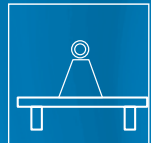
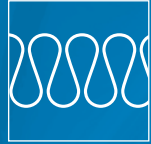


Solutions for the Building Regulations

Building boards



Building boards





Before contemplating any design, the architect or designer must be aware of the current legislation, and the design requirements and standards that govern and influence the style, parameters, performance, products and construction of external and internal walls.

This guide shows how Marley Eternit building boards can be used, in conjunction with other building components, to achieve wide-ranging thermal, fire and acoustic performance criteria suited to a variety of residential and non-residential projects

Contents

2-3	Introduction
4-7	Products
8-13	Thermal design details
14-23	Fire resisting design details
24-29	Acoustic design details
30	Services and support
31	www.marleyeternit.co.uk

Product range and relevant applications

Product				
Application	Bluclad	Hydropanel	Eter-board	Duripanel
Structural sheathing board				✓
Base board for render	✓			
Base board for painting			✓	
Moisture-resistant partition board		✓		
Page	4	5	6	7

The Building Regulations

These are mandatory regulations and, in England and Wales, are generated and approved by the Department for Communities and Local Government (DCLG).

In Scotland they are generated and approved by the Scottish Executive and in Northern Ireland, by The Office Estates and Building Standards Division (OBD).

They must be complied with for all new-build and a great deal of refurbishment work. They consist of the Building Regulations 2000 (as amended) for England and Wales, the Building (Scotland) Regulations 2004, and the Building Regulations (Northern Ireland) 2000.

Compliance with these regulations is the responsibility of the building designer, who may be the owner of the building, his appointed architect, a structural engineer appointed by the owner or his architect or, in the case of small buildings, the actual builder.

The Approved Documents of the Building Regulations (England and Wales), the Technical Handbooks (domestic and non-domestic) (Scotland) and the Technical booklets (Northern Ireland) provide practical guidance for some of the common building situations in respect of the requirements for materials and workmanship.

Copies of the Approved Documents that accompany the Building Regulations 2000 (as amended) for England and Wales can be downloaded from the Department for Communities and Local Government (DCLG) web site (www.communities.gov.uk) or obtained from RIBA Bookshops, 15 Bonhill Street, London EC2P 2EA. (Tel 020 7256 7222, Fax 020 7374 2737).

Thermal

England and Wales: Part L
'Conservation of fuel and power'

Scotland: Technical handbook,
Section 6 'Energy'

Northern Ireland: Part F
'Conservation of fuel and power'

Design details pages 8-13



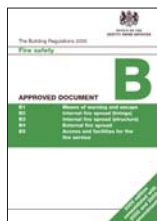
Fire

England and Wales: Part B 'Fire Safety'

Scotland: Technical handbook,
Section 2 'Fire'

Northern Ireland: Part E 'Fire Safety'

Design details pages 14-23



Sound

England and Wales: Part E
'Resistance to the passage of sound'

Scotland: Technical handbook,
Section 5 'Noise'

Northern Ireland: Part G
'Sound insulation of dwellings'

Design details pages 24-29



Product data



Bluclad

Bluclad is a flat, Class 0 building board which has outstanding dimensional stability. It can be used as a substrate for a variety of thin coat polymeric renders, textured finishes and other surface coatings. Bluclad can also be used to provide a seamless finish.

Bluclad is available in a standard 10mm thickness, it is off-white in colour and has a smooth surface on the front and is textured on the reverse. The textured face is for thin coat polymeric renders.



Weather resistant



Moisture resistant



Easily worked and decorated



Class 0

Main applications

- External cladding (substrate)
- Infill panels
- Internal wall linings (substrate)
- Fascias
- Bargeboard
- Sheathing

Advantages

- Class 0
- Weather resistant
- Easy to cut, work and decorate
- High dimensional stability
- Moisture resistant
- BRE Global certificate no. 057/99

Dimensions

Thickness	10mm
Width	1200mm
Length	2400mm
Weight	12.0 kg/m ²



Hydropanel*

Hydropanel is a high performance building board offering high levels of moisture resistance along with Class 0 fire performance, good impact resistance and dimensional stability.

The boards are easy to handle and work and can be fixed using standard tools to a variety of timber or metal fixing systems.

The board's smooth surface and tapered edges allow for decoration in the same way as standard plasterboard.

Also available in the range are Eterstrip and Eterfiller for seamless jointing of Hydropanel.



Impact resistant



Moisture resistant



Easily worked and decorated



Class 0



Acoustic performance

Main applications

- Dry lining partitions for: Hospitals, Schools, Offices
- Tile backing for: Kitchens, Bathrooms, Shower and Changing rooms

Advantages

- Water resistant (only use for interior applications)
- Fire safe (no fire ignition, no spread of fire)
- Resistant to extreme temperatures
- Resistant to fungi, bacteria, insects, vermin, etc.
- Dimensionally stable

Dimensions

6mm (weight - 8.1 kg/m²)
1200 x 2500mm

9mm (weight - 12.7 kg/m²)
900 x 1200mm
600 x 2500mm
1200 x 2500mm
600 x 3000mm
1200 x 3000mm

12mm (weight - 17 kg/m²)
1200 x 2400mm
1200 x 2600mm
1200 x 3000mm

* Patent pending

Product data



Eter-board

Eter-board is a general purpose, external grade, fibre cement sheet that is durable, low maintenance, easy to fix and available in natural grey to be painted.

Provides Class 0 fire performance

It is manufactured from a mixture of cement, organic fibres, fillers and water.

This board can be used for fascias, soffits and bargeboards to be subsequently painted



Weather resistant



Class 0



Easily worked and decorated



Impact resistant



Acoustic performance

Main applications

- Soffits and fascias
- Balcony panels
- Infill panels
- Dormer cheeks
- Sheathing board

Advantages

- Durable
- Minimal maintenance
- Easy and fast to cut, work and decorate
- Class 0 fire performance

Dimensions

Thickness	9mm
Widths	1220mm
Lengths	2500mm 3050mm
Weight	13.0 kg/m ²



Duripanel

Duripanel is a smooth and highly durable cement bonded particle board. Rot resistant and providing Class 0 fire performance, it is ideal for use in load-bearing applications.

It also provides sound insulation, impact resistance and moisture resistance. It can be used as an alternative to chipboard or plywood when there is a need for one or more of these properties. Boards should be installed with a 3mm joint gap, which allows for some movement.

The board can be used for a variety of general purpose applications.



Impact resistant



Class 0



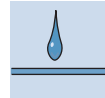
Easily worked and decorated



Acoustic performance



Load-bearing



Moisture resistant

Main applications

- Acoustic linings
- Roof decking
- High impact linings

Advantages

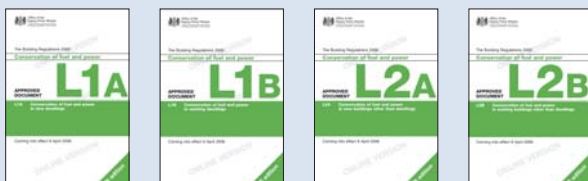
- Excellent acoustic properties
- Class 0 fire performance
- Impact and moisture resistant
- Easy to cut/drill

Dimensions

Thickness	10, 12mm
Widths	1200mm
Lengths	2400mm
Weight	12.5 kg/m ² (10mm)

Thermal design details

Marley Eternit products, used in an external rainscreen cladding system can accommodate a wide range of insulation types and thicknesses to help meet the requirements of Part L, both for new build and refurbishment construction.



Building Regulations

The relevant documents are Approved Document L1A 'Conservation of fuel and power in new dwellings'; L1B 'Conservation of fuel and power in existing dwellings' ; L2A 'Conservation of fuel and power in new buildings other than dwellings' and L2B 'Conservation of fuel and power in existing buildings other than dwellings' for England and Wales and Section 6 'Energy' (domestic and non-domestic) for Scotland (see separate leaflet).

The Building Regulations prescribe high standards of building fabric insulation for floors, walls and roofs as well as space heating, lighting, and hot water controls so as to limit the heat loss from the building.

The following sections briefly summarise the content of the four parts of Part L:

Part L1A - 'New dwellings'

The target CO₂ Emission Rate for dwellings up to 450m² is calculated using SAP (Standard Assessment Procedure) 2005 for a 'notional' dwelling of the same size and shape as the 'actual' dwelling (based on set construction rules).

The Simplified Building Energy Model (SBEM) will be used for larger dwellings.

The Dwelling Emissions Rate (DER) must be no higher than the target. Two phases of calculation for the DER are required:

- 1 Design calculations presented in a report to Building Control that defines the critical design features
- 2 Following dwelling pressure testing, a final calculation to confirm that the building complies 'as built'

Part L1B - 'Existing dwellings'

This includes most extensions, material changes of use, material alterations, provision of controlled fittings and services and provision or renovation of a thermal element. The recommended maximum U-values for an extension may be varied on condition that it is no worse overall than a similar extension built to the standards and that the defined maximum U-values are not exceeded.

SAP 2005 can be used to demonstrate that CO₂ emissions from a dwelling plus an extension taken together are no worse than that of the dwelling complying with regulations plus a separate extension complying with regulations. This process may involve improvements to the existing thermal elements, such as walls, roofs and floors, which must comply with Part L1B standards.

Part L2A - 'New non-dwellings'

There are 5 key criteria for compliance:

- 1 CO₂ emissions must be less than target value
- 2 The thermal performance of building fabric and services must satisfy minimum standards
- 3 Summer time solar gains must be controlled
- 4 Pressure testing and 'Quality of Construction' will be mandatory
- 5 Building users should be supplied with sufficient information to operate the building in the most energy efficient manner.

Significant improvements in carbon dioxide emissions are required when comparing the notional and actual results. In general terms these represent the improvements to the levels stated in the 2002 regulations:

Heated and naturally ventilated: 23.5%
Heated and mechanically ventilated: 28%
Air conditioned: 28%

Again, two phases of calculation for emissions rate are required:

- 1 Design calculations presented in a report to Building Control
- 2 Following full building pressure testing, a final calculation to confirm that the building complies 'as built'.

Part L2B - 'Existing non-dwellings'

This applies to extensions and subsequent fit out works, change of use, material changes, work on controlled services etc. New building fit outs for existing buildings should comply with new building regulations.

Part L 2006 introduces 'Consequential Improvements' which may in some situations require the upgrading of windows, boilers, air- conditioning and lighting as well as the inclusion of energy metering systems.

Thermal design details

Upgrade of solid brick wall

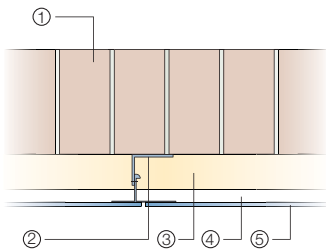
- External cladding - Blucad*
- Ventisol fixing system
- Air gap
- 80mm Rockwool Rainscreen Duo-slab mineral wool
- 9" solid brick wall (laid as headers and stretchers)

0.35
u-value

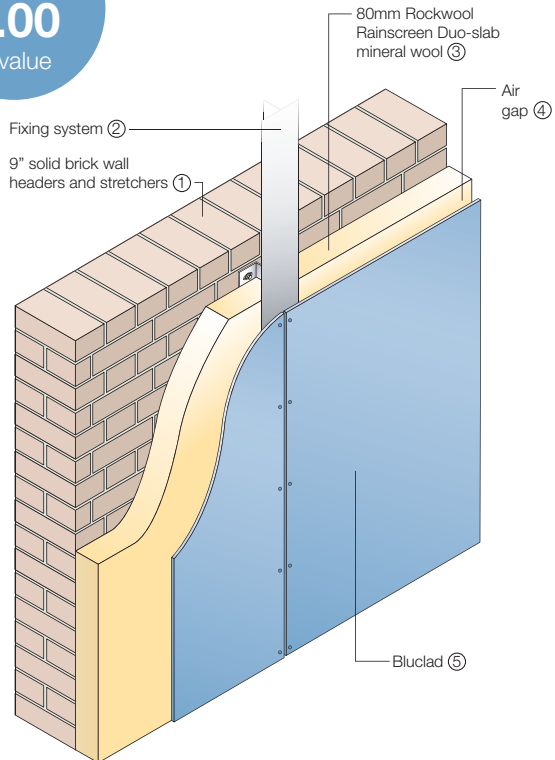
↑
upgrade
2.00
u-value

Notes:

- 9" solid walls are common in pre 1930 house construction and the brick bonding can be in a number of configurations.
- U-values of these types of wall are typically 1.9 - 2.2 W/m²K.
- Other fixing systems can also be used.
- Greater (or lesser) depths of insulant can be accommodated.
- * Other Marley Eternit high performance claddings can also be used.



Horizontal section



Upgrade of block and brick wall with uninsulated cavity

- External cladding - Bluclad*
- Ventisol fixing system
- Air gap
- Brick outer skin
- Un-insulated cavity
- Block inner skin

0.33

u-value

upgrade

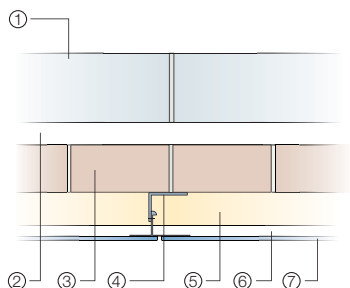
1.50

u-value

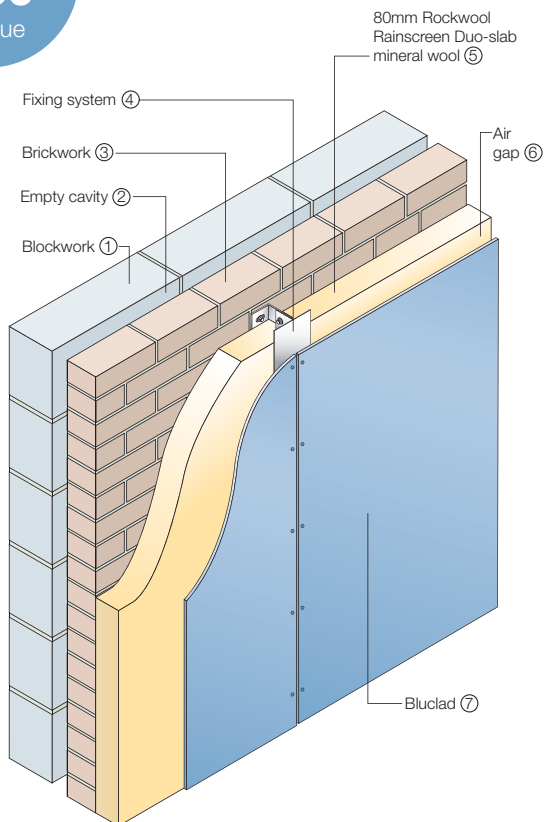
Notes:

- U-values of these types of un-insulated wall are typically 1.0 - 1.6W/m²k
- Other fixing systems can also be used
- Greater (or lesser) depths of insulant can be accommodated.

* Other Marley Eternit high performance claddings can also be used.



Horizontal section



Thermal design details

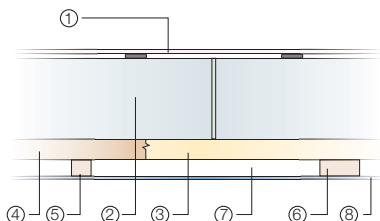
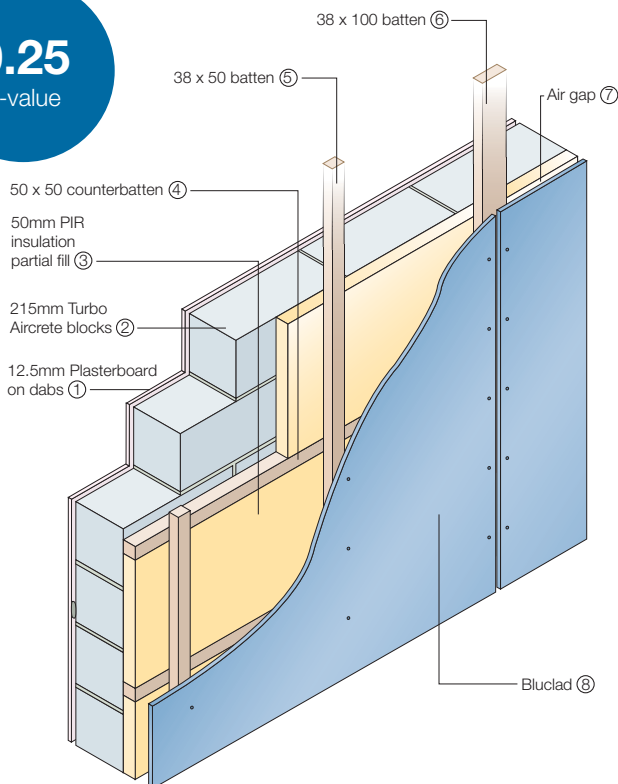
Solid blockwork wall

- External cladding - Bluclad*
- 38 x 50mm and 38 x 100mm timber battens
- Counterbattens 50 x 50mm
- Single skin 440 x 215mm Thermalite Turbo aircrete blocks
- 50mm PIR insulation

Notes

- Internal wall should be 12.5mm plasterboard on dabs
- * Other Marley Eternit high performance claddings can also be used.

0.25
u-value



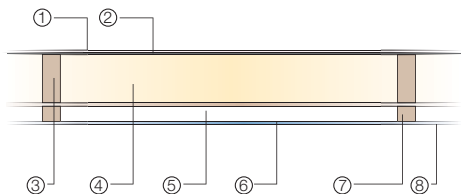
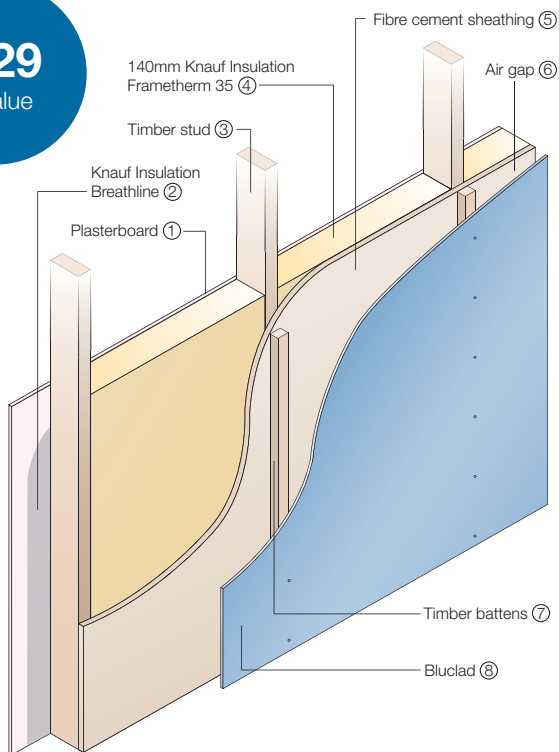
Horizontal section

Timber frame wall

- External cladding - Bluclad*
- 38 x 50mm and 38 x 100mm timber battens
- 140 x 60mm timber studs
- 140mm Knauf FrameTherm 35 insulation between studs
- Knauf Insulation Breatheline vapour control layer between plasterboard and timber studs

* Other Marley Eternit high performance claddings can also be used.

0.29
u-value



Horizontal section

Fire resisting design details

All Marley Eternit fibre cement boards have been tested to EN 13501-1:2002 and have achieved Class A2, s1, d0, (the second highest category).

The boards do not significantly contribute to fire load or fire growth, have the lowest category for smoke production, do not produce flaming droplets or particles and can provide up to 120 minutes fire resistance (see overleaf).

This makes them excellent candidates for specification in a wide range of fire-resisting applications.



Fire safety

Building Regulations

The relevant document is Approved Document B, 'Fire Safety.'

Minimum periods of fire resistance

The table below, reproduced from Approved Document B of the Building Regulations, sets out the minimum fire resistance periods required for a range of constructions and in some cases, conditions within those constructions. The details on the following pages show how these periods can be achieved using Marley Eternit cladding or building boards.

Purpose group of building	Minimum periods (minutes) for elements of structure in a:					
	Basement storey 1		Ground or upper storey including floor over			
	Depth (m) of a lowest basement		Height (m) of top floor above ground, in a building or separated part of 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 (domestic):						
a. flats	90	60	30 ²	60 ^{3,4}	90 ³	120 ³
b. and c. dwelling houses	not relevant	30 ²	30 ²	60 ³	not relevant	not relevant
2. Residential:						
a. institutional 6	90	60	30 ²	60	90	120 ⁷
b. other residential	90	60	30 ²	60	90	120 ⁷
3. Office						
- not sprinklered	90	60	30 ²	60	90	not permitted
- sprinklered	60	60	30 ²	30 ²	60	120 ⁷
4. Shop and commercial						
- not sprinklered	90	60	60	60	90	not permitted
- sprinklered	60	60	30 ²	60	60	120 ⁷
5. Assembly and recreation:						
- not sprinklered	90	60	60	60	90	not permitted
- sprinklered	60	60	30 ²	60	60	120 ⁷
6. Industrial:						
- not sprinklered	120	90	60	90	120	not permitted
- sprinklered	90	60	30 ²	60	90	120 ⁷
7. Storage and other non-residential:						
a. any building or part not described elsewhere						
- not sprinklered	120	90	60	90	120	not permitted
- sprinklered	90	60	30 ²	60	90	120 ⁷
b. car park for light vehicles:						
i. open-sided car park	n/a	n/a	15 ^{2,8}	15 ^{2,8}	15 ^{2,8}	60
ii. any other car park	90	60	30 ²	60	90	120 ⁷

Single storey buildings 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. Modifications referred to in Table A2: (for application of the table see next page)

- 1 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.
- 2 Increased to a minimum of 60 minutes for compartment walls separating buildings.
- 3 Reduced to 30 minutes for any floor within a maisonette, but not if the floor contributes to the support of the building.
- 4 Refer to paragraph 8.1.1 regarding the acceptability of 30 minutes in flat conversions.
- 5 30 minutes in the case of 3 storey dwelling-houses, increased to 60 minutes minimum for compartment walls separating buildings.
- 6 Multi-storey hospitals designed in accordance with the NHS Firecode documents should have a minimum 60 minutes standard.
- 7 Reduced to 90 minutes for elements not forming part of the structural frame.
- 8 Increased to 30 minutes for elements protecting the means of escape.

Fire resisting design details

Steel framed external wall using **Bluclad**

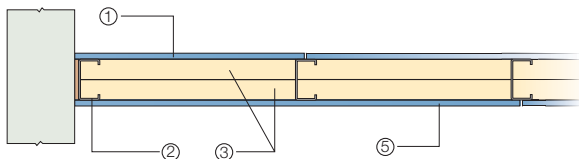
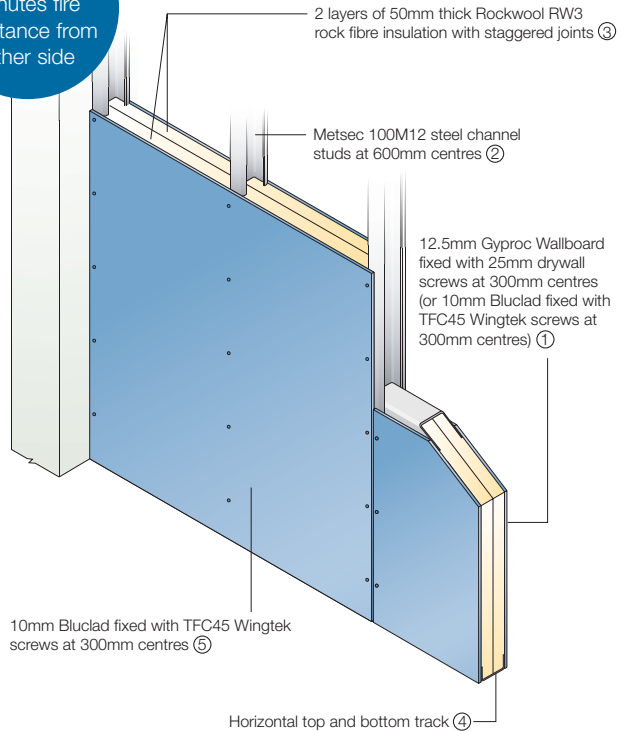
- Steel frame, non-loadbearing
- Test reports
CC 220214G, BTC 11861F,
BTC 13209F, BTC 13211F
- External skin: 10mm Bluclad
- Internal skin: 12.5mm Gyproc Wallboard or 10mm Bluclad

Notes

- Horizontal joints between boards should be backed with steel track, and the vertical and horizontal joints on one face should be staggered by 600mm with respect to the other.
- Maximum height 4m unless other studs are used (contact Marley Eternit for further information).
- For systems over 4.5m high, allowance should be made for the panels and studs to expand. Consult Marley Eternit for further information.
- If the studs are more than 100mm deep, additional layers of Rockwool RW3 should be included to avoid air gaps.
- Aperture for door or window frames to be framed with Metsec studs and tracks, filled with timber to their full depth. Studs to extend full heights of the system, with horizontal tracks above and below (where relevant) fixed to these with 1 screw on either side of joint. Aperture to be lined with a single layer of 10mm Bluclad, fixed at 300mm centres.

30

minutes fire
resistance from
either side



Horizontal section

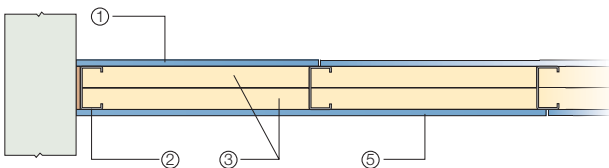
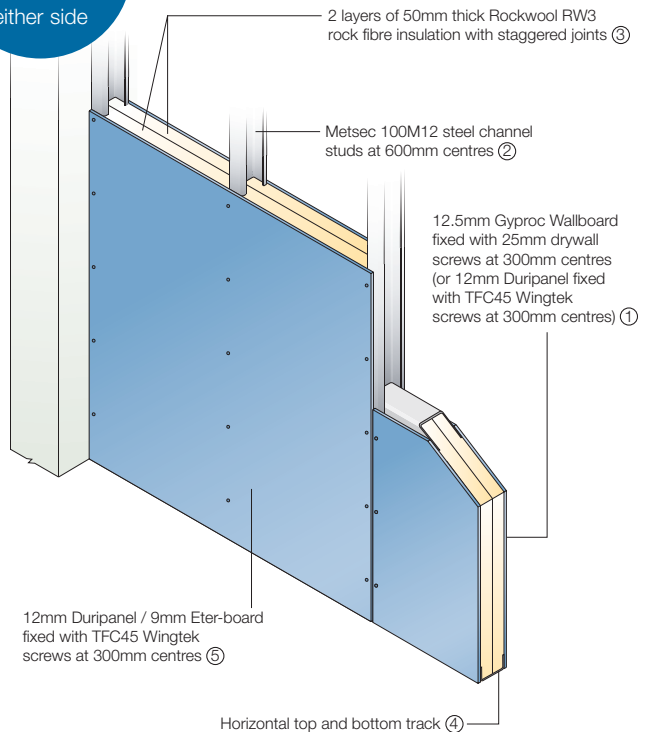
Steel framed external wall using Duripanel or Eter-board

- Steel frame, non-loadbearing
- Test reports
Duripanel - CC 220214A,
BTC 11861F, BTC 13209F
Eter-board - CC 220214H,
BTC 11861F, BTC 13209F,
BTC 13397F
- External skin: 12mm
Duripanel or 9mm Eter-board
- Internal skin: 12.5mm Gyproc
Wallboard, 12mm Duripanel or
9mm Eter-board

Notes

- Horizontal joints between boards should be backed with steel track, and the vertical and horizontal joints on one face should be staggered by 600mm with respect to the other.
- Maximum height 4m unless other studs are used (contact Marley Eternit for further information).
- For systems over 4.5m high, allowance should be made for the panels and studs to expand.
- If the studs are more than 100mm deep, additional layers of Rockwool RW3 should be included to avoid air gaps.
- Aperture for door or window frames to be lined with Metsec studs and tracks, filled with timber to their full depth. Studs to extend full height of the system, with horizontal tracks above and below (where relevant) fixed to these with 1 screw on either side of joint. Aperture to be lined with a double layer of 12mm Duripanel or 9mm Eterboard fixed at 300mm centres.

30
minutes fire
resistance from
either side



Horizontal section

Fire resisting design details

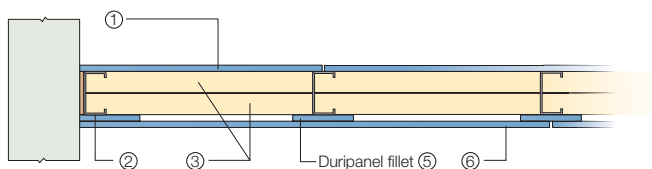
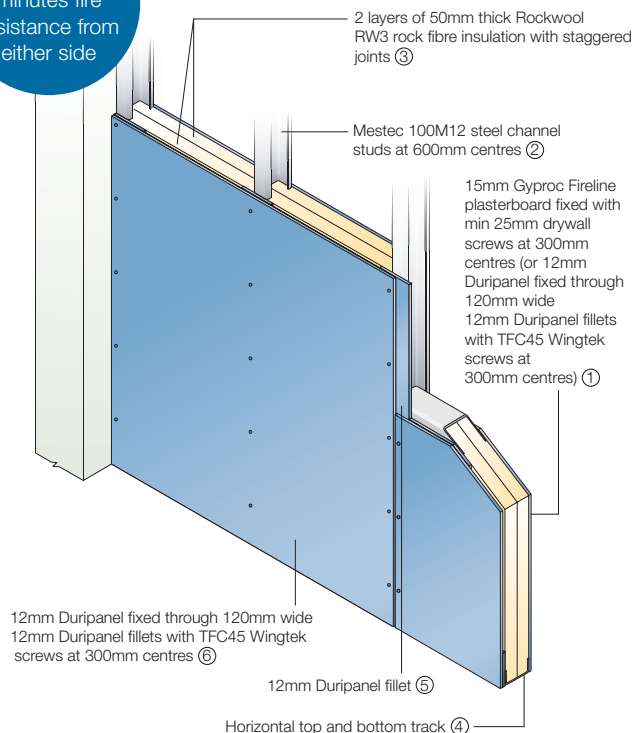
Steel framed external wall using Duripanel

- Steel frame, non-loadbearing
- Test reports
CC 220214B, BTC 12637F,
BTC 13210F, BTC 13397F
- External skin: 12mm Duripanel
on 12mm Duripanel fillets
- Internal skin: 15mm Gyproc
Fireline or 12mm Duripanel on
12mm Duripanel fillets

Notes

- Horizontal joints between boards should be backed with steel track, and the vertical and horizontal joints on one face should be staggered by 600mm with respect to the other.
- Maximum height 4m unless other studs are used (contact Eternit for further information).
- For systems over 4.5m high, allowance should be made for the panels and studs to expand. Consult Marley Eternit for further information.
- If the studs are more than 100mm deep, additional layers of Rockwool RW3 should be included to avoid air gaps.
- Aperture for door or window frames to be lined with Metsec studs and tracks, filled with timber to their full depth. Studs to extend full height of the system, with horizontal tracks above and below (where relevant) fixed to these with 1 screw on either side of joint. Aperture to be lined with a double layer of 12mm Duripanel, fixed at 300mm centres.

60
minutes fire
resistance from
either side



Horizontal section

Timber framed external wall using Bluclad

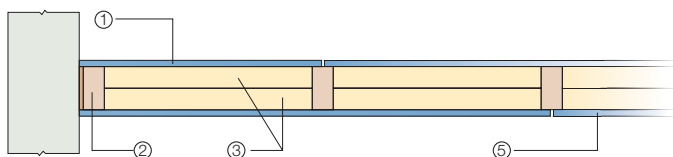
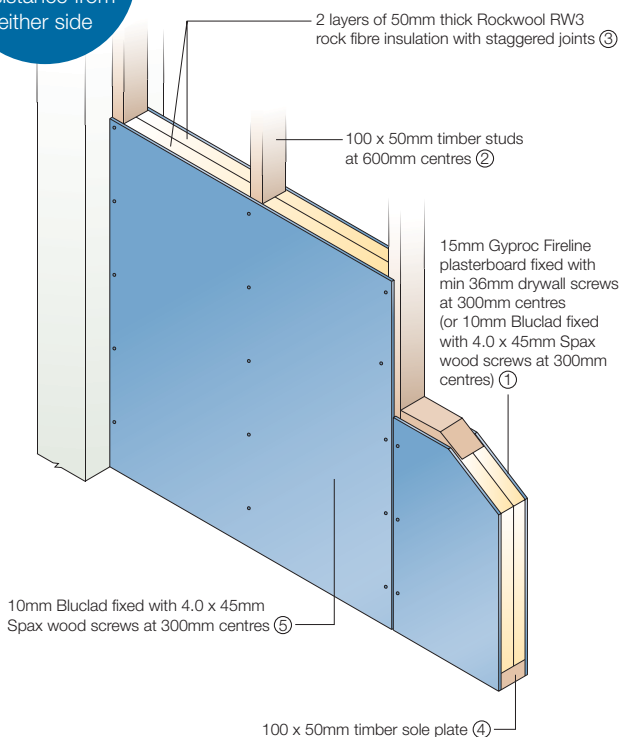
- Timber frame, non-loadbearing
- Test reports
CC 220214C, BTC 12637F, BTC 13211F
- External skin: 10mm Bluclad
- Internal skin: 15mm Gyproc Fireline or 10mm Bluclad

Notes

- Horizontal joints between boards should be backed with timber stud, and the vertical and horizontal joints on one face should be staggered by 600mm with respect to the other.
- Maximum height 6m.
- If the studs are more than 100mm deep, additional layers of Rockwool RW3 should be included to avoid air gaps.
- At apertures for door or window frames, studs to extend full height of the system, with horizontal trimmers above and below (where relevant). Aperture to be lined with a single layer of 10mm Bluclad, fixed at 300mm centres.

60

minutes fire resistance from either side



Horizontal section

Fire resisting design details

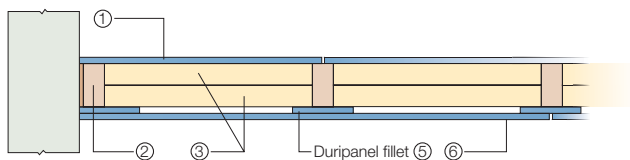
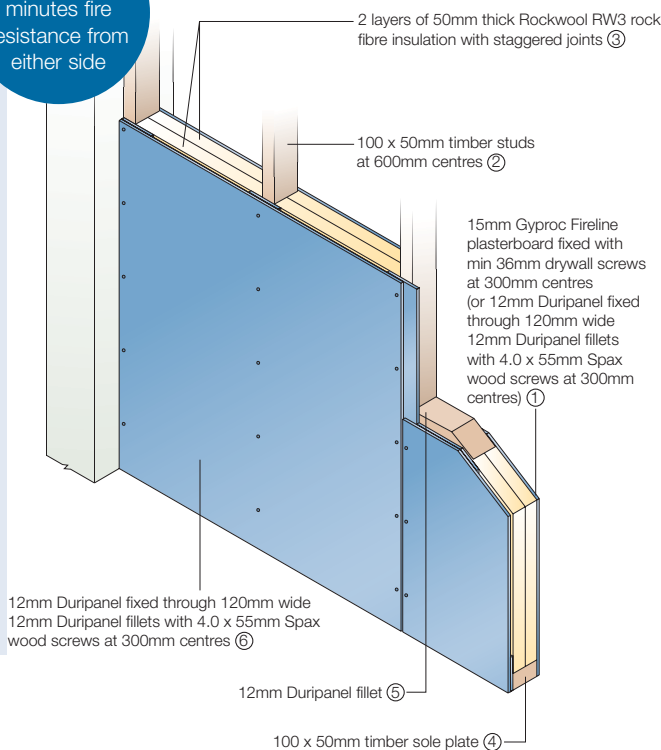
Timber framed external wall using Duripanel

- Timber frame, non-loadbearing
- Test reports
CC 220214B, BTC 12637F,
BTC 13210F, BTC 13397F
- External skin: 12mm Duripanel on 12mm Duripanel fillets
- Internal skin: 15mm Gyproc Fireline or 12mm Duripanel on 12mm Duripanel fillets

Notes

- Horizontal joints between boards should be backed with timber stud, and the vertical and horizontal joints on one face should be staggered by 600mm with respect to the other.
- Maximum height 6m.
- If the studs are more than 100mm deep, additional layers of Rockwool RW3 should be included to avoid air gaps.
- At apertures for door or window frames, studs to extend full height of the system, with horizontal trimmers above and below (where relevant). Aperture to be lined with a single layer of 12mm Duripanel, fixed at 300mm centres.

60
minutes fire
resistance from
either side



Horizontal section

Timber framed external wall using Eter-board

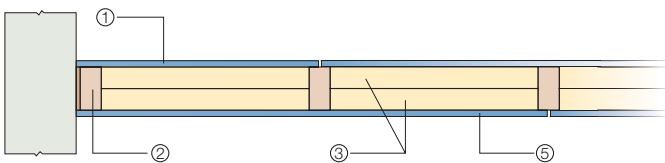
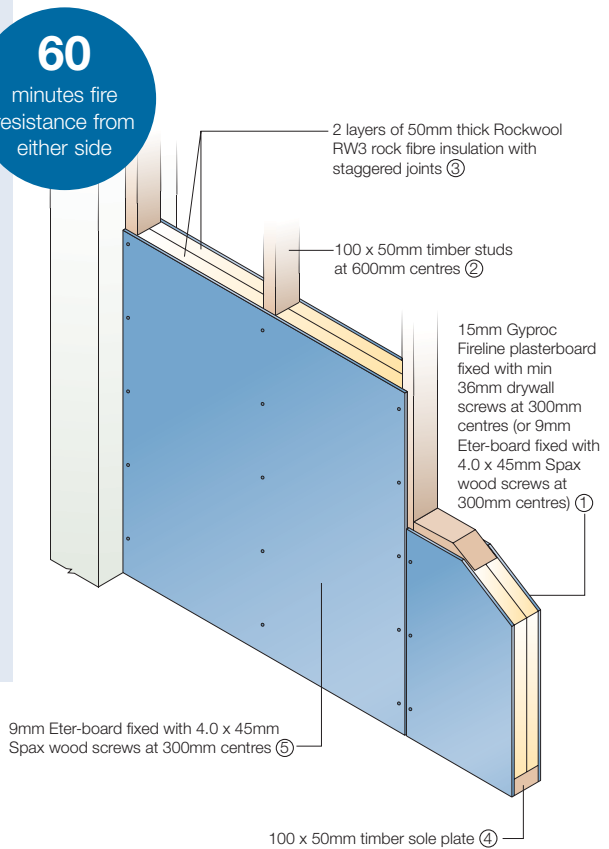
- Timber frame, non-loadbearing
- Test reports
CC 220214E, BTC 12637F, BTC 13397F
- External skin: 9mm Eter-board
- Internal skin: 15mm Gyproc Fireline or 9mm Eter-board

Notes

- Horizontal joints between boards should be backed with timber stud, and the vertical and horizontal joints on one face should be staggered by 600mm with respect to the other.
- Maximum height 6m.
- If the studs are more than 100mm deep, additional layers of Rockwool RW3 should be included to avoid air gaps.
- At apertures for door or window frames, studs to extend full height of the system, with horizontal trimmers above and below (where relevant). Aperture to be lined with a single layer of 9mm Eter-board, fixed at 300mm centres.

60

minutes fire resistance from either side



Horizontal section

Fire resisting design details

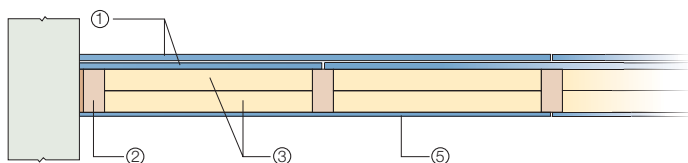
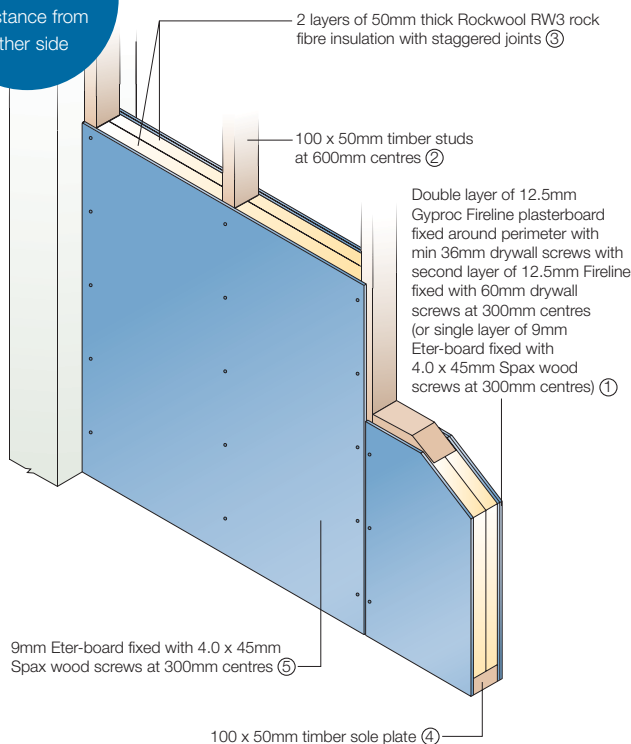
Timber framed external wall using Eter-board

- Timber frame, non-loadbearing
- Test reports
CC 220214F, BTC 11853F,
BTC 13397F
- External skin: 9mm Eter-board
- Internal skin: Double layer of 12.5mm Gyproc Fireline or single layer of 9mm Eter-board

Notes

- Horizontal joints between boards should be backed with timber stud, and the vertical and horizontal joints on one face should be staggered by 600mm with respect to the other.
- Maximum height 6m.
- If the studs are more than 100mm deep, additional layers of Rockwool RW3 should be included to avoid air gaps.
- At apertures for door or window frames, studs to extend full height of the system, with horizontal trimmers above and below (where relevant). Aperture to be lined with a single layer of 9mm Eter-board, fixed at 300mm centres.

90
minutes fire
resistance from
either side



Horizontal section

Timber framed external wall using Bluclad

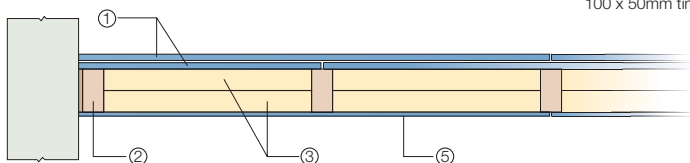
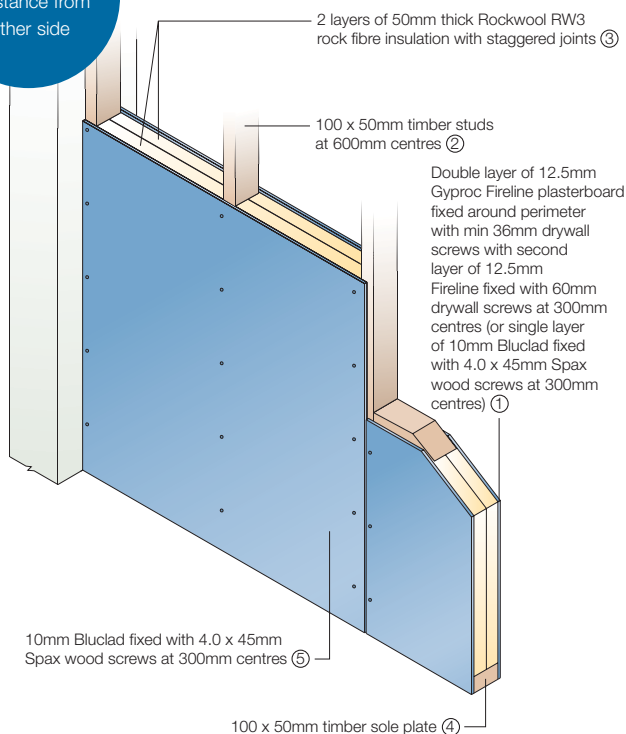
- Timber frame, non-loadbearing
- Supporting data CC220214D, BTC 11853F, BTC 13211F
- External skin: 10mm Bluclad
- Internal skin: Double layer of 12.5mm Gyproc Fireline or single layer of 10mm Bluclad

Notes

- Horizontal joints between boards should be backed with timber stud, and the vertical and horizontal joints on one face should be staggered by 600mm with respect to the other.
- Maximum height 6m.
- If the studs are more than 100mm deep, additional layers of Rockwool RW3 should be included to avoid air gaps.
- At apertures for door or window frames, studs to extend full height of the system, with horizontal trimmers above and below (where relevant). Aperture to be lined with a single layer of 10mm Bluclad, fixed at 300mm centres.

120

minutes fire resistance from either side



Horizontal section

Acoustic design details

Approved Document E of the Building Regulations specifies the requirements for sound reduction in walls and floors of dwelling houses, flats and rooms for residential purposes. As part of sound-resisting constructions, Marley Eternit building boards can help to significantly reduce the transmission of airborne sound, helping to meet both the Regulations and contributing toward the higher targets now set out in the Code for Sustainable Homes.



Building Regulations

The relevant sections are:

E1: Protection of sound from other parts of the building and adjoining buildings.

E2: Protection against sound within a dwelling house.

Separating Walls

Separating walls in dwelling houses and flats need to achieve a minimum airborne sound reduction of 45 dB for new build and 43 dB for change of use.

Separating walls between rooms for residential purposes should achieve a minimum airborne sound reduction of 43 dB.

Dwelling houses and buildings containing flats are generally covered by Robust Details – the same construction is tested on 30 different structures on 4 sites, and erected under the control of at least 2 builders or developers. If a construction has not been approved by Robust Details, pre-completion testing has to be carried out on the separating rooms. Generally there should be 1 set of tests for up to 10 houses, flats or rooms for residential purposes, with each set of tests consisting of 2 tests for dwelling houses and 4 tests for flats.

Rooms for residential purposes include rooms in a hostel, hotel, boarding house, hall of residence, residential home, but not rooms in a hospital. Robust Details cannot be used as an alternative to pre-completion testing between rooms for residential purposes.

Approved Document E indicates that where stud wall constructions are used to provide 45 dB sound reduction, the lining boards should generally be fixed to 2 independent frames.

Internal Walls

New internal walls within dwelling houses, flats and rooms for residential purposes should provide a minimum airborne sound reduction of 40 dB, achieved by laboratory testing. It is not intended that the performance should be verified by site testing.

In Approved Document E, Section 5, there are 2 examples of stud constructions that meet the requirements. These are:

- Timber or metal frames with plasterboard linings on each side of frame, each lining to be 2 or more layers of plasterboard, each sheet having a minimum mass of 10kg/m². Gap between liners to be 75mm for timber frames and 45mm for metal frames. All joints well sealed.
- As above but with a single sheet of plasterboard each side and mineral wool batts or quilt (min thickness 25mm, min. density 10kg/m³, suspended in the cavity.

Hospitals

The acoustic standards for partitions used to be defined in HTM 56, based on laboratory testing of wall constructions, with the requirements dependent on the use of the rooms. The latest version of HTM 56 refers to HTM 2045, which takes a more holistic approach with the requirement based on privacy factors and noise levels of mechanical services. The sound reduction performance of the partitions varies between 40 dB and 70 dB, depending on the application. Compliance is measured by site tests.

Schools

Partitions should be designed in accordance with Building Bulletin 93: Acoustic Design of Schools. The sound reduction of wall constructions varies from 30 dB to 60 dB, depending on the application, and the performance is confirmed by site testing.

Offices

The minimum acceptable sound insulation between offices is 38 dB, or 48 dB where privacy is important (BS 8233:1999).

The following details show constructions using Hydropanel and Eter-board along with their sound insulation test results.

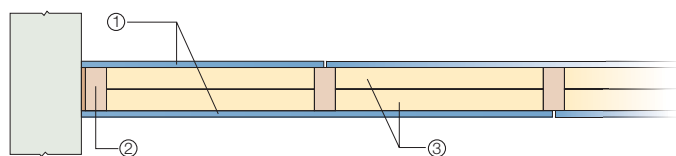
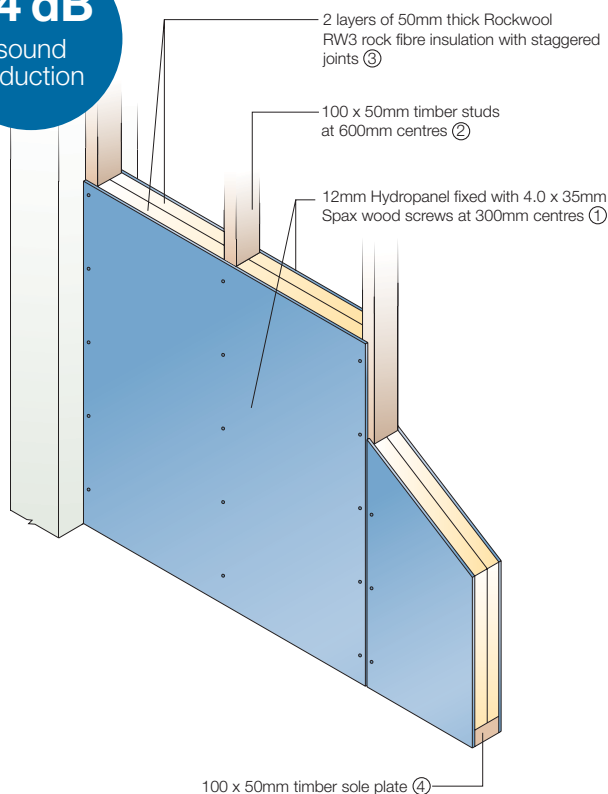
Acoustic constructions

Timber framed internal wall using 12mm Hydropanel

- Timber frame, non-loadbearing
- Test report BTC 14948A
- 12mm Hydropanel each side of frame
- $R_w = 44 \text{ dB}$, $C = -2 \text{ dB}$, $C_{tr} = -5 \text{ dB}$

Note: At panel joints, bevelled edges to be filled with Eterfiller reinforced with Eterstrip scrim).

44 dB
sound
reduction



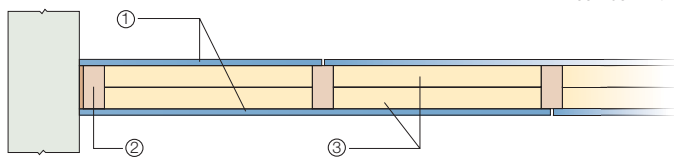
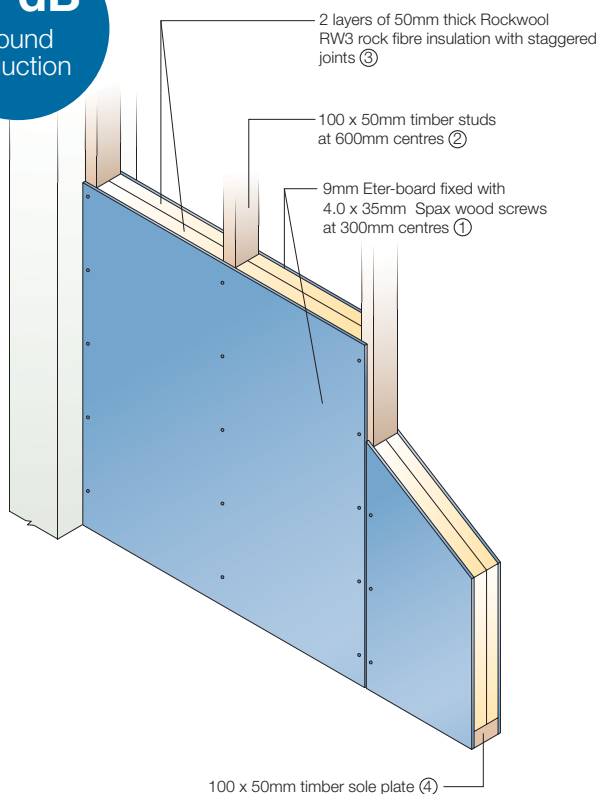
Horizontal section

Timber framed internal wall using 9mm Eter-board

- Timber frame, non-loadbearing
- Test report BTC 14950A
- 9mm Eter-board each side of frame
- $R_w = 47 \text{ dB}$, $C = -1 \text{ dB}$, $C_{tr} = -3 \text{ dB}$

Note: Joints filled with acoustic sealant.

47 dB
sound
reduction



Horizontal section

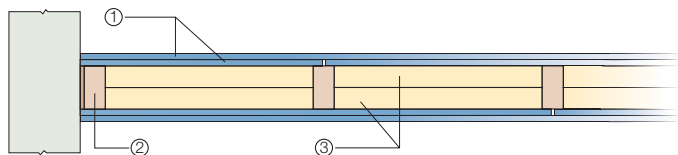
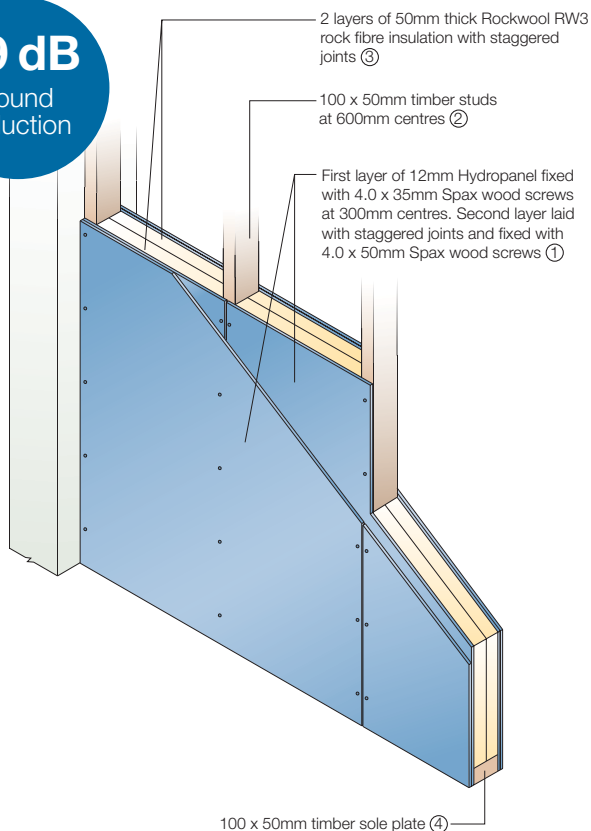
Acoustic constructions

Timber framed internal wall using a double layer of 12mm Hydropanel

- Timber frame, non-loadbearing
- Test report BTC 14949A
- 2 x 12mm Hydropanel each side of frame
- $R_w = 49 \text{ dB}$, $C = -2 \text{ dB}$, $C_{tr} = -6 \text{ dB}$

Note: At panel joints, bevelled edges to be filled with Eterfiller reinforced with Eterstrip scrim.

49 dB
sound
reduction



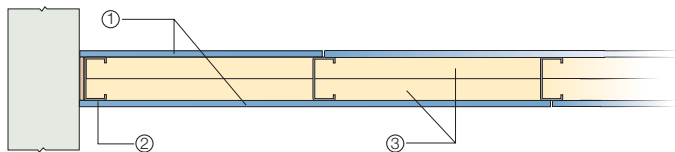
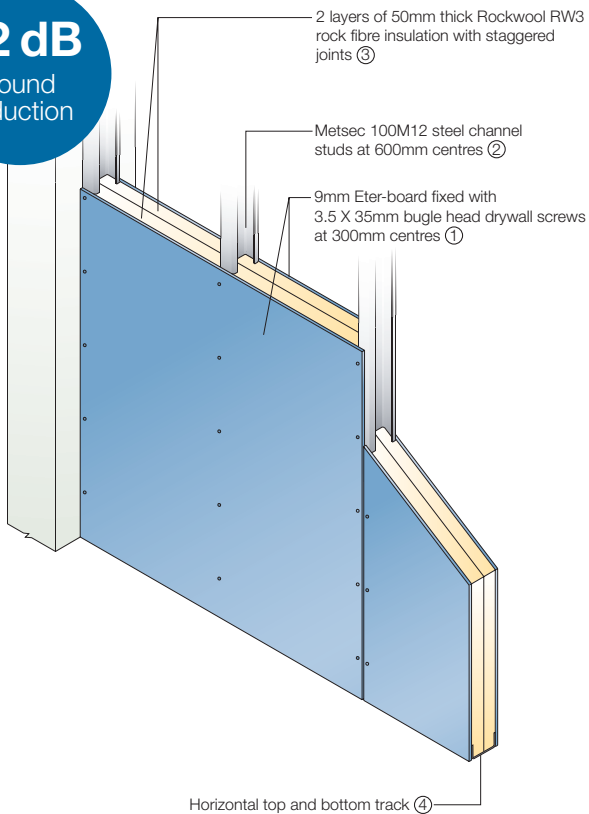
Horizontal section

Steel framed internal wall using 9mm Eter-board

- Metsec steel frame,
non-loadbearing
- Test report BTC 14951A
- 9mm Eter-board each side
of frame
- $R_w = 52 \text{ dB}$, $C = -3 \text{ dB}$,
 $C_{tr} = -10 \text{ dB}$

Note: Joints filled with acoustic sealant.

52 dB
sound
reduction



Horizontal section

Services and support



Technical Advisory Service

Specifiers require prompt, knowledgeable and detailed responses to a vast range of enquiries.

Our Technical Advisory Service is staffed by a qualified team with specialist knowledge not only of all Marley Eternit products, but also crucially, how those systems integrate with other components and comply with Building Regulations, Health and Safety, environmental and other critical criteria.

Other services

Customer services

Marley Eternit is committed to providing outstanding customer care and is staffed by experienced personnel.

Our nationwide external sales team are not only flexible enough to visit office or site, but have a thorough understanding of all our products and the ability to impart this knowledge to you quickly and simply.

Samples and literature can be sent to you by courier, or, if you prefer a sales person to call, this can be arranged to suit your schedule.

Training centre

We have a purpose-built training centre where we are able to impart our expertise and demonstrate our on-going commitment to training within our industry



Specifying the correct building board is a fundamental consideration of any building project.

To ease this process, the Marley Eternit website has been designed as a comprehensive and easy-to-use resource for the visitor. It is flexible and easily navigable, ensuring simple selection of our products to satisfy project needs. Amongst many other features, it has the facility to download literature, CAD details and request samples.

Site features

- Comprehensive product data
- Product selector – a tool to help selection of the right product
- Case studies – a searchable database of completed projects
- Downloadable literature
- Request samples and printed literature
- Press releases and industry news.

Technical Advice

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