

Separating walls



Approved Document E 2003 – Clause E1

Separating wall constructions must be built to comply with Building Regulations Approved Document E clause E1 and are subject to Pre-Completion Testing unless a Robust Detail construction is used.

Clause E1 of Approved Document E stipulates the following:

Dwelling-houses, flats and rooms for residential purposes shall be designed and constructed in such a way that they provide reasonable resistance to sound from other parts of the same building and from adjoining buildings.



Approved Document E 2003 – Performance standards

The following table is adapted from Approved Document E and highlights the minimum performance standards required for separating walls. Please note that the requirement is for airborne sound insulation only.

Dwelling-houses and flats - performance standards for separating walls that have a separating function		
	Airborne sound insulation $D_{ntw} + C_{tr}$ dB (Minimum values)	Impact sound insulation $L'_{nt,w}$ dB (Minimum values)
New build separating walls	45	-

Rooms for residential purposes - performance standards for separating walls that have a separating function		
	Airborne sound insulation $D_{ntw} + C_{tr}$ dB (Minimum values)	Impact sound insulation $L'_{nt,w}$ dB (Minimum values)
New build separating walls	43	-

How to comply

Robust Details - All Robust Details have been approved as capable of meeting or exceeding the E1 performance criteria, providing they are built correctly. Following these specifications means the construction can be exempt from undertaking Pre Completion Testing. The Robust Details scheme applies to new-build houses and apartments only. Plots must be registered with Robust Details Limited prior to construction.

NB – It is important to check the compatibility of the Robust Detail separating walls with the Robust Detail separating floors. Please refer to www.robustdetails.com for more information.

Manufacturers' Proprietary Systems - These constructions are British Gypsum Approved Systems, which, provided they are built correctly, have the potential to achieve E1 performance criteria required for new-build houses and apartments separating floor constructions and new-build rooms for residential purposes. Pre-Completion Testing must be executed on a 10% sample (by type) to demonstrate compliance.

The Code for Sustainable Homes

Within category 7 of the Code for Sustainable Homes, Health and Wellbeing, section Hea 2 states that up to four credits are available for achieving higher standards of sound insulation than those given in Building Regulations Approved Document E and demonstrating it by using either Pre-Completion Testing or Robust Details. This stamp highlights construction details which have the potential to achieve the number of credits stated, provided they are built correctly.



Section 5 - Scotland

Section 5 (Scotland) stipulates a minimum airborne sound performance for separating walls of 56 D_{ntw} dB. Please be aware that Scottish Regulations do not recognise a correction factor for low frequency sound.

	Airborne sound insulation D_{ntw} dB (Minimum values)
Separating walls	56

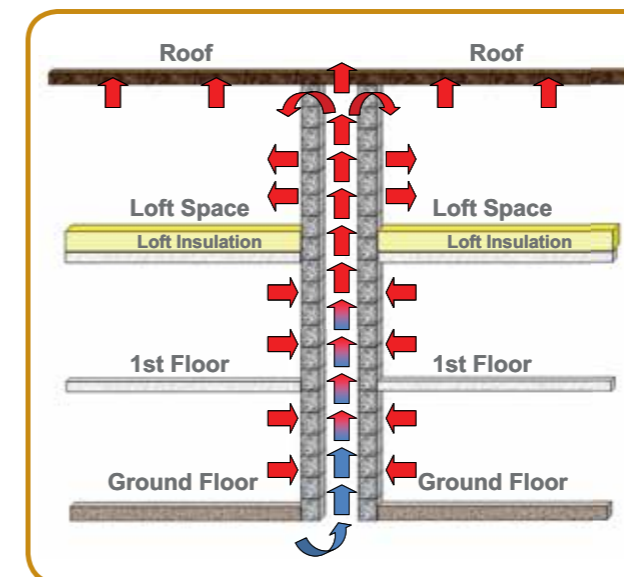
Approved Document L 2010 - Requirements

Contrary to previous assumptions, Approved Document L will no longer treat separating cavity walls as a zero heat loss element, due to the thermal bypass effect

The heat loss can be reduced by measures that restrict air movement through the cavity, either by means of fully-filling the cavity and/or by providing effective sealing around the perimeter.

Table 3 - U-values for party walls

Party wall construction	U-value (W/m^2K)
Solid	0.0
Unfilled cavity with no effective edge sealing	0.5
Unfilled cavity with effective edge sealing around all exposed edges and in line with insulation layers in abutting elements	0.2
A fully filled cavity with effective sealing at all exposed edges and in line with insulation layers in abutting elements	0.0



What is the thermal bypass effect?

Where outside air is able to flow into the separating wall cavity a cold zone is created which results in heat flux through the wall sections on either side. The extent of air flow and heat flux will depend on external conditions such as wind and temperature and also on the setting up of a ventilation stack effect caused by warmed air rising in the cavity to be replaced by cooler air drawn in from outside. The air movements involved can be significant and, if no steps are taken to restrict flows, the resulting heat losses can be large.

Isover RD Party Wall Roll

Isover RD Party Wall Roll is a full-fill glass mineral roll for use in 75mm, 100mm, 125mm and 150mm separating wall cavities. The product meets the full-fill requirement to deliver a zero U-value for separating 'party' walls as defined in Building Regulations (Approved Document L1A, Table 3). See page 56 for Separating Wall Solutions 29 and 30 and also page 97 for further product information



Zero U-value solutions

This stamp highlights construction details which have potential to achieve a zero U-value, provided they are built correctly.

Scotland

Scottish regulations also recognise that separating walls should no longer be treated as zero heat loss. Section 6 stipulates the following:

To limit heat loss, a separating wall cavity should have effective perimeter sealing around all exposed edges and in line with insulation layers in abutting elements which separate the dwelling from another building or from an unheated space. Further reduction in heat loss can be achieved where the cavity separating wall is also fully filled with a material that limits air movement.

Separating wall solutions

The separating wall solutions detailed in this section of the guide are Robust Detail or British Gypsum Approved Systems. These constructions have been tested and proved to meet or exceed the sound insulation values given in the table on page 49. Please note that for British Gypsum Approved Systems Pre-Completion Testing must take place to demonstrate compliance.

Separating wall solutions (Robust Details)		Airborne sound dB ($D_{ntw} + Ctr$) - site test result															
		45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
23	E-WM-8: Masonry Lightweight aggregate blockwork (35mm Isover RD35 and Gyproc plasterboard)				48												
24	E-WM-14: Masonry Lightweight aggregate blockwork with 100mm cavity (35mm Isover RD35 and Gyproc plasterboard)						50										
25	E-WM-15: Masonry aircrete blockwork (35mm Isover RD35 and Gyproc plasterboard)				48												
26	E-WM-17: Masonry Lightweight aggregate blockwork (Isover RD Party Wall Roll and Gyproc plasterboard)						50										
27	E-WM-20: Masonry Lightweight aggregate blockwork (Isover RD Party Wall Roll and Gyproc plasterboard)						50										
28	E-WM-24: Masonry Masonry aircrete aggregate blockwork (Isover RD Party Wall Roll and Gyproc plasterboard)						50										
29	E-WT-1: Twin Timber Frame without sheathing board						50										
30	E-WT-2: Twin Timber Frame with sheathing board				48												
31	E-WS-1: Twin Steel Frame				47												
32	E-WS-2: Steel Frame GypWall QUIET IWL (Non-loadbearing)				47												
33	E-WS-3: Twin Steel Frame Modular build steel frame						50										
34	E-WS-4: Twin Steel Frame						50										
35	Masonry Walls Gyplyner UNIVERSAL lining															59	

Separating wall solutions (British Gypsum Approved)		Airborne sound transmission ($R_w + Ctr$ dB) - lab test result															
		50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65
36	GypWall CLASSIC With Gypframe 146 AS 50 AcouStuds															56	
37	GypWall CLASSIC With Gypframe 146 AS 50 AcouStuds															57	
38	GypWall QUIET															53	
39	GypWall QUIET															57	
40	GypWall QUIET SF															54	
41	GypWall QUIET SF with additional service zone created with Gyplyner UNIVERSAL															54	
42	GypWall QUIET SF															53	
43	GypWall QUIET IWL															58	
44	GypWall QUIET IWL																62

Isover Products

Isover separating wall solutions incorporate the following Isover products

Isover RD Party Wall Roll	Isover RD35	Isover Acoustic Partition Roll
Isover Acoustic Slab	Isover Timber Frame Batt	Isover Timber Party Wall Roll

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E-WM-8: Masonry

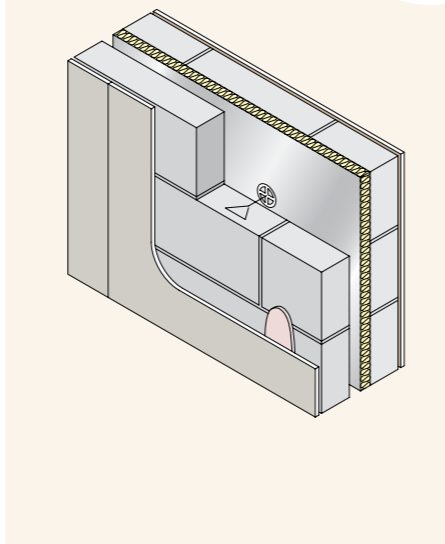
Lightweight aggregate blockwork
(35mm Isover RD35 and Gyproc plasterboard)



Robust Detail Approved Construction



- Overall construction nominal width 320mm
- Lightweight aggregate cavity block wall, minimum 100mm blocks (density 1350 - 1600kg/m³)
- Minimum 75mm cavity between leaves
- **Isover RD35 in the cavity**
- Nominal 8mm (minimum 6mm) Gyproc Soundcoat Plus
- Drylined with 12.5mm Gyproc WallBoard τ_{EN} , 15mm Gyproc WallBoard or 12.5mm Gyproc SoundBloc dot and dabbed (DriLyner **BASIC** system)



25

E-WM-15: Masonry

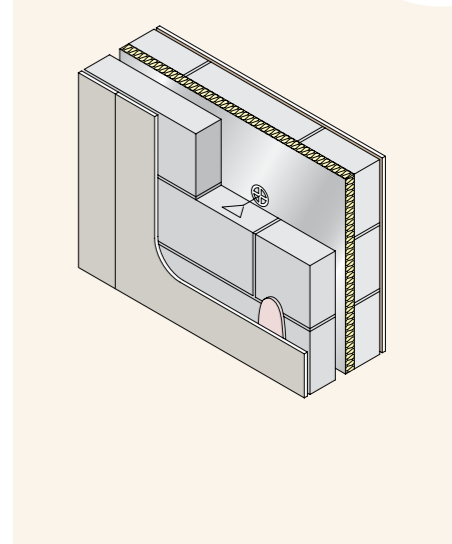
Aircrete blockwork
(35mm Isover RD35 and Gyproc plasterboard)



Robust Detail Approved Construction



- Overall construction nominal width 320mm
- Aircrete cavity block wall, minimum 100mm blocks (density 600 – 800kg/m³)
- Minimum 75mm cavity between leaves
- **Isover RD35 in the cavity**
- Drylined with 12.5mm Gyproc WallBoard τ_{EN} , 15mm Gyproc WallBoard or 12.5mm Gyproc SoundBloc dot and dabbed (DriLyner **BASIC** system)



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E-WM-14: Masonry

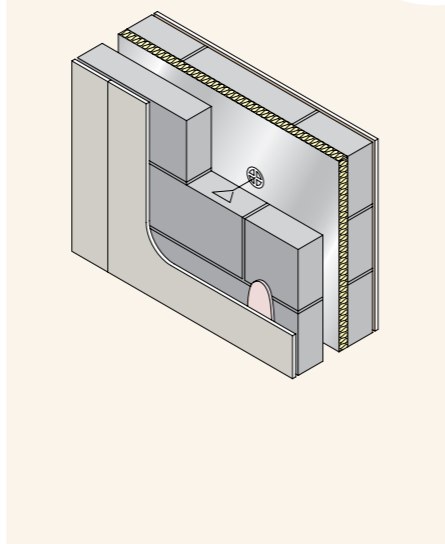
Lightweight aggregate blockwork with 100mm cavity
(35mm Isover RD35 and Gyproc plasterboard)



Robust Detail Approved Construction



- Overall construction nominal width 345mm
- Lightweight aggregate cavity block wall, minimum 100mm blocks (density 1350 - 1600kg/m³)
- Minimum 100mm cavity between leaves
- **Isover RD35 in the cavity**
- Drylined with 12.5mm Gyproc WallBoard τ_{EN} , 15mm Gyproc WallBoard or 12.5mm Gyproc SoundBloc dot and dabbed (DriLyner **BASIC** system)



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E-WM-17: Masonry

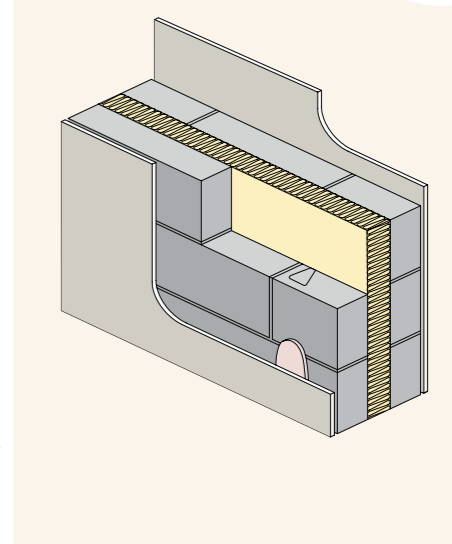
Lightweight aggregate blockwork
(Isover RD Party Wall Roll and Gyproc plasterboard)



Robust Detail Approved Construction



- Overall construction nominal width 320mm
- Lightweight aggregate cavity block wall, minimum 100mm blocks (density 1350 – 1600kg/m³) or Plasmor Aglite Ultima 1050 kg/m³ cavity block wall
- Minimum 75mm cavity between leaves
- **Minimum 75mm Isover RD Party Wall Roll in the cavity**
- Drylined with dot and dabbed 12.5mm Gyproc WallBoard τ_{EN} , 15mm Gyproc WallBoard or 12.5mm Gyproc SoundBloc



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E-WM-20: Masonry

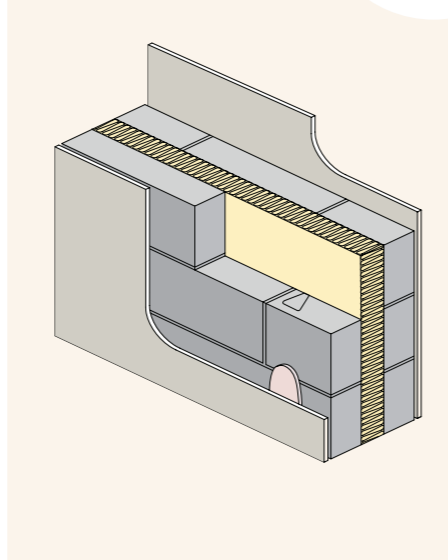
Lightweight aggregate blockwork
(Isover RD Party Wall Roll and Gyproc plasterboard)



Robust Detail Approved Construction



- Overall construction nominal width 345mm
- Lightweight aggregate cavity block wall, minimum 100mm blocks (density 1350 – 1600kg/m³)
- Minimum 100mm cavity between leaves
- **Minimum 100mm Isover RD Party Wall Roll in the cavity**
- Drylined with dot and dabbed 12.5mm Gyproc WallBoard τ_{EN} , 15mm Gyproc WallBoard or 12.5mm Gyproc SoundBloc



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E-WM-24: Masonry

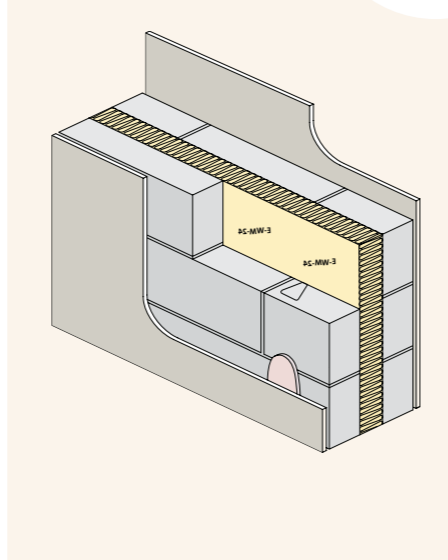
Masonry aircrete blockwork
(Isover RD Party Wall Roll and Gyproc plasterboard)



Robust Detail Approved Construction



- Aircrete cavity block wall, minimum 100mm blocks (density 600 – 800kg/m³)
- Minimum 100mm cavity between leaves
- **Minimum 100mm Isover RD Party Wall Roll in the cavity**
- Drylined with 12.5mm Gyproc WallBoard dot and dabbed (Drilyner BASIC system)



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Masonry walls

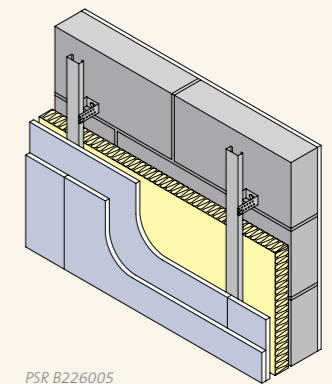
Gyplyner UNIVERSAL lining



Pre-Completion Testing - British Gypsum Approved System
(45dB D_{nT,w} + Ctr)



- Core masonry element mass per unit area minimum 200Kg/m², e.g. 100mm high density aggregate blocks
- Gyplyner UNIVERSAL wall lining to one side of wall with minimum 85mm cavity (framing at 600mm centres)
- **Lined with double layer of 12.5mm Gyproc SoundBloc, 50mm Isover Acoustic Partition Roll (APR 1200) in the cavity**
- Other side lined with either 12.5mm Gyproc WallBoard on the Drilyner BASIC system or 13mm Thistle plaster finish
- Nominal width 232mm (drylined) or 223mm (plastered)



PSR B226005

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E-WT-1: Timber frame

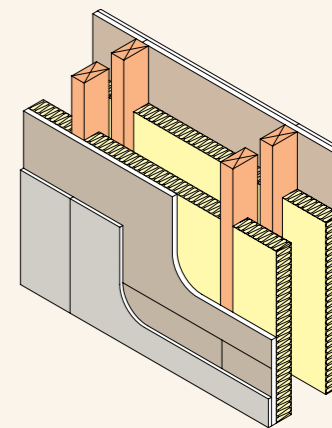
Without sheathing board



Robust Detail Approved Construction



- Overall construction nominal width 300mm
- Cavity width minimum 240mm, gap of minimum 50mm between frames
- **90mm Isover Timber Frame Batt 40 positioned between the studs in each timber frame**
- Board options:
 - Inner Layer of 19mm Gyproc Plank, outer layer of 12.5mm Gyproc WallBoard each side
 - Or
 - Double layer of 15mm Gyproc SoundBloc each side,
 - Or
 - Double layer of 15mm Gyproc FireLine each side,
 - Or
 - Inner layer of 19mm Gyproc Plank, outer layer of 12.5mm Gyproc FireLine each side



31 E-WT-2: Timber frame

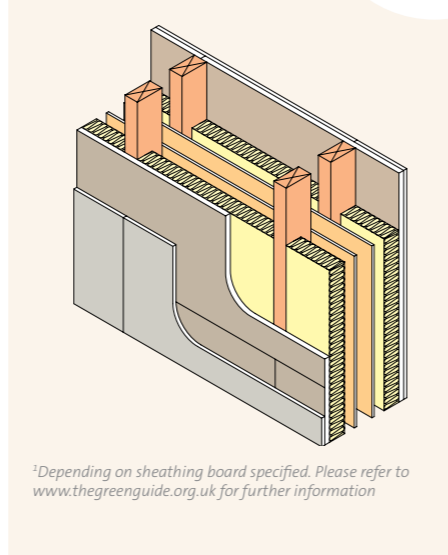
With sheathing board



Robust Detail Approved Construction



- Overall construction nominal width 300mm
- Cavity width minimum 240mm, gap of minimum 50mm between frames
- Minimum 50mm gap between sheathing panels
- **90mm Isover Frame Batt 40 positioned between the studs in each timber frame**
- Board options:
 - Inner layer of 19mm Gyproc Plank, outer layer of 12.5mm Gyproc WallBoard each side
- Or
- Double layer of 15mm Gyproc SoundBloc each side,
- Or
- Double layer of 15mm Gyproc FireLine each side,
- Or
- Inner layer of 19mm Gyproc Plank, outer layer of 12.5mm Gyproc FireLine each side



²Depending on sheathing board specified. Please refer to www.thegreenguide.org.uk for further information

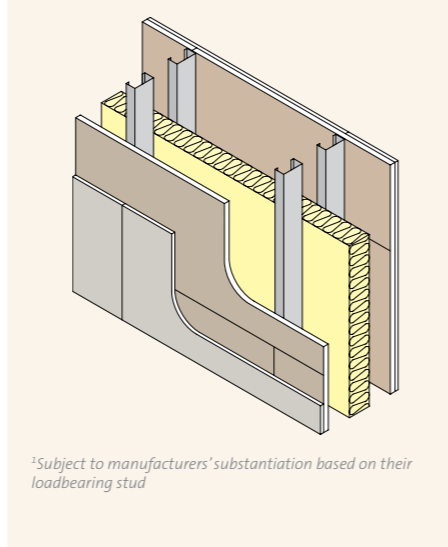
NB: Fully-fill cavity with Isover Timber Party Wall Roll to help achieve a zero U-value wall

32 E-WS-1: Steel frame

Robust Detail Approved Construction



- For use in lightweight steel frame housing or flats / apartments
- Minimum cavity width 200mm
- Loadbearing studs
- Overall construction nominal width 263mm
- **50mm Isover Frame Batt 32 positioned between the frames**
- **25mm Isover Acoustic Partition Roll (APR 1200) between the studs in each frame**
- Board options:
 - Inner layer of 19mm Gyproc Plank, outer layer of 12.5mm Gyproc WallBoard each side
- Or
- Double layer of 15mm Gyproc SoundBloc each side



²Subject to manufacturers' substantiation based on their loadbearing stud

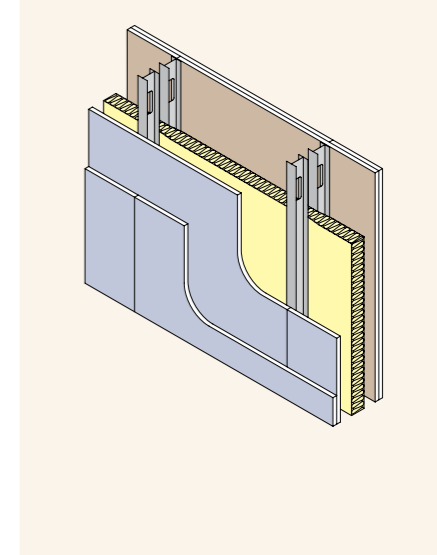
33 E-WS-2: Steel frame

GypWall QUIET IWL (non-loadbearing)

Robust Detail Approved Construction



- Overall construction nominal width 250mm
- Minimum cavity width 190mm
- Gypframe 'I' Studs minimum 60mm depth (no bracing between leaves)
- **100mm Isover Acoustic Partition Roll (APR 1200) positioned between the frames**
- Board options:
 - Double layer of 15mm Gyproc SoundBloc each side (for 90 minutes BS and EN fire resistance)
- Or
- Double layer of 15mm Gyproc SoundBloc each side overboard with one layer of 12.5mm Gyproc FireLine each side (for 120 minutes BS and EN fire resistance)



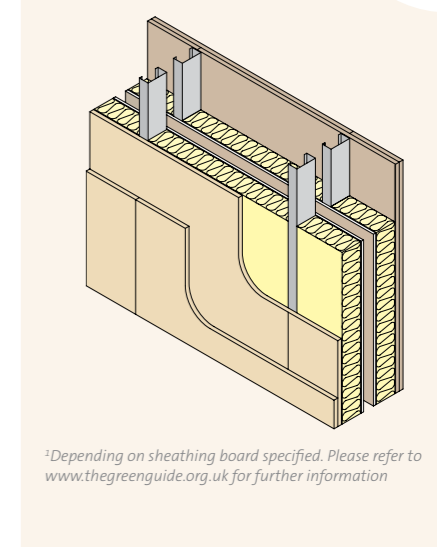
34 E-WS-3: Steel frame

Modular build steel frame

Robust Detail Approved Construction



- Only for use in lightweight steel frame housing or flats / apartments
- Overall construction nominal width 264mm
- Minimum 72mm or 100mm loadbearing studs
- Minimum 40mm gap between sheathing panels
- **Minimum 75mm minimal Isover TS48 Slab (45Kg/m³) positioned between the studs**
- Board options:
 - 72mm studs - double layer of 15mm Rigidur H
- Or
- 100mm studs - double layer of 12.5mm Rigidur H



²Depending on sheathing board specified. Please refer to www.thegreenguide.org.uk for further information



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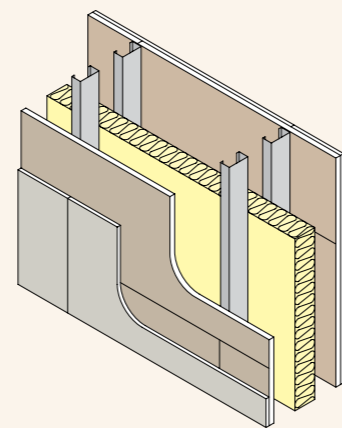
E-WS-4: Steel frame



Robust Detail Approved Construction



- Only for use in lightweight steel frame housing or flats / apartments
- Minimum cavity width 250mm
- Overall construction nominal width 313mm
- Minimum 75mm loadbearing 'C' studs
- **90mm Isover Timber Frame Batt 32 positioned between the frames**
- Board options:
 - Inner layer of 19mm Gyproc Plank, outer layer of 12.5mm Gyproc WallBoard each side
- Or
 - Double layer of 15mm Gyproc SoundBloc each side



³Subject to manufacturers' substantiation based on their loadbearing stud

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GypWall CLASSIC

With Gypframe 146 AS 50 AcouStuds

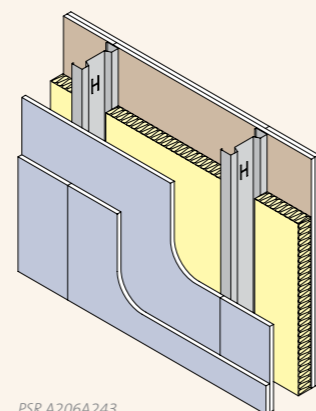
Pre-Completion Testing - British Gypsum Approved System
(45dB D_{nTw} + Ctr)



- Overall construction nominal width 208mm
- Gypframe 146 AS 50 AcouStud at 600mm centres
- **50mm Isover Acoustic Partition Roll (APR 1200) in the cavity**
- Lined with a double layer of 15mm Gyproc SoundBloc each side

Alternatively

- Lined with a double layer of 15mm Gyproc DuraLine for 120 minutes fire resistance



PSR A206A243

37

GypWall CLASSIC

With Gypframe 146 AS 50 AcouStuds



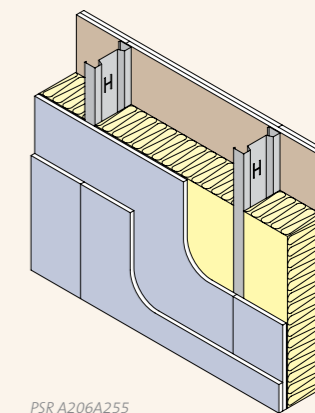
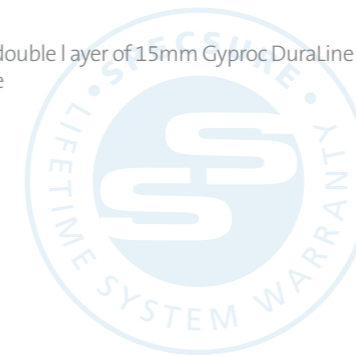
Pre-Completion Testing - British Gypsum Approved System
(45dB D_{nTw} + Ctr)



- Overall construction nominal width 208mm
- Gypframe 146 AS 50 AcouStuds at 600mm centres
- **150mm Isover Acoustic Partition Roll (APR 1200) in the cavity**
- Lined with a double layer of 15mm Gyproc SoundBloc each side

Alternatively

- Lined with a double layer of 15mm Gyproc DuraLine for 120 minutes fire resistance



PSR A206A255

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GypWall QUIET

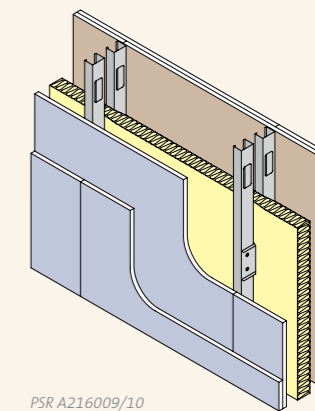
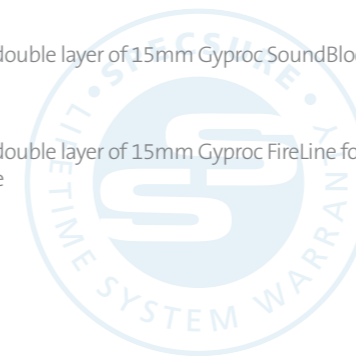
Pre-Completion Testing - British Gypsum Approved System
(45dB D_{nTw} + Ctr)



- Overall construction nominal width 200mm
- Two frames of 48mm Gypframe 'C' Stud at 600mm centres, cross braced at 1200mm centres
- Cavity width of 140mm
- **50mm Isover Acoustic Partition Roll (APR 1200) positioned between the frames**
- Lined with a double layer of 15mm Gyproc SoundBloc each side

Alternatively

- Lined with a double layer of 15mm Gyproc FireLine for 120 minutes fire resistance



PSR A216009/10

39 GypWall QUIET

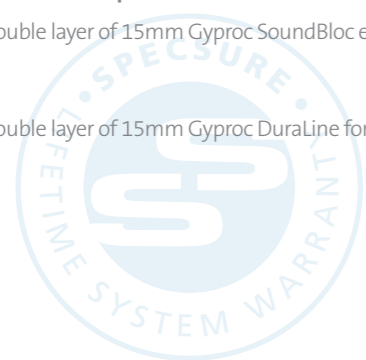
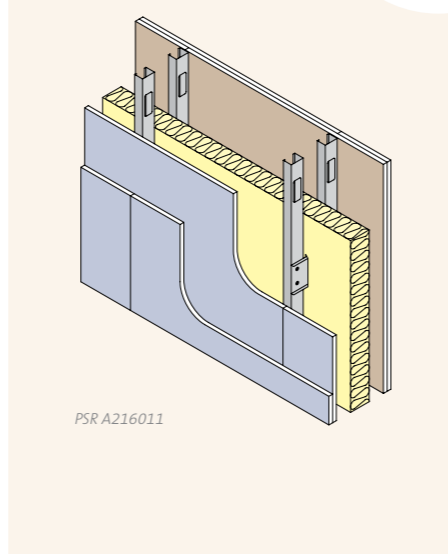
Pre-Completion Testing - British Gypsum Approved System (45dB D_{nTw} + Ctr)



- Overall construction nominal width 250mm
- Two frames of 48mm Gypframe 'C' Stud at 600mm centres, cross braced at 1200mm centres
- Cavity width of 190mm
- **75mm Isover Acoustic Slab positioned between the frames**
- Lined with a double layer of 15mm Gyproc SoundBloc each side

Alternatively

- Lined with a double layer of 15mm Gyproc Duraline for 120 minutes fire resistance



40 GypWall QUIET SF

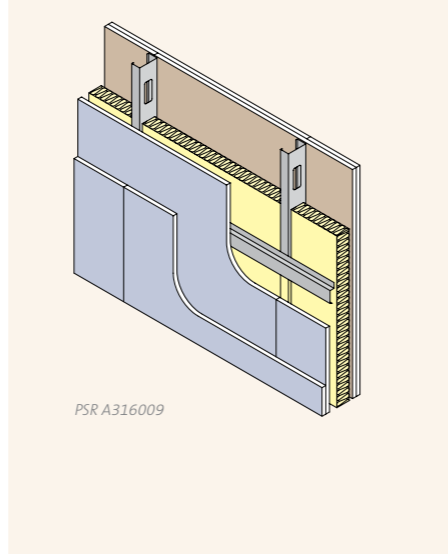
Pre-Completion Testing - British Gypsum Approved System (45dB D_{nTw} + Ctr)



- Overall construction nominal width 148mm
- 70mm Gypframe 'C' Studs at 600mm centres with Gypframe RB1 Resilient Bar at 600mm centres fixed to one side of the studs
- **50mm Isover Acoustic Partition Roll (APR 1200) positioned in the cavity**
- Lined with a double layer of 15mm Gyproc SoundBloc each side

Alternatively

- Lined with a double layer of 15mm Gyproc Duraline for 120 minutes fire resistance



41 GypWall QUIET SF

With additional service zone created with Gyplyner UNIVERSAL

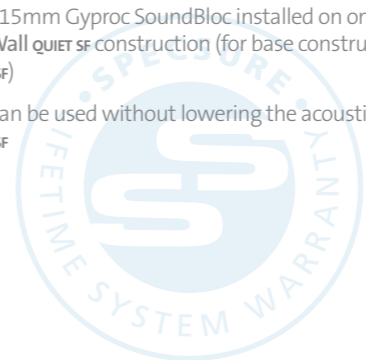
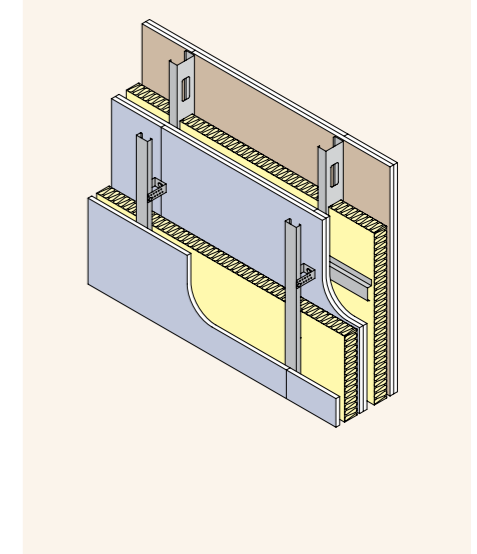
Pre-Completion Testing - British Gypsum Approved System (45dB D_{nTw} + Ctr)



- Base separating wall, GypWall QUIET SF

A wall lining with:

- Minimum 70mm cavity
- **Minimum 50mm Isover Acoustic Partition Roll (APR 1200) in the cavity**
- Single layer of 15mm Gyproc SoundBloc installed on one or both sides of the base GypWall QUIET SF construction (for base construction refer to GypWall QUIET SF)
- This solution can be used without lowering the acoustic performance of GypWall QUIET SF

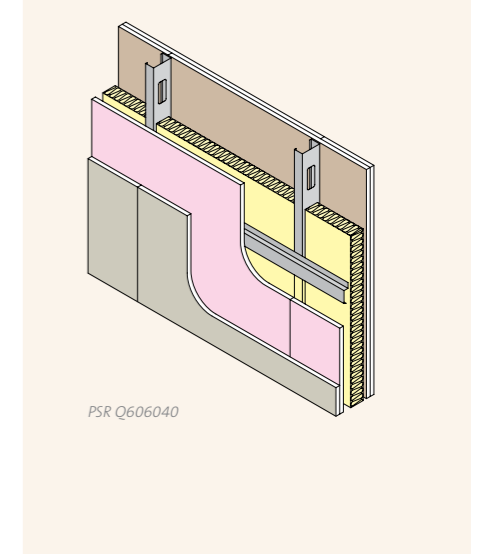


42 GypWall QUIET SF

Pre-Completion Testing - British Gypsum Approved System (45dB D_{nTw} + Ctr)



- Overall construction nominal width 148mm
- 70mm Gypframe 'C' Studs at 600mm centres with Gypframe RB1 Resilient Bar at 600mm centres fixed to one side of the studs
- **50mm Isover Acoustic Partition Roll (APR 1200) positioned in the cavity**
- Lined with an inner layer of 15mm Gyproc FireLine and an outer layer of 15mm Gyproc Duraline





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GypWall QUIET IWL

Pre-Completion Testing - British Gypsum Approved System (45 dB $D_{nTw} + Ctr$)



58dB $R_w + Ctr$

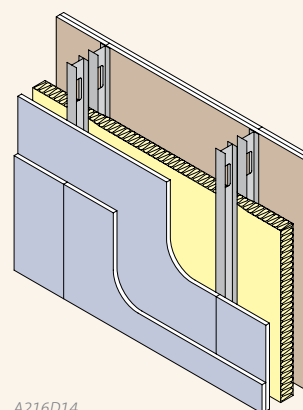


90mins BS



R_w 66dB

- Overall construction nominal width 200mm
- Two frames of Gypframe 48 I 50 'I' Studs at 600mm centres
- Cavity width of 140mm wide
- **50mm Isover Acoustic Partition Roll (APR 1200) positioned in the cavity**
- Lined with a double layer of 15mm Gyproc SoundBloc each side



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44

GypWall QUIET IWL

Pre-Completion Testing - British Gypsum Approved System (45dB $D_{nTw} + Ctr$)



62dB $R_w + Ctr$



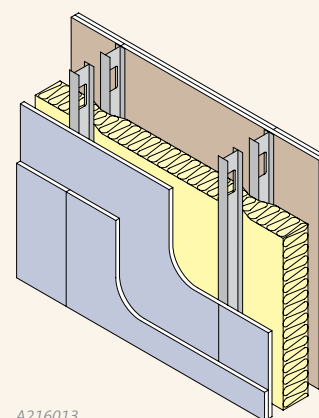
90mins BS



R_w 70dB



- Overall construction nominal width 250mm
- Two frameworks of Gypframe 60 I 50 'I' Stud
- Cavity width of 190mm wide
- **100mm Isover Acoustic Partition Roll (APR 1200) in the cavity**
- Lined with a double layer of 15mm Gyproc SoundBloc each side



A216013