

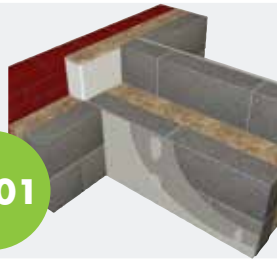
# Section 3.4.2

## Party Walls

**Full-fill with built in glass mineral wool**

**Product:** Earthwool Masonry Party Wall Slab

**Pw01**



**Full-fill with blown in glass mineral wool**

**Product:** Supafil Party Wall

**Pw02**



**Full-fill with built in glass mineral wool**

**Products:** Earthwool Timber Frame Party Wall Slab

**Pw03**



**Existing masonry into party wall**

**Products:** Earthwool Acoustic Roll or Earthwool Flexible Slab

**Pw04**



**Steel frame party wall**

**Product:** Earthwool Flexible Slab

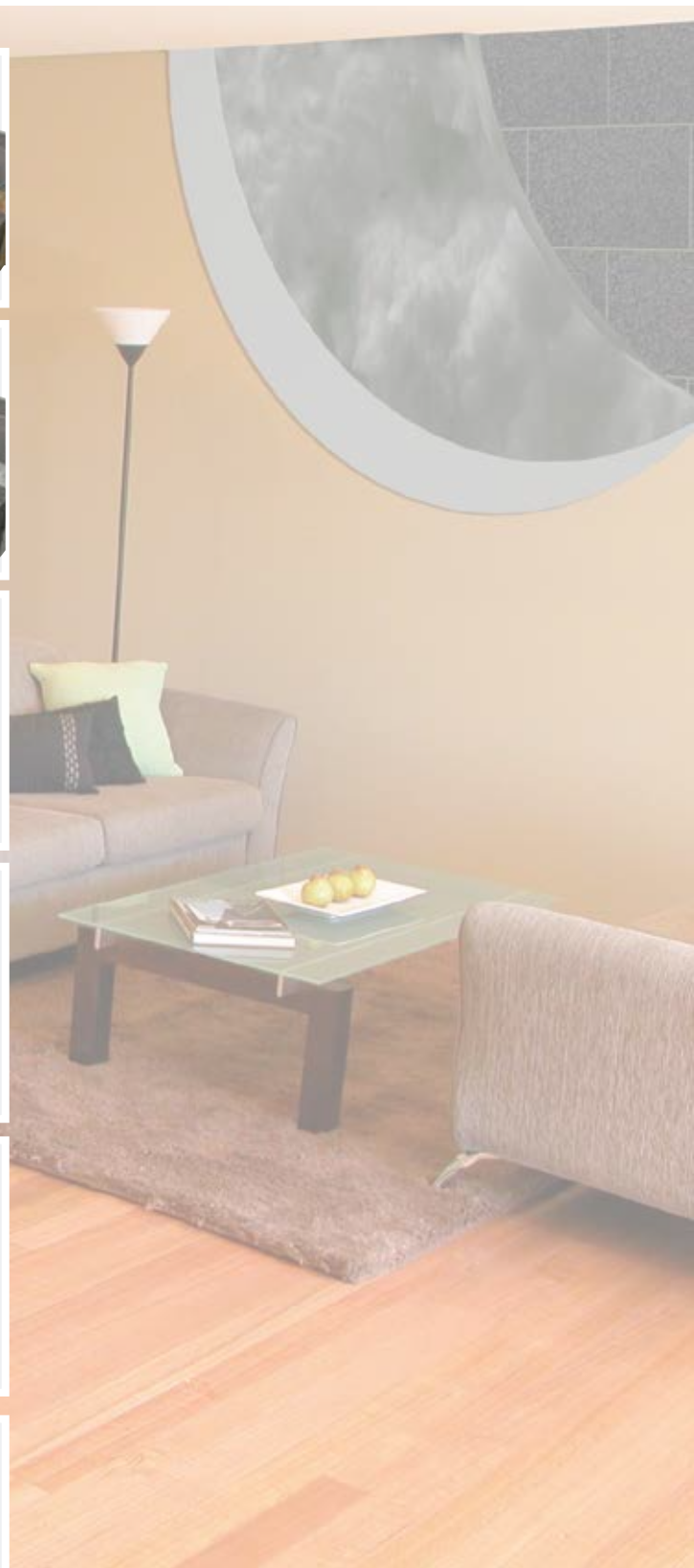
**Pw05 /06**



**Steel frame party wall**

**Product:** Earthwool Building Slab RS45

**Pw07 /08**



# Why party wall insulation is required

## Building Regulations

Party wall thermal bypass is now recognised in Building Regulations for new buildings, and details of how to include this are provided in Approved Document L1A: 2010 Edition for England and Wales and Section 6 of both the Domestic and Non-Domestic Technical Handbooks for Scotland.

In both cases the approach requires that a value for the heat loss through the party wall is included in the calculation of whole building energy performance and carbon emissions.

## SAP 2009

Table 26 below shows the four options available to designers when completing energy calculations using SAP 2009.

Table 27 - Party wall U-values as given in SAP 2009

U-values for party walls	
Wall construction	U-value (W/m <sup>2</sup> K)
1) Solid	0.00
2) Unfilled cavity with no effective edge sealing	0.50
3) Unfilled cavity with effective edge sealing around all edges and in line with insulation layers in abutting elements	0.20
4) Fully filled cavity with effective edge sealing around all edges and in line with insulation layers in abutting elements	0.00

Note: It may not be possible to achieve effective edge sealing by solely installing cavity barriers at the junction of the party wall cavity with the external cavity wall. On site testing has shown that it is possible to achieve effective edge sealing when cavity barriers are installed in conjunction with a fully filled party wall cavity.

## England and Wales:

### Approved Document L1A

The notional dwelling which is used to set the Target Emission Rate (TER) for new homes in England and Wales assumes a full-fill solution with effective edge sealing, thus providing an effective zero U-value. This means that if any other solution is adopted, savings will be required elsewhere to offset the additional carbon emissions which this will create.

## Scotland:

### Technical Handbooks Section 6

The notional dwelling which is used to set the Target Emission Rate for new homes in Scotland assumes an unfilled cavity with effective edge sealing, thus providing a U-value of 0.20 W/m<sup>2</sup>K. This means that there is the option to achieve energy and carbon savings by designing a full-fill solution with effective edge sealing.

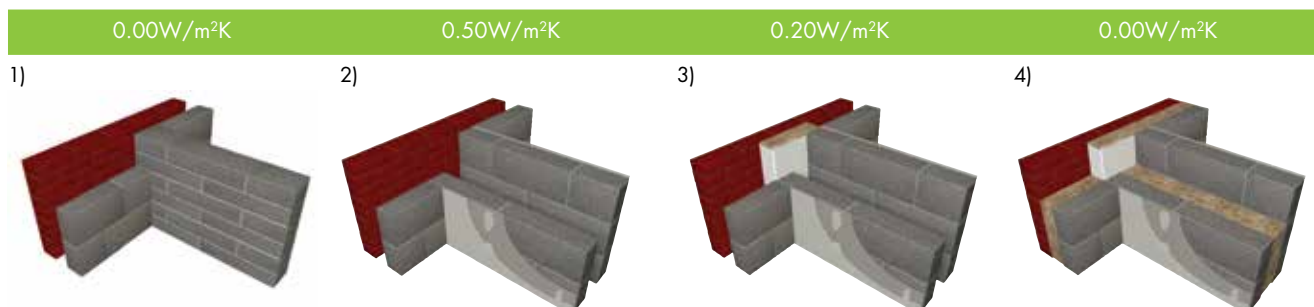
## Zero effective U-value

The heat loss from a party wall is often referred to as a U-value, strictly speaking this is not a U-value in the sense that is normally understood because the heat loss mechanism is a combination of heat loss through the wall and junctions with air circulation effects between the party wall cavity, other building cavities and the external environment. The values here have been obtained from measurements of total heat loss attributable to the party cavity wall in real buildings and then divided by the total area of the party wall, and should be considered as 'Effective U-values'. This is how it is possible to have zero U-value options.

Table 27 below shows the improvements which are required of other building elements, in order to compensate for the party wall if the 0.20W/m<sup>2</sup>K option is used rather than a zero effective U-value solution. The scenario uses a typical 3 bed mid-terrace property as an example.

Table 28 - The benefit of a zero effective U-value

Building element	Performance	
	Scenario A Party wall fully filled	Scenario B Party wall edge sealed only
Party wall	0.00 W/m <sup>2</sup> K	0.20 W/m <sup>2</sup> K
External wall	0.25 W/m <sup>2</sup> K	0.15 W/m <sup>2</sup> K
Roof	0.10 W/m <sup>2</sup> K	0.10 W/m <sup>2</sup> K
Floor	0.19 W/m <sup>2</sup> K	0.14 W/m <sup>2</sup> K
Windows	1.40 W/m <sup>2</sup> K	1.00 W/m <sup>2</sup> K
Thermal bridging Y value	0.05	0.04
Air tightness	6 m <sup>3</sup> /hr/m <sup>2</sup> @50Pa	2 m <sup>3</sup> /hr/m <sup>2</sup> @50Pa
Target emission rate	15.06	15.06
Dwelling emission rate	14.53	15.05



# Party walls and party wall thermal bypass

## Party wall function

Although the primary function of a party wall in a building is to provide structural strength and physical separation, it also provides the following:

- acoustic separation
- fire separation
- thermal separation

Thermal separation between the dwellings on either side of the party wall was not previously considered by Building Regulations as it was assumed that there was zero heat loss due to both dwellings being heated.

However, independent robust testing carried out by Leeds Metropolitan University has demonstrated that significant amounts of heat are lost through party cavity walls via the phenomenon of 'party wall bypass'.

## What is party wall thermal bypass?

Party wall thermal bypass is a process whereby heat is lost due to moving cold air which has entered an uninsulated party cavity wall from external flanking building elements, resulting in heat loss via convection.

## Building Regulations

The testing demonstrated that the level of heat lost through party wall thermal bypass is so high that it is now recognised in Building Regulations for new buildings in England, Wales and Scotland, and is included within SAP (Standard Assessment Procedure) calculations using SAP 2009.

## SAP 2009

SAP 2009 is the calculation method used for calculating energy consumption of new dwellings in England, Wales and Scotland, and considers energy used to heat, light and ventilate a dwelling.

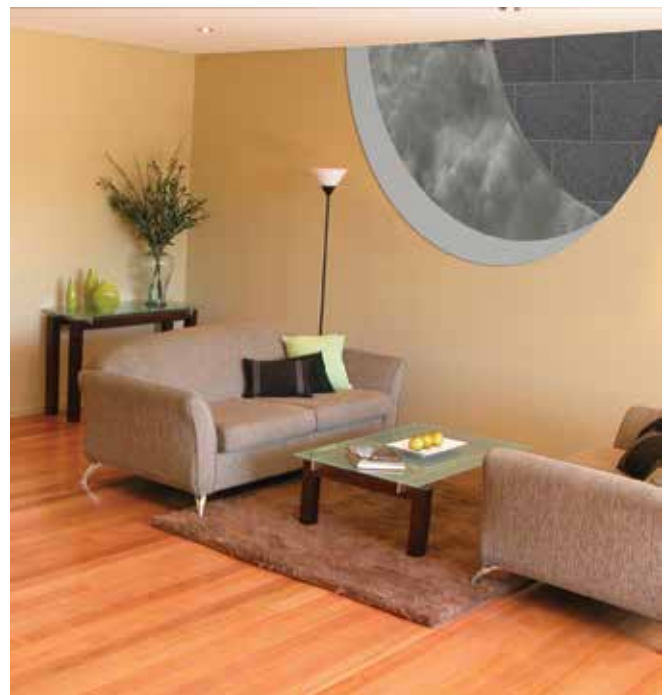
Within the 2009 version of SAP there is a section which considers the insulation of party walls, and provides designers with four options with regards to the construction of party cavity walls. See table on page 186.

## A solution to prevent party wall thermal bypass with full-fill mineral wool

The independent testing carried out by Leeds Metropolitan University not only sought to observe and quantify the phenomenon of party wall thermal bypass, but also sought to develop and prove a solution to eliminate the heat loss.

On-site tests demonstrated that the effective U-value for a party wall in a dwelling can potentially be reduced to zero if the party wall cavity is completely filled with mineral wool insulation and combined with mineral wool filled cavity barriers at the edges of the party wall cavity.

As a result, the most beneficial option for designers when designing a separating party cavity wall, as outlined in the 2009 version of SAP, is to fully fill the wall using mineral wool in conjunction with effective edge sealing.



# Party walls

## Party wall design

### Party walls are required to provide protection from noise between adjoining properties.

To achieve the expected level of protection not only does the party wall have to be designed and built correctly, but particular attention has to be paid to flanking transmission through the building elements adjoining the party wall. It should be remembered that the performance levels required by Building Regulations measure the protection offered by the dwelling from an adjoining dwelling, not just the performance of the separating element in isolation.

In England and Wales the Building Regulation Approved Document E: Resistance to the Passage of Sound, states acoustic performance levels which must be achieved for both residential and non-residential party walls.

### Robust Details Ltd

Monitoring of Robust Details is carried out by Robust Details Ltd, a 'not for profit' company specifically set up for this purpose.

Constructions are subjected to a series of acoustic tests in accordance with the requirements of Approved Document E, and registered within the Robust Details Handbook when compliance has been demonstrated.

Robust Details Ltd carry out ongoing quality checking of existing Robust Details and are responsible for the future development of Robust Details. See [www.robustdetails.com](http://www.robustdetails.com).

### England and Wales

Compliance with Approved Document E for party walls can be achieved in one of two ways:

1. Construct the party wall and show compliance by carrying out pre-completion acoustic tests in accordance with the procedures stated in the document, proving the performance of the wall equals or exceeds the standard set out in Approved Document E
2. Construct the party wall using a specified construction registered in the Robust Details Handbook – no acoustic testing is required, but a registration fee is payable to Robust Details Ltd

### Scotland and Ireland

The relevant standards are as follows:

- Scotland: Section 5
- Northern Ireland: Technical Booklet G
- Republic of Ireland: Part E

Compliance can be achieved either by adopting specified constructions or by testing to show that non-specified constructions meet the relevant performance standards.

Note that Scotland, Northern Ireland and Ireland have not adopted the DnT,w +Ctr sound spectrum for testing that must be used in England and Wales. The performance standards are therefore not directly comparable.

# Robust Details and fully filled cavities in party walls

The acoustic performance of a timber frame or masonry cavity party wall is maintained when the cavity is fully filled with glass or rock mineral wool. For masonry cavity party walls the insulation should have a density no greater than  $40\text{kg/m}^3$  and for timber frame walls the insulation should have a density between  $18\text{kg/m}^3$  -  $40\text{kg/m}^3$ .

Knauf Insulation has undertaken a wide ranging and thorough test programme of masonry and timber party walls, covering both thermal and acoustic aspects, in order to develop insulation solutions which meet both acoustic and thermal performance requirements.

The Knauf Insulation Party Wall range of products and solutions for fully filling the cavities in party walls include solutions for both masonry and timber frame construction, and are available for masonry walls in both built in and blown in formats, offering specifiers choice to suit individual project requirements.

- Dedicated party wall solutions, manufactured at optimum density levels to deliver both thermal and acoustic performance
- Solutions for masonry party separating cavity walls using blown and built in solutions
- Solutions which can also be used in external walls to provide economies of scale and on-site efficiencies
- Knauf Insulation are an active member of both the Mineral Wool Insulation Manufacturers Association (MIMA) and PWTBAB (Party Wall Thermal Bypass Advisory Body) and were instrumental in the research carried out to highlight the issue of party wall bypass
- Knauf Insulation have a significant level of knowledge and experience regarding party wall insulation solutions, gained from on-site development and testing work



Knauf Insulation Party Wall solutions are suitable for use in Robust Details™ Walls. As we are developing solutions on an ongoing basis and the range of walls within the Robust Details Handbook is constantly evolving, the most up to date information regarding Knauf Insulation solutions to be used with Robust Details walls can be found by visiting [knaufinsulation.co.uk/partywall](http://knaufinsulation.co.uk/partywall)

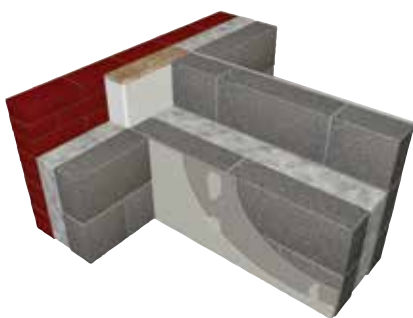


Table 29 - Robust Detail compliant solutions and products

Supafil Party Wall

Earthwool Masonry Party Wall Slab

Earthwool Timber Frame Party Wall Slab



# Masonry cavity party wall – built in

Full-fill with built in glass mineral wool

## Earthwool Masonry Party Wall Slab

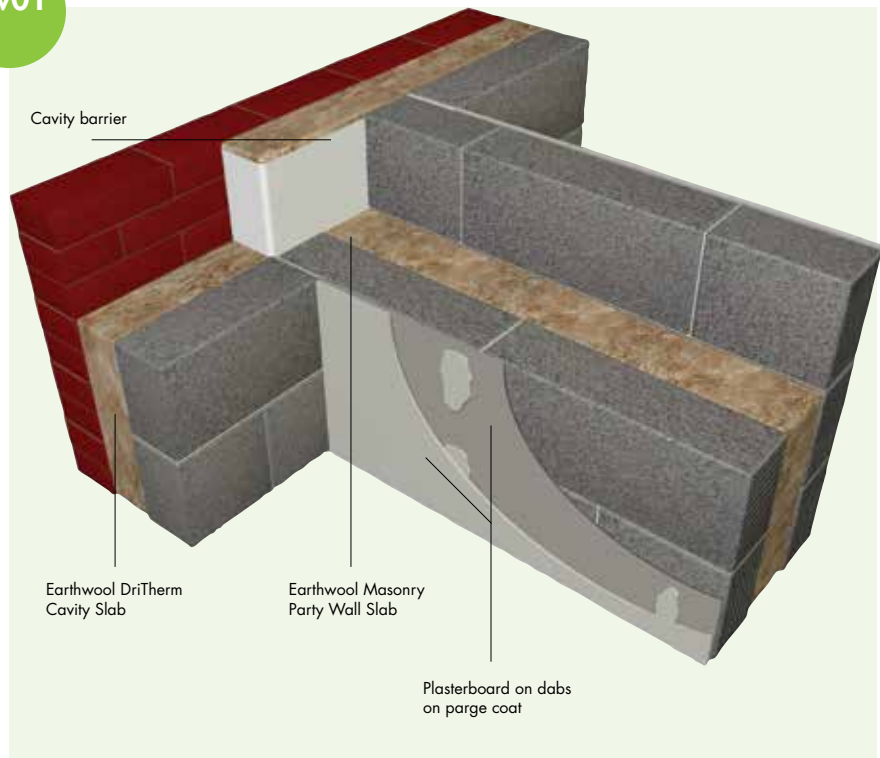


Pw01

- Contributes to a zero-effective U-value
- Installation is quick and easy using well established product, method and proven building techniques
- Can be used with a wide range of Robust Details masonry cavity wall solutions

### Earthwool Masonry Party Wall Slab

- Non-combustible with a Euroclass A1 reaction to fire rating
- A+ Generic BRE GREE Guide rating
- Zero Ozone Depletion Potential (ODP)
- Zero Global Warming Potential (GWP)



### Product

**Earthwool Masonry Party Wall Slab** is a semi-rigid glass mineral wool slab delivering both thermal and acoustic performance and is designed to fully fill the cavity in masonry cavity party walls between adjoining apartments, semi-detached and terraced houses.

Earthwool Masonry Party Wall Slab is dimensioned to fit between wall ties at standard vertical spacings.

### Typical construction

Masonry cavity party wall built of two leaves of blockwork with the cavity fully filled with Earthwool Masonry Party Wall Slab. The internal finish consists of a wet plaster coat or a render coat finished with 12.50mm standard plasterboard on dabs.

Earthwool Masonry Party Wall Slab is used as part of a full fill cavity solution to achieve a zero effective U-value and should be installed in conjunction with effective edge sealing.

Effective edge sealing is achieved by installing cavity barriers at the junction of the party wall with the external wall and at the party wall junction with the roof.

### Installation

The thickness of Earthwool Masonry Party Wall Slab should be specified to match the thickness of the party wall cavity into which it will be installed. Earthwool Masonry Party Wall Slab has been designed so that it will be slightly compressed between the two block leaves and thereby completely fill the cavity in the party wall.

Earthwool Masonry Party Wall Slab should be kept clean and free from mortar droppings with all vertical and horizontal joints closed and each slab in intimate contact with adjacent slabs and the block leaves. Any cutting and fitting should be neatly done and not distort the layers of glasswool which comprise Earthwool Masonry Party Wall Slab.

The installation of Earthwool Masonry Party Wall Slab should ordinarily commence on the foundations of the party cavity wall.

### Performance

#### Thermal

Earthwool Masonry Party Wall Slab provides a full-fill solution to prevent air movement within the cavity which is proven to prevent heat loss via convection. Earthwool Masonry Party Wall Slab provides a zero effective U-value when used in conjunction with effective edge sealing.

#### Fire

Earthwool Masonry Party Wall Slab is non combustible and classified as Euroclass A1 to BS EN 13501-1.

#### Density

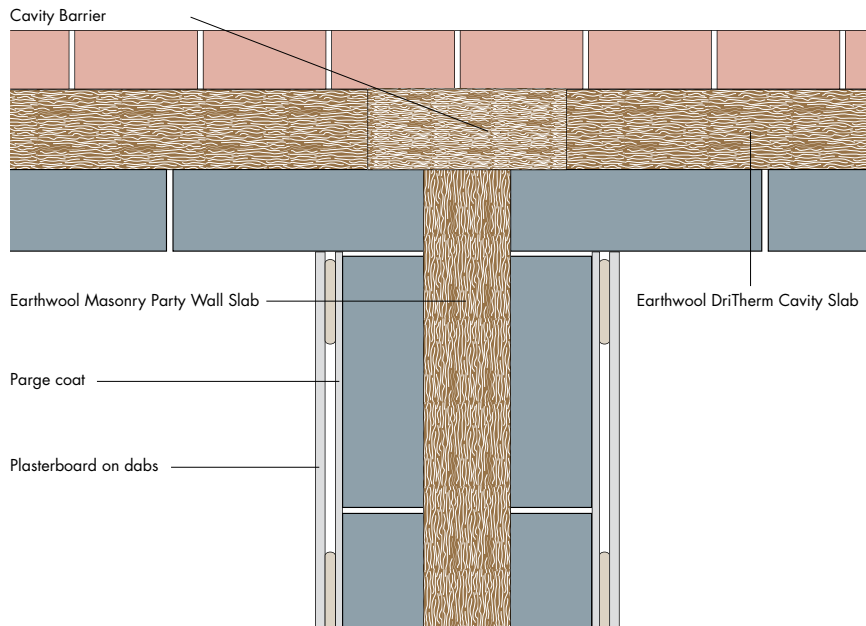
The density of Earthwool Masonry Party Wall Slab is 18.00kg/m<sup>3</sup>.

#### Acoustic

Earthwool Masonry Party Wall Slab is an excellent acoustic absorber and will not impair the acoustic performance of a masonry cavity party wall construction when installed correctly. See Table 29 for further details regarding use within walls constructed in line with Robust Details.

Where design details differ from this or for further information please contact our Technical Advice and Support Centre on 01744 766666.

## Typical junction detail with party wall



### Typical specification

All masonry cavity party walls to be insulated during construction by fully filling the cavity with.....mm of Earthwool Masonry Party Wall Slab.

The installation of Earthwool Party Wall Slab should commence at foundation level. Cavity wall ties should be installed at not more than 900mm centres horizontally, or as otherwise required by the structure, and at 450mm vertically. All work under construction must be protected overnight and during adverse weather conditions.

**nbsPlus** Alternatively, consult the National Building Specifications, Standard version clause/clauses...F30/150 and P10/420.....

Knauf Insulation specification clauses can be downloaded from [knaufinsulation.co.uk/nbs](http://knaufinsulation.co.uk/nbs)



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# Masonry cavity party wall – blown in

Full-fill with blown in glass mineral wool

## Supafil Party Wall

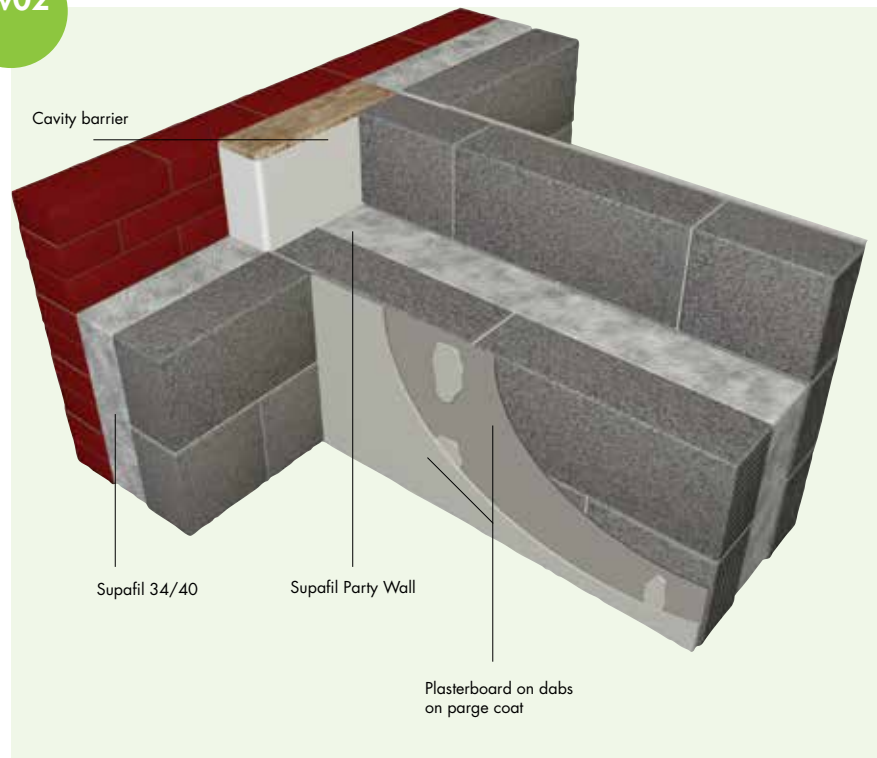


Pw02

- Contributes to a zero-effective U-value
- Product is formed in situ and is assured to provide a full-fill solution even if walls are built out of tolerance
- Can be used with a wide range of Robust Details masonry cavity wall solutions and the sound insulation performance of the wall is maintained

### Supafil Party Wall

- Can be used with Robust Detail walls
- Non-combustible Euroclass A1 reaction to fire rating
- A+ Generic BRE Green Guide rating
- Zero Ozone Depletion Potential (ODP)
- Zero Global Warming Potential (GWP)



### Product

**Supafil Party Wall** is a premium quality, non-combustible, loose glass mineral wool product designed to be 'blown' or 'injected' into masonry cavity party walls.

### Typical construction

Masonry cavity party wall built of two leaves of blockwork with the cavity fully filled with Supafil Party Wall. The internal finish consists of a wet plaster coat or a render coat finished with 12.50mm standard plasterboard on dabs.

Supafil Party Wall is designed to fully fill the cavity in masonry cavity party walls between adjoining apartments, semi-detached and terraced houses and is used to achieve a zero effective U-value when installed in conjunction with effective edge sealing.

Effective edge sealing is achieved by installing cavity barriers at the junction of the party wall with the external wall and at the party wall junction with the roof.

For additional information contact our Technical Advice and Support Centre on 01744 766666.

### Installation

A survey is carried out by approved installing technicians prior to installation to ascertain the suitability of the party wall for insulating with Supafil Party Wall.

A series of 22 or 25mm diameter holes are drilled through the inner leaf in accordance with a pre-determined pattern and the insulation installed prior to plastering.

Supafil Party Wall insulation is fed into an approved blowing machine and injected into the cavity under air pressure through a flexible hose fitted with a tapered nozzle.

The machine is fitted with a pressure sensor which automatically cuts off to stop the flow of material when the area of wall being insulated is completely filled to the correct density.

### Performance

#### Thermal

Supafil Party Wall provides a full-fill solution to prevent air movement within the cavity which is proven to prevent heat loss via convection. Supafil Party Wall provides a zero effective U-value when used in conjunction with effective edge sealing.

#### Fire

Supafil Party Wall is non combustible and classified as Euroclass A1 to BS EN 13501-1.

#### Density

The installed density of Supafil Party Wall is 18.00kg/m<sup>3</sup>.

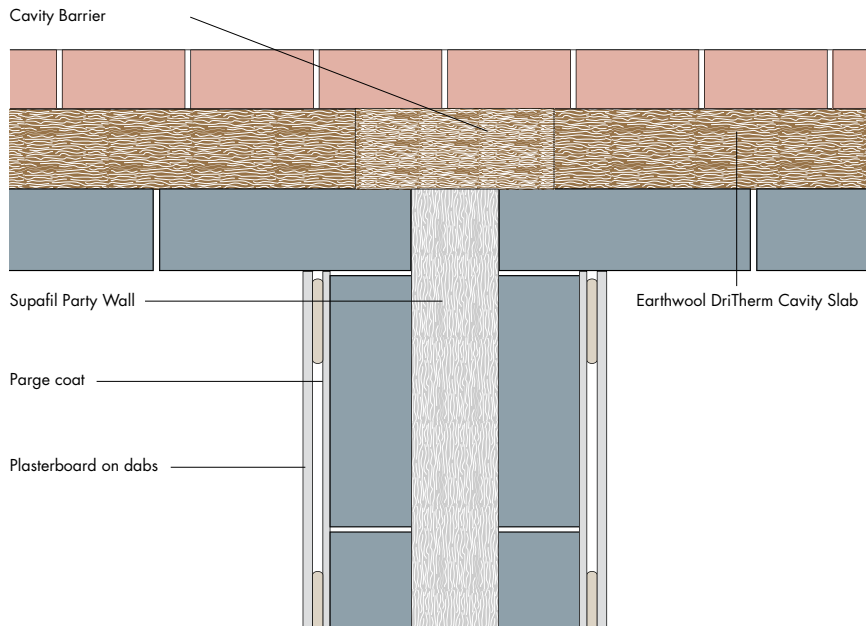
#### Acoustic

Supafil Party Wall is an excellent acoustic absorber and will not impair the acoustic performance of a masonry cavity party wall construction when installed correctly. See Table 29 for further details regarding use within walls constructed in line with Robust Details.

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## Typical junction detail with party wall



### Typical specification

Supafil Party Wall loose glass mineral wool insulation to be injected into the ....mm party wall cavity by a Knauf Insulation/BBA approved Installer.

New cavity walls to receive Supafil Party Wall should be constructed so that insulation cannot penetrate or pass through to cavities in adjoining buildings or compartments.

All work to be in strict accordance with the procedures laid out in the relevant BBA Certificate and the Knauf Insulation "Operators" and "Survey and Assessment" manuals.

**nbsPlus** Alternatively, consult the National Building Specifications, Standard version clause/clauses...P11/220 and P10/420.....

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# Timber frame party wall

Full-fill with built in glass mineral wool

## Earthwool Timber Frame Party Wall Slab

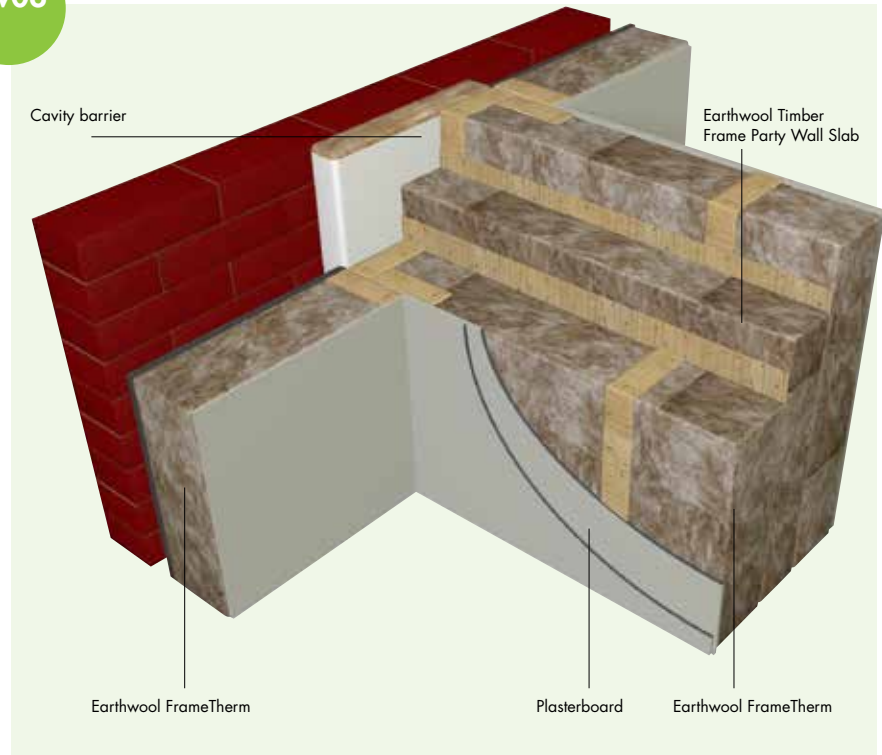


Pw03

- Contributes to a zero-effective U-value
- Compression fitted between frames ensures the party wall cavity is completely filled, preventing air movement within the cavity
- Can be used with a wide range of Robust Details masonry cavity wall solutions and the sound insulation performance of the wall is maintained

### Earthwool Timber Frame Party Wall Slab

- Non-combustible with a Euroclass A1 reaction to fire rating
- A+ Generic BRE Green Guide rating
- Zero Ozone Depletion Potential (ODP)
- Zero Global Warming Potential (GWP)



### Product

**Earthwool Timber Frame Party Wall Slab** is a semi-rigid glass mineral wool slab delivering both thermal and acoustic performance and is designed to fully fill the cavity in timber frame party walls between adjoining apartments, semi-detached and terraced houses.

### Typical construction

Timber frame wall comprised of two timber frames which are sheathed and insulated with Earthwool FrameTherm Rolls or Slabs.

Earthwool Timber Frame Party Wall Slab is used as part of a full fill cavity solution to achieve a zero effective U-value and should be installed in conjunction with effective edge sealing, and is designed to be held under slight compression (10mm) by the timber frame panels.

Effective edge sealing is achieved by installing cavity barriers at the junction of the party wall with the external wall and at the party wall junction with the roof.

The installation of additional cavity barriers is not required when the party wall cavity is fully filled with Earthwool Timber Frame Party Wall Slab.

### Installation

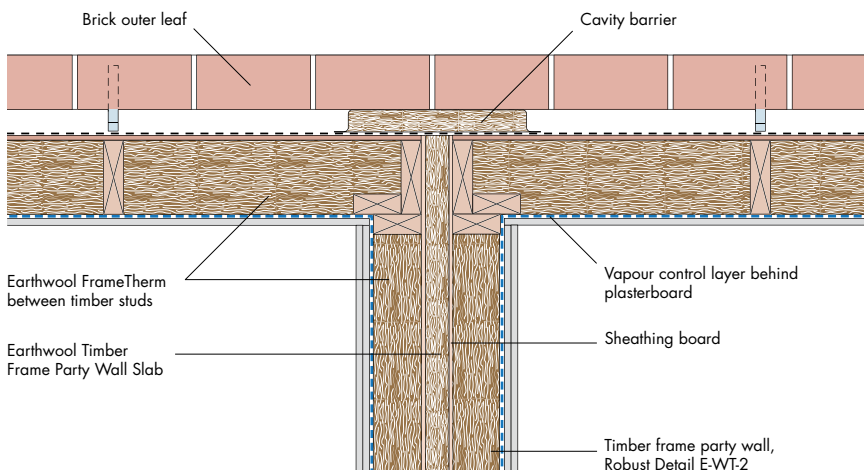
Vertical and horizontal bands of contact adhesive are applied to the timber frame against which Earthwool Timber Frame Party Wall Slab is to be installed. Typically, leave the adhesive for 30 seconds (to develop a tack) before the slabs are offered up to make contact with the sheathing board/polyethylene sheeting.

Installation should commence working from the bottom corner of one end of the panel/wall until the desired wall/panel length has been insulated, ensure that Earthwool Timber Frame Party Wall Slabs are in contact with all adjacent slabs and there are no gaps or open joints between the slabs.

The second panel(s) is installed ensuring that the specified cavity width is achieved and Earthwool Timber Frame Party Wall Slab is compressed between the two panels, repeat the installation sequence until the complete wall is insulated.

Earthwool Timber Frame Party Wall Slabs should be installed for the full height of the party wall and be in intimate contact with the effective edge sealing (cavity barriers) at the junction with the external wall and at the junction between the party wall and the roof.

## Typical junction of external and party wall



### Typical specification

Party wall cavity between timber frames to be insulated and fully filled with Earthwool Timber Frame Party Wall Slab – 60\*/85\*/110\*/mm thick.

Note: Thicknesses referred to above are the cavity width plus 10mm, as the product is held in compression by the timber frames.

(\*Delete as appropriate).

Earthwool Timber Frame Party Wall Slab to be installed and held in compression between the timber frames.

Cavity barriers should be installed at all junctions with the external structure as required by the Building Regulations.

Alternatively, consult the National Building Specifications, Standard version clause/clauses...P10/220 and 420.....

Knauf Insulation specification clauses can be downloaded from [knaufinsulation.co.uk/nbs](http://knaufinsulation.co.uk/nbs)

### Performance

#### Thermal

Earthwool Timber Frame Party Wall Slab provides a full-fill solution to prevent air movement within the cavity which is proven to prevent heat loss via convection. Earthwool Timber Frame Party Wall Slab provides a zero effective U-value when used in conjunction with effective edge sealing.

#### Fire

Earthwool Timber Frame Party Wall Slab is non-combustible and classified as Euroclass A1 to BS EN 13501-1.

#### Density

The density of Earthwool Timber Frame Party Wall Slab is 18.00kg/m<sup>3</sup>.

#### Acoustic

Earthwool Timber Frame Party Wall Slab is an excellent acoustic absorber and will not impair the acoustic performance of a masonry cavity party wall construction when installed correctly. See Table 29 for further details regarding use within walls constructed in line with Robust Details.

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# Party walls

## Existing masonry into party wall



Pw04

- Can upgrade the sound insulation performance of the existing wall to comply with the Building Regulations
- Glass and rock mineral wool products provide high levels of sound absorption
- Friction fitting between steel studs closes joints and helps to ensure sound insulation performance is achieved

### Earthwool Flexible Slab and Earthwool Acoustic Roll

- A+ Generic BRE Green Guide rating
- Non-combustible Euroclass A1 reaction to fire rating
- Zero Ozone Depletion Potential (ODP)
- Zero Global Warming Potential (GWP)



### Products

**Earthwool Acoustic Roll** is made from glass mineral wool and formed into rolls which are lightweight, flexible, resilient and non-combustible.

**Earthwool Flexible Slab** is a semi-rigid rock mineral wool slab.

Both products are designed to be friction fitted between timber or metal studs.

### Typical construction

An existing brick or block wall with plaster finish on both sides that is intended to become a separating wall. An independent lining is added to one side of the wall using an independent 'I' stud partition with 50mm Earthwool Acoustic Roll or Earthwool Flexible Slab between the studs and finished with two layers of 12.5mm standard plasterboard. This construction complies with Wall Treatment 1 in section 4 of Approved Document E. Pre-completion testing is required.

### Installation

Mark positions on the floor and ceiling for the U-channels. Bed the floor U-channels on two continuous beads of acoustic sealant and secure with nailable plugs at 600mm centres and 50mm from ends of channels. Screw fix the U-channels to the ceiling at 600mm centres.

Cut the 'I' studs to the floor to ceiling height, less 5mm, place within the channels at 600mm centres and fix in position. There should be a minimum 10mm air space between the back of the new lining and the existing party wall.

Install Earthwool Acoustic Roll or Earthwool Flexible Slab between the 'I' studs, so there are no gaps. Fix the plasterboard layers with drywall screws at 300mm centres. The board joints should be staggered between layers.

Seal all gaps at the perimeter of the plasterboard lining and where services, such as electrical sockets, penetrate the plasterboard seal with acoustic sealant.

Finish with plaster skim coat or using standard drylining techniques.

### Performance

#### Acoustic performance

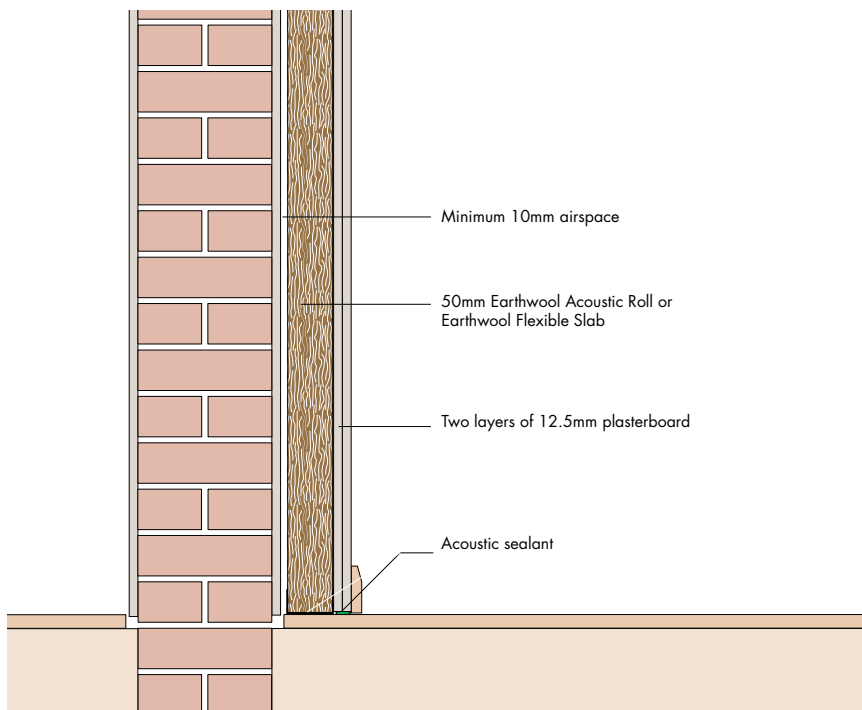
Earthwool Acoustic Roll and Earthwool Flexible Slab have excellent sound absorption characteristics. For optimum performance, the insulation must be installed so that no gaps are present between the rolls or slabs.

This solution is only suitable for refurbishment work and will require pre-completion testing to show compliance with Building Regulation requirements.

#### Fire performance

Earthwool Acoustic Roll and Earthwool Flexible Slab are classified as Euroclass A1 to BS EN 13501-1. The use of Class 'O' plasterboard will meet the requirements of the Building Regulations for wall linings in all locations.

### Typical wall/floor section



### Typical specification

Construct an independent framework using metal 'I' studs, 10mm clear of the existing separating wall. Infill between the studs with 50mm Earthwool Acoustic Roll\*/Earthwool Flexible Slab\*.

Screw fix plasterboard to the steel framing as specified. Seal round the perimeter of the plasterboard with acoustic sealant.

(\*Delete as appropriate)



Alternatively, consult the National Building Specifications, Standard version clause/clauses... K10/165.....

Knauf Insulation specification clauses can be downloaded from [knaufinsulation.co.uk/nbs](http://knaufinsulation.co.uk/nbs)

# Party walls

## Steel frame party wall

### Earthwool Flexible Slab



Pw05

Pw06

- Provides very high level of sound absorption
- Friction fitting between steel studs closes joints and helps to ensure sound insulation performance is achieved

#### Earthwool Flexible Slab

- Non-combustible with a Euroclass A1 reaction to fire rating
- A+ Generic BRE Green Guide rating
- Zero Ozone Depletion Potential (ODP)
- Zero Global Warming Potential (GWP)



#### Product

**Earthwool Flexible Slab** is a semi-rigid rock mineral wool slab designed to be friction fitted between timber and metal studs. Its density meets the requirements of Robust Details E-WS-1.

#### Typical construction

Twin steel frame construction with facing of one layer of 19mm Knauf Drywall Plank and one layer of 12.5mm Knauf Drywall Soundshield plasterboard on each side. 60mm Earthwool Flexible Slab between the frames with 70mm Earthwool Flexible Slab between the studs. Note that two 70mm wide studs and a 60mm cavity gives an overall thickness of 200mm between the plasterboard faces.

#### Installation

Two separate steel frame walls are constructed. 60mm Earthwool Flexible Slabs are slotted into the cavity between the two steel frames and butt jointed. There should be no gaps between the slabs. The rows of slabs should be laid 'broken bond' to avoid coincident vertical joints.

70mm Earthwool Flexible Slab installed between the studs, there should be no gaps between the insulation slabs.

One layer of 19mm Knauf Drywall Plank and one layer of 12.5mm Knauf Drywall Soundshield screwed to each side of the party wall, all joints staggered. Seal all joints in outer leaf with Knauf Drywall Joint Tape or caulk with Knauf Drywall Sealant.

#### Cavity barriers

To meet the requirements of the Building Regulations, cavity barriers must be installed in steel frame party walls at the junction with external walls and at horizontal floor zones. Rocksilk Smoke and Fire Barrier meets this requirement.

#### Performance

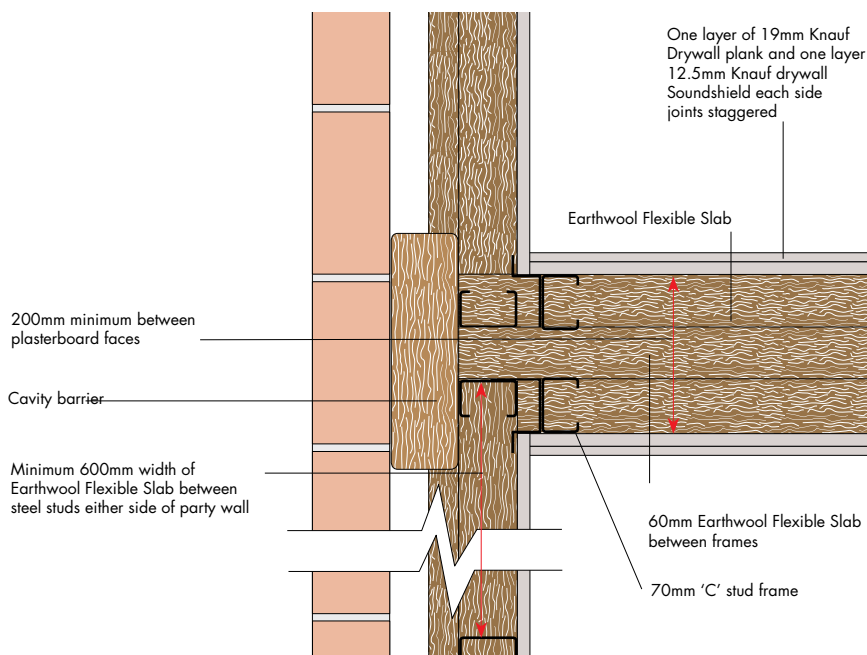
##### Acoustic performance

This wall construction requires pre-completion testing.

##### Fire performance

Earthwool Flexible Slab is classified as Euroclass A1 to BS EN 13501-1.

## Typical junction detail with party wall



## Typical specification

Earthwool Flexible Slab, 60mm thick to be slotted into the cavity between the two steel frames and butt jointed. The slabs should be laid 'broken bond' to avoid continuous vertical joints.

Earthwool Flexible Slab, 70mm thick to be installed between the steel studs and butt jointed to ensure that there are no gaps between the slabs.

**n55Plus** Alternatively, consult the National Building Specifications, Standard version clause/clauses... K10/125.....

Knauf Insulation specification clauses can be downloaded from [knaufinsulation.co.uk/nbs](http://knaufinsulation.co.uk/nbs)

### Pw06

Part L1A of the Building Regulations requires that the heat loss associated with empty cavities in party walls has to be accounted for when the energy performance of the dwelling is established. An 'effective zero U-value' can be assigned to the party wall, if the party wall cavities are fully filled with mineral wool insulation in conjunction with effective edge sealing. See pages 186 – 189 for full details about Party Wall Bypass.

Although this solution (insulation within the cavity only) was developed as a Robust Detail which can be used without on site testing in new build dwellings in England and Wales, the inclusion of insulation within the steel studs results in the requirement for pre-completion testing. However, acoustic tests (on other framed wall constructions with completely filled cavities) has, shown that the inclusion of insulation within previously empty cavities has a negligible effect on the acoustic performance of the party wall.

The use of this detail (with the same products) is appropriate as a party wall in both new build non-dwellings such as student accommodation, nursing homes and hotels constructed using light weight steel frames. Similarly, it could be used in refurbishment projects in both dwellings and non-dwellings in existing constructions which require new party walls, providing the flanking walls and floors are suitable. In all cases, if it is used for work other than new dwellings, its performance must be proven by the stipulated on site testing procedures that apply.

For dwellings in Scotland and Northern Ireland there are no approved light steel frame party wall constructions. Performance must be proven by the stipulated on site testing procedures.

# Party walls

## Steel frame party wall

### Earthwool Building Slab RS45



Pw07

Pw08

- Provides very high level of sound absorption
- Friction fitting between steel studs closes joints and helps to ensure sound insulation performance is achieved

#### Earthwool Building Slab RS45

- Non-combustible with a Euroclass A1 reaction to fire rating
- A+ Generic BRE Green Guide rating
- Zero Ozone Depletion Potential (ODP)
- Zero Global Warming Potential (GWP)



#### Product

**Earthwool Building Slab RS45** is a semi-rigid rock mineral wool slab. Its density meets the requirements of Robust Details E-WS-3.

#### Typical construction

Twin steel frame construction with facing of one layer of 19mm Knauf Drywall Plank and one layer of 12.5mm Knauf Drywall Soundshield plasterboard on one side, 75mm Earthwool Universal Slab RS45 between and sheathing on the inner face with 40mm **Earthwool Building Slab RS45** between the frames.

#### Installation

Two separate steel frame walls are constructed. 40mm **Earthwool Building Slab RS45** is slotted into the cavity between the two steel frames and butt jointed. There should be no gaps between the slabs. The rows of slabs should be laid 'broken bond' to avoid coincident vertical joints.

75mm Earthwool Building Slab RS45 between the studs and sheathing on the inner face. There should be no gaps between the insulation slabs.

One layer of 19mm Knauf Drywall Plank and one layer of 12.5mm Knauf Drywall Soundshield screwed to each side of the party wall, all joints staggered. Seal all joints in outer leaf with Knauf Drywall Joint Tape or caulk with Knauf Drywall Sealant.

#### Cavity barriers

To meet the requirements of the Building Regulations, cavity barriers must be installed in steel frame party walls at the junction with external walls and at horizontal floor zones. Rocksilks Smoke and Fire Barrier meets this requirement.

#### Performance

##### Acoustic performance

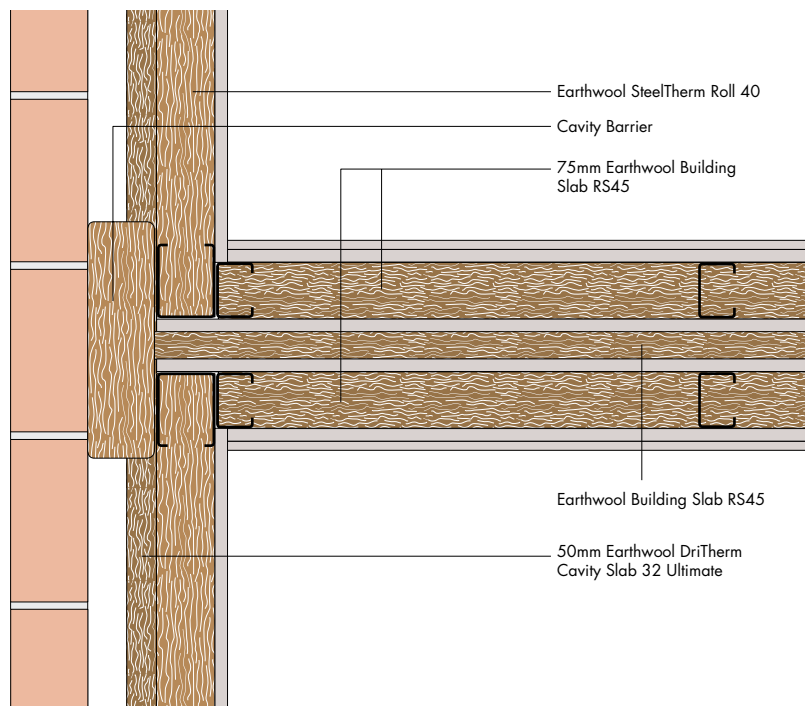
This wall construction requires pre-completion testing.

##### Fire performance

Earthwool Building Slab RS45 is classified as Euroclass A1 to BS EN 13501-1.



## Typical junction detail with party wall



### Typical specification

Earthwool Building Slab RS45, 40mm thick, to be slotted into the cavity between the two steel frames and butt jointed. The slabs should be laid 'broken bond' to avoid continuous vertical joints.

Earthwool Building Slab RS45, 75mm thick, to be installed between the steel studs and butt jointed to ensure that there are no gaps between the slabs.



Alternatively, consult the National Building Specifications, Standard version clause/clauses... K10/125.....

Knauf Insulation specification clauses can be downloaded from [knaufinsulation.co.uk/nbs](http://knaufinsulation.co.uk/nbs)

Pw08

Part L1A of the Building Regulations requires that the heat loss associated with empty cavities in party walls has to be accounted for when the energy performance of the dwelling is established. An 'effective zero U-value' can be assigned to the party wall, if the party wall cavities are fully filled with mineral wool insulation in conjunction with effective edge sealing. See pages 186 – 189 for full details about Party Wall Bypass.

Although this solution (insulation within the frames only) was developed as a Robust Detail which can be used without on site testing in new build dwellings in England and Wales, the inclusion of insulation within the steel studs results in the requirement for pre-completion testing. However, acoustic tests (on other framed wall constructions with completely filled cavities) has, shown that the inclusion of insulation within previously empty cavities

has a negligible effect on the acoustic performance of the party wall.

The use of this detail (with the same products) is appropriate as a party wall in both new build non-dwellings such as student accommodation, nursing homes and hotels constructed using light weight steel frames. Similarly, it could be used in refurbishment projects in both dwellings and non-dwellings in existing constructions which require new party walls, providing the flanking walls and floors are suitable. In all cases, if it is used for work other than new dwellings, its performance must be proven by the stipulated on site testing procedures that apply.

For dwellings in Scotland and Northern Ireland there are no approved light steel frame party wall constructions. Performance must be proven by the stipulated on site testing procedures.

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*it's time to save energy*