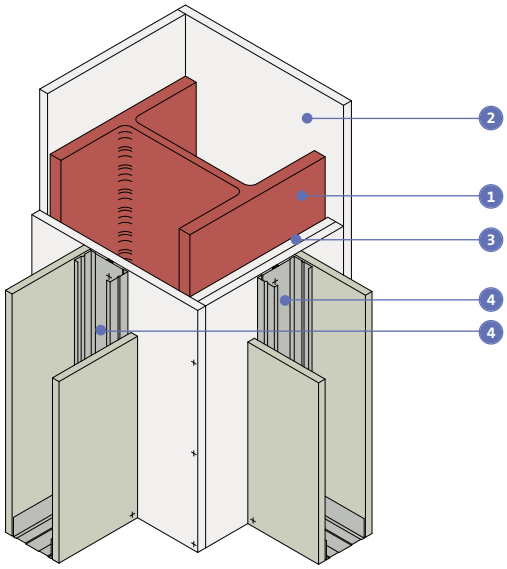
D = 30mm

E = 35mm (15mm + 20mm)

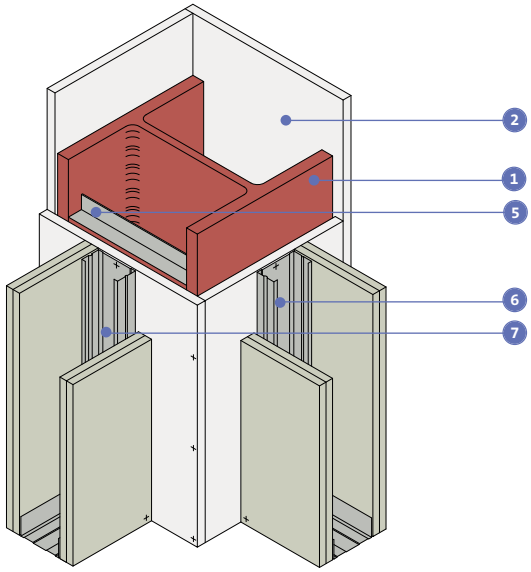
Construction details

Column encasement and partition junction

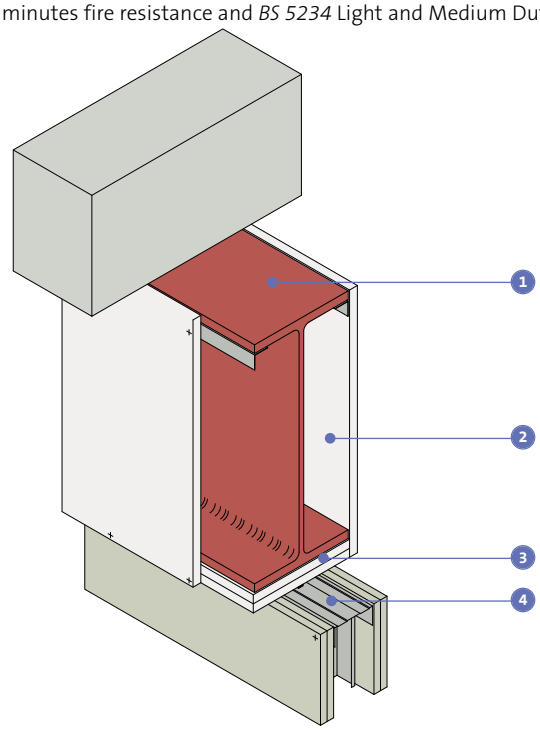
1 Column encasement and partition junction for partitions up to 60 minutes fire resistance and *BS 5234* Light and Medium Duty



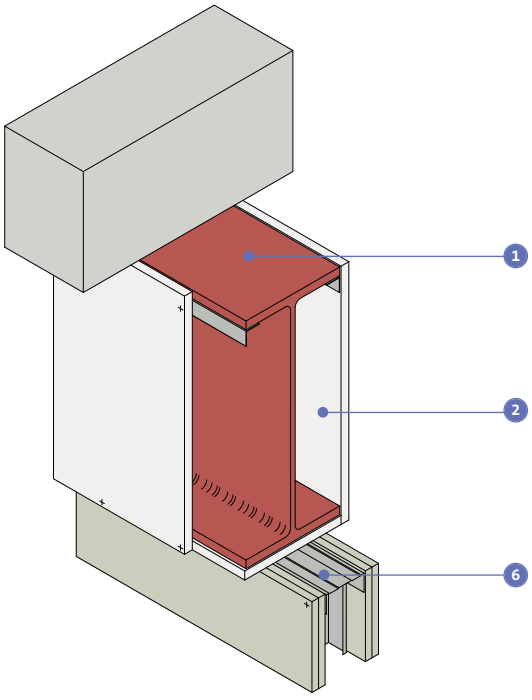
2 Column encasement and partition junction for partitions up to 120 minutes fire resistance and *BS 5234* Heavy and Severe Duty



3 Beam encasement and partition junction for partitions up to 60 minutes fire resistance and *BS 5234* Light and Medium Duty

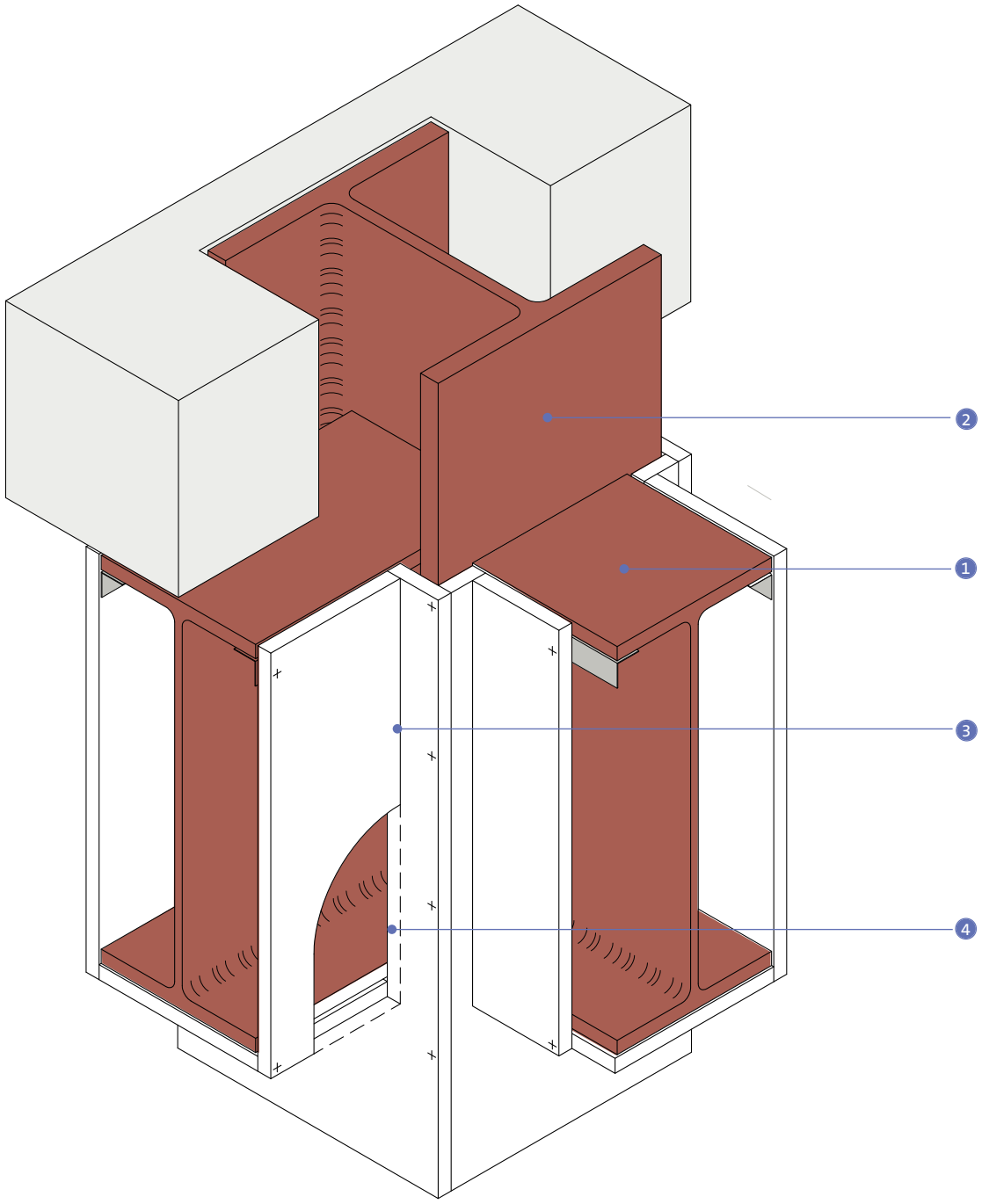


4 Beam encasement and partition junction for partitions up to 120 minutes fire resistance and *BS 5234* Heavy and Severe Duty



1. Structural steel
2. **FireCase** encasement
3. Additional layer of Glasroc F FIRECASE forming packer to receive partition fixing
4. Gypframe 'C' Stud / Channel bonded to Glasroc F FIRECASE with continuous bead of Gyproc Sealant (two beads for studs wider than 75mm) and fixed with British Gypsum Drywall Screws at 600mm centres (in two lines staggered by 300mm for studs wider than 75mm). Allow 24 hours before boarding
5. Suitable size Z-section (by others) fixed between column flanges at 600mm centres
6. Gypframe 'C' Stud / Channel suitably fixed through Glasroc F FIRECASE to structural steel at 600mm centres (in two lines staggered by 300mm for studs wider than 75mm)
7. Gypframe 'C' Stud suitably fixed through Glasroc F FIRECASE to Z-sections (in two lines for studs wider than 75mm)

5 Column and beam encasement junction



1. Steel beam
2. Steel column
3. Beam encasement boards butted tight to column encasement
4. Column encasement boards cut around penetrations

NB Where seating cleats create small gaps in column encasement below beam soffit, cloak with a suitably sized strip of Glasroc F FIRECASE fixed to column encasement boards.

Fire protection encasement of structural steel

GypLyner ENCASE

GypLyner ENCASE is a framed encasement system for fire protection to structural universal steel columns and beams, utilising Gyproc FireLine board for up to 120 minutes and Glasroc F FIRECASE for 180 minutes.

The Glasroc F FIRECASE lining requires no joint treatment for fire performance, however this can be applied to satisfy aesthetic requirements. The Gyproc FireLine solution does require joint treatment using Gyproc jointing materials or Thistle plaster skim. This enables the **GypLyner ENCASE** system to blend seamlessly with other British Gypsum systems.

Additional fire benefits

Glasroc F FIRECASE board is non-combustible and the surfaces are therefore designated Class 0 for the purposes of Building Regulations Approved Document B.

The surfaces of the Gyproc FireLine board are designated Class 0 for the purposes of Building Regulations Approved Document B.

Both Glasroc F FIRECASE and Gyproc FireLine are manufactured to stringent factory tolerances, giving the client peace of mind that the correct thickness of fire protection has been applied, ensuring life safety in the event of a fire.

Using the **GypLyner ENCASE** system will eliminate any potential problems with compartmentation. Unlike some alternative fire protection technologies, e.g. paint, using the **GypLyner ENCASE** system will ensure that there are no potential problems with fire insulation failure through the steelwork. The principle of this is shown within the FireCase section. Refer to **Figure 1 - Benefits to compartmentation.**

Other benefits

Unlike some alternative fire protection technologies, e.g. paint, using the **GypLyner ENCASE** system will give acoustic benefits by reducing sound transmission through the steelwork. For further sound insulation enhancement, Isover insulation can be incorporated into the system. The principle of this is shown within the FireCase section. Refer to **Figure 2 - Benefits to acoustics.**

The **GypLyner ENCASE** system allows other trades to work in close proximity and simultaneously. Some alternative technologies require areas of the site to be closed off due to the containment of overspray and fumes.

GypLyner ENCASE lining selection

The **GypLyner ENCASE** system is suitable for protecting structural steel sections with a section factor A/V (Hp/A) up to 260m^{-1}, calculated on the basis of box protection required, e.g. four-sided. A range of common steel sizes are shown in **Tables 2.31 - 2.33**.

To determine the thickness of cladding required to protect the steel based on a critical temperature of 550°C, the designer should follow the procedure below:

1. Establish the level of fire resistance required and to which standard, e.g. 90 minutes to *BS 476: Part 20:1987*.
2. Ascertain the number of sides of the section which require protection, e.g. four-sided
3. Identify the section factor A/V (Hp/A) of the steelwork – refer to **Tables 2.31 - 2.33**, e.g. four-sided protection to universal column, serial size 254 x 254mm, mass / metre 73kgm^{-1} = 110m^{-1}.
4. Refer to **Tables 2.34a - 2.34c** to identify the thickness of Glasroc F FIRECASE or Gyproc FireLine as required for the relevant level of fire protection and section factor, e.g. 2 x 12.5mm Gyproc FireLine.

Table 2.31 – Section factor A/V (Hp/A) of Universal Beams

Serial size mm	Mass / metre kgm^{-1}	three-sided m^{-1}	four-sided m^{-1}
914 x 419	388	45	55
	343	50	60
914 x 305	289	60	65
	253	65	75
	224	75	85
	201	80	95
838 x 292	226	70	80
	194	80	90
	176	90	100
762 x 267	197	70	85
	173	80	95
	147	95	110
686 x 254	170	75	90
	152	85	95
	140	90	105
	125	100	115
610 x 305	238	50	60
	179	70	80
	149	80	95
610 x 229	140	80	95
	125	90	105
	113	100	115
	101	110	130
533 x 210	122	85	95
	109	95	110
	101	100	115
	92	110	125
	82	120	140
457 x 191	98	90	105
	89	100	115
	82	105	125
	74	115	135
	67	130	150
457 x 152	82	105	120
	74	115	130
	67	125	145
	60	140	160
	52	160	180
406 x 178	74	105	125
	67	115	140
	60	130	155
	54	145	170
406 x 140	46	160	185
	39	190	220
356 x 171	67	105	125
	57	125	145
	51	135	165
	45	155	185
356 x 127	39	170	195
	33	195	225
305 x 165	54	115	140
	46	130	160
	40	150	180
305 x 127	48	125	145
	42	140	160
	37	155	180
305 x 102	33	175	200
	28	200	225
	25	225	260
254 x 146	43	120	150
	37	140	170
	31	160	200
254 x 102	28	170	200
	25	190	220
	22	215	250
203 x 133	30	145	180
	25	165	210
203 x 102	23	175	210
178 x 102	19	190	230
152 x 89	16	190	235
127 x 76	13	195	240

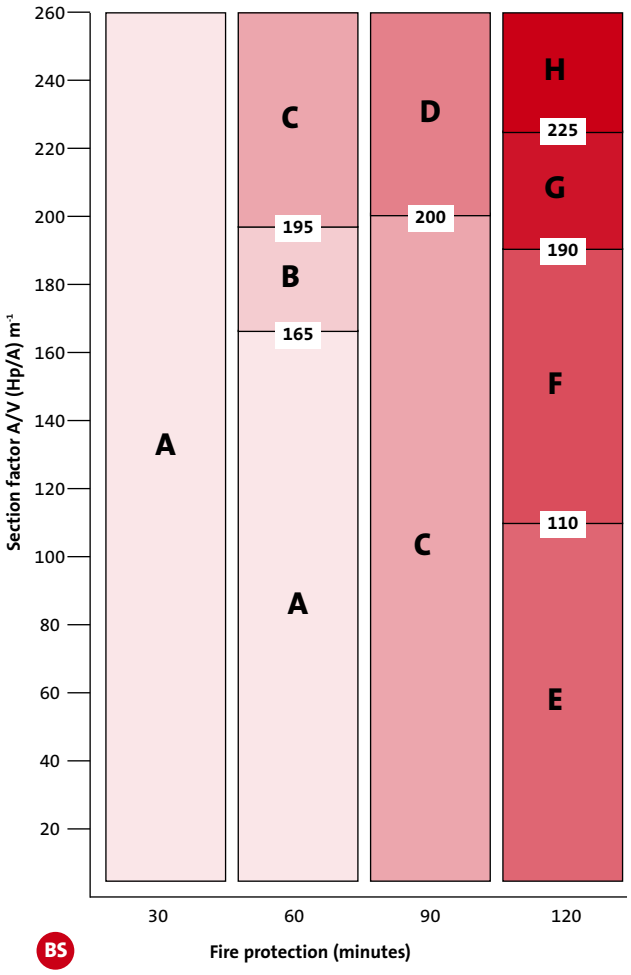
Table 2.32 – Section factor A/V (Hp/A) of Universal Columns

Serial size mm	Mass / metre kgm^{-1}	three-sided m^{-1}	four-sided m^{-1}
356 x 406	634	15	20
	551	20	25
	467	20	30
	393	25	35
	340	30	35
	287	30	45
	235	40	50
356 x 368	202	45	60
	177	50	65
	153	55	75
	129	65	90
305 x 305	283	30	40
	240	35	45
	198	40	50
	158	50	65
	137	55	70
	118	60	85
	97	75	100
254 x 254	167	40	50
	132	50	65
	107	60	75
	89	70	90
	73	80	110
203 x 203	86	60	80
	71	70	95
	60	80	110
	52	95	125
	46	105	140
152 x 152	37	100	135
	30	120	160
	23	155	205

Table 2.33 – Section factor A/V (Hp/A) of Universal Joists

Serial size mm	Mass / metre kgm^{-1}	three-sided m^{-1}	four-sided m^{-1}
254 x 203	82	70	90
254 x 114	37	130	155
203 x 152	52	85	105
152 x 127	37	90	120
127 x 114	30	100	130
127 x 114	27	110	140
114 x 114	27	100	135
102 x 102	23	105	140
89 x 89	19	105	145
76 x 76	13	140	185

Table 2.34a – The 550°C chart to *BS 476: Part 21* for selecting the required Gyproc FireLine lining thickness

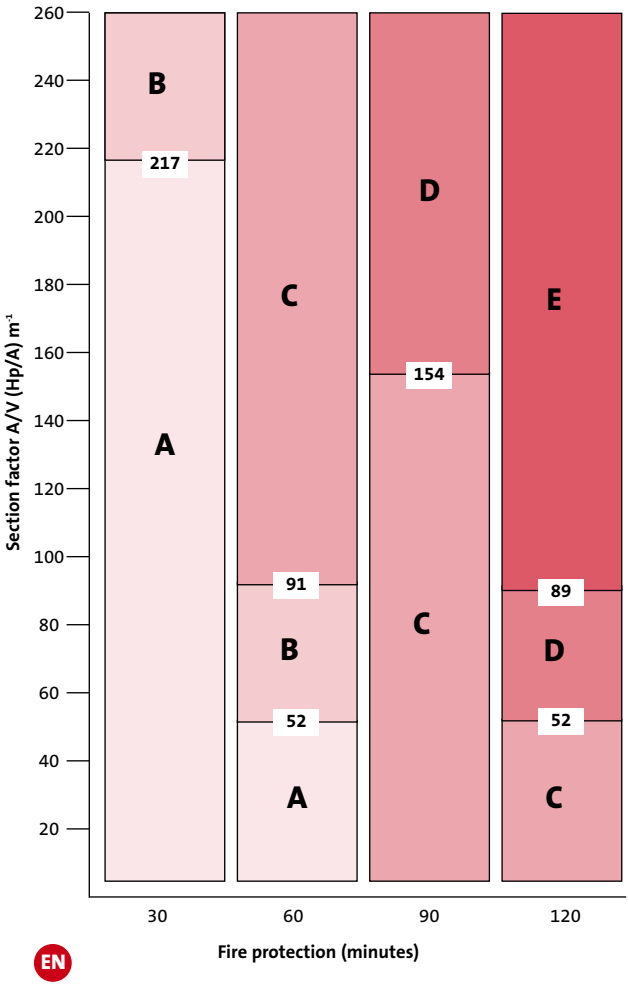


System reference DS150001

Key - Thickness of Gyproc FireLine required[1]

A	=	12.5mm
B	=	15mm
C	=	25mm (12.5mm + 12.5mm)
D	=	27.5mm (15mm + 12.5mm)
E	=	30mm (15mm + 15mm)
F	=	37.5mm (12.5mm + 12.5mm + 12.5mm)
G	=	40mm (15mm + 12.5mm + 12.5mm)
H	=	42.5mm (15mm + 15mm + 12.5mm)

Table 2.34b – The 550°C chart to *ENV 13381-4* for selecting Gyproc FireLine lining thickness



System reference DS150001

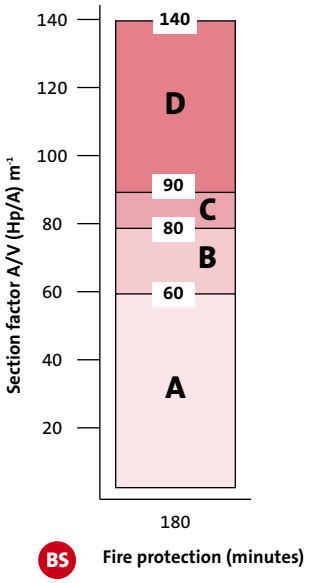
Key - Thickness of Gyproc FireLine required[1]

A	=	12.5mm
B	=	15mm
C	=	25mm (12.5mm + 12.5mm)
D	=	30mm (15mm + 15mm)
E	=	45mm (15mm + 15mm + 15mm)

NB For improved durability and impact resistance, the outer layer of Gyproc FireLine can be replaced with a layer of 15mm Gyproc DuraLine.

[1] The fire protection is based on board joints being taped and filled, or skimmed according to British Gypsum's recommendations.

Table 2.34c – Solutions to satisfy the 550°C criteria when tested in accordance with *BS 476: Part 21: 1987* for columns requiring 180 minutes fire protection using GypLyner ENCASE system



System reference D120003

Key - Thickness of Glasroc F FIRECASE board required

A = 35mm (20mm + 15mm)

B = 40mm (20mm + 20mm)

C = 45mm (25mm + 20mm)

D = 50mm (25mm + 25mm)

Fire protection encasement of structural steel within a partition

When designing room layout and the positioning of structural steel it should be noted that enhanced spatial and financial efficiencies can be achieved by providing fire protection to the steel work within the cavity of twin frame partition systems. This can be particularly useful in the construction of a cluster of acoustically sensitive areas, e.g. a suite of conference rooms.

It is possible to provide fire protection to structural steel by enclosing within **GypWall AUDIO** or **GypWall QUIET** partition systems. Refer to **Table 2.35.**

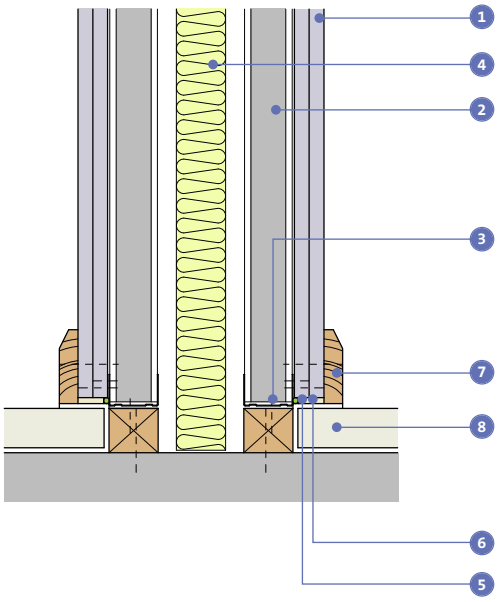
Table 2.35 – GypWall AUDIO / GypWall QUIET / GypWall AUDIO IWL, fire protection to structural steel. Solutions to satisfy the requirements of *ENV 13381-4: 2002* and *BS 467: Part 21: 1987*

Board type[1]	Lining thickness mm	Fire resistance mins	Section factor[2] A/V (Hp/A) m^{-1}
BS EN			
Gyproc SoundBloc	2 x 12.5	30	Up to 300
Gyproc SoundBloc	2 x 15	60	Up to 300
Gyproc Plank + Gyproc SoundBloc	19 + 12.5	60	Up to 300
Gyproc Plank + Gyproc FireLine	19 + 12.5	60	Up to 300
Gyproc SoundBloc	3 x 15	120	Up to 300

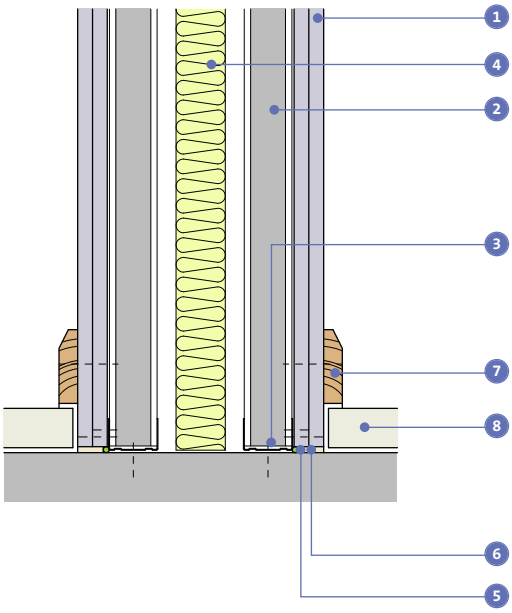
[1] For improved durability and impact resistance, the outer layer of Gyproc FireLine or Gyproc SoundBloc can be replaced with a layer of 15mm Gyproc DuraLine.
[2] Based on four-sided exposure, with no vertical joints aligning with the column, and boards not fixed to the column to maintain air space (10mm for BS or 50mm for EN).

Construction details

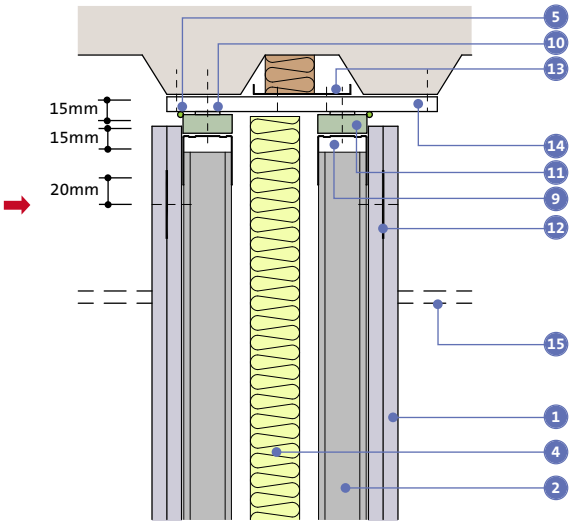
1 Base with timber sole plate



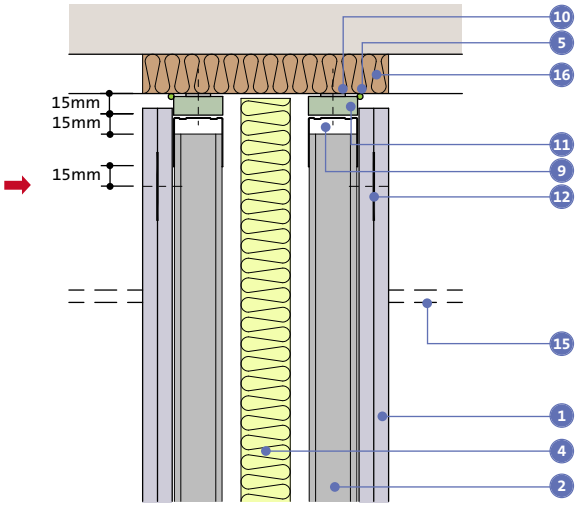
2 Base with floating screed



3 Deflection head parallel to floor profile for 15mm downward movement and 60 minutes fire resistance



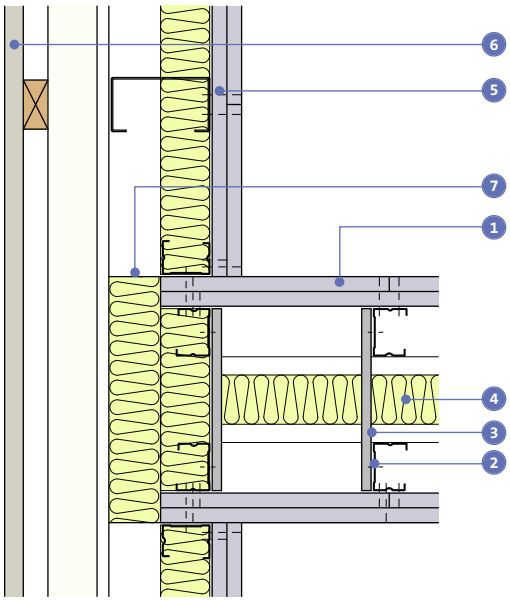
4 Deflection head perpendicular to floor profile for 15mm downward movement and 60 minutes fire resistance



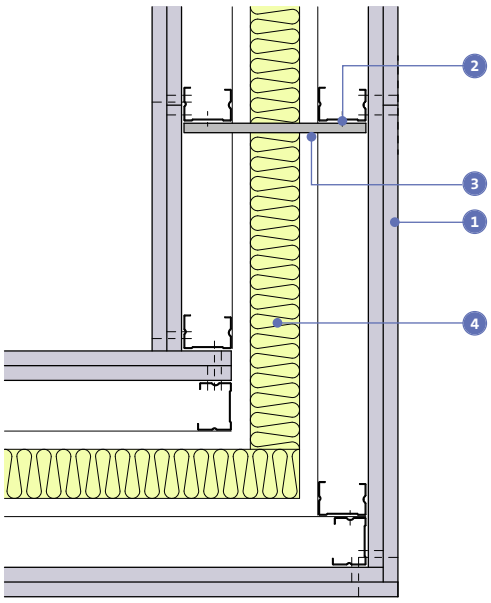
1. Gyproc SoundBloc
2. Gypframe 'C' Stud cross braced with Gypframe 99 FC 50 Fixing Channel
3. Gypframe Standard Floor & Ceiling Channel
4. Isover insulation
5. Gyproc Sealant
6. Bulk-fill with Gyproc jointing materials
7. Skirting
8. Floating screed on resilient layer
9. Gypframe Deep Flange Floor & Ceiling Channel suitably fixed through fire-stop to Gypframe 99 FC 50 Fixing Channel or structure
10. Gyproc FireStrip
11. Gyproc CoreBoard
12. Gypframe GFS1 Fixing Strap
13. Gypframe 99 FC 50 Fixing Channel pre-fixed to Glasroc F FIRECASE
14. 15mm Glasroc F FIRECASE suitably fixed to soffit at 150mm centres
15. Imperforate ceiling
16. Fire-stopping by others

NB No board fixings should be made into the head channel. The arrow (➡) denotes 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.

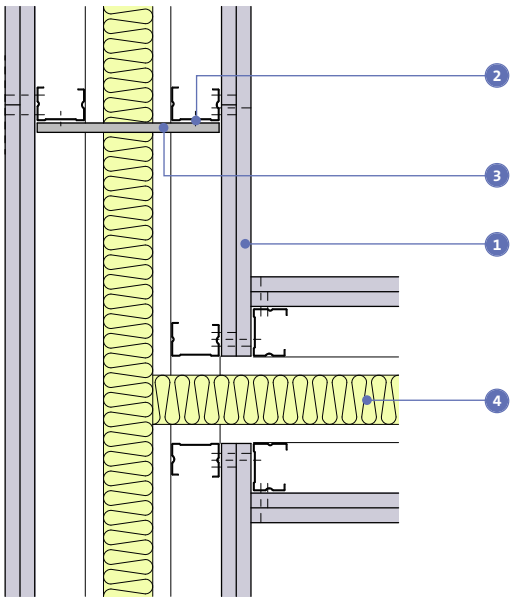
5 Junction with external wall when acoustic performance is a key consideration – helps reduce flanking transmission



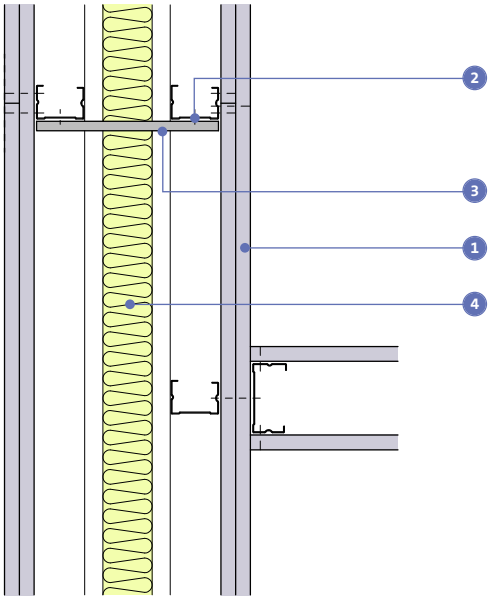
6 Corner



7 'T' junction

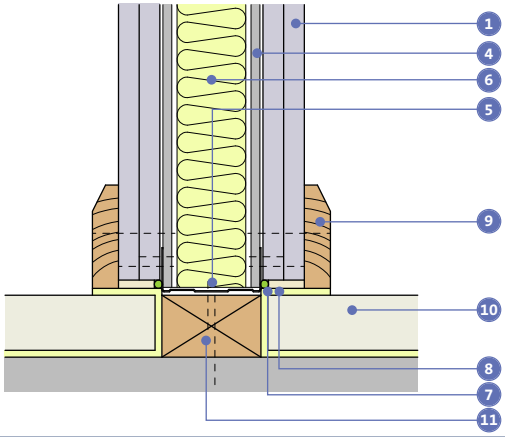


8 'T' junction with **GypWall CLASSIC** partition

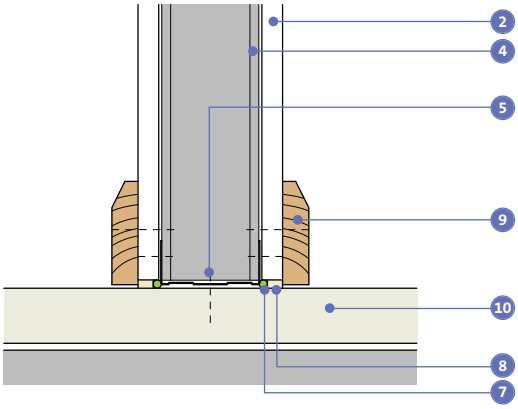


1. Gyproc SoundBloc
2. Gypframe 'C' Stud
3. Gypframe 99 FC 50 Fixing Channel
4. Isover insulation
5. External wall stud framework
6. External cladding
7. Cavity barrier (subject to regulatory requirements)

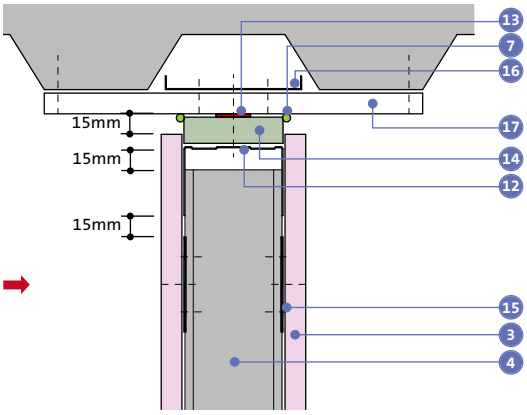
9 Base with timber sole plate



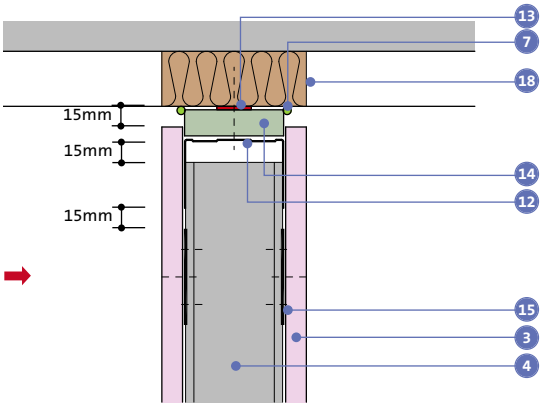
10 Base with floating screed



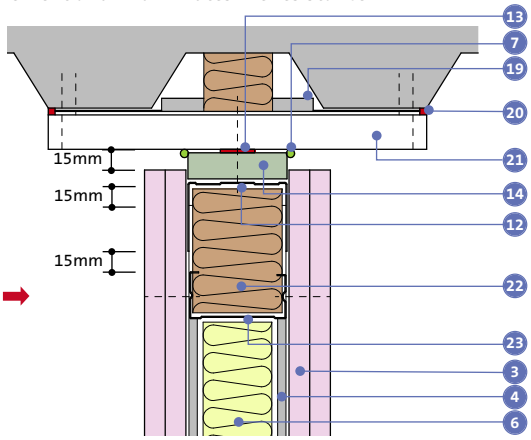
11 Deflection head parallel to floor profile for 15mm downward movement and 60 minutes fire resistance



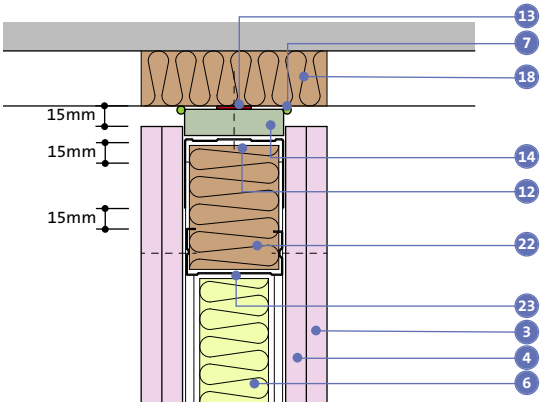
12 Deflection head perpendicular to floor profile for 15mm downward movement and 60 minutes fire resistance



13 Deflection head parallel to floor profile for 15mm downward movement and 120 minutes fire resistance



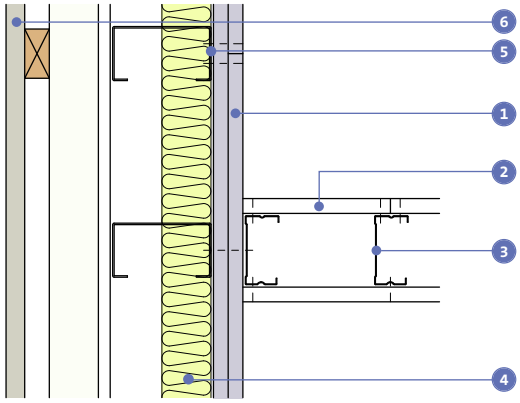
14 Deflection head perpendicular to floor profile for 15mm downward movement and 120 minutes fire resistance



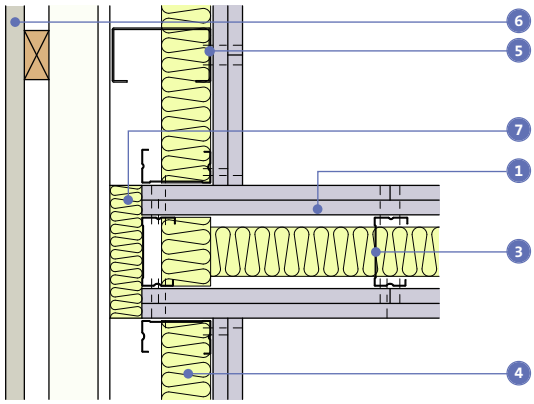
1. Gyproc SoundBloc
2. Gyproc plasterboard
3. Gyproc FireLine
4. Gypframe 'C' Stud
5. Gypframe Standard Floor & Ceiling Channel
6. Isover insulation
7. Gyproc Sealant
8. Bulk-fill with Gyproc jointing materials
9. Skirting
10. Floating screed on resilient layer
11. Timber sole plate suitably fixed to structure
12. Gypframe Deep Flange Floor & Ceiling Channel suitably fixed through fire-stop to Gypframe 99 FC 50 Fixing Channel or structure
13. Gyproc FireStrip
14. Gyproc CoreBoard
15. Gypframe GFS1 Fixing Strap
16. Gypframe 99 FC 50 Fixing Channel pre-fixed to Glasroc F FIRECASE
17. 15mm Glasroc F FIRECASE suitably fixed to soffit at 150mm centres
18. Fire-stopping by others
19. Gypframe 99 FC 50 Fixing Channel at 600mm centres with ends flattened and suitably fixed to soffit
20. Fire resistant sealant
21. 25mm Glasroc F FIRECASE suitably fixed to soffit at 150mm centres
22. Stone mineral wool (minimum 33kg/m³) retained by stud nogging
23. Nogging cut from Gypframe 'C' Stud

NB No board fixings should be made into the head channel. The arrow (➡) denotes 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.

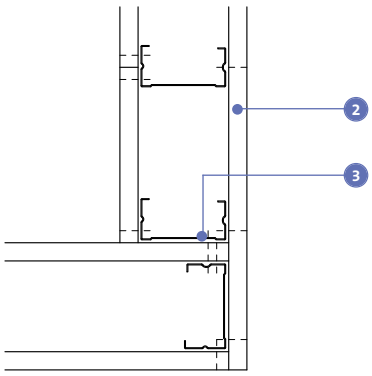
15 Junction with external wall



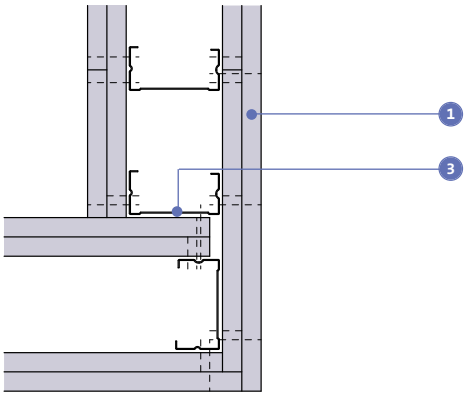
16 Junction with external wall, where acoustic performance is a key consideration – helps reduce flanking transmission



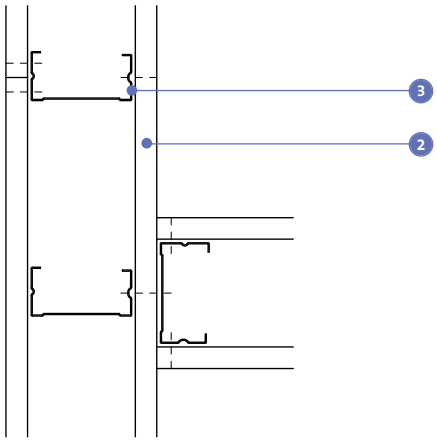
17 Corner – single layer



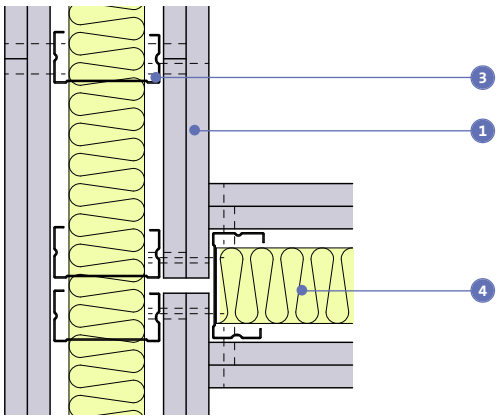
18 Corner – double layer



19 'T' junction – single layer

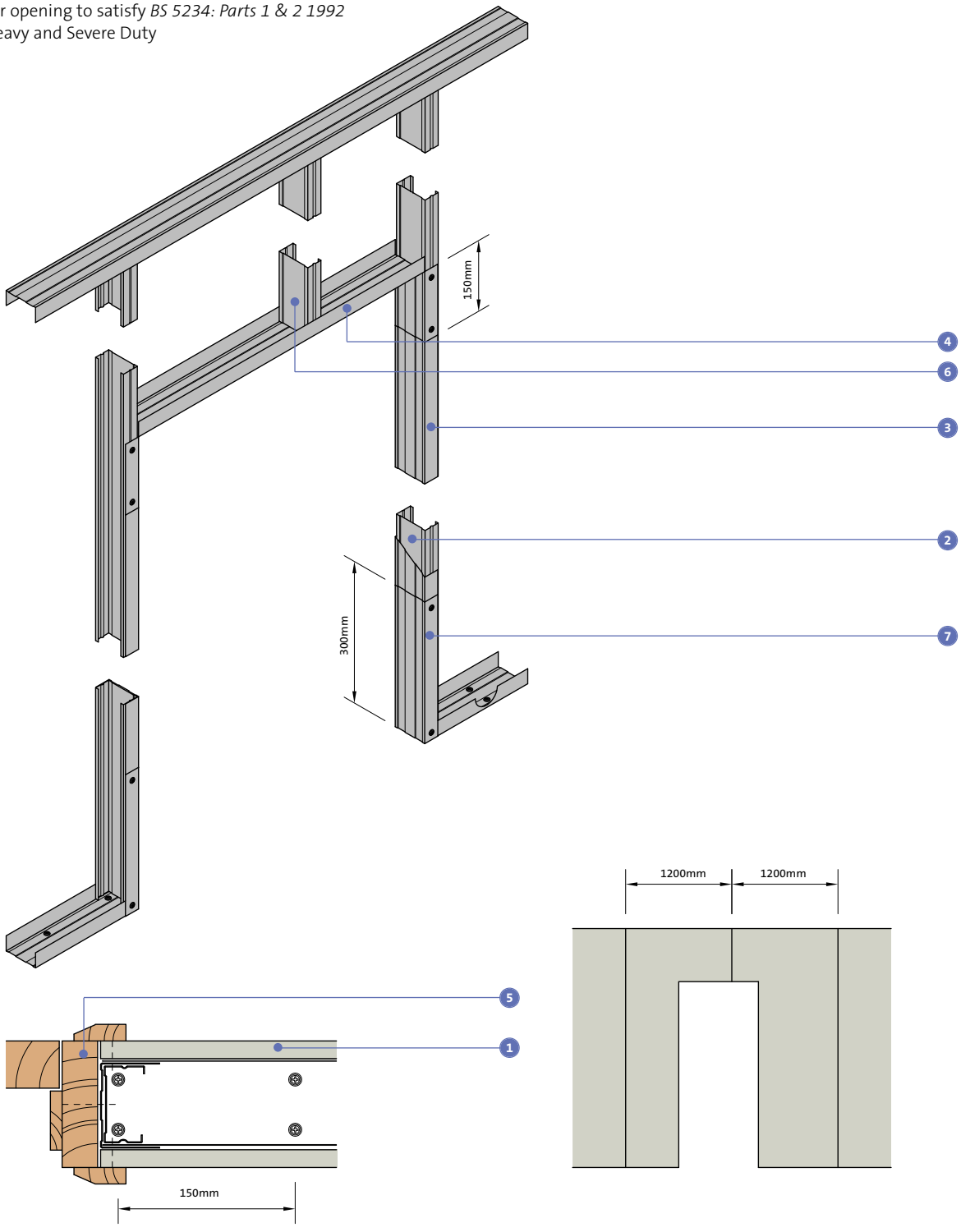


20 'T' junction to optimise acoustic performance and reduce flanking transmission



1. Gyproc SoundBloc
2. Gyproc plasterboard
3. Gypframe 'C' Stud
4. Isover insulation
5. External wall stud framework
6. External cladding
7. Cavity barrier (subject to regulatory requirements)

21 Door opening to satisfy *BS 5234: Parts 1 & 2 1992* – Heavy and Severe Duty

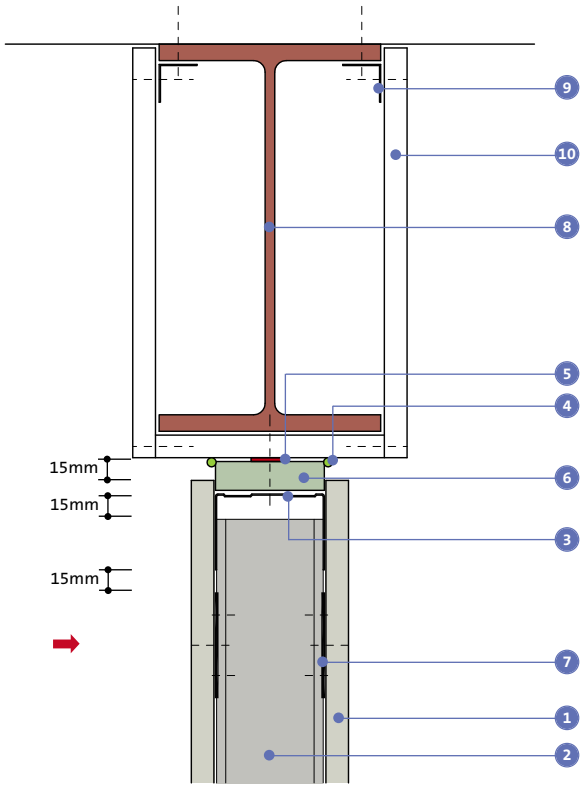


1. Gyproc DuraLine
2. Gypframe 'C' Stud
3. Gypframe Floor & Ceiling Channel to sleeve studs
4. Gypframe Floor & Ceiling Channel cut and bent to form door head
5. Timber door frame and architrave
6. Gypframe 'C' Stud to maintain stud module
7. Gypframe Floor & Ceiling Channel cut and bent to extend up studs

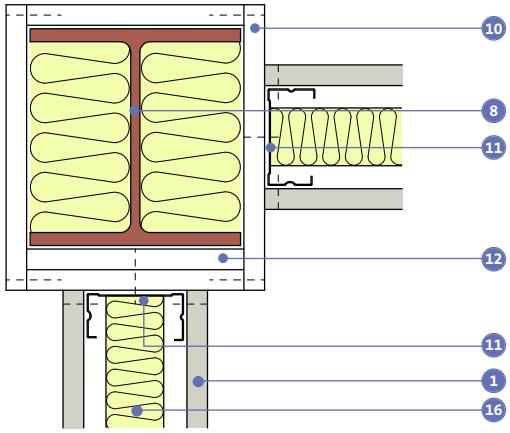
NB Advice should be sought from the door manufacturer prior to the construction of these details.

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

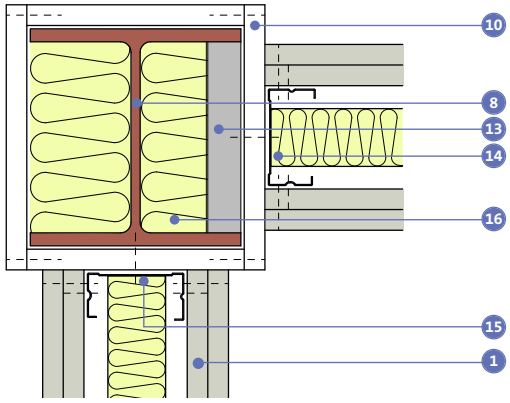
22 Beam encasement and partition junction for partitions up to 60 minutes fire resistance and *BS 5234* Heavy & Severe Duty



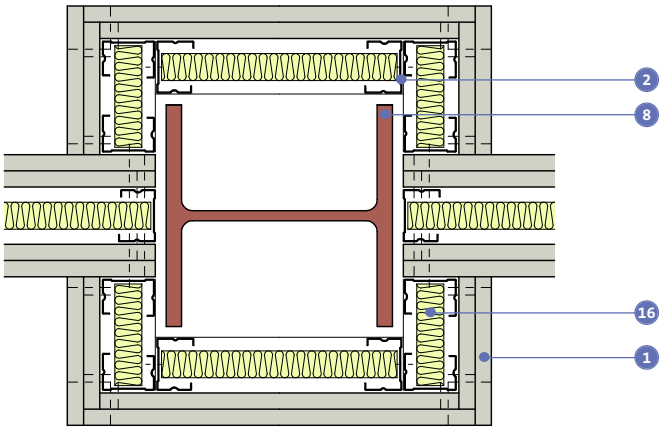
23 Column encasement and partitions up to 60 minutes fire resistance and *BS 5234* light & medium



24 Column encasement and partition junction for partitions up to 120 minutes fire resistance and *BS 5234* Heavy & Severe Duty



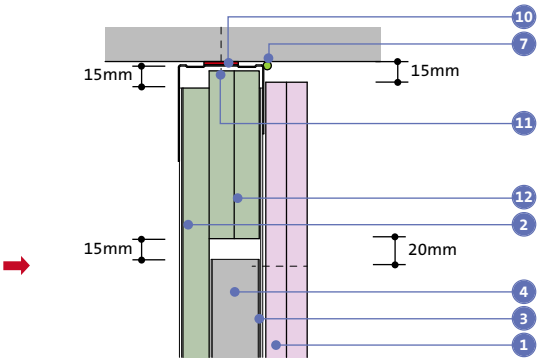
25 Column encasement and partition junction for partitions up to 120 minutes fire resistance and *BS 5234* Light & Medium Duty



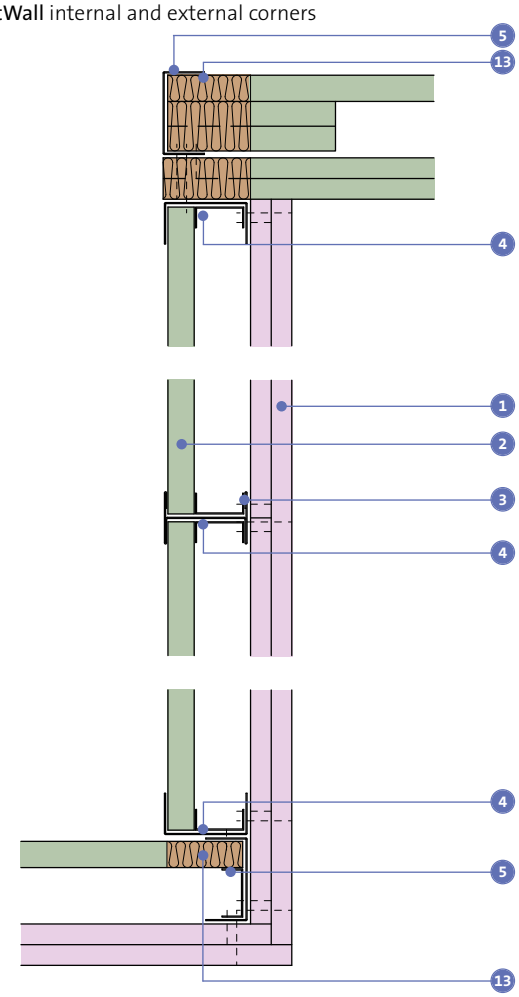
1. Gyproc DuraLine
2. Gypframe 'C' Stud
3. Gypframe Deep Flange Floor & Ceiling Channel suitably fixed through fire-stop to structure at 600mm centres
4. Gyproc Sealant
5. Gyproc FireStrip
6. Gyproc CoreBoard
7. Gypframe GFS1 Fixing Strap
8. Structural steel
9. Gypframe GA1 Steel Angle
10. Glasroc F FIRECASE
11. Gypframe 'C' Stud bonded to Glasroc F FIRECASE with continuous bead of Gyproc Sealant (two beads for studs wider than 75mm) and fixed with Drywall Screws at 600mm centres (in two lines staggered by 300mm for studs wider than 75mm). Allow 24 hours before boarding partition
12. Additional layer of Glasroc F FIRECASE forming packer to receive partition fixings
13. Suitable size Z-section, by others, fixed between column flanges at 600mm centres
14. Gypframe 'C' Stud suitably fixed through Glasroc F FIRECASE to Z-sections (in two lines for studs wider than 75mm)
15. Gypframe 'C' Stud suitably fixed through Glasroc F FIRECASE to column at 600mm centres (in two lines staggered by 300mm for studs wider than 75mm)
16. Isover insulation

NB No board fixings should be made into the head channel. The arrow (➡) denotes 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.

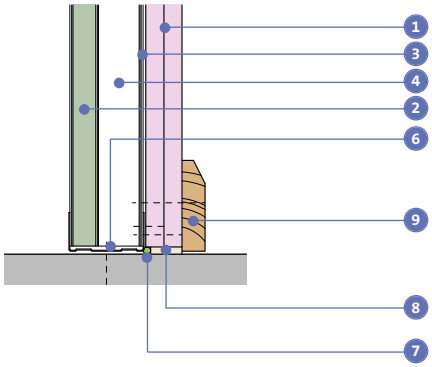
26 ShaftWall deflection head for 15mm downward movement



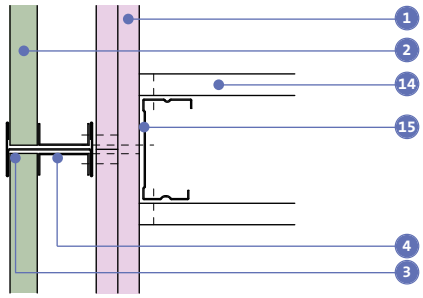
27 ShaftWall internal and external corners



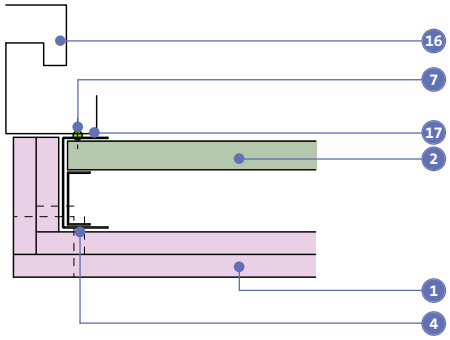
28 ShaftWall base detail



29 'T' junction – ShaftWall with GypWall CLASSIC partition



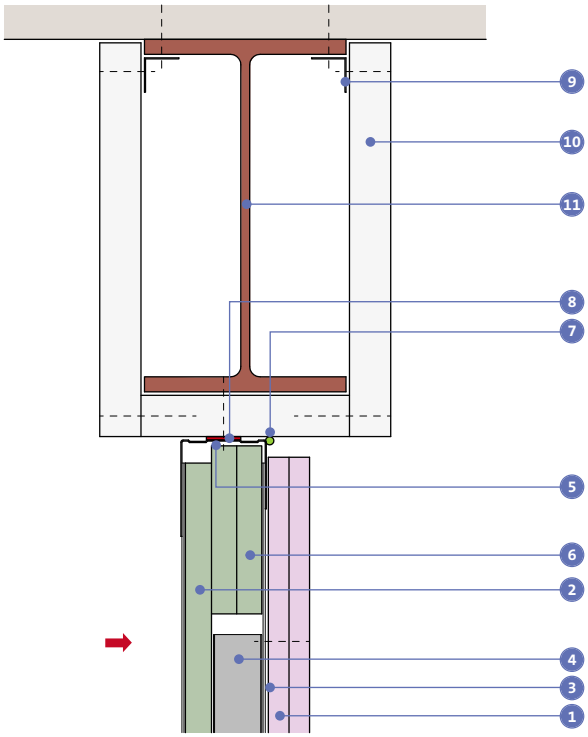
30 Lift door abutment with ShaftWall



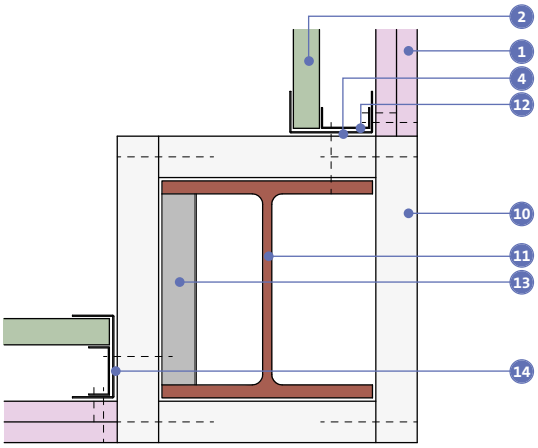
1. Gyproc FireLine
2. Gyproc CoreBoard
3. Gypframe 'I' Stud
4. Gypframe Retaining Channel
5. Gypframe Starter Channel
6. Gypframe Standard Floor & Ceiling Channel
7. Gyproc Sealant
8. Bulk-fill with Gyproc jointing materials
9. Skirting
10. Gyproc FireStrip
11. Gypframe J Channel
12. Gyproc CoreBoard fire-stop
13. Stone mineral wool (100kg/m^3) to deflection gap
14. Gyproc plasterboard
15. Gypframe 'C' Stud
16. Lift door frame
17. Gypframe Starter Channel mechanically fixed to door frame at 300mm centres

NB No board fixings should be made into the head channel. The arrow (➡) denotes 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.

31 Beam encasement and partition junction for partitions to satisfy *BS 5234: Parts 1 & 2: 1992* – Heavy and Severe Duty



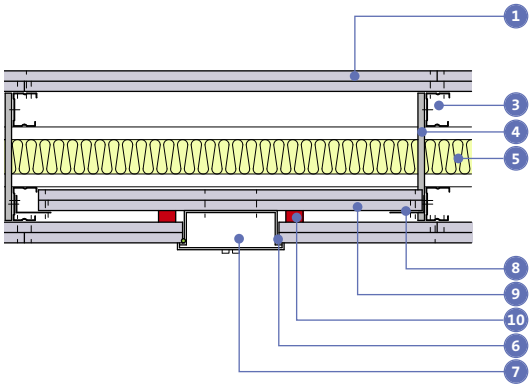
32 Column encasement and partition junction for partitions up to 120 minutes fire resistance and *BS 5234* Heavy and Severe Duty



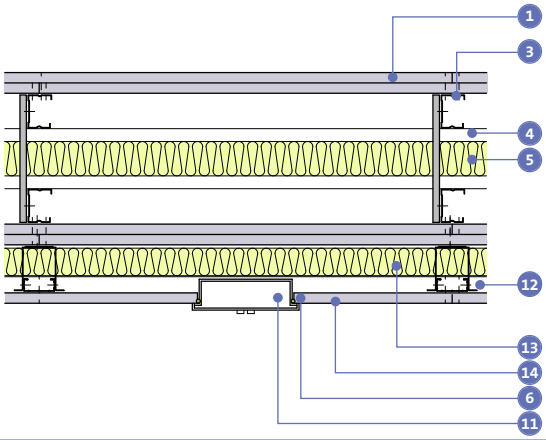
1. Gyproc FireLine
2. Gyproc CoreBoard
3. Gypframe 'I' Stud
4. Gypframe Retaining Channel
5. Gypframe J Channel suitably fixed through encasement to structure
6. Gyproc CoreBoard fire-stop
7. Gyproc Sealant
8. Gyproc FireStrip
9. Gypframe GA1 Steel Angle
10. Glasroc F FIRECASE
11. Structural steel
12. Gypframe Starter Channel suitably fixed through Glasroc F FIRECASE to column at 600mm centres (in two lines staggered by 300mm for studs wider than 75mm)
13. Suitable size Z-section, by others, fixed between column flanges at 600mm centres
14. Gypframe Starter Channel suitablity fixed through Glasroc F FIRECASE to Z-sections (in two lines staggered by 300mm for studs wider than 75mm)

NB No board fixings should be made into the head channel. The arrow (➡) denotes 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.

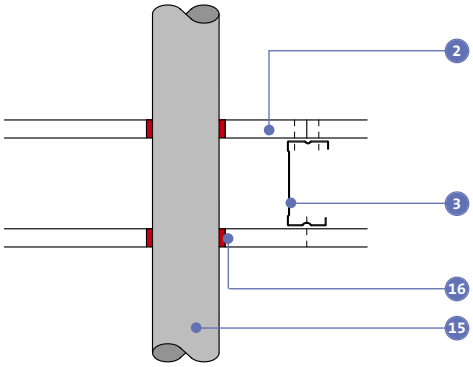
33 Electrical socket box with plasterboard baffle in GypWall QUIET



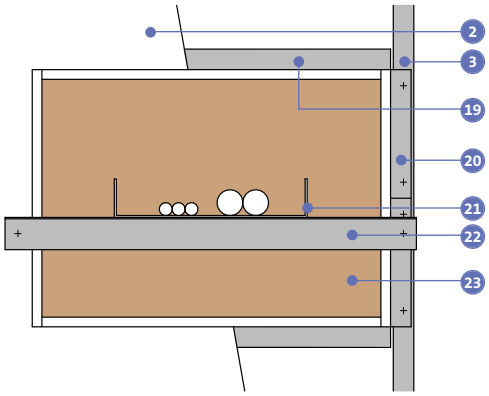
34 Electrical socket box in sacrificial lining to GypWall QUIET



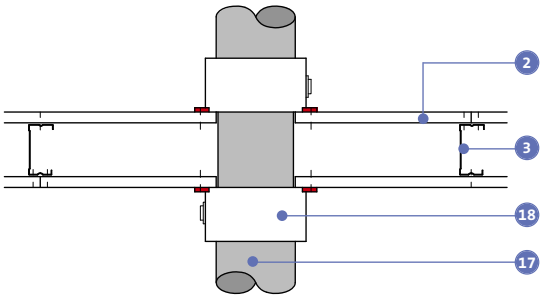
35 Steel or copper pipe penetration

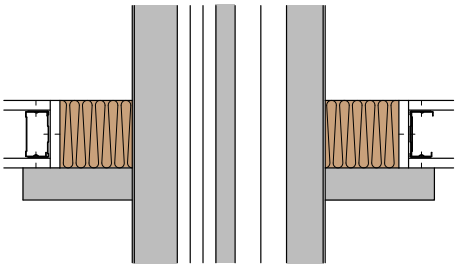


36 Cable tray penetration (elevation and plan)



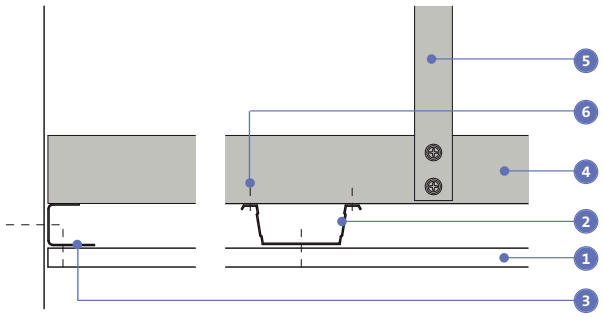
37 uPVC or PVC pipe pipe penetration



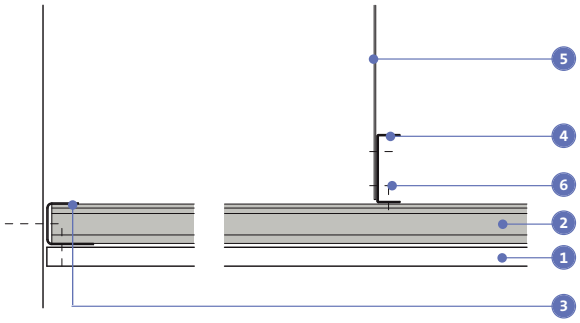


1. Gyproc SoundBloc
2. Gyproc plasterboard
3. Gypframe 'C' Stud
4. Gypframe 99 FC 50 Fixing Channel
5. Isover insulation
6. Gyproc Sealant
7. Electrical socket box with metal back
8. Gypframe GA4 Steel Angle
9. 150mm high Gyproc plasterboard baffle to match partition lining
10. Fire-resistant seal where required by Building Regulations Approved Document B
11. Electrical socket box
12. GypLyner UNIVERSAL with minimum 70mm cavity
13. 50mm Isover Acoustic Partition Roll (APR 1200)
14. 15mm Gyproc SoundBloc
15. Steel or copper pipe up to 110mm diameter
16. 5mm gap filled with fire-resistant sealant by others
17. uPVC or PVC pipe up to 160mm diameter
18. Pipe collar by others
19. Gypframe Standard Floor & Ceiling Channel cut, bent and fixed around opening
20. Opening lined with plasterboard equivalent to partition lining
21. Cable tray independently suspended from soffit
22. 50 x 50mm steel angle
23. Faced mineral fibre batt by others

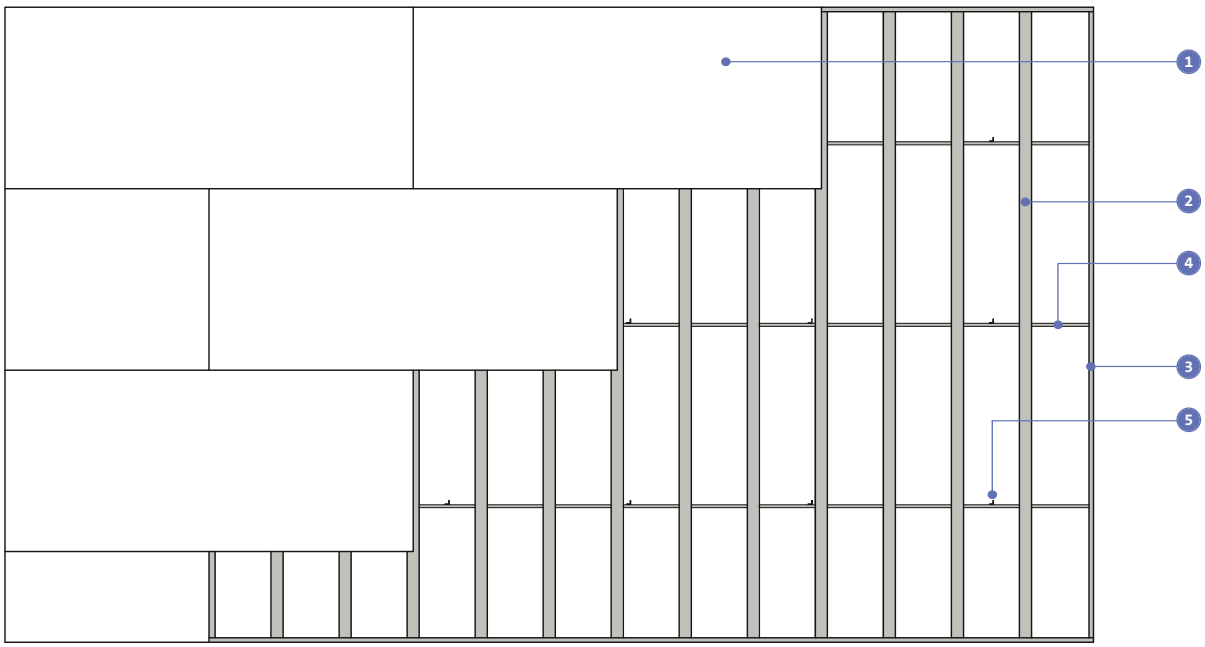
38 Perimeter parallel to Gypframe MF5 Ceiling Section



39 Perimeter perpendicular to Gypframe MF5 Ceiling Section



40 Reflected ceiling plan – single layer

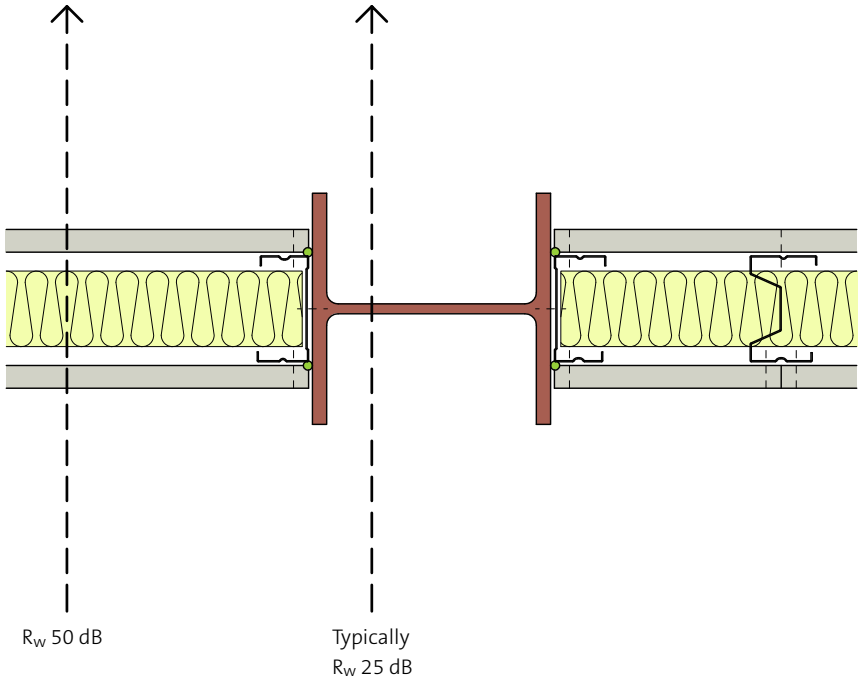


1. Gyproc plasterboard
2. Gypframe MF5 Ceiling Section
3. Gypframe MF6 Perimeter Channel
4. Gypframe MF7 Primary Support Channel
5. Gypframe MF8 Strap Hanger or Gypframe GA1 Steel Angle
6. Wafer Head Jack-Point Screws

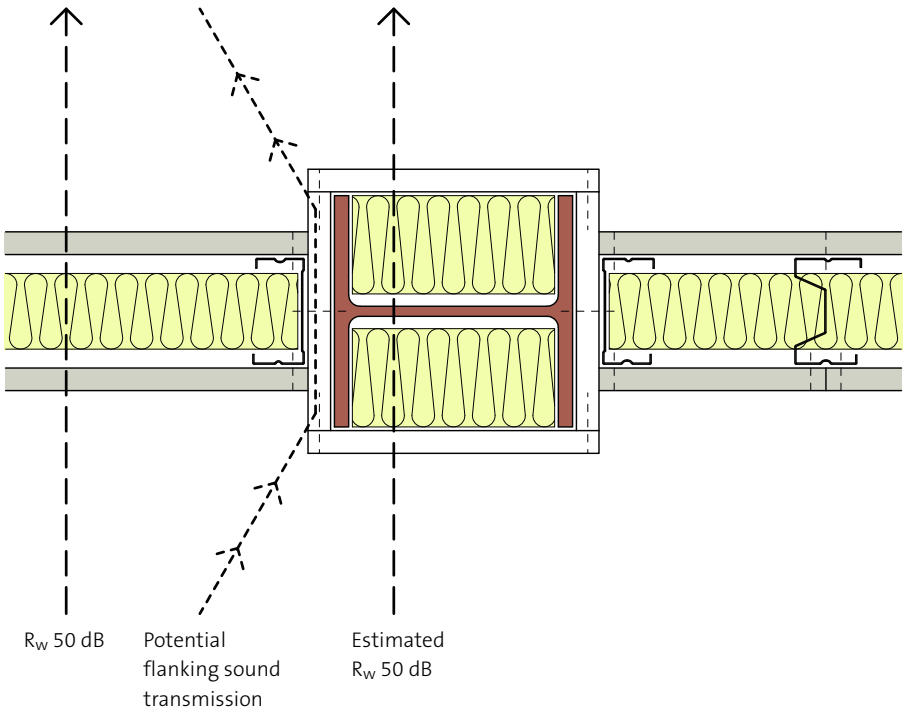
Flanking details

Principles of reducing flanking risk at partition to column junctions. Incremental performance improvement from Construction detail 1-4.

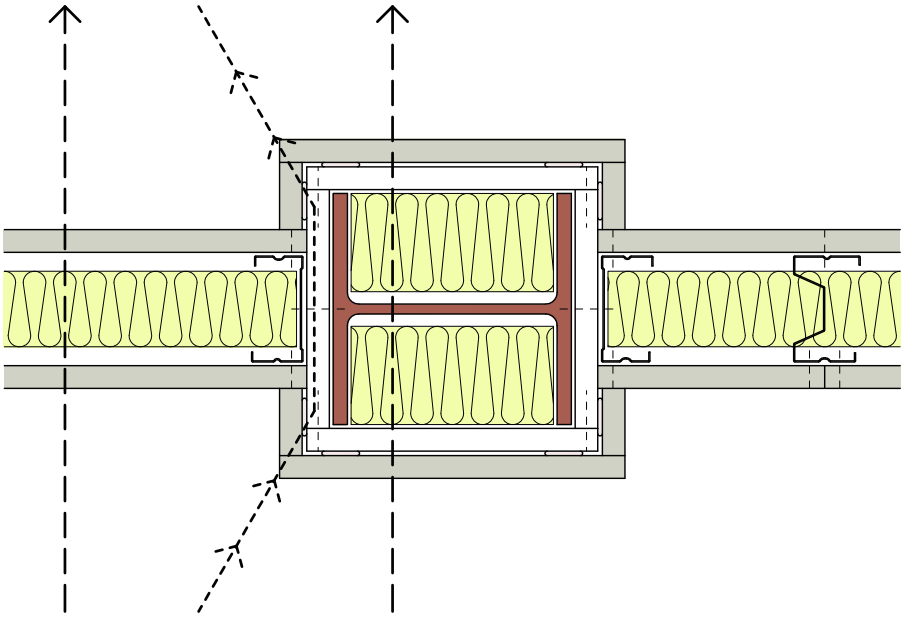
1 Column and partition junction



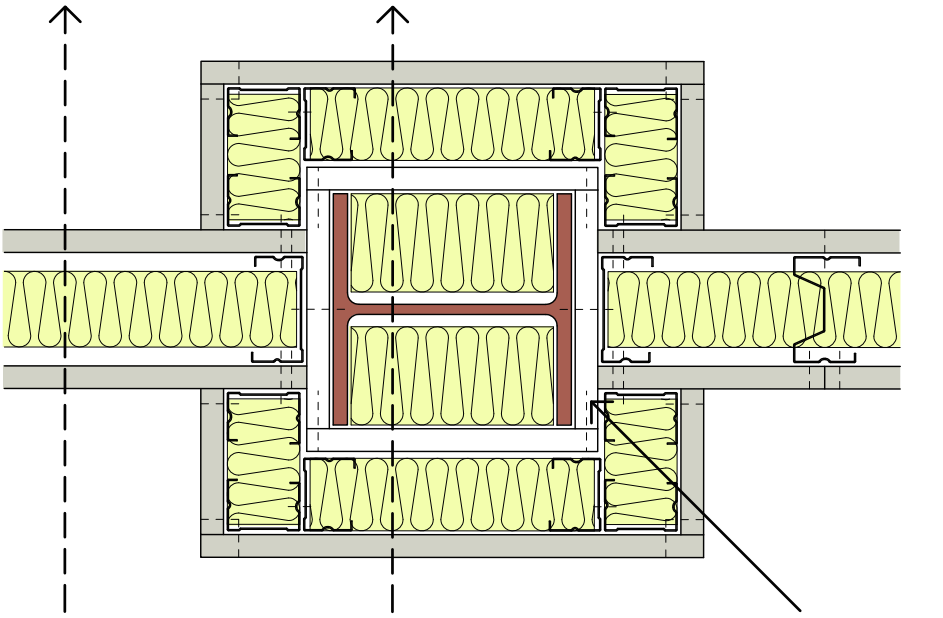
2 Column encasement and partition junction



3 Enhanced column encasement and partition junction



4 Further enhanced column encasement and partition junction

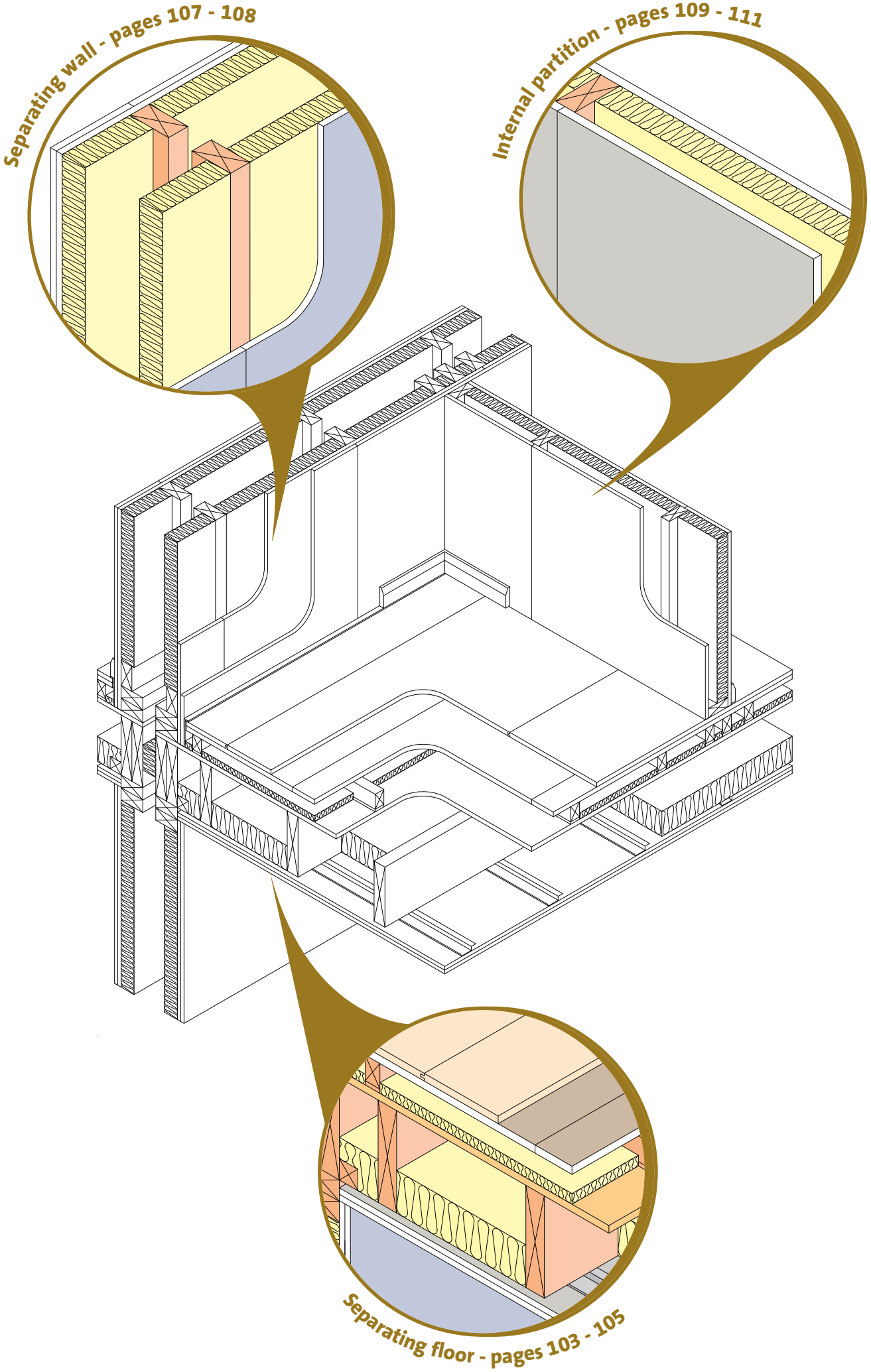


3. Timber frame solutions

Leeds Carnegie, student accommodation.

Contents

Section overview


Separating wall - pages 107 - 108
Internal partition - pages 109 - 111
Separating floor - pages 103 - 105

Introduction

Timber frame construction is well established in the UK, and British Gypsum products are extensively used to form the internal elements.

Internal partitions and walls can be used in both new-build and refurbishment. Gyproc plasterboards are used to line the timber stud framing, whilst Isover insulation products can be used to improve sound, fire and thermal insulation even further.

External linings are based on a structural timber frame and can be lined with Gyproc plasterboards to form the internal lining.

Floors and ceilings combine Gyproc plasterboard ceilings with Gyproc flooring solutions to provide the required impact and airborne sound insulation, as well as the necessary fire resistance. Again, Isover insulation can be used to improve the thermal and sound insulation.

Roofs can be underlined with Gyproc plasterboards and Isover insulation for good sound and thermal insulation.

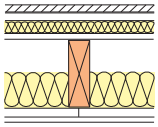
Cavity barriers comprising British Gypsum Gyproc / Glasroc and Isover products can be specified for concealed spaces in the structure or fabric of the building in order to satisfy national Building Regulations requirements for providing suitable cavity barriers and fire-stopping.

Whilst timber frame is a form of lightweight construction it has good inherent strength with a lower overall dead weight than masonry, and it is not uncommon for buildings to be built up to seven storeys with timber.

Leeds Carnegie, student accommodation.

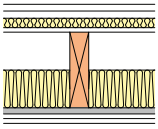
Separating floors

1



Typical platform floor construction (comprising walking surface of 18mm t&g wood board flooring, spot-bonded with Gyproc Sealant at 300mm centres to a substrate of Gyproc Plank laid on 25mm Isover Sound Deadening Floor Slab, laid on a minimum of 12mm wood-based sheet sub-deck nailed to the joists) over 195mm x 44mm timber joists at 600mm centres. 100mm Isover Acoustic Partition Roll (APR 1200) between the joists. Linings as in table.

2



Typical platform floor construction (comprising walking surface of 18mm t&g wood board flooring, spot-bonded with Gyproc Sealant at 300mm centres to a substrate of Gyproc Plank laid on 25mm Isover Sound Deadening Floor Slab, laid on a minimum of 12mm wood-based sheet sub-deck nailed to the joists) over minimum 195mm x 38mm timber joists at 600mm centres. Gypframe RB1 Resilient Bars fixed to underside of joists at 450mm centres and at perimeter with ceiling. Linings as in table fixed into the bars only. 100mm Isover Spacesaver Ready-Cut in the cavity.

Table 3.1 – Compartment / separating solid timber joist and sub-joist floors solutions to satisfy the requirements of *BS 476: Part 21: 1987*

Detail	Nominal floor depth mm	Board type	Available with ACTIV*air* technology[1]	Ceiling lining thickness mm	Maximum loadbearing ratio mm	Sound insulation		System reference
						R_w (R_w + C_{tr}) Airborne dB	L_{nw} impact dB	
BS 60 minutes fire resistance								
1	301	Gyproc Plank + Gyproc SoundBloc	ACTIV air	19 + 12.5	100%	62 (50)	56	C016038
2	320	Gyproc SoundBloc	ACTIV air	2 x 15	100%	66 (55)	48	C106050

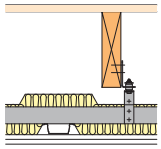
[1] These systems have an **ACTIV*air*** board option available for formaldehyde control to improve indoor air quality. Alternatively, all systems can be skim finished with Thistle PureFinish which contains **ACTIV*air*** technology. Refer to the indoor air quality section in Background & theory.

NB Separating floors require both a suitable isolating floor and a suitable isolating ceiling.

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 components are used throughout, and the company's fixing recommendations are strictly observed. Any variation in the specifications should be checked with British Gypsum.

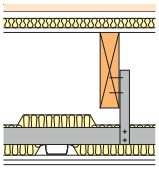
NB Where boards are fixed direct to timber joists, Drywall Timber Screws should be used as opposed to nail-fixing to minimise the risk of fixing defects occurring.

1



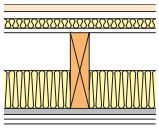
CasoLine MF ceiling[2] suspended beneath 195 x 45mm timber joists at 600mm centres with t&g chipboard flooring using Gypframe Acoustic Hangers to give 277mm cavity. 80mm Isover Modular Roll in cavity. Linings as in table.

2



Floating floor[1] laid over joists. CasoLine MF ceiling[2] suspended beneath 195mm x 45mm timber joists at 600mm centres to give 277mm cavity. 80mm Isover Modular Roll in cavity. Linings as in table.

3



Floating floor[1] laid over 38 x 195mm (minimum) timber joists at 600mm centres. Gypframe RB1 Resilient Bars fixed to underside of joists at 450mm centres with ceiling linings (see table) fixed into the bars only. 100mm Isover Spacesaver Ready-Cut in the cavity.

Table 3.2 – Compartment / separating solid timber joist floor, CasoLine MF solutions to satisfy the requirements of *BS 476: Part 21: 1987*

Detail	Board type	Available with ACTIV*air*[3] technology[3]	Ceiling lining thickness mm	Floor depth mm	Sound insulation R_w ($R_w + C_{tr}$) Airborne dB	Sound insulation L_{nw} impact dB	System reference
BS 30 minutes fire resistance							
1	Gyproc SoundBloc	ACTIV air	2 x 12.5	320	63 (55)	54	C106013
2	Gyproc SoundBloc	ACTIV air	2 x 12.5	376	66 (54)	50	C106011
BS 60 minutes fire resistance							
1	Gyproc FireLine		2 x 12.5	320	62 (53)	55	C106022
2	Gyproc SoundBloc	ACTIV air	2 x 15	381	66 (54)	50	C106025
3	Gyproc SoundBloc	ACTIV air	2 x 15	315	64 (53)	55	C016040

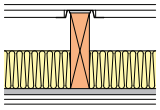
[1] Comprising walking surface of 18mm t&g chipboard flooring, spot-bonded with Gyproc Sealant at 300mm centres to a substrate of Gyproc Plank laid on 25mm Isover Sound Deadening Floor Slabs (Rigid Grade, laid on a minimum of 12mm wood-based sheet sub-deck nailed to the joists).

[2] Normal fixing centres for Gypframe MF5 Ceiling Section and Gypframe MF7 Primary Support Channel (450mm and 1200mm respectively). Suspension method is Gypframe MF8 Strap Hangers or Gypframe GA1 Steel Angle unless otherwise stated.

[3] These systems have an **ACTIV*air*** board option available for formaldehyde control to improve indoor air quality. Alternatively, all systems can be skim finished with Thistle PureFinish which contains **ACTIV*air*** technology. Refer to the indoor air quality section in Background & theory.

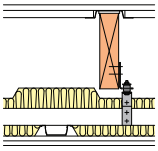
NB The ceiling cavity is the distance from the underside of the walking surface to the back of the plasterboard ceiling lining.

1



GypFloor SILENT comprising Gyproc Plank on Gypframe SIF Floor Channel located over timber joists (minimum 195mm deep at 450mm / 600mm centres). Walking surface of chipboard or softwood flooring (21mm minimum). 100mm Isover Spacesaver Ready-Cut in the cavity. Gypframe RB1 Resilient Bars fixed at 450mm centres. Ceiling linings as in table.

2



CasoLine MF ceiling suspended beneath **GypFloor SILENT** using Gypframe Acoustic Hangers to give 277mm cavity. 100mm Isover Spacesaver Ready-Cut laid on ceiling boards. Ceiling linings as in table.

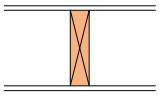
Table 3.3 – GypFloor **SILENT** timber floor fire resistance solutions to satisfy the requirements of *BS 476: Part 21: 1987* and *BS EN 1365-2: 2000*

Detail	Ceiling lining	Available with ACTIV*air* technology[1]	Lining thickness mm	Floor depth mm dB	Sound insulation R_w ($R_w + C_{tr}$) Airborne dB	Sound insulation L_{nw} impact	System reference
BS EN 60 minutes fire resistance							
1	Gyproc Plank + Gyproc SoundBloc	ACTIV air	19 + 12.5	271	63 (51)	55	C204001
2	Gyproc SoundBloc	ACTIV air	2 x 15	354	63 (55)	51	C106026

[1] These systems have an **ACTIV*air*** board option available for formaldehyde control to improve indoor air quality. Alternatively, all systems can be skim finished with Thistle PureFinish which contains **ACTIV*air*** technology. Refer to the indoor air quality section in Background & theory.

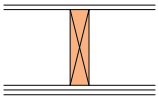
Internal floors

1



22mm t&g (softwood or chipboard) floor boarding over minimum 195mm x 38mm timber joists at 600mm centres. Noggings and linings as in table.

2



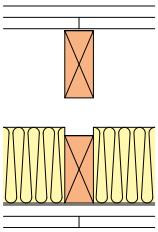
22mm t&g (softwood or chipboard) floor boarding over minimum 195mm x 38mm timber joists at 600mm centres. Noggings and linings as in table.

Table 3.4 – Compartment / separating solid timber joist and sub-joist floors solutions to satisfy the requirements of *BS 476: Part 21: 1987* and *BS EN 1365-2: 2000*

Detail	Nominal floor depth mm	Board type	Ceiling lining thickness mm	Noggings required	Maximum loadbearing ratio	Sound insulation		System reference
						R_w Airborne dB	L_{nw} impact dB	
BS EN **30 minutes fire resistance**								
1	232	Gyproc WallBoard	1 x 15	Yes	100%	40	–	C106029
BS EN **60 minutes fire resistance**								
2	242	Gyproc FireLine	2 x 12.5	Yes	100%	40	76	C016009

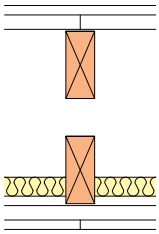
Separating walls – loadbearing

1



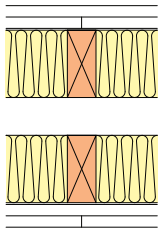
Two separate timber frames spaced 50mm apart, consisting of 89mm x 38mm timber studs at 600mm centres with noggings. Two layers of board each side. 100mm Isover Spacesaver Ready-Cut between the studs on one side. Linings as in table.

2



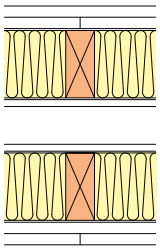
Two separate timber frames spaced 50mm apart, consisting of 89mm x 38mm timber studs at 600mm centres with noggings. Two layers of board each side. 25mm Isover Acoustic Partition Roll (APR 1200) between the studs on one side. Linings as in table.

3



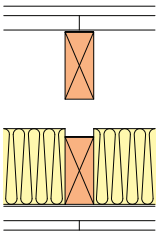
Two separate timber frames spaced a minimum of 50mm apart (240mm minimum between inner facings of wall linings). Two layers of board each side. 65mm Isover Acoustic Partition Roll (APR 1200) or 90mm Isover Frame Batt 32 between the studs in each timber frame. Linings as in table.

4



Two separate timber frames, each with a 9mm minimum thick sheathing board, spaced a minimum of 50mm apart (240mm minimum between inner facings of wall linings). Two layers of board each side. 65mm Isover Acoustic Partition Roll (APR 1200) or 90mm Isover Frame Batt 32 between the studs in each timber frame. Linings as in table.

5



Two separate timber frames spaced 50mm apart, consisting of 89mm x 38mm timber studs at 600mm centres with noggings. Two layers of board each side. 100mm Isover Acoustic Partition Roll (APR 1200) between the studs on one side. Linings as in table.

Table 3.5 – 89mm timber stud compartment / sound insulating walls solutions to satisfy the requirements of *BS 476: Part 21: 1987* and *BS EN 1365-1: 1999* (where applicable)

Detail	Partition thickness mm	Board type	Available with ACTIV*air* technology[4]	Lining thickness mm	Minimum stud size mm	Maximum load ratio	Sound insulation R_w ($R_w + C_{tr}$) dB	System reference
BS 60 minutes fire resistance								
1	290	Gyproc SoundBloc	✓	2 x 15	89 x 38	80%	61 (53)	A036002
2	293	Gyproc Plank + Gyproc WallBoard		19 + 12.5	89 x 38	80%	63 (51)	A046022
3	300[1]	Gyproc SoundBloc or Gyproc Plank + Gyproc WallBoard	✓	2 x 15 19 + 12.5	89 x 38	80%	RD[2]	RD[2]
4	300[1]	Gyproc SoundBloc or Gyproc Plank + Gyproc WallBoard	✓	2 x 15 19 + 12.5	89 x 38	80%	RD[3]	RD[3]
BS 60 minutes fire resistance								
5	293	Gyproc Plank + Gyproc FireLine		19 + 12.5	89 x 38	60%	63 (51)	A036003

[1] Subject to timber size.

[2] RD = Approved Robust Detail Specification E-WT-1. For more information visit www.robustdetails.com

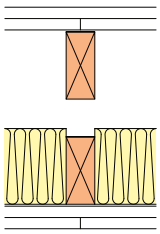
[3] RD = Approved Robust Detail Specification E-WT-2. For more information visit www.robustdetails.com

[4] These systems have an **ACTIV*air*** board option available for formaldehyde control to improve indoor air quality. Alternatively, all systems can be skim finished with Thistle PureFinish which contains **ACTIV*air*** technology. Refer to the indoor air quality section in Background & theory.

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 components are used throughout, and the company's fixing recommendations are strictly observed. Any variation in the specifications should be checked with British Gypsum.

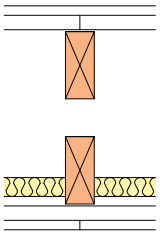
Separating walls – non-loadbearing

1



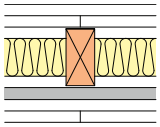
Two separate timber frames spaced 50mm apart, consisting of 89mm x 38mm timber studs at 600mm centres with noggings. Two layers of board each side. 100mm Isover Spacesaver Ready-Cut between the studs on one side. Linings as in table.

2



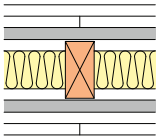
Two separate timber frames spaced 50mm apart, consisting of 89mm x 38mm timber studs at 600mm centres with noggings. Two layers of board each side. 25mm Isover Acoustic Partition Roll (APR 1200) between the studs on one side. Linings as in table.

3



Two layers of board each side of 75mm x 38mm timber studs at 600mm centres with Gypframe RB1 Resilient Bars fixed horizontally to one side at 600mm centres. 50mm Isover Acoustic Partition Roll (APR 1200) in the cavity. Linings as in table.

4



Two layers of board each side of 75mm x 38mm timber studs at 600mm centres with Gypframe RB1 Resilient Bars fixed horizontally to both sides at 600mm centres. 50mm Isover Acoustic Partition Roll (APR 1200) in the cavity. Linings as in table.

Table 3.6 – 75mm and 89mm timber stud walls solutions to satisfy the requirements of *BS 476: Part 22: 1987* and *BS EN 1364-1: 1999* (where applicable)

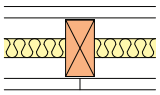
Detail	Partition thickness mm	Board type	Available with ACTIV*air* technology[1]	Lining thickness mm	Minimum stud size mm dB	Sound insulation R_w ($R_w + C_{tr}$)	System reference
BS 60 minutes fire resistance							
1	290	Gyproc SoundBloc	ACTIV air	2 x 15	89 x 38	61 (53)	A036002
2	293	Gyproc Plank + Gyproc WallBoard		19 + 12.5	89 x 38	63 (51)	A046022
BS EN 60 minutes fire resistance							
4	157	Gyproc SoundBloc	ACTIV air	2 x 12.5	75 x 38	59 (51)	A046006
BS 90 minutes fire resistance							
3	151	Gyproc SoundBloc	ACTIV air	2 x 15	75 x 38	58 (51)	A046007
4	167	Gyproc SoundBloc	ACTIV air	2 x 15	75 x 38	60 (52)	A046008
4	170	Gyproc Plank + Gyproc SoundBloc	ACTIV air	19 + 12.5	75 x 38	60 (52)	A046024

[1] These systems have an **ACTIV*air*** board option available for formaldehyde control to improve indoor air quality. Alternatively, all systems can be skim finished with Thistle PureFinish which contains **ACTIV*air*** technology. Refer to the indoor air quality section in Background & theory.

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 components are used throughout, and the company's fixing recommendations are strictly observed. Any variation in the specifications should be checked with British Gypsum.

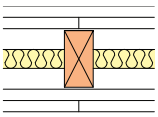
Internal partitions – loadbearing

1



One layer of board each side of timber studs at 600mm centres. 25mm Isover Acoustic Partition Roll (APR 1200) and board linings as in table.

2



Two layers of board each side of timber studs at 600mm centres. 25mm Isover Acoustic Partition Roll (APR 1200) and board linings as in table.

Table 3.7a – 75mm and 100mm timber stud partitions solutions to satisfy the requirements of *BS 476: Part 21: 1987*

Detail	Partition thickness mm	Board type	Available with ACTIV*air* technology[1]	Lining thickness mm	Minimum stud size mm	Maximum load ratio	Sound insulation R_w without insulation dB	Sound insulation R_w with insulation dB	System reference
BS 30 minutes fire resistance									
1	100	Gyproc WallBoard		1 x 12.5	75 x 38	60%	35	36	A026001/005
1	100	Gyproc SoundBloc	ACTIV air	1 x 12.5	75 x 38	60%	38	40	A026011/016
1	105	Gyproc SoundBloc	ACTIV air	1 x 15	75 x 38	60%	40	43	A026014/017
BS 60 minutes fire resistance									
2	125	Gyproc WallBoard		2 x 12.5	75 x 38	60%	38	42	A026003/007
2	125	Gyproc SoundBloc	ACTIV air	2 x 12.5	75 x 38	60%	44	46	A026015/018
1	130	Gyproc FireLine		1 x 15	100 x 50	55%	38	–	A026023
BS 120 minutes fire resistance									
2	160	Gyproc FireLine		2 x 15	100 x 50	55%	41	–	A026025

Table 3.7b – 75mm timber stud partitions solutions to satisfy the requirements of *BS EN 1365-1: 1999*

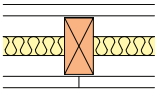
Detail	Partition thickness mm	Board type	Available with ACTIV*air* technology[1]	Lining thickness mm	Minimum stud size mm	Maximum load ratio	Sound insulation R_w without insulation dB	Sound insulation R_w with insulation dB	System reference
EN 30 minutes fire resistance									
1	105	Gyproc WallBoard		1 x 15	75 x 38	60%	37	40	A026002/006
1	105	Gyproc SoundBloc	ACTIV air	1 x 15	75 x 38	60%	40	34	A026014/017
EN 60 minutes fire resistance									
2	115	Glasroc F MULTIBOARD		2 x 10	75 x 38	60%	38	–	G106004
2	125	Gyproc FireLine		2 x 12.5	75 x 38	60%	38	42	A026028/029
EN 90 minutes fire resistance									
2	125	Glasroc F MULTIBOARD		2 x 12.5	75 x 38	60%	37	–	G106005
2	135	Gyproc FireLine		2 x 15	75 x 38	100%	38	42	A026030/031

[1] These systems have an **ACTIV*air*** board option available for formaldehyde control to improve indoor air quality. Alternatively, all systems can be skim finished with Thistle PureFinish which contains **ACTIV*air*** technology. Refer to the indoor air quality section in Background & theory.

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 components are used throughout, and the company's fixing recommendations are strictly observed. Any variation in the specifications should be checked with British Gypsum.

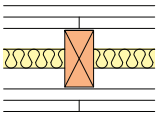
Internal partitions – non-loadbearing

1



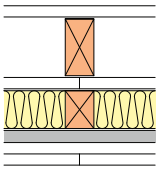
One layer of board each side of timber studs at 600mm centres. 25mm Isover Acoustic Partition Roll (APR 1200) and linings as in table.

2



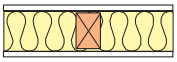
Two layers of board each side of timber studs at 600mm centres. 25mm Isover Acoustic Partition Roll (APR 1200) and linings as in table.

3



Remedial treatment on one side of existing plasterboard partition (minimum 1 x 12.5mm plasterboard each side of 75mm x 38mm studs at 600mm centres) using 50mm x 50mm timber battens at 600mm centres, with 50mm Isover Acoustic Partition Roll (APR 1200) between the studs with Gypframe RB1 Resilient Bar at 600mm centres (fixed horizontally). Linings as in table.

4



One layer of board each side of timber studs at 600mm centres and 65mm Isover Acoustic Partition Roll (APR 1200) in the cavity. Linings as in table.

Table 3.8a – 63mm, 75mm and 100mm timber stud partitions solutions to satisfy the requirements of *BS 476: Part 22: 1987*

Detail	Partition thickness mm	Board type	Available with ACTIV*air* technology[3]	Lining thickness mm	Minimum stud size[1] mm	Sound insulation R_w without insulation dB	Sound insulation R_w with insulation dB	System reference
BS 30 minutes fire resistance								
1	88	Gyproc SoundBloc	✓	1 x 12.5	63 x 38	–	40[2]	A026009
4	88	Gyproc WallBoard		1 x 12.5	63 x 38	–	41	A026012
1	93	Gyproc SoundBloc	✓	1 x 15	63 x 38	40	–	A026008
1	93	Gyproc WallBoard		1 x 15	63 x 38	–	40[2]	A026010
1	100	Gyproc WallBoard		1 x 12.5	75 x 38	35	36[2]	A026001/005
1	100	Gyproc SoundBloc	✓	1 x 12.5	75 x 38	38	40[2]	A026011/016
1	105	Gyproc SoundBloc	✓	1 x 15	75 x 38	40	43[2]	A026014/017
BS 60 minutes fire resistance								
2	125	Gyproc WallBoard		2 x 12.5	75 x 38	38	42[2]	A026003/007
2	125	Gyproc SoundBloc	✓	2 x 12.5	75 x 38	44	46[2]	A026015/018
3	130	Gyproc FireLine		1 x 15	100 x 50	38	–	A026023
3	196	Gyproc SoundBloc	✓	2 x 15	75 x 38	–	52	A05402
BS 120 minutes fire resistance								
2	160	Gyproc FireLine		2 x 15	100 x 50	41	–	A026025

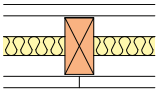
[1] Stud sizes quoted are minimum.

[2] 25mm Isover Acoustic Partition Roll (APR 1200) insulation.

[3] These systems have an **ACTIV*air*** board option available for formaldehyde control to improve indoor air quality. Alternatively, all systems can be skim finished with Thistle PureFinish which contains **ACTIV*air*** technology. Refer to the indoor air quality section in Background & theory.

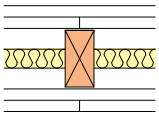
NB The fire resistance and sound insulation performances are for imperforate partitions, walls and ceilings incorporating boards with all joints taped and filled, or skimmed according to British Gypsum's recommendations. The quoted performances are achieved only if British Gypsum components are used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

1



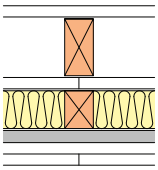
One layer of board each side of timber studs at 600mm centres. 25mm Isover Acoustic Partition Roll (APR 1200) and linings as in table.

2



Two layers of board each side of timber studs at 600mm centres. 25mm Isover Acoustic Partition Roll (APR 1200) and linings as in table.

3



Remedial treatment on one side of existing plasterboard partition (minimum 1 x 12.5mm plasterboard each side of 75mm x 38mm studs at 600mm centres) using 50mm x 50mm timber battens at 600mm centres, with 50mm Isover Acoustic Partition Roll (APR 1200) between the studs with Gypframe RB1 Resilient Bar at 600mm centres (fixed horizontally). Linings as in table.

Table 3.8b – 63mm, 75mm and 100mm timber stud partitions solutions to satisfy the requirements of *BS EN 1364-1: 1999*

Detail	Partition thickness mm	Board type	Available with ACTIV*air* technology[3]	Lining thickness mm	Minimum stud size[1] mm	Sound insulation R_w dB: without insulation	Sound insulation R_w dB: with insulation	System reference
EN 30 minutes fire resistance								
1	88	Gyproc SoundBloc	ACTIV air	1 x 12.5	63 x 38	–	40[2]	A026009
1	93	Gyproc SoundBloc	ACTIV air	1 x 15	63 x 38	40	–	A026008
1	93	Gyproc WallBoard		1 x 15	63 x 38	–	40[2]	A026010
1	105	Gyproc WallBoard		1 x 15	75 x 38	37	40[2]	A026002/6
1	105	Gyproc SoundBloc	ACTIV air	1 x 15	75 x 38	40	43[2]	A026014/17
EN 60 minutes fire resistance								
2	115	Glasroc F MULTIBOARD		2 x 10	75 x 38	38	–	G106004
2	125	Gyproc FireLine		2 x 12.5	75 x 38	38	42[2]	A026028/9
3	196	Gyproc SoundBloc	ACTIV air	2 x 15	75 x 38	–	52	A05402
EN 90 minutes fire resistance								
2	125	Glasroc F MULTIBOARD		2 x 12.5	75 x 38	37	–	G106005
2	135	Gyproc FireLine		2 x 15	75 x 38	38	42[2]	A026030/1

[1] Stud sizes quoted are minimum.

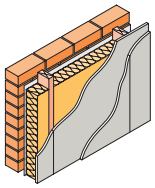
[2] 25mm Isover Acoustic Partition Roll (APR 1200) insulation.

[3] These systems have an **ACTIV*air*** board option available for formaldehyde control to improve indoor air quality. Alternatively, all systems can be skim finished with Thistle PureFinish which contains **ACTIV*air*** technology. Refer to the indoor air quality section in Background & theory.

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 components are used throughout, and the company's fixing recommendations are strictly observed. Any variation in the specifications should be checked with British Gypsum.

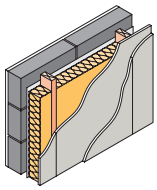
External walls

1



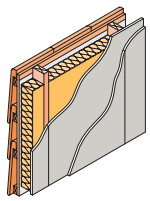
100mm brick outer, 50mm clear cavity, 9mm OSB. 140mm x 38mm timber studs at maximum 600mm centres. Timber stud fully-filled with 140mm Isover Frame Batt 34, Isover Vario. Linings as in table.

2



20mm render, 100mm medium block (λ=0.61W/mK), 50mm clear cavity, 9mm OSB. 140mm x 38mm timber studs at maximum 600mm centres. Timber stud fully-filled with 140mm Isover Frame Batt 34, Isover Vario. Linings as in table.

3



Cladding on battens – well ventilated, 9mm OSB. 140mm x 38mm timber studs at maximum 600mm centres. Timber stud fully-filled with 140mm Isover Frame Batt 34, Isover Vario. Linings as in table.

Table 3.9a – Timber frame

Detail	Board type	Lining thickness mm	U-value (W/m^2K)	Fire resistance (BS) minutes	Fire resistance (EN) minutes	System reference
1	Gyproc SoundBloc[4] or Gyproc FireLine	1 x 15	0.28	30	30	B606005
2	Gyproc SoundBloc[4] or Gyproc FireLine	1 x 15	0.27	30	30	B606004
3	Gyproc SoundBloc[4] or Gyproc FireLine	1 x 15	0.30	30[2]	30[2]	B606006

Table 3.9b – Timber frame with enhanced impact performance

Detail	Board type	Lining thickness mm	U-value (W/m^2K)	Fire resistance (BS)[1] minutes	Fire resistance (EN) minutes	System reference
1	Gyproc DuraLine[4]	1 x 15	0.28	30	30	B606005
2	Gyproc DuraLine[4]	1 x 15	0.27	30	30	B606004
3	Gyproc DuraLine[4]	1 x 15	0.30	30[2]	30[2]	B606006
1	Gyproc FireLine	2 x 12.5	0.27	60	60	B606008
2	Gyproc FireLine	2 x 12.5	0.27	60	60	B606007
3	Gyproc FireLine	2 x 12.5	0.29	60[3]	60[3]	B606009
1	Gyproc SoundBloc[4] or Gyproc WallBoard	2 x 12.5	0.27	60	30	A066008
2	Gyproc SoundBloc[4] or Gyproc WallBoard	2 x 12.5	0.27	60	30	A066007
3	Gyproc SoundBloc[4] or Gyproc WallBoard	2 x 12.5	0.29	60	30	A066009

Table 3.9c – Timber frame with enhanced impact performance

Detail	Board type	Lining thickness mm	U-value (W/m^2K)	Fire resistance (BS)[1] minutes	Fire resistance (EN) minutes	System reference
1	Rigidur H[4]	1 x 12.5	0.28	30	30	B606010
2	Rigidur H[4]	1 x 12.5	0.27	30	30	B606011
3	Rigidur H[4]	1 x 12.5	0.30	30[2]	30[2]	B606012

NB Systems presented are typical solutions. For specific U-value and condensation risk calculations, please contact the British Gypsum Technical Advice Centre at bgtechnical.enquiries@bpb.com

1 Based on Building Research Establishment Document BR128 report (1988) guidelines, as referenced in Building Regulations Approved Document B.

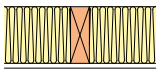
2 30 minutes loadbearing capacity, 30 minutes integrity, 15 minutes insulation.

3 60 minutes loadbearing capacity, 60 minutes integrity, 15 minutes insulation.

4 These systems have an **ACTIV*air*** board option available for formaldehyde control to improve indoor air quality. Alternatively, all systems can be skim finished with Thistle PureFinish which contains **ACTIV*air*** technology. Refer to the indoor air quality section in Background & theory.

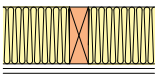
Ceiling membranes

1



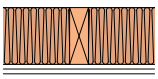
38mm (minimum) timber joists or 35mm (minimum)[1] bottom chord of trusses at 600mm centres, with suitable timber noggings between joists to support board edges. Insulation laid between joists (see table). Linings as in table.

2



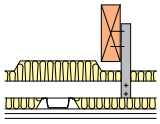
38mm (minimum) timber joists or 35mm (minimum)[1] bottom chord of trusses at 600mm centres, with suitable timber noggings between joists to support board edges. Insulation laid between joists (see table). Linings as in table.

3



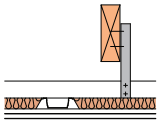
38mm (minimum) timber joists or 35mm (minimum)[1] bottom chord of trusses at 600mm centres, with suitable timber noggings between joists to support board edges. Insulation laid between joists (see table). Linings as in table.

4



CasoLine MF suspended from joists. Insulation laid over ceiling grid. Linings as in table.

5



CasoLine MF suspended from joists. Insulation laid over ceiling grid. Linings as in table.

Table 3.10a – Direct fix to joists / bottom chord 1 of trusses below the roof space. Solutions to satisfy the requirements of *BS 476: Part 22: 1987*

Detail	Board type	Ceiling lining thickness mm	Noggings required	Insulation type	System reference
BS 30 minutes fire resistance					
2	Gyproc WallBoard	2 x 12.5	Yes[2]	150mm Isover Spacesaver Ready-Cut	C106049
1	Gyproc FireLine	1 x 12.5	Yes[2]	150mm Isover Spacesaver Ready-Cut	C106047
4	Gyproc WallBoard	2 x 12.5	No	100mm Isover Spacesaver Ready-Cut	C106045
BS 60 minutes fire resistance					
3	Gyproc FireLine	2 x 12.5	Yes[2]	150mm stone mineral wool (24kg/m^3)	C106048
5	Gyproc FireLine	2 x 15	No	30mm stone mineral wool (45kg/m^3)	C106051

Table 3.10b – Direct fix to joists / bottom chord of trusses below the roof space. Solutions to satisfy the requirements of *BS EN 1364-2: 1999*

Detail	Board type	Ceiling lining thickness mm	Noggings required	Insulation type	System reference
EN 30 minutes fire resistance					
2	Gyproc WallBoard	2 x 15	Yes[2]	150mm Isover Spacesaver Ready-Cut	C106052
3	Gyproc FireLine	2 x 12.5	Yes[2]	150mm stone mineral wool (24kg/m^3)	C106048

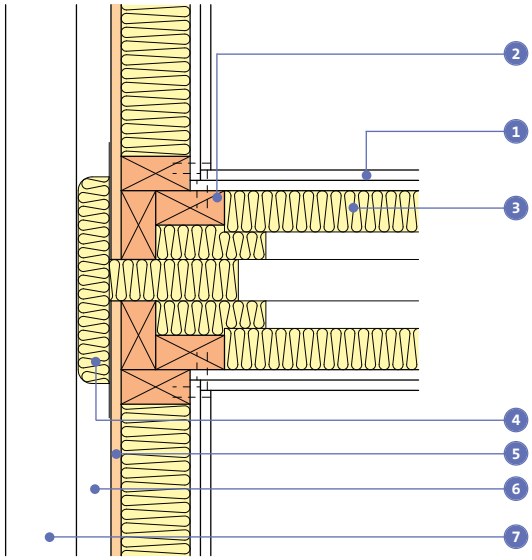
[1] Nominal 50mm x 25mm timber battens should be fixed to the side of timber supports where the ceiling boards butt to maintain an adequate bearing surface.
[2] At ceiling perimeter and to support outer layer ceiling board joints.

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 components are used throughout, and the company's fixing recommendations are strictly observed. Any variation in the specifications should be checked with British Gypsum.

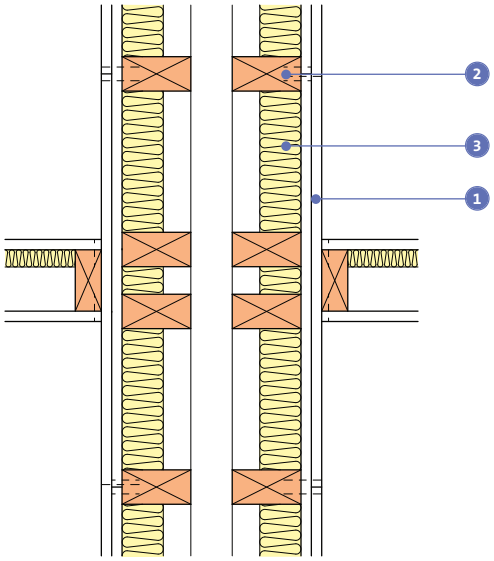
NB Where boards are fixed direct to timber joists, Drywall Timber Screws should be used as opposed to nail-fixing to minimise the risk of fixing defects occurring.

Construction details

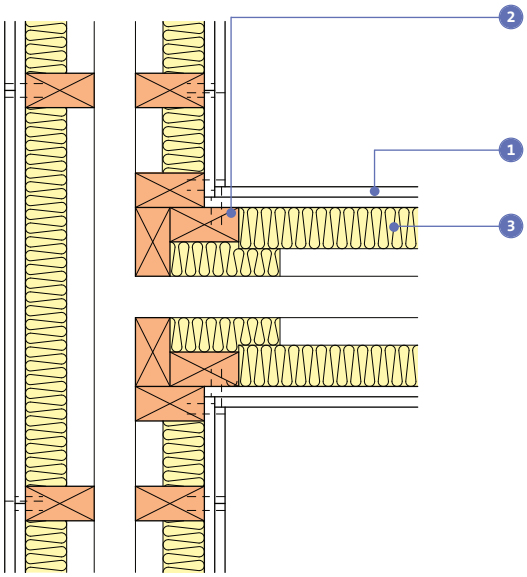
1 Separating wall and external wall junction (plan)



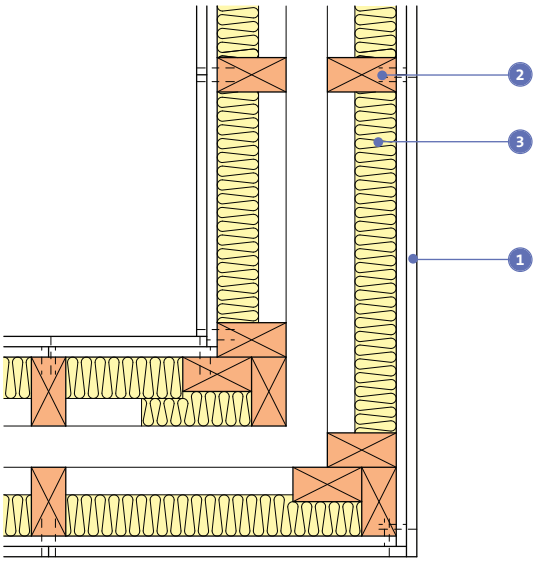
2 Separating wall and internal wall junction (plan)



3 Separating wall 'T' junction (plan)



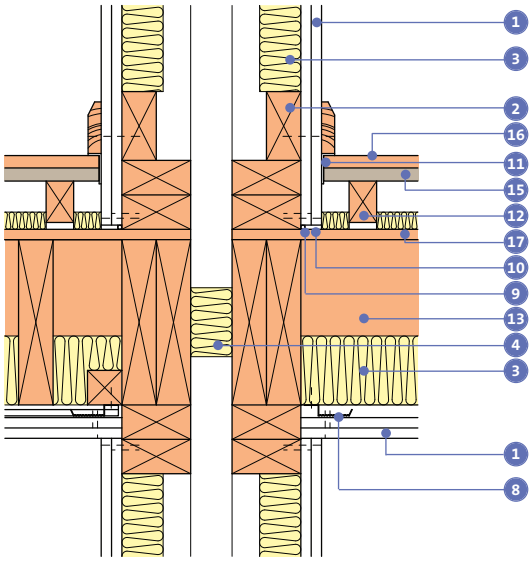
4 Separating wall corner (plan)



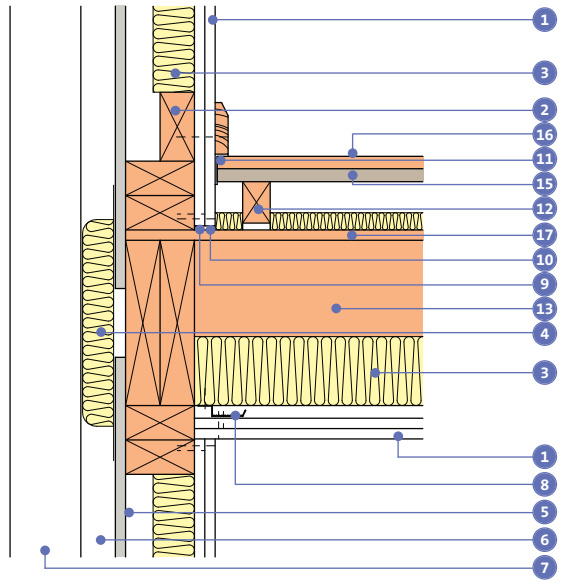
1. Gyproc plasterboard
2. Timber framing
3. Isover insulation
4. Isover cavity barrier
5. Sheathing board
6. External wall cavity
7. External cladding

Construction details

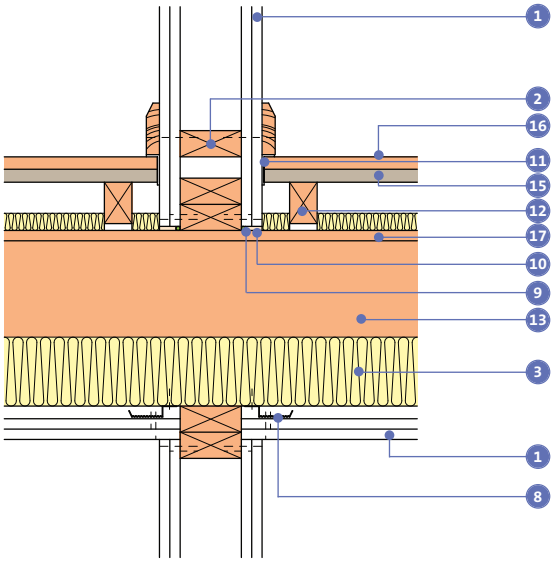
5 Separating wall and separating floor junction (section)



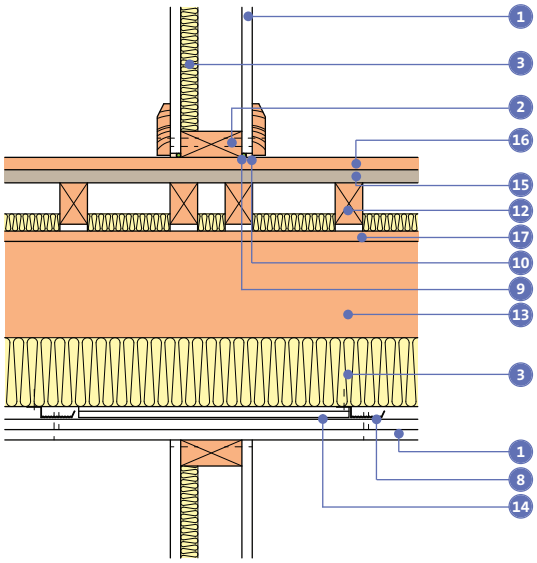
6 Separating floor and external wall junction (section)



7 Separating floor and loadbearing internal wall junction (section)

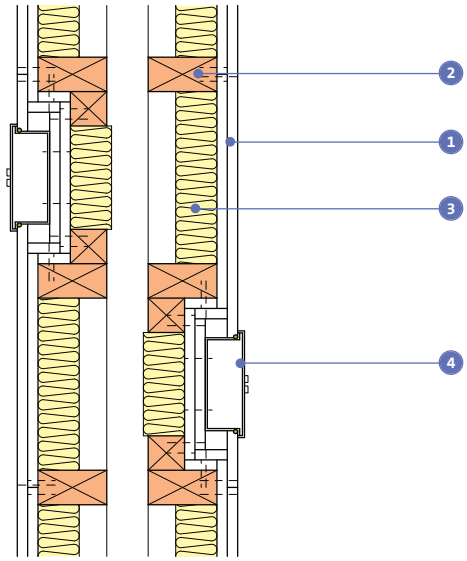


8 Separating floor and non-loadbearing internal wall junction (section)

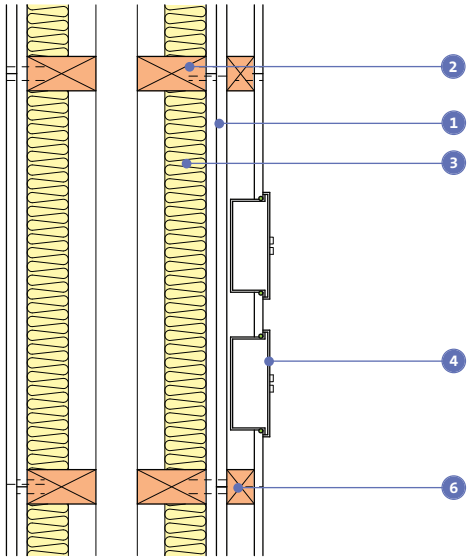


1. Gyproc plasterboard
2. Timber framing
3. Isover insulation
4. Isover cavity barrier
5. Sheathing board
6. External wall cavity
7. External cladding
8. Gypframe Resilient Bars
9. Gyproc Sealant
10. Bulk-fill with Gyproc jointing materials (where gap exceeds 5mm)
11. 5mm resilient flanking strip
12. Resilient battens / floating floor
13. Timber joist
14. Gypframe Resilient Bar noggings
15. Gyproc Plank
16. Walking surface
17. Timber-based sub-deck

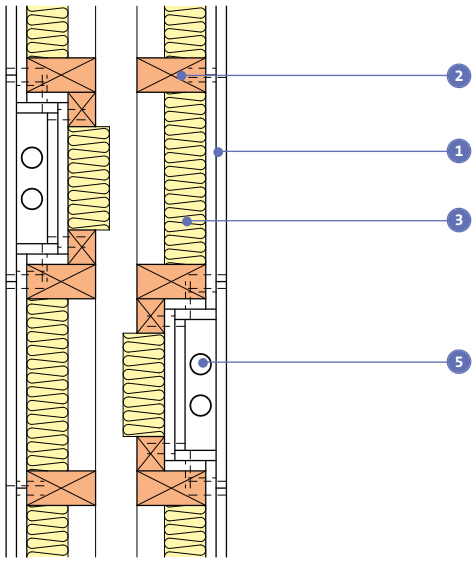
9 Sockets in separating wall



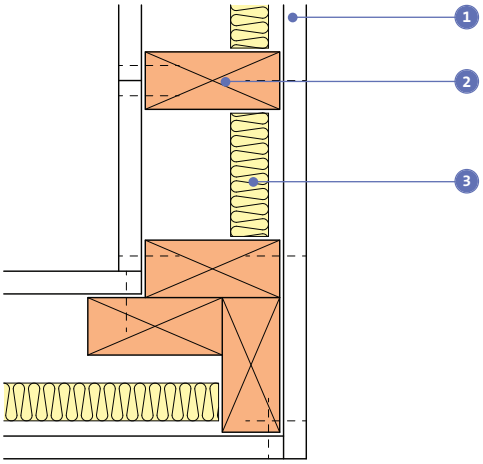
10 Sockets in sacrificial lining to separating wall



11 Services in separating wall

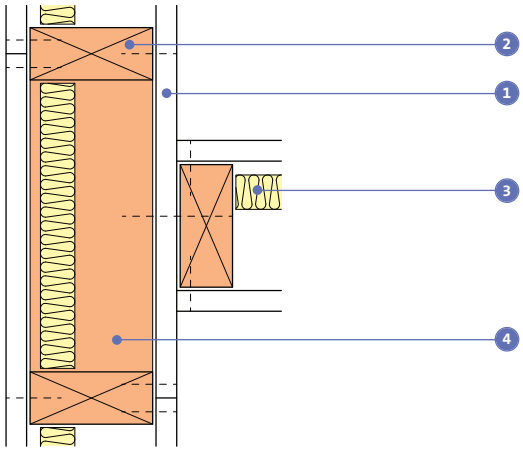


12 Corner

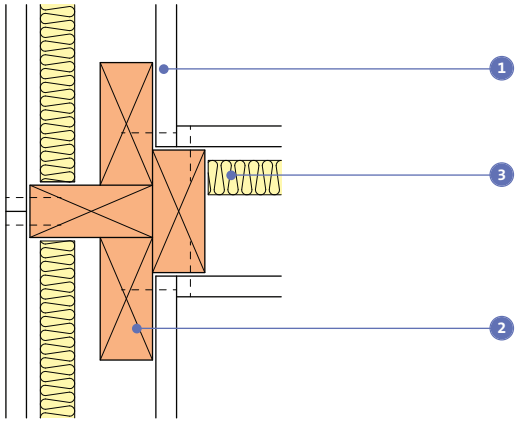


1. Gyproc plasterboard
2. Timber framing
3. Isover insulation
4. Electrical socket box
5. Services
6. Timber batten

13 ‘T’ junction between studs



14 ‘T’ junction at stud



1. Gyproc plasterboard
2. Timber framing
3. Isover insulation
4. Timber noggings at 600mm centres

4. Concrete frame solutions

Contents

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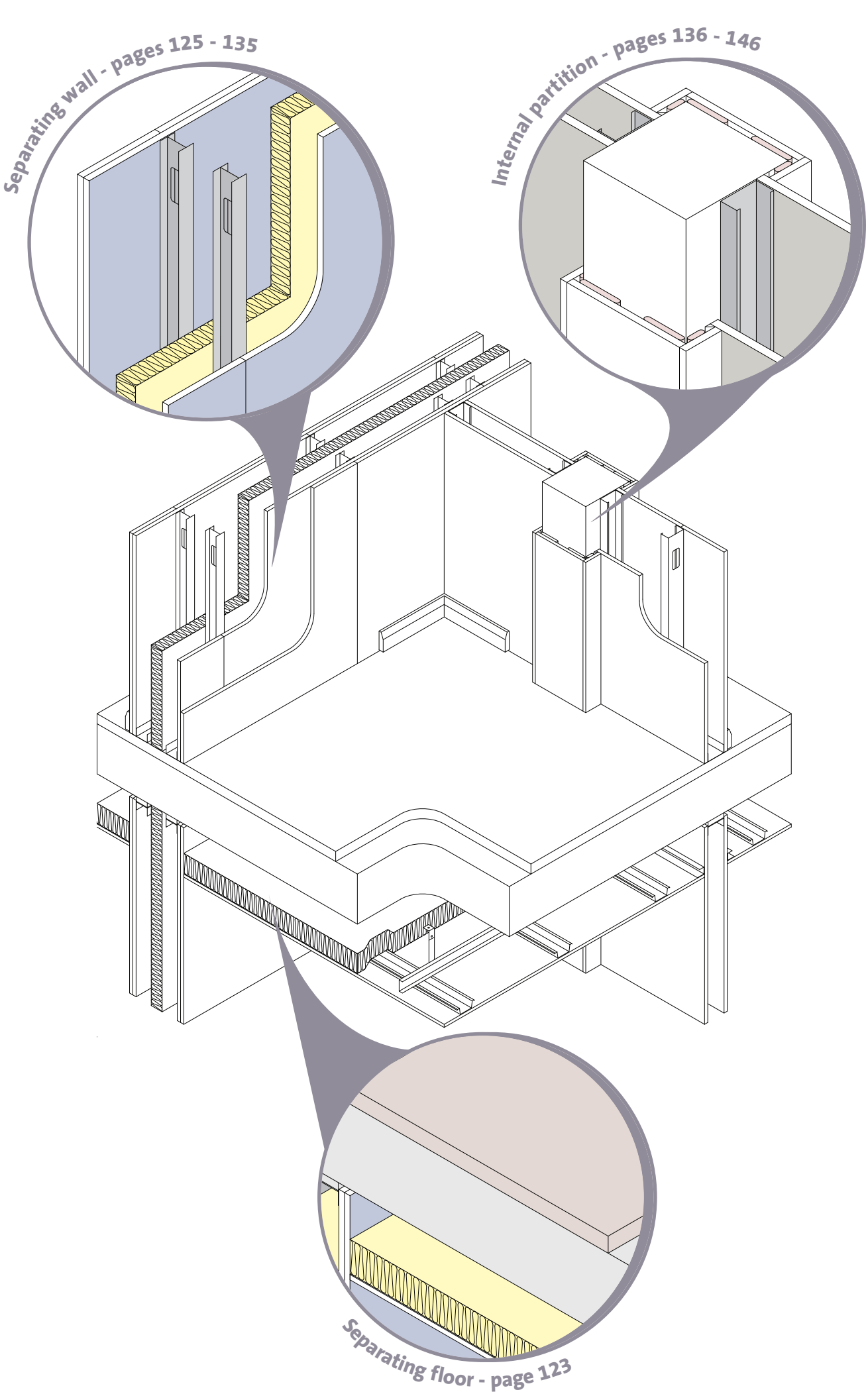

Separating wall - pages 125 - 135
Internal partition - pages 136 - 146
Separating floor - page 123

Introduction

Concrete frame is often used as a structural element for HRMO sector buildings where a flexible open floor layout is required. A key benefit to utilising a concrete super-structure is the inherent fire performance it provides reducing the need for additional structural encasement systems.

British Gypsum has a range of internal partitions, ceilings, floors and separating walls suitable for integration within a concrete frame structure.

This section will lead you through the process of selecting an appropriate British Gypsum specification for your needs based on relevant performance criteria such as fire resistance, acoustic insulation or absorption, robustness, and thermal performance.

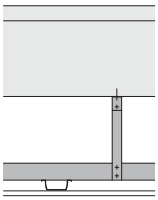
NB Where it is necessary to provide additional fire protection to concrete beams and columns, e.g. where insufficient concrete cover is given to the steel reinforcing bars, it may be possible to utilise a plasterboard encasement system. For further details contact the British Gypsum Technical Advice Centre at bgtechnical.enquiries@bpb.com

Separating floors

Typically, concrete floors provide sufficient performance to meet fire resistance requirements without contribution from the ceiling. For sound insulation performance refer to **Tables 4.1a and 4.1b** below.

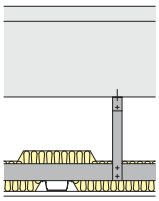
Where it is necessary to control reverberation time for enhanced acoustic comfort, e.g. improved speech clarity within a conference room, we recommend the use of Gyptone or Rigitone ceiling boards. Refer to the ceiling section within **Background & theory**.

1



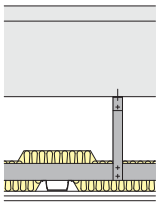
CasoLine MF ceiling suspended beneath floor to give a 240mm cavity. Ceiling lining as in table.

2



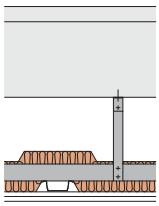
CasoLine MF ceiling suspended beneath floor to give a 240mm cavity. Ceiling lining as in table.

3



CasoLine MF ceiling suspended beneath floor to give a 240mm cavity, with 100mm Isover General Purpose Roll in void. Ceiling lining as in table.

4



CasoLine MF ceiling suspended beneath floor to give a 240mm cavity, with 100mm stone mineral wool in void. Ceiling lining as in table.

Table 4.1a – CasoLine MF ceiling system to the underside of concrete slab to satisfy the requirements of *BS 476: Part 21: 1987*

Detail	Board type	Available with ACTIV*air* technology[3]	Ceiling lining thickness mm	Approx. ceiling weight kg/m^2	Sound insulation[1] Airborne R_w ($R_w + C_{tr}$) dB	Sound insulation[1] Impact L_{nw} dB	System reference
BS 30 minutes fire resistance[2]							
1	Gyproc WallBoard		1 x 12.5	10	56 (50)	68	C100016
2	Gyproc SoundBloc	ACTIV air	1 x 12.5	13	61 (51)	60	C100018
3	Gyproc SoundBloc	ACTIV air	2 x 12.5	23	64 (55)	57	C100019
BS 60 minutes fire resistance							
4	Gyproc FireLine		2 x 15	25	64 (55)	57	C106051 / C100019

Table 4.1b – CasoLine MF ceiling system to the underside of concrete slab to satisfy the requirements of *BS EN 1364-2: 1999*

Detail	Board type	Ceiling lining thickness mm	Approx. ceiling weight kg/m^2	Sound insulation[1] Airborne R_w ($R_w + C_{tr}$) dB	Sound insulation[1] Impact L_{nw} dB	System reference
EN 30 minutes fire resistance						
4	Gyproc FireLine	2 x 12.5	22	64 (55)	57	C106046 / C100019
EN 60 minutes fire resistance						
4	Glasroc F FIRECASE	2 x 15	28	64 (55)	57	G106040 / C100019

[1] Based on floor substrate achieving 35 R_w dB (airborne) and 91 L_{nw} dB (impact).
[2] Single layer ceiling specification based on 30 minute fire resistance contribution from floor substrate
[3] These systems have an **ACTIV*air*** board option available for formaldehyde control to improve indoor air quality. Alternatively, all systems can be skim finished with Thistle PureFinish which contains **ACTIV*air*** technology. Refer to the indoor air quality section in Background & theory.

Internal floors

Typically, concrete floors provide sufficient performance to meet acoustic requirements without contribution from the ceiling. Should the project require enhanced performance, an appropriate system can be selected from the separating floor table on the previous page.

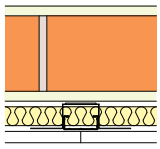
Where it is necessary to control reverberation time for enhanced acoustic comfort, e.g. improved speech clarity within a conference room, we would recommend the use of Gyptone or Rigitone ceiling boards. Refer to the ceiling section within **Background & theory**.

Separating walls

Masonry separating walls

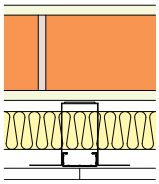
GypLyner UNIVERSAL

1



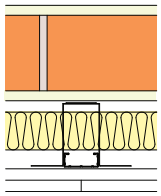
Solid masonry wall of mass 200kg/m^2 with Gyproc SoundCoat Plus or Thistle plaster each side. Lined one side with **GypLyner UNIVERSAL** system incorporating 25mm Isover Acoustic Partition Roll (APR 1200) within 35mm cavity. Linings as in table.

2



Solid masonry wall of mass 200kg/m^2 with Gyproc SoundCoat Plus or Thistle plaster each side. Lined one side with **GypLyner UNIVERSAL** system incorporating 50mm Isover Acoustic Partition Roll (APR 1200) within 85mm cavity. Linings as in table.

3



Solid masonry wall of mass 200kg/m^2 with Gyproc SoundCoat Plus or Thistle plaster each side. Lined one side with **GypLyner UNIVERSAL** system incorporating 50mm Isover Acoustic Partition Roll (APR 1200) within 85mm cavity. Linings as in table.

Table 4.2 – GypLyner UNIVERSAL linings to masonry construction to satisfy the requirements of *BS 476: Part 21: 1987*

Detail	Board type	Available with ACTIV*air* technology[2]	Wall lining thickness mm	System cavity size including insulation mm	Performance of base wall R_w ($R_w + C_{tr}$) dB	Sound insulation: Airborne R_w ($R_w + C_{tr}$) dB	Sound insulation: Improvement over base wall R_w ($R_w + C_{tr}$) dB	System reference
BS **120 minutes fire resistance[1]**								
1	Gyproc SoundBloc	ACTIV air	2 x 12.5	35	47 (44)	60 (55)	+13 (+11)	B226003
2	Gyproc SoundBloc	ACTIV air	1 x 12.5	85	47 (44)	64 (56)	+17 (+12)	B226007
3	Gyproc SoundBloc	ACTIV air	2 x 12.5	85	47 (44)	66 (59)	+19 (+15)	B226005

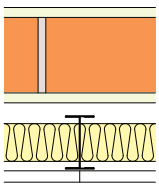
[1] The fire resistance quoted is that provided by the masonry wall without contribution from the lining.

[2] These systems have an **ACTIV*air*** board option available for formaldehyde control to improve indoor air quality. Alternatively, all systems can be skim finished with Thistle PureFinish which contains **ACTIV*air*** technology. Refer to the indoor air quality section in Background & theory.

Masonry separating walls

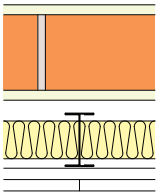
GypLyner IWL

1



Solid masonry wall of mass 180kg/m^2 with Gyproc SoundCoat Plus or Thistle plaster. Lined one side with **GypLyner IWL** system incorporating 50mm Isover Steel Frame Infill Batt (minimum 10mm stand-off from face of masonry). Linings as in table.

2



Solid masonry wall of mass 180kg/m^2 with Gyproc SoundCoat Plus or Thistle plaster. Lined one side with **GypLyner IWL** system incorporating 50mm Isover Steel Frame Infill Batt (minimum 10mm stand-off from face of masonry). Linings as in table.

Table 4.3a – GypLyner IWL lining to masonry construction to satisfy the requirements of *BS 476: Part 21: 1987*

Detail	Board type	Wall lining thickness mm	Minimum system cavity size including insulation mm	Performance of base wall R_w ($R_w + C_{tr}$) dB	Sound insulation		System reference
					Airborne R_w ($R_w + C_{tr}$) dB	Improvement over base wall R_w ($R_w + C_{tr}$) dB	
BS 120 minutes fire resistance[1]							
1	Gyproc WallBoard	1 x 15	58	45 (42)	59 (51)	+14 (+9)	B216002
2	Gyproc WallBoard	2 x 12.5	58	45 (42)	61 (54)	+16 (+12)	B216031

A range of studs are available for use within the **GypWall IWL** system depending on height requirements. See **Table 4.3b** below.

Table 4.3b – GypLyner IWL maximum heights for Gypframe 'I' Studs at 600mm centres

Gypframe 'I' Stud	Maximum height (mm)[2]	
	Single layer 15mm Gyproc WallBoard	Double layer 12.5mm Gyproc WallBoard
48 I 50	2400	2700
60 I 50	2700	3000
60 I 70	3300	3600
70 I 70	3900	4200

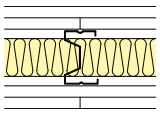
[1] The fire resistance quoted is that provided by the masonry wall without contribution from the lining.
[2] Based on a limiting deflection of L/240 at 200 Pa.

NB For heights between 4200mm and 8000mm, Gypframe Deep Flange Floor & Ceiling Channel should be used at base and at head (subject to deflection criteria).

Steel frame separating walls

Single frame solutions – 70mm Gypframe AcouStud

1



70mm Gypframe 70 AS 50 AcouStuds at 600mm centres,
50mm Isover Acoustic Partition Roll (APR 1200).
Linings as in table.

Table 4.4a – GypWall **CLASSIC** partitions to satisfy the requirements of *BS 476-22: 1987*

Detail	Partition thickness mm	Board type	Available with ACTIV*air* technology[3]	Lining thickness mm	Approx. weight kg/m^2	Max. partition height[1] mm	Sound insulation Airborne Rw ($R_w + C_{tr}$) dB		Duty rating	System reference	
							Any finish[4]	Skim finish[5]		Any finish[4]	Skim finish[5]
BS	**90 minutes fire resistance**										
1	132	Gyproc SoundBloc		2 x 15	52	5000	58 (52)	59 (52)	Severe	A206A231	A206A231S

Table 4.4b – GypWall **CLASSIC** partitions to satisfy the requirements of *BS EN 1364-1: 1999*

Detail	Partition thickness mm	Board type	Available with ACTIV*air* technology[3]	Lining thickness mm	Approx. weight kg/m^2	Max. partition height[2] mm	Sound insulation Airborne Rw ($R_w + C_{tr}$) dB		Duty rating	System reference	
							Any finish[4]	Skim finish[5]		Any finish[4]	Skim finish[5]
EN	**90 minutes fire resistance**										
1	132	Gyproc SoundBloc		2 x 15	52	4000	58 (52)	59 (52)	Severe	A206A231	A206A231S

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

[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 the more onerous.

[3] These systems have an **ACTIV*air*** board option available for formaldehyde control to improve indoor air quality. Alternatively, all systems can be skim finished with Thistle PureFinish which contains **ACTIV*air*** technology. Refer to the indoor air quality section in Background & theory.

[4] Sound insulation performance for partitions finished using jointing or plaster skim.

[5] Sound insulation performance for partitions finished with a 2mm skim finish of Thistle Multi-Finish.

NB For 120 minutes fire resistance whilst maintaining sound insulation performance, use Gyproc DuraLine in lieu of Gyproc SoundBloc.

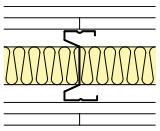
NB The fire resistance and sound insulation performances are for imperforate partitions, walls and ceilings incorporating boards with all joints taped and filled, or skimmed according to British Gypsum's recommendations. The quoted performances are achieved only if British Gypsum components are used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

NB For heights between 4200mm and 8000mm, Gypframe Deep Flange Floor & Ceiling Channel should be used at base and at head (subject to deflection criteria).

Steel frame separating walls

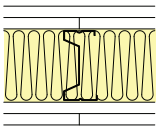
Single frame solutions – 92mm Gypframe AcouStud

1



92mm Gypframe 92 AS 50 AcouStuds at 600mm centres, 50mm Isover Acoustic Partition Roll (APR 1200). Linings as in table.

2



92mm Gypframe 92 AS 50 AcouStuds at 600mm centres, 100mm Isover Modular Roll. Linings as in table.

Table 4.5a – GypWall CLASSIC partitions to satisfy the requirements of *BS 476-22: 1987*

Detail	Partition thickness mm	Board type	Available with ACTIV*air* technology[3]	Lining thickness mm	Approx. weight kg/m²	Max. partition height[1] mm	Sound insulation Airborne R_w ($R_w + C_{tr}$) dB		Duty rating	System reference	
							Any finish[4]	Skim finish[5]		Any finish[4]	Skim finish[5]
BS 60 minutes fire resistance											
1	144	Gyproc SoundBloc		2 x 12.5	52	5800	58 (53)	59 (53)	Severe	A206A291	A206A291S
2	144	Gyproc SoundBloc		2 x 12.5	52	5800	59 (54)	60 (54)	Severe	A206A292	A206A292S

Table 4.5b – GypWall CLASSIC partitions to satisfy the requirements of *BS EN 1364-1: 1999*

Detail	Partition thickness mm	Board type	Available with ACTIV*air* technology[3]	Lining thickness mm	Approx. weight kg/m²	Max. partition height[1] mm	Sound insulation Airborne R_w ($R_w + C_{tr}$) dB		Duty rating	System reference	
							Any finish[4]	Skim finish[5]		Any finish[4]	Skim finish[5]
EN 60 minutes fire resistance											
1	144	Gyproc SoundBloc		2 x 12.5	52	5000	58 (53)	59 (53)	Severe	A206A291	A206A291S
2	144	Gyproc SoundBloc		2 x 12.5	52	5000	59 (54)	60 (54)	Severe	A206A292	A206A292S

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

[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 the more onerous.

[3] These systems have an **ACTIV*air*** board option available for formaldehyde control to improve indoor air quality. Alternatively, all systems can be skim finished with Thistle PureFinish which contains **ACTIV*air*** technology. Refer to the indoor air quality section in Background & theory.

[4] Sound insulation performance for partitions finished using jointing or plaster skim.

[5] Sound insulation performance for partitions finished with a 2mm skim finish of Thistle Multi-Finish.

NB For 90 minutes fire resistance whilst maintaining sound insulation performance, use 15mm Gyproc SoundBloc in lieu of 12.5mm Gyproc SoundBloc.

NB For 120 minutes fire resistance whilst maintaining sound insulation performance, use Gyproc DuraLine in lieu of Gyproc SoundBloc.

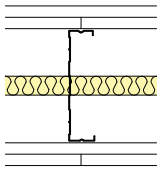
NB The fire resistance and sound insulation performances are for imperforate partitions, walls and ceilings incorporating boards with all joints taped and filled, or skimmed according to British Gypsum's recommendations. The quoted performances are achieved only if British Gypsum components are used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

NB For heights between 4200mm and 8000mm, Gypframe Deep Flange Floor & Ceiling Channel should be used at base and at head (subject to deflection criteria).

Steel frame separating walls

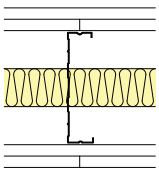
Single frame solutions – 146mm Gypframe AcouStud

1



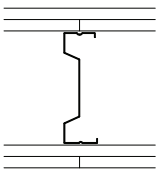
146mm Gypframe 146 S 50 'C' Studs at 600mm centres, 25mm Isover Acoustic Partition Roll (APR 1200). Linings as in table.

2



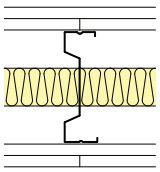
146mm Gypframe 146 S 50 'C' Studs at 600mm centres, 50mm Isover Acoustic Partition Roll (APR 1200). Linings as in table.

3



146mm Gypframe 146 AS 50 AcouStuds at 600mm centres. Linings as in table.

4



146mm Gypframe 146 AS 50 AcouStuds at 600mm centres, 50mm Isover Acoustic Partition Roll (APR 1200). Linings as in table.

Table 4.6a – GypWall CLASSIC partitions to satisfy the requirements of *BS 476-22: 1987*

Detail	Partition thickness mm	Board type	Available with ACTIV*air* technology[3]	Lining thickness mm	Approx. weight kg/m²	Max. partition height[1] mm	Sound insulation Airborne R_w ($R_w + C_{tr}$) dB		Duty rating	System reference	
							Any finish[4]	Skim finish[5]		Any finish[4]	Skim finish[5]
BS 90 minutes fire resistance											
1	208	Gyproc SoundBloc		2 x 15	51	7900	58 (52)		Severe	A206211	
2	208	Gyproc SoundBloc		2 x 15	52	7900	59 (53)	60 (53)	Severe	A206243	A206243S
3	208	Gyproc SoundBloc		2 x 15	51	8100	59 (54)	60 (54)	Severe	A206A179	A206A179S
4	208	Gyproc SoundBloc		2 x 15	52	8100	61 (56)	62 (56)	Severe	A206A243	A206A243S

Table 4.6b – GypWall CLASSIC partitions to satisfy the requirements of *BS EN 1364-1: 1999*

Detail	Partition thickness mm	Board type	Available with ACTIV*air* technology[3]	Lining thickness mm	Approx. weight kg/m²	Max. partition height[1] mm	Sound insulation Airborne R_w ($R_w + C_{tr}$) dB		Duty rating	System reference	
							Any finish[4]	Skim finish[5]		Any finish[4]	Skim finish[5]
EN 90 minutes fire resistance											
1	208	Gyproc SoundBloc		2 x 15	51	4000	58 (52)		Severe	A206211	
2	208	Gyproc SoundBloc		2 x 15	52	4000	59 (53)	60 (53)	Severe	A206243	A206243S
3	208	Gyproc SoundBloc		2 x 15	51	4000	59 (54)	60 (54)	Severe	A206A179	A206A179S
4	208	Gyproc SoundBloc		2 x 15	52	4000	61 (56)	62 (56)	Severe	A206A243	A206A243S

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

[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 the more onerous.

[3] These systems have an **ACTIV*air*** board option available for formaldehyde control to improve indoor air quality. Alternatively, all systems can be skim finished with Thistle PureFinish which contains **ACTIV*air*** technology. Refer to the indoor air quality section in Background & theory.

[4] Sound insulation performance for partitions finished using jointing or plaster skim.

[5] Sound insulation performance for partitions finished with a 2mm skim finish of Thistle Multi-Finish.

NB For 120 minutes fire resistance whilst maintaining sound insulation performance, use Gyproc DuraLine in lieu of Gyproc SoundBloc.

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 components are used throughout, and the company's fixing recommendations are strictly observed. Any variation in the specifications should be checked with British Gypsum.

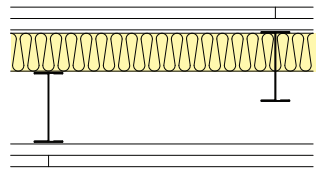
NB For heights between 4200mm and 8000mm, Gypframe Deep Flange Floor & Ceiling Channel should be used at base and at head (subject to deflection criteria).

NB For heights over 8000mm, Gypframe Extra Deep Flange Floor & Ceiling Channel should be used at head and base.

Steel frame separating walls

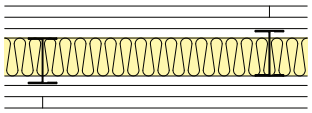
Single frame solutions – Staggered stud

1



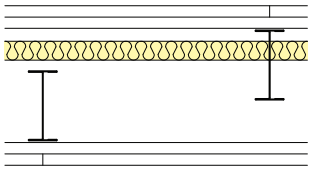
Staggered rows of 92mm Gypframe 92 I 90 'I' Studs at 600mm centres, 50mm Isover Acoustic Partition Roll (APR 1200). Linings as in table.

2



Staggered rows of 60mm Gypframe 60 I 70 'I' Studs at 600mm centres, 50mm Isover Acoustic Partition Roll (APR 1200). Linings as in table.

3



Staggered rows of 92mm Gypframe 92 I 90 'I' Studs at 600mm centres, 25mm Isover Acoustic Partition Roll (APR 1200). Linings as in table.

Table 4.7a – GypWall STAGGERED partitions to satisfy the requirements of *BS 476-22: 1987*

Detail	Partition thickness mm	Board type	Available with ACTIV*air* technology[3]	Lining thickness mm	Approx. weight kg/m²	Max. partition height[1] mm	Sound insulation Airborne R_w ($R_w + C_{tr}$) dB		Duty rating		System reference	
							Any finish[4]	Skim finish[5]		Any finish[4]		Skim finish[5]
BS	**60 minutes fire resistance**											
1	198	Gyproc SoundBloc	✓	2 x 12.5	44	5700	62 (53)		Severe	A233027		
BS	**90 minutes fire resistance**											
2	132	Gyproc SoundBloc	✓	2 x 15	53	3900	61 (53)		Severe	A233023		
3	208	Gyproc SoundBloc	✓	2 x 15	53	6000	62 (54)	63 (54)	Severe	A233008	A233008S	
1	208	Gyproc SoundBloc	✓	2 x 15	53	6000	63 (55)		Severe	A233028		

Table 4.7b – GypWall STAGGERED partitions to satisfy the requirements of *BS EN 1364-1: 1999*

Detail	Partition thickness mm	Board type	Available with ACTIV*air* technology[3]	Lining thickness mm	Approx. weight kg/m²	Max. partition height[1] mm	Sound insulation Airborne R_w ($R_w + C_{tr}$) dB		Duty rating		System reference	
							Any finish[4]	Skim finish[5]		Any finish[4]		Skim finish[5]
EN	**60 minutes fire resistance**											
1	198	Gyproc SoundBloc	✓	2 x 12.5	44	5700	62 (53)		Severe	A233027		
EN	**90 minutes fire resistance**											
2	132	Gyproc SoundBloc	✓	2 x 15	53	3900	61 (53)		Severe	A233023		
3	208	Gyproc SoundBloc	✓	2 x 15	53	5000	62 (54)	63 (54)	Severe	A233008	A233008S	
1	208	Gyproc SoundBloc	✓	2 x 15	53	5000	63 (55)		Severe	A233028		

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

[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 the more onerous.

[3] These systems have an **ACTIV*air*** board option available for formaldehyde control to improve indoor air quality. Alternatively, all systems can be skim finished with Thistle PureFinish which contains **ACTIV*air*** technology. Refer to the indoor air quality section in Background & theory.

[4] Sound insulation performance for partitions finished using jointing or plaster skim.

[5] Sound insulation performance for partitions finished with a 2mm skim finish of Thistle Multi-Finish.

NB For 120 minutes fire resistance whilst maintaining sound insulation performance, use Gyproc DuraLine in lieu of Gyproc SoundBloc.

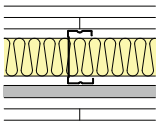
NB The fire resistance and sound insulation performances are for imperforate partitions, walls and ceilings incorporating boards with all joints taped and filled, or skimmed according to British Gypsum's recommendations. The quoted performances are achieved only if British Gypsum components are used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

NB For heights between 4200mm and 8000mm, Gypframe Deep Flange Floor & Ceiling Channel should be used at base and at head (subject to deflection criteria).

Steel frame separating walls

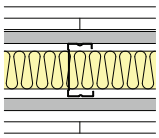
Single frame solutions – Gypframe 'C' Stud with Gypframe RBI Resilient Bar

1



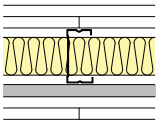
70mm Gypframe 70 S 50 'C' Studs at 600mm centres with Gypframe RB1 Resilient Bar at 600mm centres to one side. 50mm Isover Acoustic Partition Roll (APR 1200). Linings as in table.

2



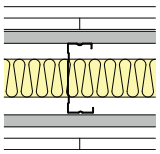
70mm Gypframe 70 S 50 'C' Studs at 600mm centres with Gypframe RB1 Resilient Bar at 600mm centres to both sides. 50mm Isover Acoustic Partition Roll (APR 1200). Linings as in table.

3



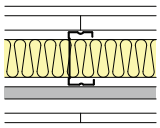
92mm Gypframe 92 S 50 'C' Studs at 600mm centres with Gypframe RB1 Resilient Bar at 600mm centres to one side. 50mm Isover Acoustic Partition Roll (APR 1200). Linings as in table.

4



92mm Gypframe 92 S 50 'C' Studs at 600mm centres with Gypframe RB1 Resilient Bar at 600mm centres to both sides. 50mm Isover Acoustic Partition Roll (APR 1200). Linings as in table.

5



70mm Gypframe 70 S 50 'C' Studs at 600mm centres with Gypframe RB1 Resilient Bar at 600mm centres to one side. 50mm Isover Acoustic Partition Roll (APR 1200). Linings as in table.

Table 4.8a – GypWall QUIET SF partitions to satisfy the requirements of *BS 476-22: 1987*

Detail	Partition thickness mm	Board type	Available with ACTIV*air* technology[2]	Lining thickness mm	Approx. weight kg/m^2	Max. partition height[1] mm	Sound insulation Airborne R_w ($R_w + C_{tr}$) dB	Duty rating	System reference
BS 60 minutes fire resistance									
1	137	Gyproc SoundBloc	ACTIV air	2 x 12.5	43	4000	61 (53)	Severe	A316008
2	152	Gyproc SoundBloc	ACTIV air	2 x 12.5	43	3200	62 (55)	Severe	A316012
3	159	Gyproc SoundBloc	ACTIV air	2 x 12.5	43	5000	61 (53)	Severe	A316014
4	174	Gyproc SoundBloc	ACTIV air	2 x 12.5	43	4000	63 (55)	Severe	A316015
BS 90 minutes fire resistance									
1	147	Gyproc SoundBloc	ACTIV air	2 x 15	51	4200	62 (54)	Severe	A316009
5	150	Gyproc Plank + Gyproc WallBoard		19 + 12.5	49	3700	61 (53)	Severe	A316010
5	150	Gyproc Plank + Gyproc SoundBloc	ACTIV air	19 + 12.5	54	3700	63 (54)	Severe	A316011
2	162	Gyproc SoundBloc	ACTIV air	2 x 15	51	3200	65 (57)	Severe	A316013

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

[2] These systems have an **ACTIV*air*** board option available for formaldehyde control to improve indoor air quality. Alternatively, all systems can be skim finished with Thistle PureFinish which contains **ACTIV*air*** technology. Refer to the indoor air quality section in Background & theory.

NB For 120 minutes fire resistance whilst maintaining sound insulation performance, use Gyproc DuraLine in lieu of Gyproc SoundBloc (excluding Detail 5).

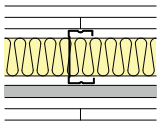
NB The fire resistance and sound insulation performances are for imperforate partitions, walls and ceilings incorporating boards with all joints taped and filled, or skimmed according to British Gypsum's recommendations. The quoted performances are achieved only if British Gypsum components are used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

NB For heights between 4200mm and 8000mm, Gypframe Deep Flange Floor & Ceiling Channel should be used at base and at head (subject to deflection criteria).

Steel frame separating walls

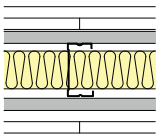
Single frame solutions – Gypframe 'C' Stud with Gypframe RBI Resilient Bar

1



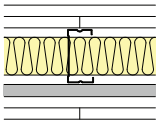
70mm Gypframe 70 S 50 'C' Studs at 600mm centres with Gypframe RB1 Resilient Bar at 600mm centres to one side. 50mm Isover Acoustic Partition Roll (APR 1200). Linings as in table.

2



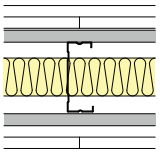
70mm Gypframe 70 S 50 'C' Studs at 600mm centres with Gypframe RB1 Resilient Bar at 600mm centres to both sides. 50mm Isover Acoustic Partition Roll (APR 1200). Linings as in table.

3



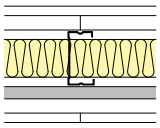
92mm Gypframe 92 S 50 'C' Studs at 600mm centres with Gypframe RB1 Resilient Bar at 600mm centres to one side. 50mm Isover Acoustic Partition Roll (APR 1200). Linings as in table.

4



92mm Gypframe 92 S 50 'C' Studs at 600mm centres with Gypframe RB1 Resilient Bar at 600mm centres to both sides. 50mm Isover Acoustic Partition Roll (APR 1200). Linings as in table.

5



70mm Gypframe 70 S 50 'C' Studs at 600mm centres with Gypframe RB1 Resilient Bar at 600mm centres to one side. 50mm Isover Acoustic Partition Roll (APR 1200). Linings as in table.

Table 4.8b – GypWall QUIET SF partitions to satisfy the requirements of *BS EN 1364-1: 1999*

Detail	Partition thickness mm	Board type	Available with ACTIV*air* technology[2]	Lining thickness mm	Approx. weight kg/m^2	Max. partition height[1] mm	Sound insulation Airborne R_w ($R_w + C_{tr}$) dB	Duty rating	System reference
EN 60 minutes fire resistance									
1	137	Gyproc SoundBloc		2 x 12.5	43	4000	61 (53)	Severe	A316008
2	152	Gyproc SoundBloc		2 x 12.5	43	3200	62 (55)	Severe	A316012
3	159	Gyproc SoundBloc		2 x 12.5	43	5000	61 (53)	Severe	A316014
4	174	Gyproc SoundBloc		2 x 12.5	43	4000	63 (55)	Severe	A316015
EN 90 minutes fire resistance									
1	147	Gyproc SoundBloc		2 x 15	51	4200	62 (54)	Severe	A316009
5	150	Gyproc Plank + Gyproc SoundBloc		19 + 12.5	54	3700	63 (54)	Severe	A316011
2	162	Gyproc SoundBloc		2 x 15	51	3200	65 (57)	Severe	A316013

[1] 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 the more onerous.
[2] These systems have an **ACTIV*air*** board option available for formaldehyde control to improve indoor air quality. Alternatively, all systems can be skim finished with Thistle PureFinish which contains **ACTIV*air*** technology. Refer to the indoor air quality section in Background & theory.

NB For 120 minutes fire resistance whilst maintaining sound insulation performance, use Gyproc DuraLine in lieu of Gyproc SoundBloc (excluding Detail 5).

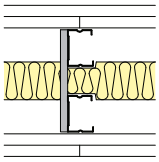
NB The fire resistance and sound insulation performances are for imperforate partitions, walls and ceilings incorporating boards with all joints taped and filled, or skimmed according to British Gypsum's recommendations. The quoted performances are achieved only if British Gypsum components are used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

NB For heights between 4200mm and 8000mm, Gypframe Deep Flange Floor & Ceiling Channel should be used at base and at head (subject to deflection criteria).

Steel frame separating walls

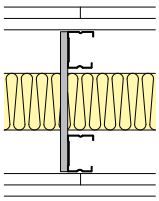
Twin frame solutions – 48mm Gypframe 'C' Studs

1



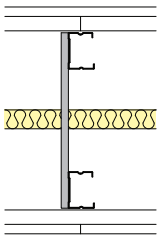
Two rows of 48mm Gypframe 48 S 50 'C' Studs at 600mm centres, braced at 1200mm centres max. 50mm Isover Acoustic Partition Roll (APR 1200). Width between frames 40mm (min). Linings as in table.

2



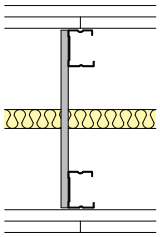
Two rows of 48mm Gypframe 48 S 50 'C' Studs at 600mm centres, braced at 1200mm centres max. 75mm Isover Acoustic Slab. Width between frames 90mm (min). Linings as in table.

3



Two rows of 48mm Gypframe 48 S 50 'C' Studs at 600mm centres, braced at 1200mm centres max. 25mm Isover Acoustic Partition Roll (APR 1200). Width between frames 137mm (min). Linings as in table.

4



Two rows of 48mm Gypframe 48 S 50 'C' Studs at 600mm centres, braced at 1200mm centres max. 25mm Isover Acoustic Partition Roll (APR 1200). Width between frames 140mm (min). Linings as in table.

Table 4.9a – GypWall QUIET partitions to satisfy the requirements of *BS 476-22: 1987*

Detail	Partition thickness mm	Board type	Available with ACTIV*air* technology[2]	Lining thickness mm	Approx. weight kg/m²	Max. partition height[1] mm	Sound insulation Airborne R_w ($R_w + C_{tr}$) dB		Duty rating	System reference	
							Any finish[3]	Skim finish[4]		Any finish[3]	Skim finish[4]
BS 90 minutes fire resistance											
1	200	Gyproc SoundBloc		2 x 15	55	7500	62 (56)	63 (56)	Severe	A216009	A216009S
2	250	Gyproc SoundBloc		2 x 15	55	7500	63 (57)	64 (57)	Severe	A216011	A216011S
3	300	Gyproc Plank + Gyproc SoundBloc		19 + 12.5	55	6200	62 (52)		Severe	A216002	
4	300	Gyproc SoundBloc		2 x 15	55	7500	63 (57)	64 (57)	Severe	A216008	A216008S
BS 120 minutes fire resistance											
1	200	Gyproc FireLine		2 x 15	52	7500	60 (53)	61 (53)	Severe	A216010	A216010S

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

[2] These systems have an **ACTIV*air*** board option available for formaldehyde control to improve indoor air quality. Alternatively, all systems can be skim finished with Thistle PureFinish which contains **ACTIV*air*** technology. Refer to the indoor air quality section in Background & theory.

[3] Sound insulation performance for partitions finished using jointing or plaster skim.

[4] Sound insulation performance for partitions finished with a 2mm skim finish of Thistle Multi-Finish.

NB For 120 minutes fire resistance whilst maintaining sound insulation performance, use Gyproc DuraLine in lieu of Gyproc SoundBloc (excluding Detail 3).

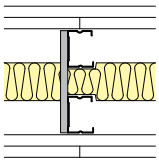
NB The fire resistance and sound insulation performances are for imperforate partitions, walls and ceilings incorporating boards with all joints taped and filled, or skimmed according to British Gypsum's recommendations. The quoted performances are achieved only if British Gypsum components are used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

NB For heights between 4200mm and 8000mm, Gypframe Deep Flange Floor & Ceiling Channel should be used at base and at head (subject to deflection criteria).

Steel frame separating walls

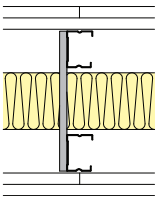
Twin frame solutions – 48mm Gypframe 'C' Studs

1



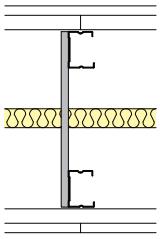
Two rows of 48mm Gypframe 48 S 50 'C' Studs at 600mm centres, braced at 1200mm centres max. 50mm Isover Acoustic Partition Roll (APR 1200). Width between frames 40mm (min). Linings as in table.

2



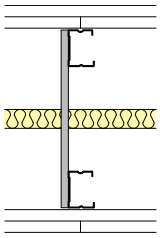
Two rows of 48mm Gypframe 48 S 50 'C' Studs at 600mm centres, braced at 1200mm centres max. 75mm Isover Acoustic Slab. Width between frames 90mm (min). Linings as in table.

3



Two rows of 48mm Gypframe 48 S 50 'C' Studs at 600mm centres, braced at 1200mm centres max. 25mm Isover Acoustic Partition Roll (APR 1200). Width between frames 137mm (min). Linings as in table.

4



Two rows of 48mm Gypframe 48 S 50 'C' Studs at 600mm centres, braced at 1200mm centres max. 25mm Isover Acoustic Partition Roll (APR 1200). Width between frames 140mm (min). Linings as in table.

Table 4.9b – GypWall QUIET partitions to satisfy the requirements of *BS EN 1364-1: 1999*

Detail	Partition thickness mm	Board type	Available with ACTIV*air* technology[2]	Lining thickness mm	Approx. weight kg/m²	Max. partition height[1] mm	Sound insulation Airborne R_w ($R_w + C_{tr}$) dB		Duty rating	System reference	
							Any finish[3]	Skim finish[4]		Any finish[3]	Skim finish[4]
EN 60 minutes fire resistance											
1	200	Gyproc SoundBloc	ACTIV air	2 x 15	55	6200	62 (56)	63 (56)	Severe	A216009	A216009S
2	250	Gyproc SoundBloc	ACTIV air	2 x 15	55	6200	63 (57)	64 (57)	Severe	A216011	A216011S
3	300	Gyproc Plank + Gyproc SoundBloc	ACTIV air	19 + 12.5	55	6200	62 (52)		Severe	A216002	
4	300	Gyproc SoundBloc	ACTIV air	2 x 15	55	6200	63 (57)	64 (57)	Severe	A216008	A216008S
EN 90 minutes fire resistance											
1	200	Gyproc SoundBloc	ACTIV air	2 x 15	55	5000	62 (56)	63 (56)	Severe	A216009	A216009S
2	250	Gyproc SoundBloc	ACTIV air	2 x 15	55	5000	63 (57)	64 (57)	Severe	A216011	A216011S
3	300	Gyproc Plank Gyproc + SoundBloc	ACTIV air	19 + 12.5	55	5000	62 (52)		Severe	A216002	
4	300	Gyproc SoundBloc	ACTIV air	2 x 15	55	5000	63 (57)	64 (57)	Severe	A216008	A216008S
EN 120 minutes fire resistance											
1	200	Gyproc FireLine		2 x 15	52	7500	60 (53)	61 (53)	Severe	A216010	A216010S

[1] 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 the more onerous.

[2] These systems have an **ACTIV*air*** board option available for formaldehyde control to improve indoor air quality. Alternatively, all systems can be skim finished with Thistle PureFinish which contains **ACTIV*air*** technology. Refer to the indoor air quality section in Background & theory.

[3] Sound insulation performance for partitions finished using jointing or plaster skim.

[4] Sound insulation performance for partitions finished with a 2mm skim finish of Thistle Multi-Finish.

NB For 120 minutes fire resistance whilst maintaining sound insulation performance, use Gyproc DuraLine in lieu of Gyproc SoundBloc (excluding Detail 3).

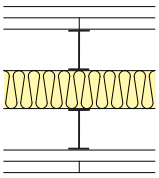
NB The fire resistance and sound insulation performances are for imperforate partitions, walls and ceilings incorporating boards with all joints taped and filled, or skimmed according to British Gypsum's recommendations. The quoted performances are achieved only if British Gypsum components are used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

NB For heights between 4200mm and 8000mm, Gypframe Deep Flange Floor & Ceiling Channel should be used at base and at head (subject to deflection criteria).

Steel frame separating walls

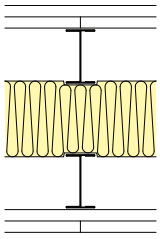
Twin frame solutions – Gypframe 'I' Studs

1



Two rows of 48mm Gypframe 48 I 50 'I' Studs at 600mm centres, 50mm Isover Acoustic Partition Roll (APR 1200). Width between frames 40mm (min). Linings as in table.

2



Two rows of 60mm Gypframe 60 I 50 'I' Studs at 600mm centres, 100mm Isover Acoustic Partition Roll (APR 1200). Width between frames 66mm (min). Linings as in table.

Table 4.10a – GypWall QUIET IWL partitions to satisfy the requirements of *BS 476-22: 1987*

Detail	Partition thickness mm	Board type	Available with ACTIV*air* technology[4]	Lining thickness mm	Approx. weight kg/m^2	Max. partition height[1] mm	Sound insulation Airborne R_w ($R_w + C_{tr}$) dB	Duty rating	System reference
BS 90 minutes fire resistance									
1	200	Gyproc SoundBloc	ACTIV air	2 x 15	55	2800	66 (58)	Severe	A216014
2	250	Gyproc SoundBloc	ACTIV air	2 x 15	55	3300	70 (62)	Severe	A216013

A range of studs are available for use within the GypWall QUIET IWL system depending on height requirements. See Table 4.10b below.

Table 4.10b – GypLyner QUIET IWL maximum heights for Gypframe 'I' Studs at 600mm centres

Gypframe 'I' Stud	Maximum height for double layer 15mm boards mm[1]
48 I 50	2800
60 I 50	3300
60 I 70	3900
70 I 70	4300[2]

Table 4.10c – GypWall QUIET IWL partitions to satisfy the requirements of *BS EN 1364-1: 1999*

Detail	Partition thickness mm	Board type	Available with ACTIV*air*[4] technology[4]	Lining thickness mm	Approx. weight kg/m^2	Max. partition height[1] mm	Sound insulation Airborne R_w ($R_w + C_{tr}$) dB	Duty rating	System reference
EN 90 minutes fire resistance									
1	200	Gyproc SoundBloc	ACTIV air	2 x 15	55	2800	66 (58)	Severe	A216014
2	250	Gyproc SoundBloc	ACTIV air	2 x 15	55	3300	70 (62)	Severe	A216013

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

[2] Limited to 4000mm to EN fire resistance.

[3] 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 the more onerous.

[4] These systems have an **ACTIV*air*** board option available for formaldehyde control to improve indoor air quality. Alternatively, all systems can be skim finished with Thistle PureFinish which contains **ACTIV*air*** technology. Refer to the indoor air quality section in Background & theory.

NB For 120 minutes fire resistance whilst maintaining sound insulation performance, use Gyproc DuraLine in lieu of Gyproc SoundBloc.

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 components are used throughout, and the company's fixing recommendations are strictly observed. Any variation in the specifications should be checked with British Gypsum.

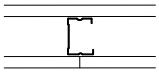
NB For heights between 4200mm and 8000mm, Gypframe Deep Flange Floor & Ceiling Channel should be used at base and at head (subject to deflection criteria).

Internal partitions

Steel frame internal partitions

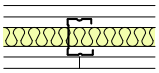
48mm Gypframe 'C' Stud solutions

1



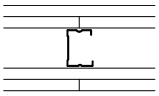
48mm Gypframe 48 S 50 'C' Studs at 600mm centres. Linings as in table.

2



48mm Gypframe 48 S 50 'C' Studs at 600mm centres, 25mm Isover Acoustic Partition Roll (APR 1200) in the cavity. Linings as in table.

3



48mm Gypframe 48 S 50 'C' Studs at 600mm centres. Linings as in table.

Table 4.11a – GypWall CLASSIC partitions to satisfy the requirements of *BS 476-22: 1987*

Detail	Partition thickness mm	Board type	Available with ACTIV*air* technology[4]	Lining thickness mm	Approx. weight kg/m²	Max. partition height[1] mm	Sound insulation Airborne R_w ($R_w + C_{tr}$) dB		Duty rating		System reference
							Any finish[5]	Skim finish[6]		Any finish[5]	Skim finish[6]
BS 30 minutes fire resistance											
1	80	Gyproc WallBoard		1 x 15	21	2800	36		Medium	A206002	
2	80	Gyproc WallBoard		1 x 15	21	2800	42		Medium	A206034	
2	80	Gyproc SoundBloc	ACTIV air	1 x 15	26	2800	44	45	Medium	A206185	A206185S
BS 60 minutes fire resistance											
1	80	Gyproc SoundBloc F		1 x 15	27	2800	39		Heavy	A206299	
2	80	Gyproc FireLine		1 x 15	24	2800	42		Heavy	A206098	
2	80	Gyproc SoundBloc F		1 x 15	27	2800	44	45	Heavy	A206300	A206300S
3	100	Gyproc SoundBloc	ACTIV air	2 x 12.5	43	3400	46		Severe	A206154	
BS 120 minutes fire resistance											
3	100	Gyproc FireLine		2 x 12.5	40	3400	42		Severe	A206067	

Greater heights can be achieved through the use of Gypframe 'I' Studs, refer to **Table 2.12b** below.

Table 4.11b – GypLyner CLASSIC maximum heights for Gypframe 48 I 50 'I' Studs at 600mm centres

Board lining each side (mm)	Maximum height (mm)[1]	Board lining each side (mm)	Maximum height (mm)[1]
1 x 15	3100[2]	2 x 12.5	3700[2]

Table 4.11c – GypWall CLASSIC partitions to satisfy the requirements of *BS EN 1364-1: 1999*

Detail	Partition thickness mm	Board type	Available with ACTIV*air* technology[4]	Lining thickness mm	Approx. weight kg/m²	Max. partition height[3] mm	Sound insulation Airborne R_w ($R_w + C_{tr}$) dB		Duty rating		System reference
							Any finish[5]	Skim finish[6]		Any finish[5]	Skim finish[6]
EN 30 minutes fire resistance											
1	80	Gyproc WallBoard		1 x 15	21	2800	36		Medium	A206002	
2	80	Gyproc SoundBloc	ACTIV air	1 x 15	26	2800	44	45	Medium	A206185	A206185S
2	100	Gyproc WallBoard		2 x 12.5	35	3400	42		Severe	A206003	
EN 60 minutes fire resistance											
1	80	Gyproc SoundBloc F		1 x 15	27	2800	39		Heavy	A206299	
2	80	Gyproc FireLine		1 x 15	24	2800	42		Heavy	A206098	
2	80	Gyproc SoundBloc F		1 x 15	27	2800	44	45	Heavy	A206300	A206300S
3	100	Gyproc SoundBloc	ACTIV air	2 x 12.5	43	3000	46		Severe	A206154	
EN 120 minutes fire resistance											
3	100	Gyproc FireLine		2 x 12.5	40	3000	42		Severe	A206067	

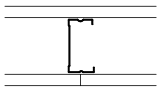
[1] Based on a limiting deflection of L/240 at 200 Pa.
[2] Limited to 3000mm to EN fire resistance.
[3] The maximum heights quoted are limited by the fire state field of application or by limiting deflection of L/240 at 200 Pa, whichever is the more onerous.
[4] These systems have an **ACTIV*air*** board option available for formaldehyde control to improve indoor air quality. Alternatively, all systems can be skim finished with Thistle PureFinish which contains **ACTIV*air*** technology. Refer to the indoor air quality section in Background & theory.
[5] Sound insulation performance for partitions finished using jointing or plaster skim.
[6] Sound insulation performance for partitions finished with a 2mm skim finish of Thistle Multi-Finish.

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 components are used throughout, and the company's fixing recommendations are strictly observed. Any variation in the specifications should be checked with British Gypsum.

Steel frame internal partitions

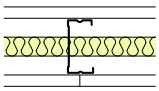
70mm Gypframe 'C' Stud solutions

1



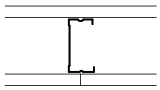
GypWall CLASSIC - 70mm Gypframe 70 S 50 'C' Studs at 600mm centres. Linings as in table.

2



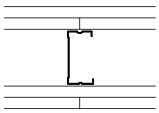
GypWall CLASSIC - 70mm Gypframe 70 S 50 'C' Studs at 600mm centres, 25mm Isover Acoustic Partition Roll (APR 1200). Linings as in table.

3



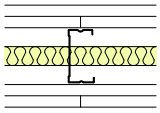
GypWall ROBUST - 70mm Gypframe 70 S 60 'C' Studs at 600mm centres. Linings as in table.

4



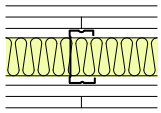
GypWall CLASSIC - 70mm Gypframe 70 S 50 'C' Studs at 600mm centres. Linings as in table.

5



GypWall CLASSIC - 70mm Gypframe 70 S 50 'C' Studs at 600mm centres, 25mm Isover Acoustic Partition Roll (APR 1200). Linings as in table.

6



GypWall CLASSIC - 70mm Gypframe 70 S 50 'C' Studs at 600mm centres, 50mm Isover Acoustic Partition Roll (APR 1200). Linings as in table.

Table 4.12a – GypWall CLASSIC and GypWall ROBUST partitions to satisfy the requirements of *BS 476-22: 1987*

Detail	Partition thickness mm	Board type	Available with ACTIV*air* technology[2]	Lining thickness mm	Approx. weight kg/m²	Max. partition height[1] mm	Sound insulation Airborne R_w ($R_w + C_{tr}$) dB		Duty rating	System reference	
							Any finish[3]	Skim finish[4]		Any finish[3]	Skim finish[4]
BS 30 minutes fire resistance											
1	97	Gyproc WallBoard		1 x 12.5	18	3600	36		Medium	A206013	
1	97	Gyproc SoundBloc	ACTIV air	1 x 12.5	22	3600	40		Medium	A206164	
2	97	Gyproc SoundBloc	ACTIV air	1 x 12.5	22	3600	45		Medium	A206196	
1	102	Gyproc WallBoard		1 x 15	22	3800	38	39	Medium	A206014	A206014S
1	102	Gyproc SoundBloc	ACTIV air	1 x 15	26	3800	42		Heavy	A206165	
2	102	Gyproc SoundBloc	ACTIV air	1 x 15	26	3800	47	48	Heavy	A206197	A206197S
BS 60 minutes fire resistance											
1	102	Gyproc FireLine		1 x 15	24	3800	37		Heavy	A206078	
1	102	Gyproc SoundBloc F		1 x 15	27	3800	42		Heavy	A206301	
3	102	Gyproc DuraLine	ACTIV air	1 x 15	29	4000	42	43	Severe	Q606043	Q606043S
2	102	Gyproc FireLine		1 x 15	24	3800	43	44	Heavy	A206110	A206110S
2	102	Gyproc SoundBloc F		1 x 15	27	3800	47	48	Heavy	A206302	A206302S
4	122	Gyproc WallBoard		2 x 12.5	35	4600	45		Severe	A206015	
4	122	Gyproc SoundBloc	ACTIV air	2 x 12.5	43	4600	49		Severe	A206166	
6	122	Gyproc WallBoard		2 x 12.5	36	4600	50		Severe	A206142	
5	122	Gyproc SoundBloc	ACTIV air	2 x 12.5	43	4600	52		Severe	A206198	
6	122	Gyproc SoundBloc	ACTIV air	2 x 12.5	44	4600	53		Severe	A206230	
BS 120 minutes fire resistance											
4	122	Gyproc FireLine		2 x 12.5	40	4600	46		Severe	A206079	
6	122	Gyproc FireLine		2 x 12.5	41	4600	50		Severe	A206144	

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

[2] These systems have an **ACTIV*air*** board option available for formaldehyde control to improve indoor air quality. Alternatively, all systems can be skim finished with Thistle PureFinish which contains **ACTIV*air*** technology. Refer to the indoor air quality section in Background & theory.

[3] Sound insulation performance for partitions finished using jointing or plaster skim.

[4] Sound insulation performance for partitions finished with a 2mm skim finish of Thistle Multi-Finish.

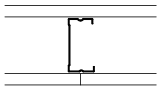
NB For heights between 4200mm and 8000mm, Gypframe Deep Flange Floor & Ceiling Channel should be used at base and at head (subject to deflection criteria).

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 components are used throughout, and the company's fixing recommendations are strictly observed. Any variation in the specifications should be checked with British Gypsum.

Steel frame internal partitions

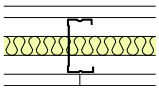
70mm Gypframe 'C' Stud solutions

1



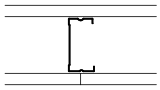
GypWall CLASSIC - 70mm Gypframe 70 S 50 'C' Studs at 600mm centres. Linings as in table.

2



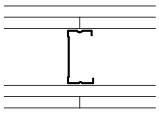
GypWall CLASSIC - 70mm Gypframe 70 S 50 'C' Studs at 600mm centres, 25mm Isover Acoustic Partition Roll (APR 1200). Linings as in table.

3



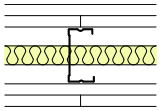
GypWall ROBUST - 70mm Gypframe 70 S 60 'C' Studs at 600mm centres. Linings as in table.

4



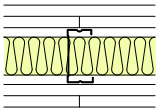
GypWall CLASSIC - 70mm Gypframe 70 S 50 'C' Studs at 600mm centres. Linings as in table.

5



GypWall CLASSIC - 70mm Gypframe 70 S 50 'C' Studs at 600mm centres, 25mm Isover Acoustic Partition Roll (APR 1200). Linings as in table.

6



GypWall CLASSIC - 70mm Gypframe 70 S 50 'C' Studs at 600mm centres, 50mm Isover Acoustic Partition Roll (APR 1200). Linings as in table.

Table 4.12b – GypWall CLASSIC and GypWall ROBUST partitions to satisfy the requirements of *BS EN 1364-1: 1999*

Detail	Partition thickness mm	Board type	Available with ACTIV*air* technology[2]	Lining thickness mm	Approx. weight kg/m²	Max. partition height[1] mm	Sound insulation Airborne R_w ($R_w + C_{tr}$) dB		Duty rating		System reference	
							Any finish[3]	Skim finish[4]		Any finish[3]		Skim finish[4]
EN 30 minutes fire resistance												
1	97	Gyproc WallBoard		1 x 12.5	18	3600	36		Medium	A206013		
1	97	Gyproc SoundBloc	ACTIV air	1 x 12.5	22	3600	40		Medium	A206164		
2	97	Gyproc SoundBloc	ACTIV air	1 x 12.5	22	3600	45		Medium	A206196		
1	102	Gyproc WallBoard		1 x 15	22	3800	38	39	Medium	A206014		A206014S
1	102	Gyproc SoundBloc	ACTIV air	1 x 15	26	3800	42		Heavy	A206165		
2	102	Gyproc SoundBloc	ACTIV air	1 x 15	26	3800	47	48	Heavy	A206197		A206197S
4	122	Gyproc WallBoard		2 x 12.5	35	4600	45		Severe	A206015		
6	122	Gyproc WallBoard		2 x 12.5	36	4600	50		Severe	A206142		
5	122	Gyproc SoundBloc	ACTIV air	2 x 12.5	43	4600	52		Severe	A206198		
6	122	Gyproc SoundBloc	ACTIV air	2 x 12.5	44	4600	53		Severe	A206230		
EN 60 minutes fire resistance												
1	102	Gyproc FireLine		1 x 15	24	3800	37		Heavy	A206078		
1	102	Gyproc SoundBloc F		1 x 15	27	3800	42		Heavy	A206301		
3	102	Gyproc DuraLine	ACTIV air	1 x 15	29	4000	42	43	Severe	Q606043		Q606043S
2	102	Gyproc FireLine		1 x 15	24	3800	43	44	Heavy	A206110		A206110S
2	102	Gyproc SoundBloc F		1 x 15	27	3800	47	48	Heavy	A206302		A206302S
4	122	Gyproc SoundBloc	ACTIV air	2 x 12.5	43	4600	49		Severe	A206166		
6	122	Gyproc WallBoard		2 x 12.5	36	4000	50		Severe	A206142		
5	122	Gyproc SoundBloc	ACTIV air	2 x 12.5	43	4000	52		Severe	A206198		
6	122	Gyproc SoundBloc	ACTIV air	2 x 12.5	44	4000	53		Severe	A206230		
EN 90 minutes fire resistance												
4	122	Gyproc FireLine		2 x 12.5	40	4600	46		Severe	A206079		
6	122	Gyproc FireLine		2 x 12.5	41	4600	50		Severe	A206144		
EN 120 minutes fire resistance												
6	122	Gyproc FireLine		2 x 12.5	41	4000	50		Severe	A206144		

[1] 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 the more onerous.

[2] These systems have an **ACTIV*air*** board option available for formaldehyde control to improve indoor air quality. Alternatively, all systems can be skim finished with Thistle PureFinish which contains **ACTIV*air*** technology. Refer to the indoor air quality section in Background & theory.

[3] Sound insulation performance for partitions finished using jointing or plaster skim.

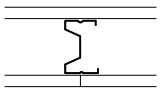
[4] Sound insulation performance for partitions finished with a 2mm skim finish of Thistle Multi-Finish.

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 components are used throughout, and the company's fixing recommendations are strictly observed. Any variation in the specifications should be checked with British Gypsum.

Steel frame internal partitions

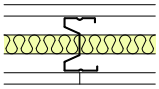
70mm Gypframe AcouStud solutions

1



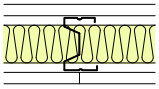
GypWall CLASSIC - 70mm Gypframe 70 AS 50 AcouStuds at 600mm centres. Linings as in table.

2



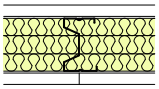
GypWall CLASSIC - 70mm Gypframe 70 AS 50 AcouStuds at 600mm centres, 25mm Isover Acoustic Partition Roll (APR 1200). Linings as in table.

3



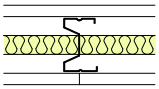
GypWall CLASSIC - 70mm Gypframe 70 AS 50 AcouStuds at 600mm centres, 50mm Isover Acoustic Partition Roll (APR 1200). Linings as in table.

4



GypWall CLASSIC - 70mm Gypframe 70 AS 50 AcouStuds at 600mm centres, 3 x 25mm Isover Acoustic Partition Roll (APR 1200). Linings as in table.

5



GypWall ROBUST - 70mm Gypframe 70 AS 50 AcouStuds at 600mm centres, 25mm Isover Acoustic Partition Roll (APR 1200). Linings as in table.

Table 4.13a – GypWall CLASSIC and GypWall ROBUST partitions to satisfy the requirements of *BS 476-22: 1987*

Detail	Partition thickness mm	Board type	Available with ACTIV*air* technology[2]	Lining thickness mm	Approx. weight kg/m²	Max. partition height[1] mm	Sound insulation Airborne R_w (R_w + C_{tr}) dB		Duty rating		System reference	
							Any finish[3]	Skim finish[4]		Any finish[3]		Skim finish[4]
BS 60 minutes fire resistance												
1	97	Gyproc SoundBloc	ACTIV air	1 x 12.5	22	3800	41		Medium	A206A164		
2	97	Gyproc SoundBloc	ACTIV air	1 x 12.5	22	3800	48		Medium	A206A196		
3	97	Gyproc SoundBloc	ACTIV air	1 x 12.5	23	3800	49	50	Medium	A206A228		A206A228S
1	102	Gyproc SoundBloc	ACTIV air	1 x 15	26	4000	42		Heavy	A206A165		
4	102	Gyproc SoundBloc	ACTIV air	1 x 15	26	4000	50	51	Heavy	A206A252		A206A252S
BS 60 minutes fire resistance												
1	102	Gyproc SoundBloc F		1 x 15	27	4000	42		Heavy	A206A301		
2	102	Gyproc FireLine		1 x 15	24	4000	43	44	Heavy	A206A110		A206A110S
3	102	Gyproc FireLine		1 x 15	24	4000	44	45	Heavy	A206A141		A206A141S
2	102	Gyproc SoundBloc F		1 x 15	27	4000	48		Heavy	A206A302		
5	102	Gyproc DuraLine	ACTIV air	1 x 15	29	4000	48	49	Severe	Q606A044		Q606A044S
4	102	Gyproc SoundBloc F		1 x 15	27	4000	50	51	Heavy	A206A304		A206A304S

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

[2] These systems have an **ACTIV*air*** board option available for formaldehyde control to improve indoor air quality. Alternatively, all systems can be skim finished with Thistle PureFinish which contains **ACTIV*air*** technology. Refer to the indoor air quality section in Background & theory.

[3] Sound insulation performance for partitions finished using jointing or plaster skim.

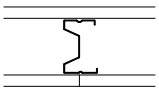
[4] Sound insulation performance for partitions finished with a 2mm skim finish of Thistle Multi-Finish.

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 components are used throughout, and the company's fixing recommendations are strictly observed. Any variation in the specifications should be checked with British Gypsum.

Steel frame internal partitions

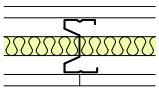
70mm Gypframe AcouStud solutions

1



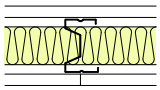
GypWall CLASSIC - 70mm Gypframe 70 AS 50 AcouStuds at 600mm centres. Linings as in table.

2



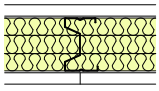
GypWall CLASSIC - 70mm Gypframe 70 AS 50 AcouStuds at 600mm centres, 25mm Isover Acoustic Partition Roll (APR 1200). Linings as in table.

3



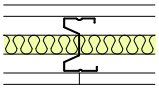
GypWall CLASSIC - 70mm Gypframe 70 AS 50 AcouStuds at 600mm centres, 50mm Isover Acoustic Partition Roll (APR 1200). Linings as in table.

4



GypWall CLASSIC - 70mm Gypframe 70 AS 50 AcouStuds at 600mm centres, 3 x 25mm Isover Acoustic Partition Roll (APR 1200). Linings as in table.

5



GypWall ROBUST - 70mm Gypframe 70 AS 50 AcouStuds at 600mm centres, 25mm Isover Acoustic Partition Roll (APR 1200). Linings as in table.

Table 4.13b – GypWall CLASSIC and GypWall ROBUST partitions to satisfy the requirements of *BS EN 1364-1: 1999*

Detail	Partition thickness mm	Board type	Available with ACTIV*air* technology[2]	Lining thickness mm	Approx. weight kg/m²	Max. partition height[1] mm	Sound insulation Airborne R_w ($R_w + C_{tr}$) dB		Duty rating		System reference	
							Any finish[3]	Skim finish[4]		Any finish[3]		Skim finish[4]
EN 30 minutes fire resistance												
1	97	Gyproc SoundBloc		1 x 12.5	22	3800	41		Medium	A206A164		
2	97	Gyproc SoundBloc		1 x 12.5	22	3800	48		Medium	A206A196		
3	97	Gyproc SoundBloc		1 x 12.5	23	3800	49	50	Medium	A206A228	A206A228S	
1	102	Gyproc SoundBloc		1 x 15	26	4000	42		Heavy	A206A165		
4	102	Gyproc SoundBloc		1 x 15	26	4000	50	51	Heavy	A206A252	A206A252S	
EN 60 minutes fire resistance												
1	102	Gyproc SoundBloc F		1 x 15	27	4000	42		Heavy	A206A301		
2	102	Gyproc FireLine		1 x 15	24	4000	43	44	Heavy	A206A110	A206A110S	
3	102	Gyproc FireLine		1 x 15	24	4000	44	45	Heavy	A206A141	A206A141S	
2	102	Gyproc SoundBloc F		1 x 15	27	4000	48		Heavy	A206A302		
5	102	Gyproc DuraLine		1 x 15	29	4000	48	49	Severe	Q606A044	Q606A044S	
4	102	Gyproc SoundBloc F		1 x 15	27	3000	50	51	Heavy	A206A304	A206A304S	

[1] 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 the more onerous.

[2] These systems have an **ACTIV*air*** board option available for formaldehyde control to improve indoor air quality. Alternatively, all systems can be skim finished with Thistle PureFinish which contains **ACTIV*air*** technology. Refer to the indoor air quality section in Background & theory.

[3] Sound insulation performance for partitions finished using jointing or plaster skim.

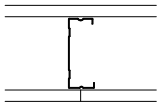
[4] Sound insulation performance for partitions finished with a 2mm skim finish of Thistle Multi-Finish.

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 components are used throughout, and the company's fixing recommendations are strictly observed. Any variation in the specifications should be checked with British Gypsum.

Steel frame internal partitions

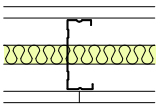
92mm Gypframe 'C' Stud solutions

1



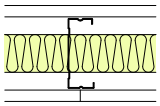
GypWall CLASSIC – 92mm Gypframe 92 S 50 'C' Studs at 600mm centres. Linings as in table.

2



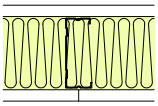
GypWall CLASSIC – 92mm Gypframe 92 S 50 'C' Studs at 600mm centres, 25mm Isover Acoustic Partition Roll (APR 1200). Linings as in table.

3



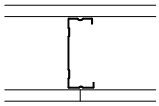
GypWall CLASSIC – 92mm Gypframe 92 S 50 'C' Studs at 600mm centres, 50mm Isover Acoustic Partition Roll (APR 1200). Linings as in table.

4



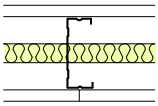
GypWall CLASSIC – 92mm Gypframe 92 S 50 'C' Studs at 600mm centres, 100mm Isover Modular Roll. Linings as in table.

5



GypWall ROBUST – 92mm Gypframe 92 S 60 'C' Studs at 600mm centres. Linings as in table.

6



GypWall ROBUST – 92mm Gypframe 92 S 60 'C' Studs at 600mm centres, 25mm Isover Acoustic Partition Roll (APR 1200). Linings as in table.

Table 4.14a – GypWall CLASSIC and GypWall ROBUST partitions to satisfy the requirements of *BS 476-22: 1987*

Detail	Partition thickness mm	Board type	Available with ACTIV*air* technology[3]	Lining thickness mm	Approx. weight kg/m²	Max. partition height[1] mm	Sound insulation Airborne R_w ($R_w + C_{tr}$) dB		Duty rating	System reference	
							Any finish[4]	Skim finish[5]		Any finish[4]	Skim finish[5]
BS 30 minutes fire resistance											
1	124	Gyproc SoundBloc	ACTIV air	1 x 15	27	4700	44	45	Heavy	A206261	A206261S
3	124	Gyproc SoundBloc	ACTIV air	1 x 15	27	4700	50	51	Heavy	A206263	A206263S
BS 60 minutes fire resistance											
1	124	Gyproc FireLine		1 x 15	25	4700	40	41	Heavy	A206265	A206265S
1	124	Gyproc SoundBloc F		1 x 15	27	4700	44	45	Heavy	A206305	A206305S
2	124	Gyproc FireLine		1 x 15	25	4700	44[2]	45[2]	Heavy	A206266	A206266S
5	124	Gyproc DuraLine	ACTIV air	1 x 15	29	4900	45	46	Severe	A206257	A206257S
4	124	Gyproc FireLine		1 x 15	25	4700	46	48	Heavy	A206268	A206268S
6	124	Gyproc DuraLine	ACTIV air	1 x 15	30	4900	48[2]	49[2]	Severe	A206258	A206258S
2	124	Gyproc SoundBloc F		1 x 15	27	4700	49	50	Heavy	A206306	A206306S
3	124	Gyproc SoundBloc F		1 x 15	27	4700	50	51	Heavy	A206309	A206309S
4	124	Gyproc SoundBloc F		1 x 15	27	4700	51	52	Heavy	A206308	A206308S

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

[2] Increasing insulation to 50mm Isover Acoustic Partition Roll (APR 1200) will not improve this system performance.

[3] These systems have an **ACTIV*air*** board option available for formaldehyde control to improve indoor air quality. Alternatively, all systems can be skim finished with Thistle PureFinish which contains **ACTIV*air*** technology. Refer to the indoor air quality section in Background & theory.

[4] Sound insulation performance for partitions finished using jointing or plaster skim.

[5] Sound insulation performance for partitions finished with a 2mm skim finish of Thistle Multi-Finish.

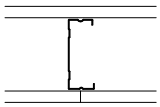
NB For heights between 4200mm and 8000mm, Gypframe Deep Flange Floor & Ceiling Channel should be used at base and at head (subject to deflection criteria).

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 components are used throughout, and the company's fixing recommendations are strictly observed. Any variation in the specifications should be checked with British Gypsum.

Steel frame internal partitions

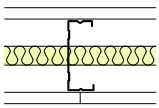
92mm Gypframe 'C' Stud solutions

1



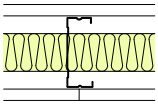
GypWall CLASSIC – 92mm Gypframe 92 S 50 'C' Studs at 600mm centres. Linings as in table.

2



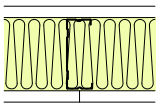
GypWall CLASSIC – 92mm Gypframe 92 S 50 'C' Studs at 600mm centres, 25mm Isover Acoustic Partition Roll (APR 1200). Linings as in table.

3



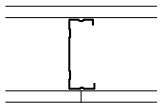
GypWall CLASSIC – 92mm Gypframe 92 S 50 'C' Studs at 600mm centres, 50mm Isover Acoustic Partition Roll (APR 1200). Linings as in table.

4



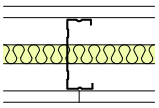
GypWall CLASSIC – 92mm Gypframe 92 S 50 'C' Studs at 600mm centres, 100mm Isover Modular Roll. Linings as in table.

5



GypWall ROBUST – 92mm Gypframe 92 S 60 'C' Studs at 600mm centres. Linings as in table.

6



GypWall ROBUST – 92mm Gypframe 92 S 60 'C' Studs at 600mm centres, 25mm Isover Acoustic Partition Roll (APR 1200). Linings as in table.

Table 4.14b – GypWall CLASSIC and GypWall ROBUST partitions to satisfy the requirements of *BS EN 1364-1: 1999*

Detail	Partition thickness mm	Board type	Available with ACTIV*air* technology[3]	Lining thickness mm	Approx. weight kg/m²	Max. partition height[1] mm	Sound insulation Airborne R_w ($R_w + C_{tr}$) dB		Duty rating	System reference	
							Any finish[4]	Skim finish[5]		Any finish[4]	Skim finish[5]
EN 30 minutes fire resistance											
1	124	Gyproc SoundBloc	ACTIV air	1 x 15	27	4000	44	45	Heavy	A206261	A206261S
3	124	Gyproc SoundBloc	ACTIV air	1 x 15	27	4000	50	51	Heavy	A206263	A206263S
EN 60 minutes fire resistance											
1	124	Gyproc FireLine		1 x 15	25	4000	40	41	Heavy	A206265	A206265S
1	124	Gyproc SoundBloc F		1 x 15	27	4000	44	45	Heavy	A206305	A206305S
2	124	Gyproc FireLine		1 x 15	25	4000	44[2]	45[2]	Heavy	A206266	A206266S
5	124	Gyproc DuraLine	ACTIV air	1 x 15	29	4000	45	46	Severe	A206257	A206257S
4	124	Gyproc FireLine		1 x 15	25	4000	46	48	Heavy	A206268	A206268S
6	124	Gyproc DuraLine	ACTIV air	1 x 15	30	4000	48[2]	49[2]	Severe	A206258	A206258S
2	124	Gyproc SoundBloc		1 x 15	27	4000	49	50	Heavy	A206306	A206306S
3	124	Gyproc SoundBloc F		1 x 15	27	4000	50	51	Heavy	A206309	A206309S
4	124	Gyproc SoundBloc F		1 x 15	27	4000	51	52	Heavy	A206308	A206308S

[1] 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 the more onerous.

[2] Increasing insulation to 50mm Isover Acoustic Partition Roll (APR 1200) will not improve this system performance.

[3] These systems have an **ACTIV*air*** board option available for formaldehyde control to improve indoor air quality. Alternatively, all systems can be skim finished with Thistle PureFinish which contains **ACTIV*air*** technology. Refer to the indoor air quality section in Background & theory.

[4] Sound insulation performance for partitions finished using jointing or plaster skim.

[5] Sound insulation performance for partitions finished with a 2mm skim finish of Thistle Multi-Finish.

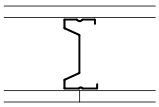
NB For heights between 4200mm and 8000mm, Gypframe Deep Flange Floor & Ceiling Channel should be used at base and at head (subject to deflection criteria).

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 components are used throughout, and the company's fixing recommendations are strictly observed. Any variation in the specifications should be checked with British Gypsum.

Steel frame internal partitions

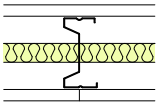
92mm Gypframe AcouStud solutions

1



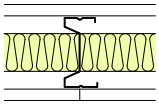
GypWall CLASSIC - 92mm Gypframe 92 AS 50 AcouStuds at 600mm centres. Linings as in table.

2



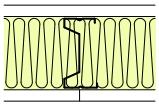
GypWall CLASSIC - 92mm Gypframe 92 AS 50 AcouStuds at 600mm centres, 25mm Isover Acoustic Partition Roll (APR 1200). Linings as in table.

3



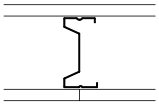
GypWall CLASSIC - 92mm Gypframe 92 AS 50 AcouStuds at 600mm centres, 50mm Isover Acoustic Partition Roll (APR 1200). Linings as in table.

4



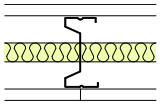
GypWall CLASSIC - 92mm Gypframe 92 AS 50 AcouStuds at 600mm centres, 100mm Isover Modular Roll. Linings as in table.

5



GypWall ROBUST - 92mm Gypframe 92 AS 50 AcouStuds at 600mm centres. Linings as in table.

6



GypWall ROBUST - 92mm Gypframe 92 AS 50 AcouStuds at 600mm centres, 25mm Isover Acoustic Partition Roll (APR 1200). Linings as in table.

Table 4.15a – GypWall CLASSIC and GypWall ROBUST partitions to satisfy the requirements of *BS 476-22: 1987*

Detail	Partition thickness mm	Board type	Available with ACTIV*air* technology[3]	Lining thickness mm	Approx. weight kg/m²	Max. partition height[1] mm	Sound insulation Airborne R_w ($R_w + C_{tr}$) dB		Duty rating	System reference	
							Any finish[4]	Skim finish[5]		Any finish[4]	Skim finish[5]
BS 30 minutes fire resistance											
1	124	Gyproc SoundBloc	ACTIV air	1 x 15	27	4900	45	46	Heavy	A206A281	A206A281S
3	124	Gyproc SoundBloc	ACTIV air	1 x 15	27	4900	51	52	Heavy	A206A283	A206A283S
BS 60 minutes fire resistance											
1	124	Gyproc FireLine		1 x 15	24	4900	41	42	Heavy	A206A285	A206A285S
2	124	Gyproc FireLine		1 x 15	24	4900	44[2]	45[2]	Heavy	A206A286	A206A286S
1	124	Gyproc SoundBloc F		1 x 15	27	4900	45	46	Heavy	A206A305	A206A305S
5	124	Gyproc DuraLine	ACTIV air	1 x 15	29	4900	45	46	Severe	A206A277	A206A277S
4	124	Gyproc FireLine		1 x 15	24	4900	46	48	Heavy	A206A288	A206A288S
2	124	Gyproc SoundBloc F		1 x 15	27	4900	50	51	Heavy	A206A306	A206A306S
6	124	Gyproc DuraLine	ACTIV air	1 x 15	30	4900	50	51	Severe	A206A278	A206A278S
3	124	Gyproc SoundBloc F		1 x 15	27	4900	51	52	Heavy	A206A309	A206A309S
4	124	Gyproc SoundBloc F		1 x 15	27	4900	52	54	Heavy	A206A308	A206A308S

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

[2] Increasing insulation to 50mm Isover Acoustic Partition Roll (APR 1200) will not improve this system performance.

[3] These systems have an **ACTIV*air*** board option available for formaldehyde control to improve indoor air quality. Alternatively, all systems can be skim finished with Thistle PureFinish which contains **ACTIV*air*** technology. Refer to the indoor air quality section in Background & theory.

[4] Sound insulation performance for partitions finished using jointing or plaster skim.

[5] Sound insulation performance for partitions finished with a 2mm skim finish of Thistle Multi-Finish.

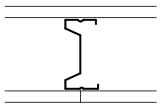
NB For heights between 4200mm and 8000mm, Gypframe Deep Flange Floor & Ceiling Channel should be used at base and at head (subject to deflection criteria).

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 components are used throughout, and the company's fixing recommendations are strictly observed. Any variation in the specifications should be checked with British Gypsum.

Steel frame internal partitions

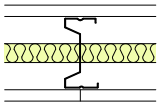
92mm Gypframe AcouStud solutions

1



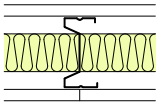
GypWall CLASSIC - 92mm Gypframe 92 AS 50 AcouStuds at 600mm centres. Linings as in table.

2



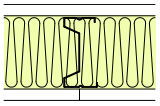
GypWall CLASSIC - 92mm Gypframe 92 AS 50 AcouStuds at 600mm centres, 25mm Isover Acoustic Partition Roll (APR 1200). Linings as in table.

3



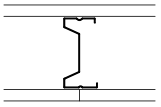
GypWall CLASSIC - 92mm Gypframe 92 AS 50 AcouStuds at 600mm centres, 50mm Isover Acoustic Partition Roll (APR 1200). Linings as in table.

4



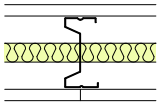
GypWall CLASSIC - 92mm Gypframe 92 AS 50 AcouStuds at 600mm centres, 100mm Isover Modular Roll. Linings as in table.

5



GypWall ROBUST - 92mm Gypframe 92 AS 50 AcouStuds at 600mm centres. Linings as in table.

6



GypWall ROBUST - 92mm Gypframe 92 AS 50 AcouStuds at 600mm centres, 25mm Isover Acoustic Partition Roll (APR 1200). Linings as in table.

Table 4.15b – GypWall CLASSIC and GypWall ROBUST partitions to satisfy the requirements of *BS EN 1364-1: 1999*

Detail	Partition thickness mm	Board type	Available with ACTIV*air* technology[3]	Lining thickness mm	Approx. weight kg/m²	Max. partition height[1] mm	Sound insulation Airborne R_w ($R_w + C_{tr}$) dB		Duty rating	System reference	
							Any finish[4]	Skim finish[5]		Any finish[4]	Skim finish[5]
EN 30 minutes fire resistance											
1	124	Gyproc SoundBloc	ACTIV air	1 x 15	27	4000	45	46	Heavy	A206A281	A206A281S
3	124	Gyproc SoundBloc	ACTIV air	1 x 15	27	4000	51	52	Heavy	A206A283	A206A283S
EN 60 minutes fire resistance											
1	124	Gyproc FireLine		1 x 15	24	4000	41	42	Heavy	A206A285	A206A285S
2	124	Gyproc FireLine		1 x 15	24	4000	44[2]	45[2]	Heavy	A206A286	A206A286S
1	124	Gyproc SoundBloc F		1 x 15	27	4000	45	46	Heavy	A206A305	A206A305S
5	124	Gyproc DuraLine	ACTIV air	1 x 15	29	4000	45	46	Severe	A206A277	A206A277S
4	124	Gyproc FireLine		1 x 15	24	4000	46	48	Heavy	A206A288	A206A288S
2	124	Gyproc SoundBloc F		1 x 15	27	4000	50	51	Heavy	A206A306	A206A306S
6	124	Gyproc DuraLine	ACTIV air	1 x 15	30	4000	50	51	Severe	A206A278	A206A278S
3	124	Gyproc SoundBloc F		1 x 15	27	4000	51	52	Heavy	A206A309	A206A309S
4	124	Gyproc SoundBloc F		1 x 15	27	4000	52	54	Heavy	A206A308	A206A308S

[1] 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 the more onerous.
[2] Increasing insulation to 50mm Isover Acoustic Partition Roll (APR 1200) will not improve this system performance.
[3] These systems have an **ACTIV*air*** board option available for formaldehyde control to improve indoor air quality. Alternatively, all systems can be skim finished with Thistle PureFinish which contains **ACTIV*air*** technology. Refer to the indoor air quality section in Background & theory.
[4] Sound insulation performance for partitions finished using jointing or plaster skim.
[5] Sound insulation performance for partitions finished with a 2mm skim finish of Thistle Multi-Finish.

NB For heights between 4200mm and 8000mm, Gypframe Deep Flange Floor & Ceiling Channel should be used at base and at head (subject to deflection criteria).

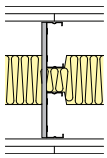
NB The fire resistance and sound insulation performances are for imperforate partitions, walls and ceilings incorporating boards with all joints taped and filled, or skimmed according to British Gypsum's recommendations. The quoted performances are achieved only if British Gypsum components are used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

Enhanced performance partitions

Where enhanced sound insulation is required between rooms, such as conference rooms and circulation areas or music rooms and corridors, it may be necessary to specify a partition with a performance beyond that attainable by separating wall solutions. **GypWall AUDIO** solutions can achieve up to 80 R_w (71 $R_w + C_{tr}$) dB.

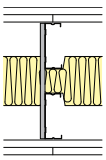
Twin frame solutions – 92mm Gypframe 'C' Studs

1



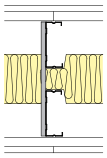
Two rows of 92mm Gypframe 92 S 10 'C' Studs at 600mm centres, braced as in table, width between frames 62mm (min), 100mm Isover Spacesaver Ready-Cut in the cavity. Linings as in table.

2



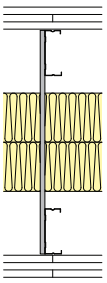
Two rows of 92mm Gypframe 92 S 10 'C' Studs at 600mm centres, braced as in table, width between frames 52mm (min), 100mm Isover Spacesaver Ready-Cut in the cavity. Linings as in table.

3



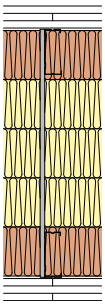
Two rows of 92mm Gypframe 92 S 10 'C' Studs at 600mm centres, braced as in table, width between frames 49mm (min), 100mm Isover Spacesaver Ready-Cut in the cavity. Linings as in table.

4



Two rows of 92mm Gypframe 92 S 10 'C' Studs at 600mm centres, braced as in table, width between frames 286mm (min), 2 x 100mm Isover Spacesaver Ready-Cut in the cavity. Linings as in table.

5



Two rows of 92mm Gypframe 92 S 10 'C' Studs at 600mm centres, braced as in table, width between frames 536mm (min), 3 x 100mm Isover Spacesaver Ready-Cut and 2 x 100mm stone mineral wool in the cavity. Linings as in table.

Table 4.16a – GypWall AUDIO partitions to satisfy the requirements of *BS 476-22: 1987*

Detail	Partition thickness mm	Board type	Available with ACTIV*air* technology[3]	Lining thickness mm	Approx. weight kg/m²	Max. partition height[1] mm		Sound insulation Airborne R_w ($R_w + C_{tr}$) dB[2]	Duty rating	System reference
						Gypframe 99 FC 50 Fixing Channel braces at 3600mm centres	Gypframe GAB3 Acoustic Braces at 3300mm centres			
BS 60 minutes fire resistance										
1	300	Gyproc SoundBloc	✓	2 x 12.5	47	8000	8000	67 (56)	Severe	A326001
BS 90 minutes fire resistance										
2	300	Gyproc SoundBloc	✓	2 x 15	55	8000	8000	69 (60)	Severe	A326002
BS 120 minutes fire resistance										
3	300	Gyproc Plank + Gyproc FireLine		19 + 12.5	57	8000	8000	67 (57)	Severe	A326006
4	550	Gyproc SoundBloc	✓	3 x 15	80	9000	9500	76 (68)	Severe	A326013
5	800	Gyproc SoundBloc	✓	3 x 15	80	9500	9000	80 (71)	Severe	A326019

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

[2] Low frequency performance data available on request.

[3] These systems have an **ACTIV*air*** board option available for formaldehyde control to improve indoor air quality. Alternatively, all systems can be skim finished with Thistle PureFinish which contains **ACTIV*air*** technology. Refer to the indoor air quality section in Background & theory.

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 components are used throughout, and the company's fixing recommendations are strictly observed. Any variation in the specifications should be checked with British Gypsum.

NB For heights between 4200mm and 8000mm, Gypframe Deep Flange Floor & Ceiling Channel should be used at base and at head (subject to deflection criteria).

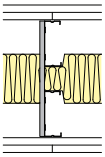
NB For heights over 8000mm, Gypframe Extra Deep Flange Floor & Ceiling Channel should be used at base and at head.

Enhanced performance partitions

Where enhanced sound insulation is required between rooms, such as conference rooms and circulation areas or music rooms and corridors, it may be necessary to specify a partition with a performance beyond that attainable by separating wall solutions. **GypWall AUDIO** solutions can achieve up to 80 R_w (71 $R_w + C_{tr}$) dB.

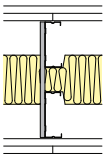
Twin frame solutions – 92mm Gypframe 'C' Studs

1



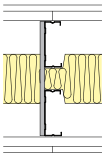
Two rows of 92mm Gypframe 92 S 10 'C' Studs at 600mm centres, braced as in table, width between frames 62mm (min), 100mm Isover Spacesaver Ready-Cut in the cavity. Linings as in table.

2



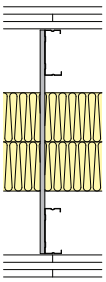
Two rows of 92mm Gypframe 92 S 10 'C' Studs at 600mm centres, braced as in table, width between frames 52mm (min), 100mm Isover Spacesaver Ready-Cut in the cavity. Linings as in table.

3



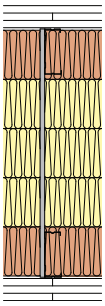
Two rows of 92mm Gypframe 92 S 10 'C' Studs at 600mm centres, braced as in table, width between frames 49mm (min), 100mm Isover Spacesaver Ready-Cut in the cavity. Linings as in table.

4



Two rows of 92mm Gypframe 92 S 10 'C' Studs at 600mm centres, braced as in table, width between frames 286mm (min), 2 x 100mm Isover Spacesaver Ready-Cut in the cavity. Linings as in table.

5



Two rows of 92mm Gypframe 92 S 10 'C' Studs at 600mm centres, braced as in table, width between frames 536mm (min), 3 x 100mm Isover Spacesaver Ready-Cut and 2 x 100mm stone mineral wool in the cavity. Linings as in table.

Table 4.16b – GypWall AUDIO partitions to satisfy the requirements of *BS EN 1364-1: 1999*

Detail	Partition thickness mm	Board type	Available with ACTIV*air* technology[3]	Lining thickness mm	Approx. weight kg/m²	Max. partition height[1] mm		Sound insulation Airborne R_w ($R_w + C_{tr}$) dB[2]	Duty rating	System reference
						Gypframe 99 FC 50 Fixing Channel braces at 3600mm centres	Gypframe GAB3 Acoustic Braces at 3300mm centres			
EN 60 minutes fire resistance										
1	300	Gyproc SoundBloc	ACTIV air	2 x 12.5	47	8000	8000	67 (56)	Severe	A326001
3	300	Gyproc Plank + Gyproc FireLine		19 + 12.5	57	8000	8000	67 (57)	Severe	A326006
2	300	Gyproc SoundBloc	ACTIV air	2 x 15	55	8000	8000	69 (60)	Severe	A326002
EN 120 minutes fire resistance										
4	550	Gyproc SoundBloc	ACTIV air	3 x 15	80	9000	9500	76 (68)	Severe	A326013
5	800	Gyproc SoundBloc	ACTIV air	3 x 15	80	9500	9000	80 (71)	Severe	A326019

[1] 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 the more onerous.
[2] Low frequency performance data available on request.
[3] These systems have an **ACTIV*air*** board option available for formaldehyde control to improve indoor air quality. Alternatively, all systems can be skim finished with Thistle PureFinish which contains **ACTIV*air*** technology. Refer to the indoor air quality section in Background & theory.

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 components are used throughout, and the company's fixing recommendations are strictly observed. Any variation in the specifications should be checked with British Gypsum.

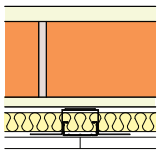
NB For heights between 4200mm and 8000mm, Gypframe Deep Flange Floor & Ceiling Channel should be used at base and at head (subject to deflection criteria).

NB For heights over 8000mm, Gypframe Extra Deep Flange Floor & Ceiling Channel should be used at base and at head.

Acoustic upgrade to masonry construction

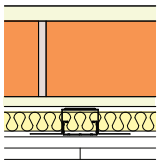
GypLyner UNIVERSAL

1



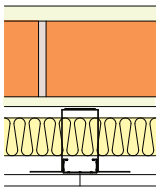
Externally rendered solid masonry wall of mass 200kg/m² with Gyproc SoundCoat Plus or Thistle plaster to the inside. Lined internally with **GypLyner UNIVERSAL** system incorporating 25mm Isover Acoustic Partition Roll ` (APR 1200) within 35mm cavity. Linings as in table.

2



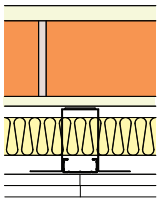
Externally rendered solid masonry wall of mass 200kg/m² with Gyproc SoundCoat Plus or Thistle plaster to the inside. Lined internally with **GypLyner UNIVERSAL** system incorporating 25mm Isover Acoustic Partition Roll (APR 1200) within 35mm cavity. Linings as in table.

3



Externally rendered solid masonry wall of mass 200kg/m² with Gyproc SoundCoat Plus or Thistle plaster to the inside. Lined internally with **GypLyner UNIVERSAL** system incorporating 50mm Isover Acoustic Partition Roll (APR 1200) within 85mm cavity. Linings as in table.

4



Externally rendered solid masonry wall of mass 200kg/m² with Gyproc SoundCoat Plus or Thistle plaster to the inside. Lined internally with **GypLyner UNIVERSAL** system incorporating 50mm Isover Acoustic Partition Roll (APR 1200) within 85mm cavity. Linings as in table. .

Table 4.17 – GypLyner UNIVERSAL linings to upgrade the sound insulation of external solid masonry walls

Detail	Board type	Available with ACTIV*air* technology[2]	Wall lining thickness mm	System cavity size including insulation mm	Performance of base wall R_w ($R_w + C_{tr}$) dB	Sound insulation: Airborne R_w (R_w + Ctr) dB	Sound insulation: Improvement over base wall R_w ($R_w + C_{tr}$) dB	System reference
BS **120 minutes fire resistance[1]**								
1	Gyproc SoundBloc	ACTIV air	1 x 12.5	35	47 (44)	57 (50)	+10 (+6)	B226008
2	Gyproc SoundBloc	ACTIV air	2 x 12.5	35	47 (44)	60 (55)	+13 (+11)	B226003
3	Gyproc SoundBloc	ACTIV air	1 x 12.5	85	47 (44)	64 (56)	+17 (+12)	B226007
4	Gyproc SoundBloc	ACTIV air	2 x 12.5	85	47 (44)	66 (59)	+19 (+15)	B226005

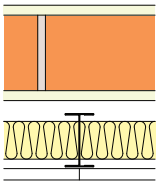
[1] The fire resistance quoted is that provided by the masonry wall to satisfy the requirements of *BS 476: Part 21: 1987* without contribution from the lining.

[2] These systems have an **ACTIV*air*** board option available for formaldehyde control to improve indoor air quality. Alternatively, all systems can be skim finished with Thistle PureFinish which contains **ACTIV*air*** technology. Refer to the indoor air quality section in Background & theory.

Acoustic upgrade to masonry construction

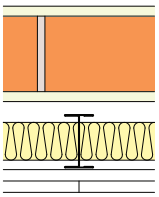
GypLyner IWL

1



Solid masonry wall of mass 180kg/m² with Gyproc SoundCoat Plus or Thistle plaster. Lined one side with **GypLyner IWL** system incorporating 50mm Isover Steel Frame Infill Batt (minimum 10mm stand-off from face of masonry). Linings as in table.

2



Solid masonry wall of mass 180kg/m² with Gyproc SoundCoat Plus or Thistle plaster. Lined one side with **GypLyner IWL** system incorporating 50mm Isover Steel Frame Infill Batt (minimum 10mm stand-off from face of masonry). Linings as in table.

Table 4.18a – GypLyner IWL linings to upgrade the sound insulation of external solid masonry walls

Detail	Board type	Wall lining thickness mm	System cavity size including insulation mm	Performance of base wall R_w ($R_w + C_{tr}$) dB	Sound insulation		System reference
					Airborne R_w ($R_w + C_{tr}$) dB	Improvement over base wall R_w ($R_w + C_{tr}$) dB	
BS **120 minutes fire resistance**[1]							
1	Gyproc WallBoard	1 x 15	58	45 (42)	59 (51)	+14 (+9)	B216002
2	Gyproc WallBoard	2 x 12.5	58	45 (42)	61 (54)	+16 (+12)	B216031

A range of studs are available for use within the **GypWall IWL** system depending on height requirements. See **Table 4.18b** below

Table 4.18b – GypLyner IWL maximum heights for Gypframe 'I' Studs at 600mm centres

Gypframe 'I' Stud	Maximum height mm[2]	
	Single layer 15mm Gyproc WallBoard	Double layer 12.5mm Gyproc WallBoard
48 I 50	2400	2700
60 I 50	2700	3000
60 I 70	3300	3600
70 I 70	3900	4200

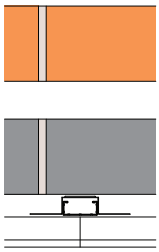
[1] The fire resistance quoted is that provided by the masonry wall to satisfy the requirements of *BS 476: Part 21: 1987* without contribution from the lining.
[2] Based on a limiting deflection of L/240 at 200 Pa

NB For heights between 4200mm and 8000mm, Gypframe Deep Flange Floor & Ceiling Channel should be used at base and at head (subject to deflection criteria).

Thermal insulation to external wall constructions

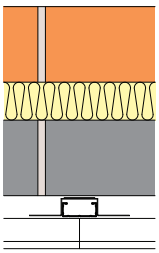
GypLyner UNIVERSAL

1



Brick outer leaf, 50mm clear cavity, inner leaf as in table, **GypLyner UNIVERSAL** system with 25mm cavity. Lining as in table.

2



Brick outer leaf, 50mm Isover CWS, inner leaf as in table, **GypLyner UNIVERSAL** system with 25mm cavity. Lining as in table.

Table 4.19 – GypLyner UNIVERSAL U-values for external masonry walls

Detail	Overall wall thickness mm	Thermal laminate type	Thermal laminate thickness mm	U-value (W/m^2K)
Inner leaf – Medium density block (λ = 0.47 W/mK)				
1	338	Gyproc ThermaLine SUPER	60	0.31
1	348	Gyproc ThermaLine SUPER	70	0.27
1	368	Gyproc ThermaLine SUPER	90	0.22
2	313	Gyproc ThermaLine PLUS	35	0.34
Inner leaf – Aircrete block (λ = 0.11 W/mK)				
1	318	Gyproc ThermaLine SUPER	40	0.35
1	338	Gyproc ThermaLine SUPER	60	0.26
1	368	Gyproc ThermaLine SUPER	90	0.19
2	305	Gyproc ThermaLine PLUS	27	0.31
2	308	Gyproc ThermaLine SUPER	30	0.29
2	318	Gyproc ThermaLine PLUS	40	0.28

Thermal insulation to external wall constructions

GypLyner IWL

Table 4.20a – GypLyner IWL U-values[1] for external claddings with lining / insulation combinations – based on a well-vented external cladding cavity

External cladding	Board type	Lining thickness mm	Isover Steel Frame Infill Batts	U-value (W/m²K)
Curtain walling / concrete cladding / panels / brickwork / blockwork, etc.	Gyproc ThermaLine SUPER	50	50mm (with Gypframe 48 I 50 'I' Studs)	0.33
	Gyproc ThermaLine SUPER	60	50mm (with Gypframe 48 I 50 'I' Studs)	0.28
	Gyproc ThermaLine SUPER	70	50mm (with Gypframe 48 I 50 'I' Studs)	0.25
	Gyproc ThermaLine SUPER	70	75mm (with Gypframe 70 I 70 'I' Studs)	0.22
	Gyproc ThermaLine SUPER	70	100mm (with Gypframe 92 I 90 'I' Studs)	0.21
	Gyproc ThermaLine SUPER	70	2 x 75mm (with Gypframe 146 I 80 'I' Studs)	0.17

A range of studs are available for use within the **GypWall IWL** system depending on height requirements. See **Table 4.20b** below

Table 4.20b – GypLyner IWL maximum heights for Gypframe 'I' Studs at 600mm centres

Gypframe 'I' Stud	Maximum height mm[2]				
	12.5mm boards Single layer	12.5mm boards Double layer	15mm boards Single layer	15mm boards Double layer	Gyproc ThermaLine laminates
48 I 50	2400	2700	2400	2800	2400
60 I 50	2400	3000	2700	3300	2400
60 I 70	3000	3600	3300	3900	3000
70 I 70	3600	4200	3900	4300	3600
92 I 90	5100	5700	5400	6000	5100
146 I 80	6900	7200	7200	7500	6900

[1] U-values are calculated by proportional area method. Contact the British Gypsum Technical Advice Centre for U-value calculations for specific construction types.

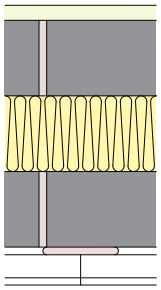
[2] Based on a limiting deflection of L/240 at 200 Pa.

NB For heights between 4200mm and 8000mm, Gypframe Deep Flange Floor & Ceiling Channel should be used at base and at head (subject to deflection criteria).

Thermal insulation to external wall constructions

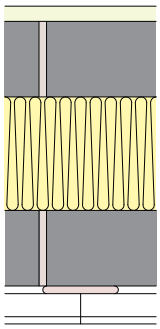
DriLyner BASIC and DriLyner TL systems

1



20mm render, 100mm block (type as in table), 100mm Isover Hi-Cav 32 full-fill, 100mm block (type as in table). Lining system as in table.

2



20mm render, 100mm block (type as in table), 150mm Isover Hi-Cav 32 full-fill, 100mm block (type as in table). Lining system as in table.

Table 4.21 – DriLyner U-values (W/m^2K) for external masonry cavity walls

Lining system	Aircrete block (λ = 0.11 W/mK)		Medium dense block (λ = 0.47 W/mK)		Dense block (λ = 1.28 W/mK)	
	1	2	1	2	1	2
DriLyner BASIC – 12.5mm Gyproc WallBoard	0.20	0.16	0.26	0.20	0.27	0.21
DriLyner TL – 30mm Gyproc ThermaLine SUPER	0.17	0.14	0.21	0.17	0.22	0.18
DriLyner TL – 40mm Gyproc ThermaLine SUPER	0.16	0.13	0.19	0.15	0.20	0.16
DriLyner TL – 50mm Gyproc ThermaLine SUPER	0.15	0.12	0.17	0.14	0.18	0.15
DriLyner TL – 60mm Gyproc ThermaLine SUPER	0.13	0.12	0.16	0.13	0.16	0.14
DriLyner TL – 70mm Gyproc ThermaLine SUPER	0.13	0.11	0.15	0.12	0.15	0.13
DriLyner TL – 80mm Gyproc ThermaLine SUPER	0.12	0.10	0.14	0.12	0.14	0.12
DriLyner TL – 90mm Gyproc ThermaLine SUPER	0.11	0.10	0.13	0.11	0.13	0.11

NB U-values shown in the table above are based on the same block type being used for inner and outer leaves with appropriate wall-tie correction factors taken from BRE BR443 U-value conventions. For other permutations, contact the British Gypsum Technical Advice Centre at bgtechnical.enquiries@bpb.com

Lift shafts

Fire protection to lift shafts

ShaftWall

In situations where it is necessary to install a fire-rated partition in confined spaces where access is limited to one side, e.g. lift shaft enclosures and stairwells, the British Gypsum **ShaftWall** system is recommended. The system provides a protective structure that can be incorporated at an early stage of the construction without the need for scaffolding.

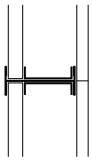
For situations where a non-combustible lining is required, such as the London Underground or smoke ducts, the British Gypsum **ShaftWall** using Glasroc F **FIRECASE** is appropriate.

The following tables provide technical performance data including laboratory sound insulation performance. For projects where it is necessary for **ShaftWall** to meet separating wall requirements (43 $D_{nT,w}$ + C_{tr} dB) an additional lining of **GypLyner UNIVERSAL IWL** could be considered. For further guidance contact the British Gypsum Technical Advice Centre at bgtechnical.enquiries@bpb.com

Fire protection to lift shafts

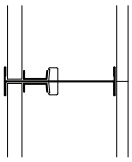
ShaftWall

1



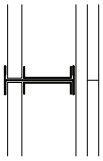
Gypframe 60, 70 or 92mm 'I' Stud framework with Gyproc CoreBoard between studs, secured by Gypframe Retaining Channel. 25mm Isover Acoustic Partition Roll (APR 1200) in cavity (optional). Lining boards to non-shaft side, see table.

2



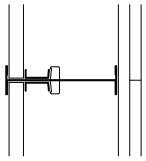
Gypframe 146 TI 90 Tabbed 'I' Stud framework with Gyproc CoreBoard between studs, secured by Gypframe Retaining Channel. 25mm Isover Acoustic Partition Roll (APR 1200) in cavity (optional). Lining boards to non-shaft side, see table.

3



Gypframe 60, 70 or 92mm 'I' Stud framework with Gyproc CoreBoard between studs, secured by Gypframe Retaining Channel. 25mm Isover Acoustic Partition Roll (APR 1200) in cavity (optional). Lining boards to non-shaft side, see table.

4



Gypframe 146 TI 90 Tabbed 'I' Stud framework with Gyproc CoreBoard between studs, secured by Gypframe Retaining Channel. 25mm Isover Acoustic Partition Roll (APR 1200) in cavity (optional). Lining boards to non-shaft side, see table.

Table 4.22a – ShaftWall (vertical elements) solutions to satisfy the requirements of *BS 476: Part 22: 1987*

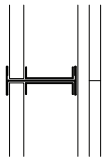
Detail	Partition thickness mm	Lining boards to non-shaft side[1]		Maximum partition height[2] mm	Stud size mm	Sound insulation R_w[3]		Duty rating[5]	Approx. weight kg/m²	System reference
		Board type	Lining thickness mm			No insulation dB	Sealed structure[4] plus 25mm Isover Acoustic Partition Roll (APR 1200) dB			
BS	**60 minutes fire resistance[6]**									
1	77	Gyproc FireLine	1 x 15	4200	60	39	42	Heavy	30	A306001/010
1	87	Gyproc FireLine	1 x 15	4200	70	39	42	Heavy	30	A306001/010
1	109	Gyproc FireLine	1 x 15	6000	92	40	43	Heavy	31	A306004/011
2	163	Gyproc FireLine	1 x 15	7700	146	43	46	Heavy	33	A306007
BS	**90 minutes fire resistance[6]**									
3	87	Gyproc FireLine	2 x 12.5	4400	60	40	44	Severe	39	A306002/012
3	97	Gyproc FireLine	2 x 12.5	4400	70	40	44	Severe	39	A306002/012
3	119	Gyproc FireLine	2 x 12.5	6400	92	45	47	Severe	40	A306005/014
4	173	Gyproc FireLine	2 x 12.5	7900	146	48	52	Severe	42	A306008/020
BS	**120 minutes fire resistance[6]**									
3	92	Gyproc FireLine	2 x 15	4500	60	42	45	Severe	43	A306003/023
3	102	Gyproc FireLine	2 x 15	4500	70	42	45	Severe	43	A306003/023
3	124	Gyproc FireLine	2 x 15	6700	92	44	46	Severe	44	A306006/025
4	178	Gyproc FireLine	2 x 15	7900	146	48	50	Severe	46	A306009/028

[1] For improved durability and impact resistance, the outer layer of Gyproc FireLine can be replaced with a layer of 15mm Gyproc DuraLine. On single layer linings this will improve duty rating to Severe Duty.
[2] Based on a limiting deflection of L/240 at 200 Pa.
[3] The acoustic performance figures quoted include **ShaftWall** partitions with deflection heads.
[4] Gyproc CoreBoard and first layer of lining board are bedded onto Gyproc Sealant, as required for pressurised air shafts, in addition to normal sealing.
[5] Estimated rating from non-shaft side only.
[6] The temperature of exposed metal may exceed the requirements of *BS 476: Part 22: 1987* within the fire test period, and therefore relaxation should be sought from the approving authority on the basis that no combustible materials are likely to be stored adjacent to the structure. In situations where the full period of insulation is required, contact the British Gypsum Technical Advice Centre for further guidance.

NB The fire resistance and sound insulation performances are for imperforate partitions, but incorporating deflection heads, with all joints taped and filled, or skimmed according to British Gypsum's recommendations. The quoted performances are achieved only if British Gypsum components are used throughout, and the company's fixing recommendations are strictly observed. Any variation in the specifications should be checked with British Gypsum.

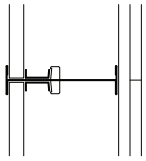
NB Gypframe Extra Deep Flange Floor & Ceiling Channel or 'J' Channel should be used at the head. For the base, Gypframe Floor & Ceiling Channel should be used for heights up to 4200mm, Gypframe Deep Flange Floor & Ceiling Channel should be used for heights between 4200mm and 8000mm.

1



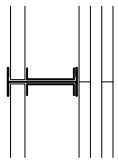
Gypframe 60, 70 or 92mm 'I' Stud framework with Gyproc CoreBoard between studs, secured by Gypframe Retaining Channel. 25mm Isover Acoustic Partition Roll (APR 1200) in cavity (optional). Lining boards to non-shaft side, see table.

2



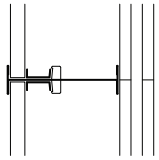
Gypframe 146 TI 90 Tabbed 'I' Stud framework with Gyproc CoreBoard between studs, secured by Gypframe Retaining Channel. 25mm Isover Acoustic Partition Roll (APR 1200) in cavity (optional). Lining boards to non-shaft side, see table.

3



Gypframe 60, 70 or 92mm 'I' Stud framework with Gyproc CoreBoard between studs, secured by Gypframe Retaining Channel. 25mm Isover Acoustic Partition Roll (APR 1200) in cavity (optional). Lining boards to non-shaft side, see table.

4



Gypframe 146 TI 90 Tabbed 'I' Stud framework with Gyproc CoreBoard between studs, secured by Gypframe Retaining Channel. 25mm Isover Acoustic Partition Roll (APR 1200) in cavity (optional). Lining boards to non-shaft side, see table.

Table 4.22b – ShaftWall (vertical elements) solutions to satisfy the requirements of *BS EN 1364-1: 1999*

Detail	Partition thickness mm	Lining boards to non-shaft side[1]		Maximum partition height[2] mm	Stud size mm	Sound insulation R_w[3]		Duty rating[5]	Approx. weight kg/m²	System reference
		Board type	Lining thickness mm			No insulation dB	Sealed structure[4] plus 25mm Isover Acoustic Partition Roll (APR 1200) dB			
EN	**60 minutes fire resistance**									
1	87	Gyproc FireLine	2 x 12.5	4400	60	40	44	Severe	39	A306002/012
1	97	Gyproc FireLine	2 x 12.5	4400	70	40	44	Severe	39	A306002/012
1	119	Gyproc FireLine	2 x 12.5	6000	92	45	47	Severe	40	A306005/014
2	173	Gyproc FireLine	2 x 12.5	6000	146	48	52	Severe	42	A306008/020
EN	**90 minutes fire resistance**									
1	92	Gyproc FireLine	2 x 15	4500	60	42	45	Severe	43	A306003/023
1	102	Gyproc FireLine	2 x 15	4500	70	42	45	Severe	43	A306003/023
1	124	Gyproc FireLine	2 x 15	6000	92	44	46	Severe	44	A306006/025
2	178	Gyproc FireLine	2 x 15	6000	146	48	50	Severe	46	A306009/028
EN	**120 minutes fire resistance**									
3	107	Gyproc FireLine	3 x 15	4500	60	43	45	Severe	55	A306030/035
3	117	Gyproc FireLine	3 x 15	4500	70	43	45	Severe	55	A306030/035
3	139	Gyproc FireLine	3 x 15	6000	92	45	46	Severe	56	A306031/036
4	193	Gyproc FireLine	3 x 15	6000	146	49	50	Severe	58	A306032/033

[1] For improved durability and impact resistance, the outer layer of Gyproc FireLine can be replaced with a layer of 15mm Gyproc DuraLine.
[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 the more onerous.
[3] The acoustic performance figures quoted include **ShaftWall** partitions with deflection heads.
[4] Gyproc CoreBoard and first layer of lining board are bedded onto Gyproc Sealant, as required for pressurised air shafts, in addition to normal sealing.
[5] Estimated rating from non-shaft side only.

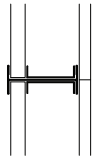
NB The fire resistance and sound insulation performances are for imperforate partitions, but incorporating deflection heads, with all joints taped and filled, or skimmed according to British Gypsum's recommendations. The quoted performances are achieved only if British Gypsum components are used throughout, and the company's fixing recommendations are strictly observed. Any variation in the specifications should be checked with British Gypsum.

NB Gypframe Extra Deep Flange Floor & Ceiling Channel or 'J' Channel should be used at the head. For the base, Gypframe Floor & Ceiling Channel should be used for heights up to 4200mm, Gypframe Deep Flange Floor & Ceiling Channel should be used for heights between 4200mm and 8000mm.

Fire protection to lift shafts

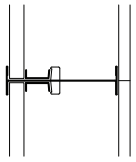
Non-combustible ShaftWall

1



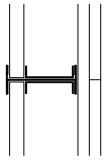
Gypframe 60, 70 or 92mm 'I' Stud framework with 20mm Glasroc F FIRECASE between studs, secured by Gypframe Retaining Channel. 25mm Isover Acoustic Partition Roll (APR 1200) in cavity (optional). Lining boards to non-shaft side, see table.

2



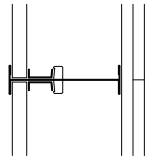
Gypframe 146 TI 90 Tabbed 'I' Stud framework with 20mm Glasroc F FIRECASE between studs, secured by Gypframe Retaining Channel. 25mm Isover Acoustic Partition Roll (APR 1200) in cavity (optional). Lining boards to non-shaft side, see table.

3



Gypframe 60, 70 or 92mm 'I' Stud framework with 20mm Glasroc F FIRECASE between studs, secured by Gypframe Retaining Channel. 25mm Isover Acoustic Partition Roll (APR 1200) in cavity (optional). Lining boards to non-shaft side, see table.

4



Gypframe 146 TI 90 Tabbed 'I' Stud framework with 20mm Glasroc F FIRECASE between studs, secured by Gypframe Retaining Channel. 25mm Isover Acoustic Partition Roll (APR 1200) in cavity (optional). Lining boards to non-shaft side, see table.

Table 4.23a – ShaftWall (vertical elements) non-combustible solutions to satisfy the requirements of *BS 476: Part 22: 1987*

Detail	Partition thickness mm	Lining boards to non-shaft side[1]		Maximum partition height[2] mm	Stud size mm	Sound insulation R_w[3]		Duty rating[5]	Approx. weight kg/m²	System reference
		Board type	Lining thickness mm			No insulation dB	Sealed structure[4] plus 25mm Isover Acoustic Partition Roll (APR 1200) dB			
BS	**60 minutes fire resistance[6]**									
1	77	Glasroc F FIRECASE	1 x 15	4200	60	38	41	Heavy	32	G306001/010
1	87	Glasroc F FIRECASE	1 x 15	4200	70	38	41	Heavy	32	G306001/010
1	109	Glasroc F FIRECASE	1 x 15	6000	92	39	42	Heavy	33	G306004/011
2	163	Glasroc F FIRECASE	1 x 15	7700	146	42	45	Heavy	35	G306007
BS	**90 minutes fire resistance[6]**									
3	92	Glasroc F FIRECASE	2 x 15	4500	60	41	44	Severe	46	G306003/023
3	102	Glasroc F FIRECASE	2 x 15	4500	70	41	44	Severe	46	G306003/023
3	124	Glasroc F FIRECASE	2 x 15	6400	92	43	45	Severe	47	G306006/025
4	178	Glasroc F FIRECASE	2 x 15	7900	146	47	49	Severe	49	G306009/028
BS	**120 minutes fire resistance[6]**									
3	92	Glasroc F FIRECASE	2 x 15	4500	60	41	44	Severe	46	G306003/023
3	102	Glasroc F FIRECASE	2 x 15	4500	70	41	44	Severe	46	G306003/023
3	124	Glasroc F FIRECASE	2 x 15	6700	92	43	45	Severe	47	G306006/025
4	178	Glasroc F FIRECASE	2 x 15	7900	146	47	49	Severe	49	G306009/028

[1] For a non-combustible solution on the shaft side only the Glasroc F FIRECASE on the non-shaft side can be replaced with 15mm Gyproc FireLine or 15mm Gyproc DuraLine.

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

[3] The acoustic performance figures quoted include **ShaftWall** partitions with deflection heads.

[4] 20mm Glasroc F FIRECASE and first layer of lining board are bedded onto Gyproc Sealant, as required for pressurised air shafts, in addition to normal sealing.

[5] Estimated rating from non-shaft side only.

[6] The temperature of exposed metal may exceed the requirements of *BS 476: Part 22: 1987* within the fire test period, and therefore relaxation should be sought from the approving authority on the basis that no combustible materials are likely to be stored adjacent to the structure. In situations where the full period of insulation is required, contact the British Gypsum Technical Advice Centre for further guidance.

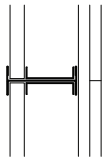
NB The fire resistance and sound insulation performances are for imperforate partitions, but incorporating deflection heads, with all joints taped and filled, or skimmed according to British Gypsum's recommendations. The quoted performances are achieved only if British Gypsum components are used throughout, and the company's fixing recommendations are strictly observed. Any variation in the specifications should be checked with British Gypsum.

NB Gypframe Extra Deep Flange Floor & Ceiling Channel or 'J' Channel should be used at the head. For the base, Gypframe Floor & Ceiling Channel should be used for heights up to 4200mm, Gypframe Deep Flange Floor & Ceiling Channel should be used for heights between 4200mm and 8000mm.

Fire protection to lift shafts

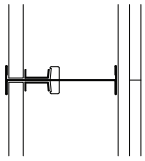
Non-combustible **ShaftWall**

1



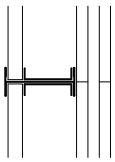
Gypframe 60, 70 or 92mm 'T' Stud framework with 20mm Glasroc F FIRECASE between studs, secured by Gypframe Retaining Channel. 25mm Isover Acoustic Partition Roll (APR 1200) in cavity (optional). Lining boards to non-shaft side, see table.

2



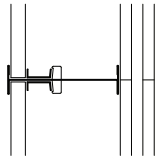
Gypframe 60, 70 or 92mm 'T' Stud framework with 20mm Glasroc F FIRECASE between studs, secured by Gypframe Retaining Channel. 25mm Isover Acoustic Partition Roll (APR 1200) in cavity (optional). Lining boards to non-shaft side, see table.

3



Gypframe 60, 70 or 92mm 'T' Stud framework with 20mm Glasroc F FIRECASE between studs, secured by Gypframe Retaining Channel. 25mm Isover Acoustic Partition Roll (APR 1200) in cavity (optional). Lining boards to non-shaft side, see table.

4



Gypframe 146 TI 90 Tabbed 'T' Stud framework with 20mm Glasroc F FIRECASE between studs, secured by Gypframe Retaining Channel. 25mm Isover Acoustic Partition Roll (APR 1200) in cavity (optional). Lining boards to non-shaft side, see table.

Table 4.23b – ShaftWall (vertical elements) non-combustible solutions to satisfy the requirements of *BS EN 1364-1: 1999*

Detail	Partition thickness mm	Lining boards to non-shaft side[1]		Maximum partition height[2] mm	Stud size mm	Sound insulation R_w[3]		Duty rating[5]	Approx. weight kg/m²	System reference
		Board type	Lining thickness mm			No insulation dB	Sealed structure[4] plus 25mm Isover Acoustic Partition Roll (APR 1200) dB			
EN **60 minutes fire resistance**										
1	92	Glasroc F FIRECASE	2 x 15	4500	60	41	44	Severe	46	G306003/023
1	102	Glasroc F FIRECASE	2 x 15	4500	70	41	44	Severe	46	G306003/023
1	124	Glasroc F FIRECASE	2 x 15	6000	92	43	45	Severe	47	G306006/025
2	178	Glasroc F FIRECASE	2 x 15	6000	146	47	49	Severe	49	G306009/028
EN **90 minutes fire resistance**										
1	92	Glasroc F FIRECASE	2 x 15	4500	60	41	44	Severe	46	G306003/023
1	102	Glasroc F FIRECASE	2 x 15	4500	70	41	44	Severe	46	G306003/023
1	124	Glasroc F FIRECASE	2 x 15	6000	92	43	45	Severe	47	G306006/025
2	178	Glasroc F FIRECASE	2 x 15	6000	146	47	49	Severe	49	G306009/028
EN **120 minutes fire resistance**										
3	107	Glasroc F FIRECASE	3 x 15	4500	60	42	44	Severe	59	G306030/035
3	117	Glasroc F FIRECASE	3 x 15	4500	70	42	44	Severe	59	G306030/035
3	139	Glasroc F FIRECASE	3 x 15	6000	92	44	45	Severe	60	G306031/036
4	193	Glasroc F FIRECASE	3 x 15	6000	146	48	49	Severe	62	G306032/033

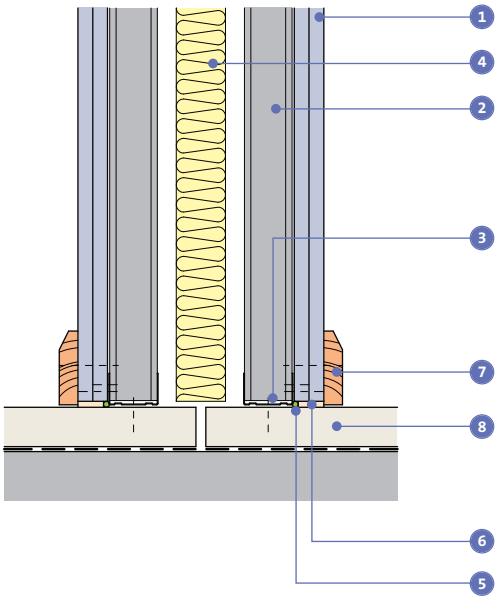
[1] For a non-combustible solution on the shaft side only the Glasroc F FIRECASE on the non-shaft side can be replaced with 15mm Gyproc FireLine or 15mm Gyproc DuraLine.
[2] The maximum heights quoted are limited by the fire state field of application or by limiting deflection of L/240 at 200 Pa, whichever is the more onerous.
[3] The acoustic performance figures quoted include **ShaftWall** partitions with deflection heads.
[4] 20mm Glasroc F FIRECASE and first layer of lining board are bedded onto Gyproc Sealant, as required for pressurised air shafts, in addition to normal sealing.
[5] Estimated rating from non-shaft side only.

NB The fire resistance and sound insulation performances are for imperforate partitions, but incorporating deflection heads, with all joints taped and filled, or skimmed according to British Gypsum's recommendations. The quoted performances are achieved only if British Gypsum components are used throughout, and the company's fixing recommendations are strictly observed. Any variation in the specifications should be checked with British Gypsum.

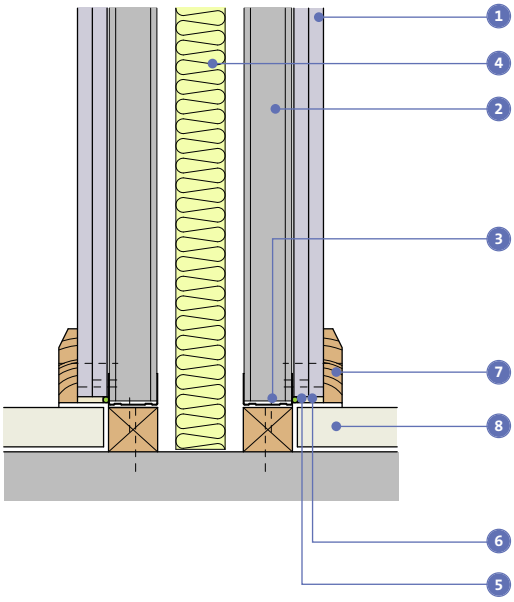
NB Gypframe Extra Deep Flange Floor & Ceiling Channel or 'J' Channel should be used at the head. For the base, Gypframe Floor & Ceiling Channel should be used for heights up to 4200mm, Gypframe Deep Flange Floor & Ceiling Channel should be used for heights between 4200mm and 8000mm.

Construction details

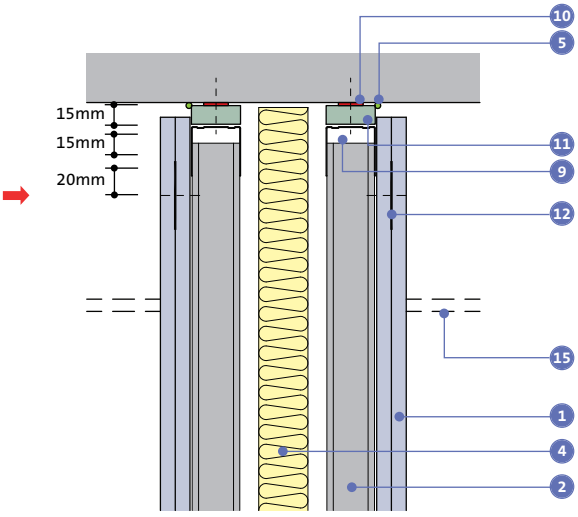
1 Base on concrete floor with screed



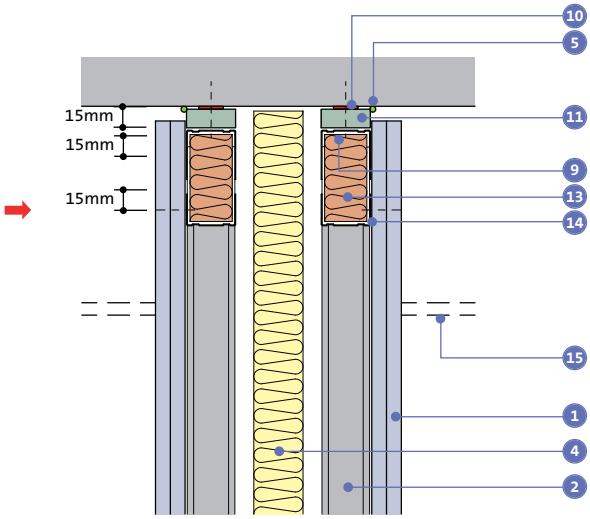
2 Base with timber sole plate



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



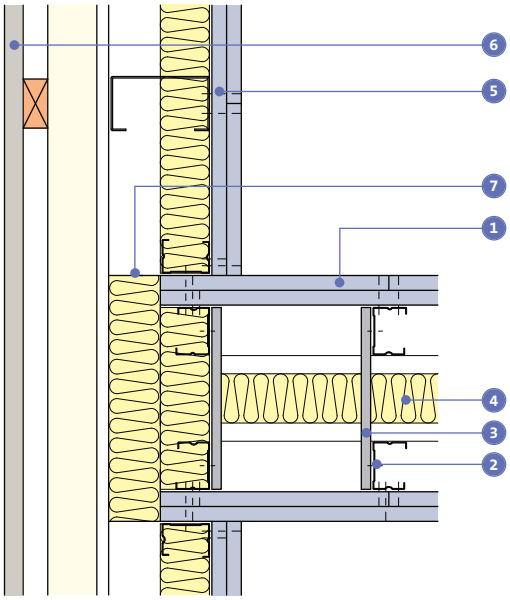
4 Deflection head for 15mm downward movement and up to 120 minutes fire resistance



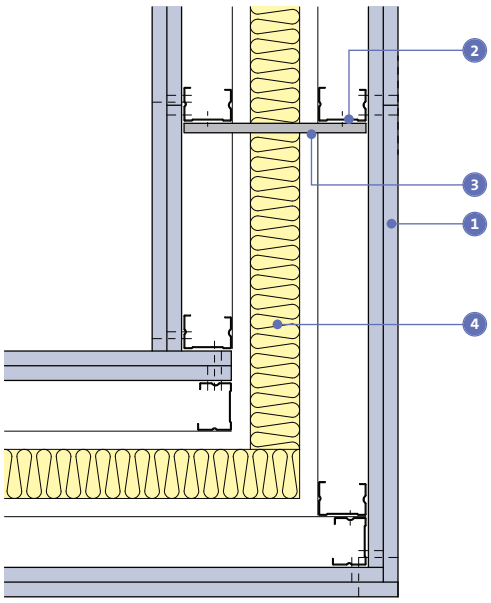
1. Gyproc SoundBloc
2. Gypframe 'C' Stud cross braced with Gypframe 99 FC 50 Fixing Channel
3. Gypframe Standard Floor & Ceiling Channel
4. Isover insulation
5. Gyproc Sealant
6. Bulk-fill with Gyproc jointing materials
7. Skirting
8. Screed
9. Gypframe Deep Flange Floor & Ceiling Channel suitably fixed through fire-stop to structure
10. Gyproc FireStrip
11. Gyproc CoreBoard
12. Gypframe GFS1 Fixing Strap
13. Stone mineral wool (minimum 33kg/m^3) retained by channel nogging
14. Nogging cut from Gypframe Channel and fixed to studs
15. Imperforate ceiling

NB No board fixings should be made into the head channel. The arrow (➡) denotes 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.

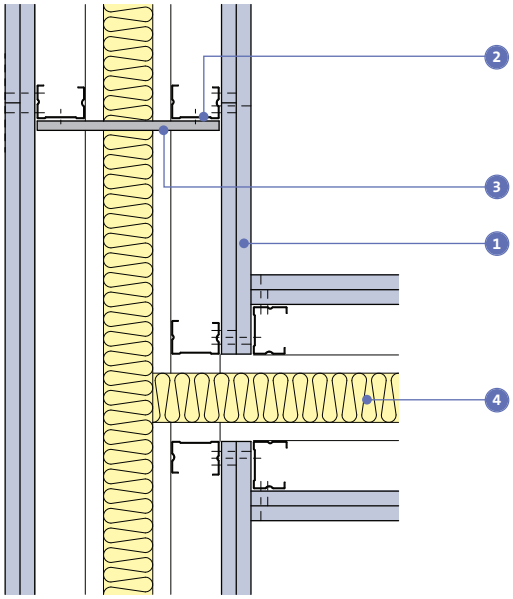
5 Junction with external wall when acoustic performance is a key consideration – helps reduce flanking transmission



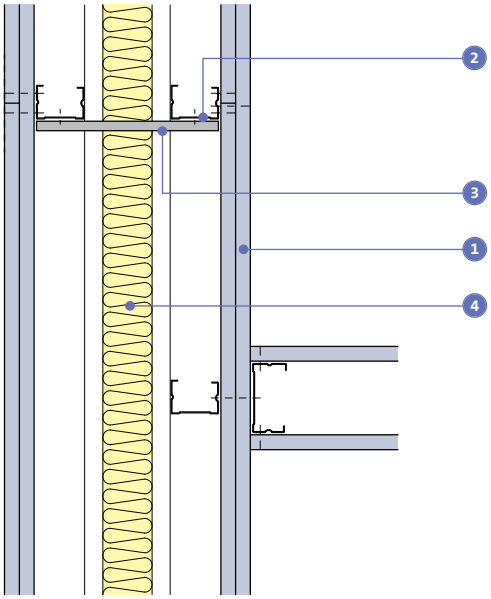
6 Corner



7 'T' junction

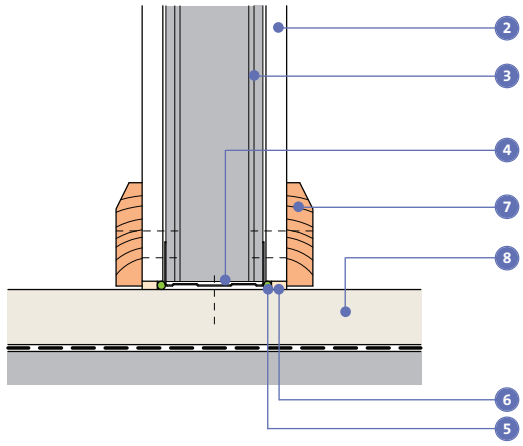


8 'T' junction with **GypWall CLASSIC** partition

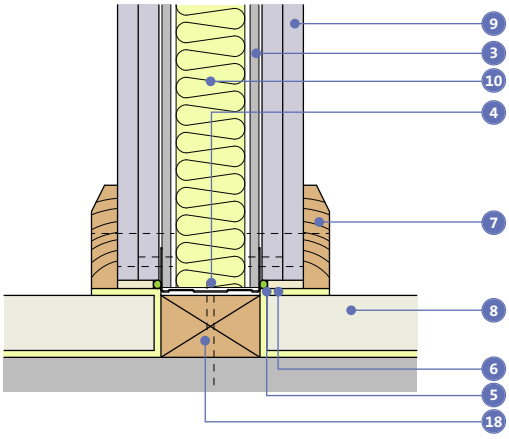


1. Gyproc SoundBloc
2. Gypframe 'C' Stud
3. Gypframe 99 FC 50 Fixing Channel
4. Isover insulation
5. External wall stud framework
6. External cladding
7. Cavity barrier (subject to regulatory requirements)

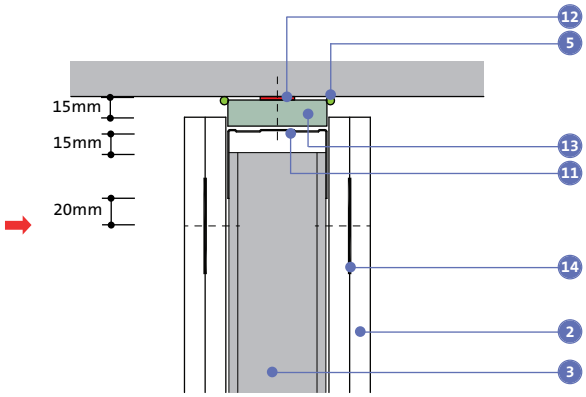
9 Base on concrete floor with screed



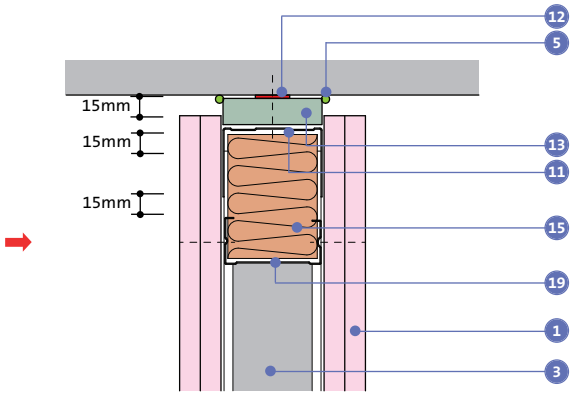
10 Base with timber sole plate



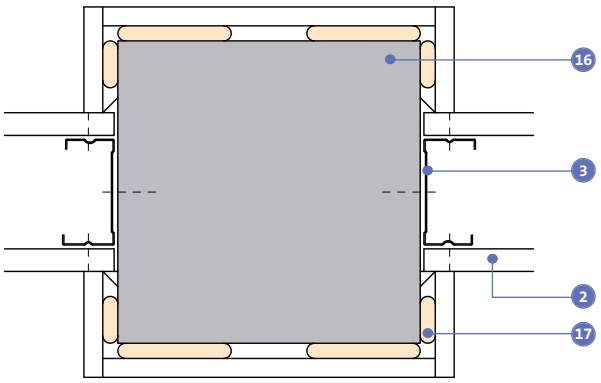
11 Deflection head for 15mm downward movement and 60 minutes fire resistance



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



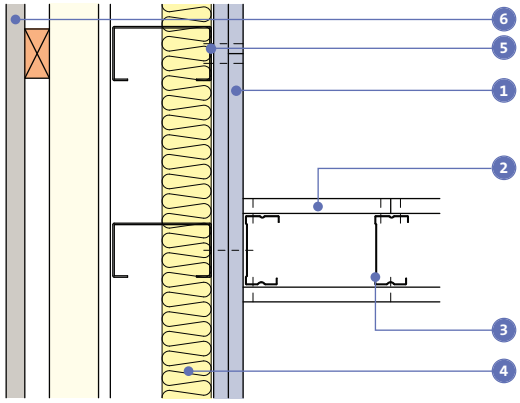
13 Concrete column and partition junction



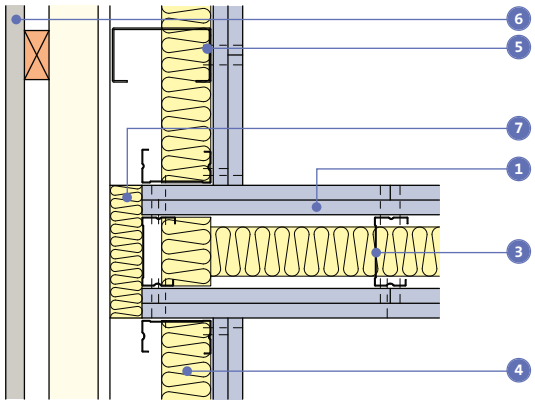
1. Gyproc FireLine
2. Gyproc plasterboard
3. Gypframe 'C' Stud
4. Gypframe Standard Floor & Ceiling Channel
5. Gyproc Sealant
6. Bulk-fill with Gyproc jointing materials
7. Skirting
8. Screed
9. Gyproc SoundBloc
10. Isover insulation
11. Gypframe Deep Flange Floor & Ceiling Channel suitably fixed through fire-stop to structure
12. Gyproc FireStrip
13. Gyproc CoreBoard
14. Gypframe GFS1 Fixing Strap
15. Stone mineral wool (minimum 33kg/m³) retained by channel nogging
16. Concrete column
17. **DriLyner BASIC** wall lining system
18. Timber sole plate, suitably fixed to structure
19. Nogging cut from Gypframe 'C' Stud

NB No board fixings should be made into the head channel. The arrow (➡) denotes 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.

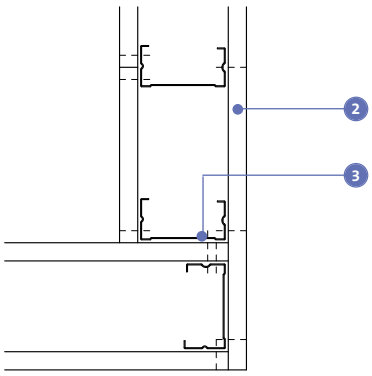
14 Junction with external wall



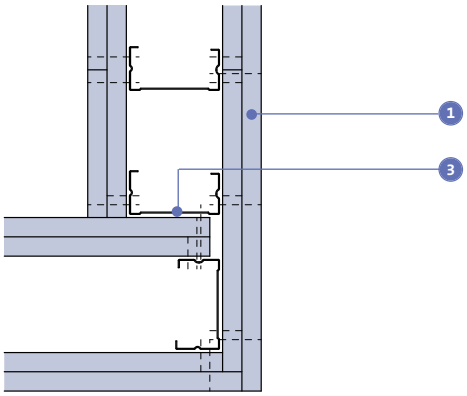
15 Junction with external wall where acoustic performance is a key consideration – helps reduce flanking transmission



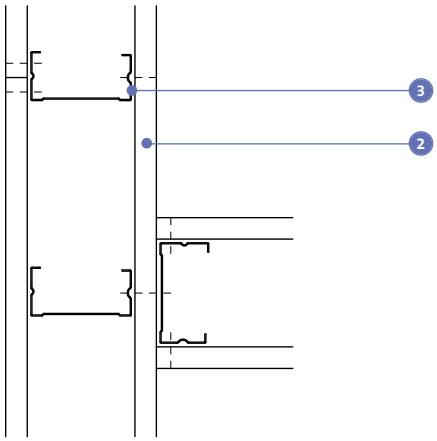
16 Corner – single layer



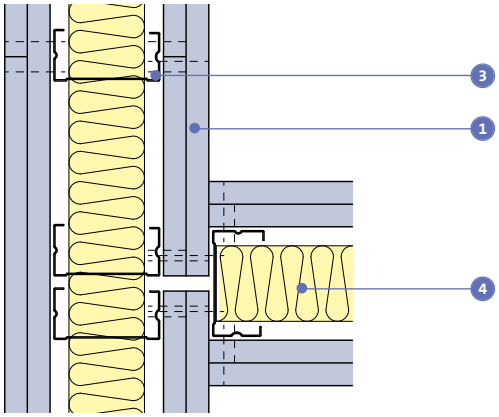
17 Corner – double layer



18 'T' junction – single layer

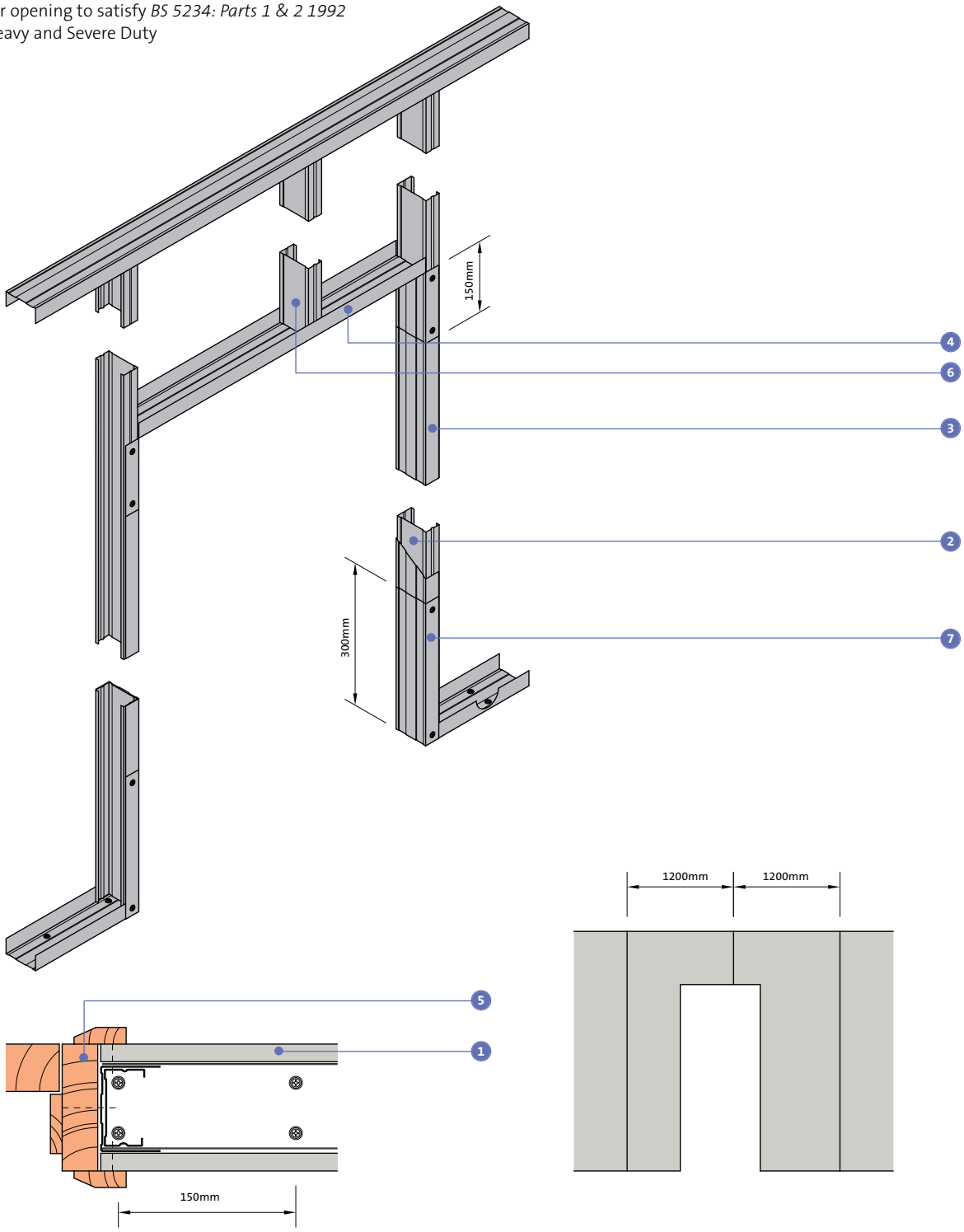


19 'T' junction to optimise acoustic performance and reduce flanking transmission



1. Gyproc SoundBloc
2. Gyproc plasterboard
3. Gypframe 'C' Stud
4. Isover insulation
5. External wall stud framework
6. External cladding
7. Cavity barrier (subject to regulatory requirements)

20 Door opening to satisfy *BS 5234: Parts 1 & 2 1992* – Heavy and Severe Duty

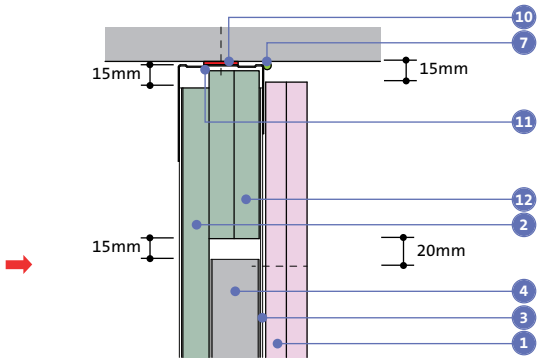


1. Gyproc DuraLine
2. Gypframe 'C' Stud
3. Gypframe Floor & Ceiling Channel to sleeve studs
4. Gypframe Floor & Ceiling Channel cut and bent to form door head
5. Timber door frame and architrave
6. Gypframe 'C' Stud to maintain stud module
7. Gypframe Floor & Ceiling Channel cut and bent to extend up studs

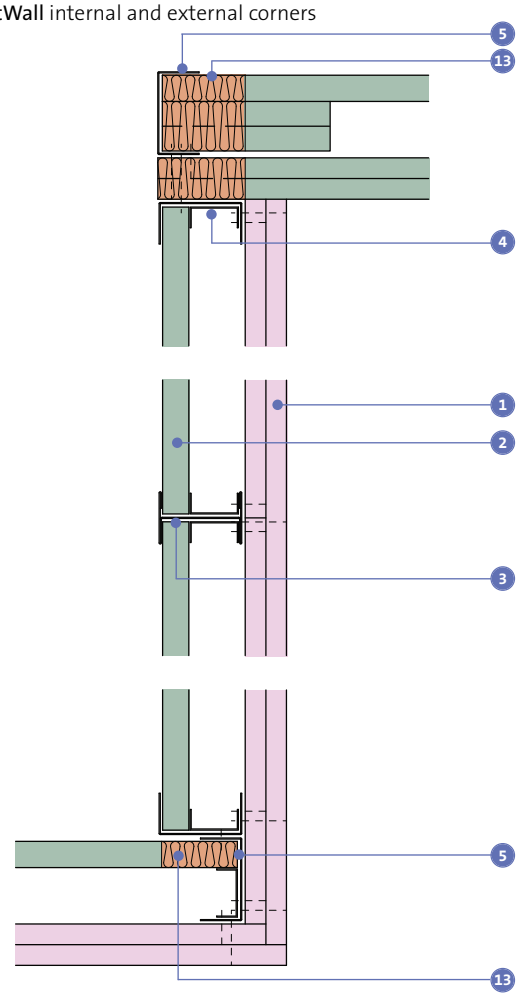
NB Advice should be sought from the door manufacturer prior to the construction of these details.

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

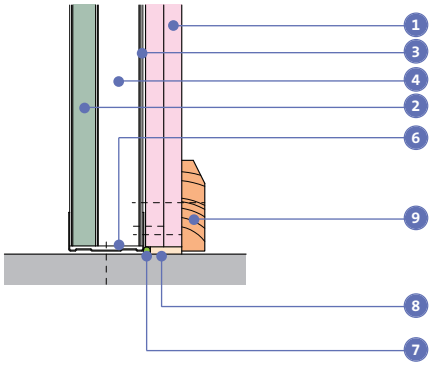
21 ShaftWall deflection head for 15mm downward movement



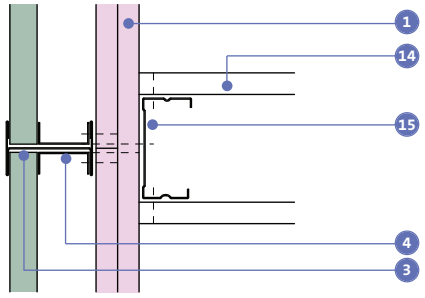
22 ShaftWall internal and external corners



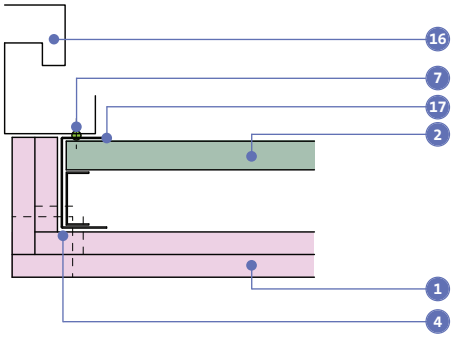
23 ShaftWall base



24 'T' junction – ShaftWall with GypWall CLASSIC partition



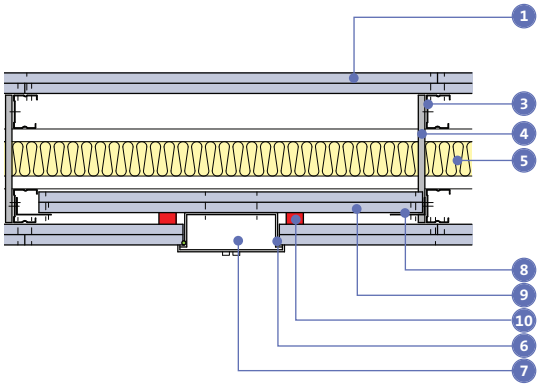
25 Lift door abutment with ShaftWall



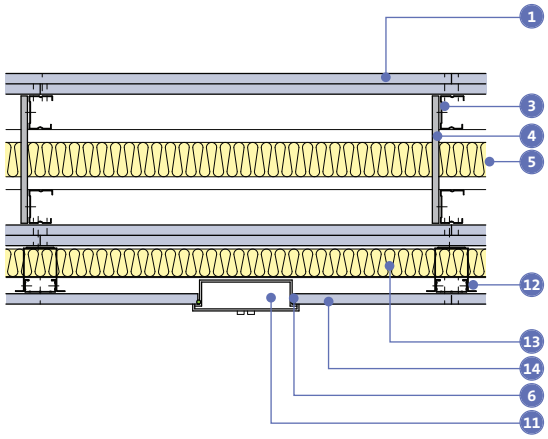
1. Gyproc FireLine
2. Gyproc CoreBoard
3. Gypframe 'I' Stud
4. Gypframe Retaining Channel
5. Gypframe Starter Channel
6. Gypframe Standard Floor & Ceiling Channel
7. Gyproc Sealant
8. Bulk-fill with Gyproc jointing materials
9. Skirting
10. Gyproc FireStrip
11. Gypframe 'J' Channel
12. Gyproc CoreBoard firestop
13. Stone mineral wool (100kg/m^3) to deflection gap
14. Gyproc plasterboard
15. Gypframe 'C' Stud
16. Lift door frame
17. Gypframe Starter Channel mechanically fixed to door frame at 300mm centres

NB No board fixings should be made into the head channel. The arrow (➡) denotes 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.

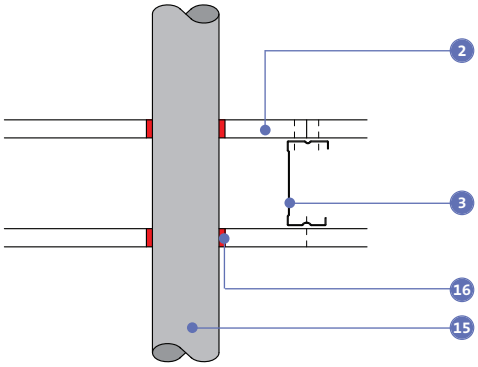
26 Electrical socket box with plasterboard baffle in GypWall QUIET



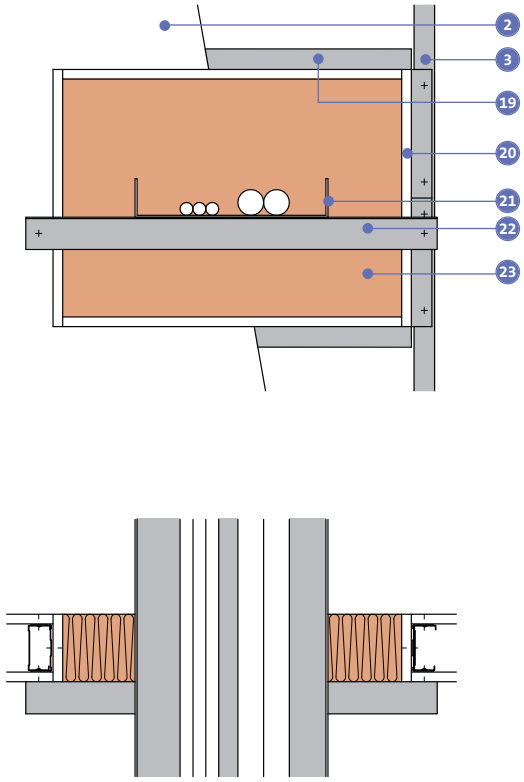
27 Electrical socket box in sacrificial lining to GypWall QUIET



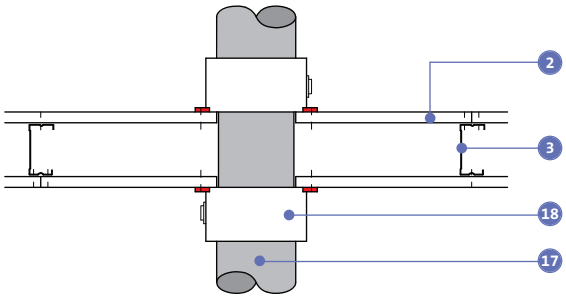
28 Steel or copper pipe penetration



29 Cable tray penetration (elevation and plan)

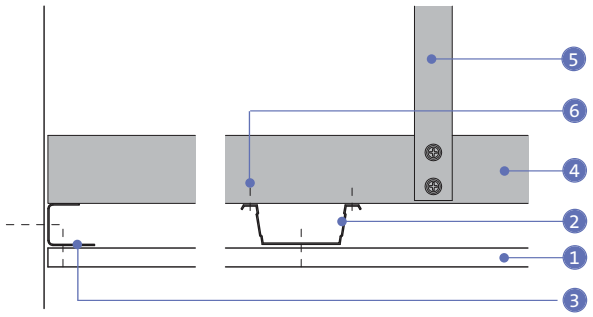


30 uPVC or PVC pipe penetration

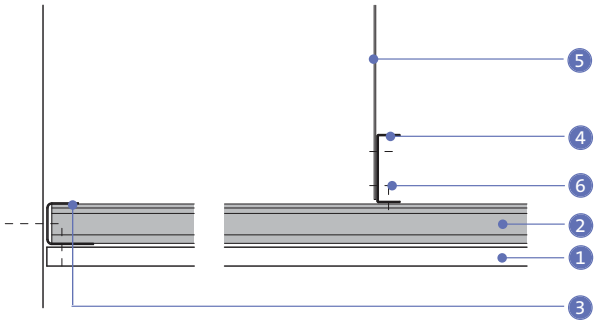


1. Gyproc SoundBloc
2. Gyproc plasterboard
3. Gypframe 'C' Stud
4. Gypframe 99 FC 50 Fixing Channel
5. Isover insulation
6. Gyproc Sealant
7. Electrical socket box with metal back
8. Gypframe GA4 Steel Angle
9. 150mm high Gyproc plasterboard baffle to match partition lining
10. Fire-resistant seal where required by Building Regulations Approved Document B
11. Electrical socket box
12. GypLyner UNIVERSAL with minimum 70mm cavity
13. Minimum 50mm Isover Acoustic Partition Roll (APR 1200)
14. 15mm Gyproc SoundBloc
15. Steel or copper pipe up to 110mm diameter
16. 5mm gap filled with fire-resistant sealant by others
17. uPVC or PVC pipe up to 160mm diameter
18. Pipe collar by others
19. Gypframe Standard Floor & Ceiling Channel cut, bent and fixed around opening
20. Opening lined with plasterboard equivalent to partition lining
21. Cable tray independently suspended from soffit
22. 50 x 50mm steel angle
23. Faced mineral fibre batt by others

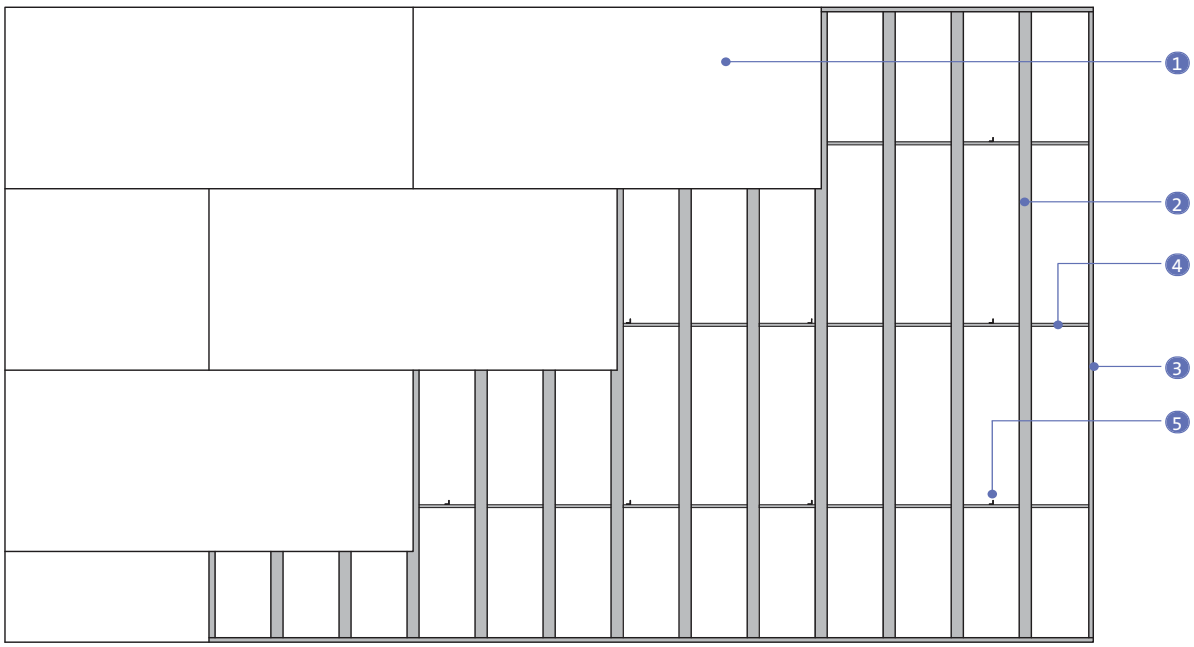
31 Perimeter parallel to Gypframe MF5 Ceiling Section



32 Perimeter perpendicular to Gypframe MF5 Ceiling Section



33 Reflected ceiling plan – single layer



1. Gyproc plasterboard
2. Gypframe MF5 Ceiling Section
3. Gypframe MF6 Perimeter Channel
4. Gypframe MF7 Primary Support Channel
5. Gypframe MF8 Strap Hanger or Gypframe GA1 Steel Angle
6. Wafer Head Jack-Point Screws

5. Off-Site Manufacturing

St Ives, Cornwall.

Off-Site Manufacturing

Off-Site Manufacturing (OSM) of panels and modules has become an attractive solution in the construction of hotels and student accommodation for the following reasons:

- Speed of construction
- Build programme predictability
- Building tolerances
- Quality control
- On-site health and safety
- Waste elimination
- Reduced construction noise

As a result of these benefits, significant time and cost efficiency improvements can be achieved.

British Gypsum products for the OSM market

To meet the unique challenges presented to products used in the OSM market, British Gypsum has developed a range of solutions to suit.

Rigidur H

Material characteristics

Rigidur H is a gypsum fibreboard which combines gypsum, cellulose fibres from recycled paper, and water to form a dense sheet material that has superior rigidity, durability, surface hardness and mechanical strength. This additional performance over traditional plasterboard minimises damage during transit and installation, which can be a cause of unplanned cost for off-site manufacturers. The uniquely smooth surface of the product can be directly decorated without the need for surface treatments, reducing the number of operations required to complete a module or pod.

The high density of the product provides excellent acoustic performance, and it achieves an A1 Euroclass reaction to fire rating in addition to being classified Non-Combustible and Class 0 in accordance with Building Regulations Approved Document B.

The increased mechanical strength of the product also means that greater loads can be attached to it without the need for additional support.

The surface of **Rigidur H** has been treated to prevent the ingress of moisture. Tests have shown that it will increase less than 2% in thickness after immersion in water for 24 hours, and is therefore a product considered suitable for use in 'intermittently damp' areas, e.g. kitchens and bathrooms.

Rigidur H is now being used by a number of major off-site manufacturers supplying into the Healthcare, Education, Custodial, Hotel and MOD sectors.

Rigidur H can be used as a lining to internal walls, external walls, ceilings, SIP panels, bathroom pods and service risers onto either timber or metal frames.

Table 5.1 shows example fixing devices and typical safe working loads when fixing into Rigidur H (GypWall EXTREME) and including 12.5mm Gyproc WallBoard, 15mm Gyproc SoundBloc and 15mm Gyproc DuraLine for comparison where appropriate.

Table 5.1 – Example fixing devices and typical safe working loads for GypWall EXTREME

Typical SWL[1] (typical failure load)	Description	Detail
17kg (68kg)	Steel picture hook and masonry nail into 12.5mm Rigidur H	
18kg (72kg)	Steel picture hook and masonry nail into 15mm Rigidur H	
7kg (49kg)	Fischer PD nylon plug and screw into 12.5mm Gyproc WallBoard	
10kg (70kg)	Fischer PD nylon plug and screw into 15mm Gyproc SoundBloc	
11kg (77kg)	Fischer PD nylon plug into 15mm Gyproc DuraLine	
20kg (140kg)	Fischer PD nylon plug and screw into 12.5mm or 15mm Rigidur H	
21kg (147kg)	Fischer UX (8 x 50) nylon plug and screw into 12.5mm Rigidur H	
27kg (189kg)	Fischer UX (8 x 50) nylon plug and screw into 15mm Rigidur H	
30kg (120kg)	No. 10 woodscrew into 12.5mm or 15mm Rigidur H	
17kg (68kg)	Fischer HM8 x 55 steel cavity fixing into 15mm Gyproc SoundBloc	
20kg (80kg)	Fischer HM8 x 55 steel cavity fixing into 15mm Gyproc DuraLine	
49kg (196kg)	Fischer HM8 x 55 steel cavity fixing into 15mm Rigidur H	
58kg (232kg)	Fischer KD6 steel cavity fixing into 12.5mm Rigidur H	
74kg (296kg)	Fischer KD6 steel cavity fixing into 15mm Rigidur H	

[1] Safe Working Load (SWL) - a safety factor of four (steel fixings) and seven (plastic fixings) has been used.

NB For technical assistance on above fixings please contact the fixings manufacturer. The suitability of the fixing must be confirmed by the building designer / fixing manufacturer. Reference can also be made to the Construction Fixing Association (CFA) guidance note 'Fixing For Plasterboard', which is currently under review by the CFA and can be accessed at www.fixingscfa.co.uk

The information within **Table 5.1** does not take into consideration any additional forces that may be applied whether it be accidental, abuse or otherwise.

The example fixing devices, typical safe working loads and typical failure loads given in **Table 5.1** relate to the installation of single fixtures. It is important to ensure that the drylining system specified is capable of supporting the loads, particularly if installing multiple fixtures.

Rigidur H Large format board

One of the major challenges in modular construction is finding product solutions that allow for greater automation to reduce process time and increase productivity.

Customers told us that they wanted to reduce the jointing process in their factory system, as this step had a significant time impact.

Rigidur H has been developed in large board format, enabling complete wall panels to be constructed from a single board, without the need for jointing. Any bespoke size up to 2.5m x 6m can be manufactured to suit the precise overall wall dimensions of the module or pod and minimise waste. The removal of joints also removes any risk of joint cracking during transit, thus negating the need for remedial work being required. The mechanical strength of the product means that it can also contribute to the racking strength of the construction.

Glasroc H TILEBACKER

Glasroc H TILEBACKER is a glass-reinforced gypsum board designed for use as a tiling board, providing outstanding performance in environments where there is frequent exposure to water, such as shower cubicles and wet room walls within bathroom pods. Glasroc H TILEBACKER has a yellow pre-primed acrylic coating which provides an ideal surface for direct tiling in addition to enhanced water resistance.

Glasroc H TILEBACKER provides good levels of acoustic and impact performance, along with A1 Euroclass reaction to fire classification.

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