# TIMBER FRAME SLAB

Non-combustible thermal insulation designed specifically for timber frames

ROCKWOOL®

# TIMBER FRAME SLAB

## ROCKWOOL Timber Frame Slab delivers performance to meet and exceed thermal building regulations for external walls in timber frame buildings.

Being made from stone wool means the highest Euroclass A1 reaction to fire as well as exceptional sound absorption properties. The Timber Frame Slab delivers thermal performance at an optimal weight and features dimensions tailored for external timber frame walls.

## Advantages

- Thermal performance - low thermal conductivity of 0.034 W/mK
- Non-combustible, non-toxic - Euroclass fire rating of A1
- Excellent sound absorption - high density, stone wool fibres
- Easy installation - 570mm slab width for easy, no-waste fitting into 600mm frames
- Breathable - water repellent, and vapour permeable. Helps prevent rot and mould
- Durable - no slumping or sagging, maintains performance over time
- Sustainability - produced from abundant, renewable volcanic rock. 97% recyclable

## Description

ROCKWOOL Timber Frame Slab is a semi-rigid insulation designed specifically for use between the studwork of external timber frame walls. The slabs have been optimised to offer a low thermal conductivity, A1 fire resistance and outstanding sound absorption.

When building with timber, using non-combustible ROCKWOOL insulation can help to reduce the risk of fire, and fire spread, particularly during the more vulnerable construction phase. Tested to BS EN 13501-1, achieving the best possible Euroclass reaction to fire classification of A1, Timber Frame Slab acts as a barrier to fire, able to withstand temperatures over 1,000C and, importantly, does not produce toxic smoke.

ROCKWOOL stone wool insulation is also a highly effective thermal insulator, helping to keep the heat in, and the cold out. Timber Frame Slab has been tested to BS EN 13162, achieving a thermal conductivity of 0.034 W/mK, at a low product weight, to assist in handling and installation.

Comprised of thousands of high density stone wool fibres, Timber Frame Slab traps sound waves and absorbs vibration, helping to prevent unwanted noise from disturbing comfort.

The Timber Frame Slab will also repel liquid water, but allow water vapour to pass through, enabling the construction to breathe, reducing the risk of condensation, which can lead to rot, mould and humidity damage.

Stone wool insulation has a unique physical structure and durability, meaning that it keeps its shape over time, despite changes in temperature or humidity. With its 570mm slab width and dense smart fibre structure, ROCKWOOL Timber Frame Slab is quick and easy to fit into timber frame walls, reducing the need for cutting, minimising waste and speeding up installation. The dimensional stability means the slabs will not sag or slump after installation, with no gaps in the insulation layer, delivering maximum performance for the life of the building.

## Application

ROCKWOOL Timber Frame Slab has been designed specifically for quick and easy installation into the standard size 600mm (on centre) studs, of external timber frame walls. This means the insulation takes less time to install, is a more reliable and long-lasting fit, and that the performance does not diminish over the lifetime of the building.

## Performance

### Thermal resistance

Tested to BS EN 13162:2012+A1:2015 achieving a lambda value of 0.034 W/mK. ROCKWOOL Timber Frame Slab is able to meet or exceed Part L (Conservation of fuel and power) of the building regulations.

### Reaction to fire

Tested to BS EN 13501-1, Timber Frame Slab achieves a Euroclass A1 classification using test data from the reaction to fire test.

### Acoustic performance

Timber Frame Slab can significantly reduce outside sources of noise when used in an external wall.

### Water resistance

ROCKWOOL stone wool repels liquid water due to its fibre orientation and a water repellent additive.

### Condensation control

Vapour resistivity = 5.9 MNs/gm, preventing ingress of liquid water, but allowing the escape of water vapour. ROCKWOOL stone wool insulation allows the construction to breathe, reducing the risk of condensation, which can lead to rot, mould and humidity damage.

## Technical information

| Thickness (mm) | Width (mm) | Length (mm) | Pieces/ pack | Area/ pack ($m^2$) | Packs/ pallet | Area/ pallet ($m^2$) |
|---|---|---|---|---|---|---|
| 90 | 570 | 1200 | 6 | 4.10 | 12 | 49.25 |
| 140 | 570 | 1200 | 4 | 2.73 | 12 | 32.83 |

### Standards and Approvals

ROCKWOOL Timber Frame Slab has been tested to the requirements of BS EN 13162:2012+A1:2015 'Thermal insulation products for buildings – Factory made mineral wool (MW) products – specification'.

## Installation

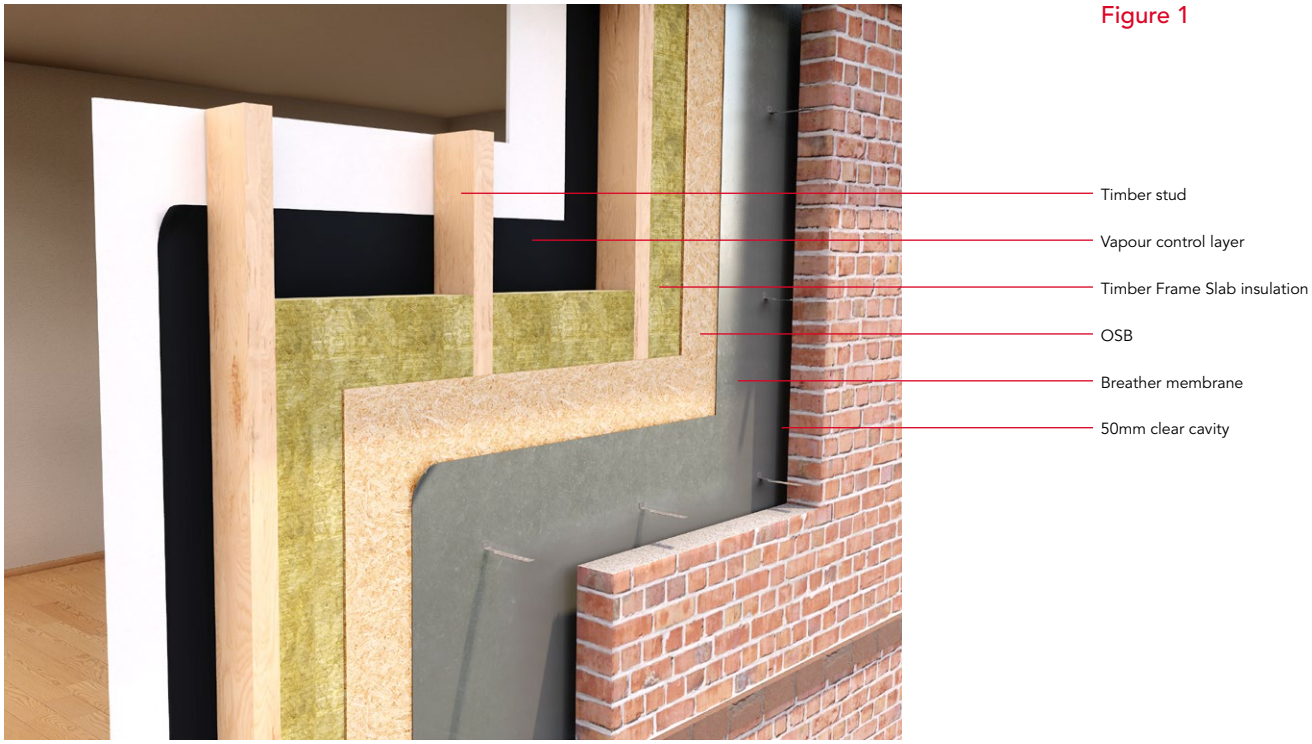
With an engineered optimal density, Timber Frame Slabs are light and easy to install, sized to friction fit into 600mm on-centre timber studs without the need to cut or create waste. Any cutting that is required can be quickly and easily carried out, to fit awkward spacing, using a serrated knife or insulation saw. The slabs are compressed and shrink wrapped in polyethylene film, supplied on pallets that are shrouded with a waterproof hood suitable for short term outside storage.

Typical wall constructions and u-value are listed in the tables below:

### U-values - Timber frame external wall constructions

**1.** Insulation between the studs, without service void

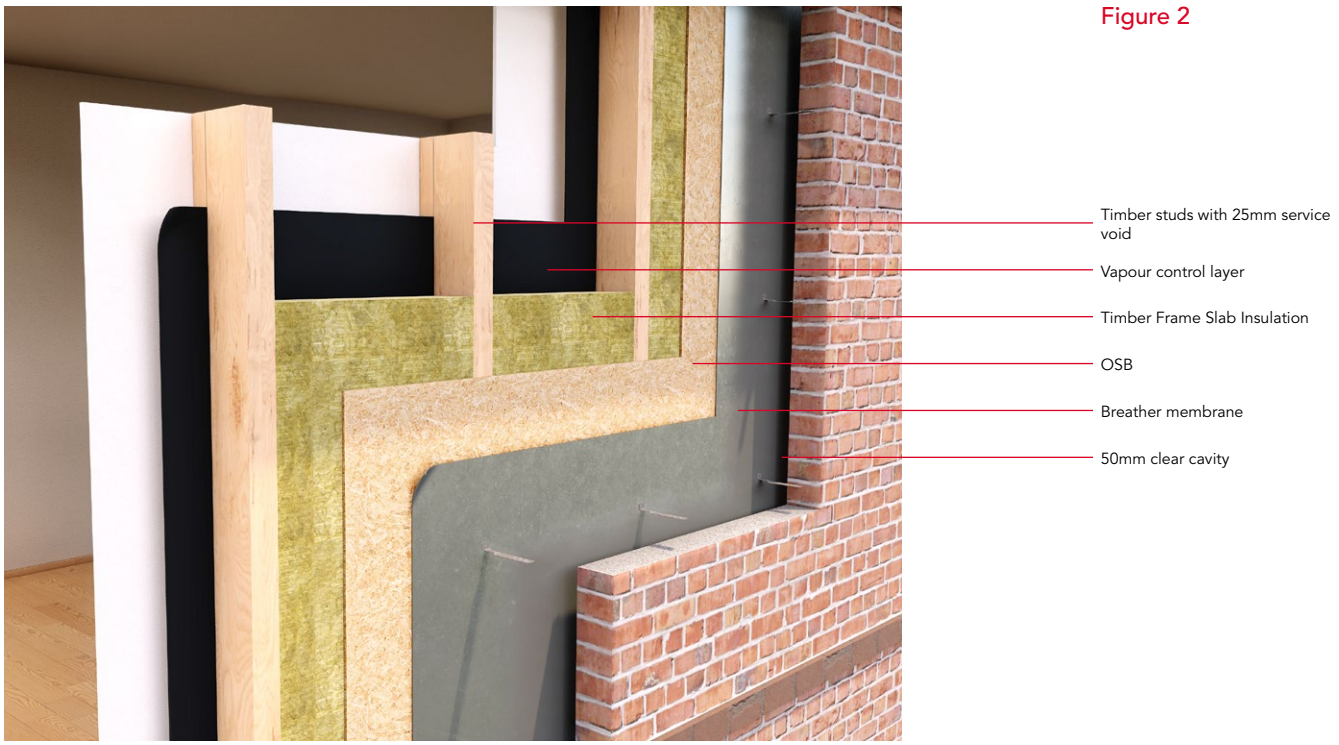
Figure 1




| U-value ($W/m^2K$) | Timber Frame Slab (mm) | Stud depth | Vapour control layer | Breather membrane | | |
|---|---|---|---|---|---|---|
| | | | Standard | Standard | Tyvek Reflex | Protect TF200 Thermo |
| 0.28 | 140 | 140 | ✓ | ✓ | | |
| 0.25 | 140 | 140 | ✓ | | ✓ | |
| 0.23 | 140 | 140 | ✓ | | | ✓ |

## 2. Insulation between the studs, with service void

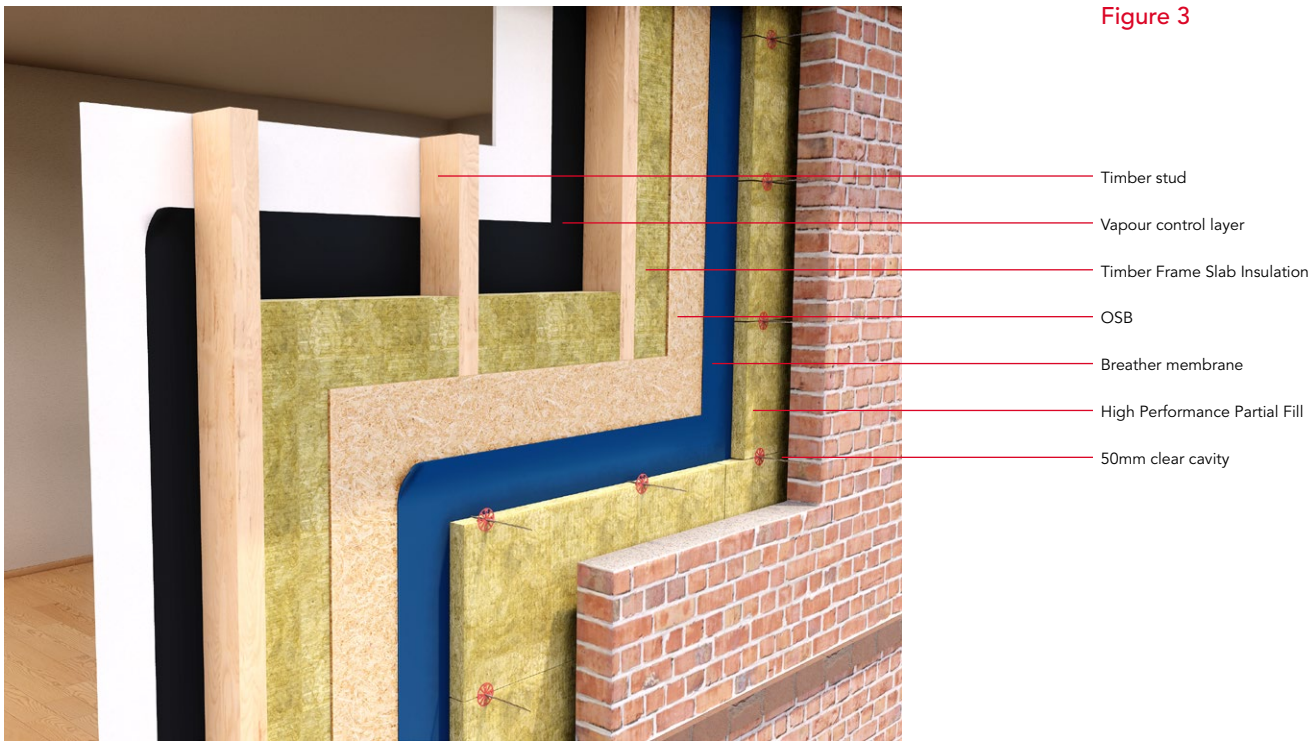
Figure 2




| U-value ($W/m^2K$) | TF 034 slab (mm) | Stud depth | Vapour control layer | | | Breather membrane | | |
|---|---|---|---|---|---|---|---|---|
| | | | Standard | Tyvek Airguard | Protect VC Foil Ultra | Standard | Tyvek Reflex | Protect TF200 Thermo |
| 0.36 | 90 | 89 | ✓ | | | ✓ | | |
| 0.28 | 90 | 89 | | ✓ | | | ✓ | |
| 0.26 | 90 | 89 | | | ✓ | | | ✓ |
| 0.26 | 140 | 140 | ✓ | | | ✓ | | |
| 0.21 | 140 | 140 | | ✓ | | | ✓ | |
| 0.20 | 140 | 140 | | | ✓ | | | ✓ |

## 3. Insulation between the studs with sheathing insulation

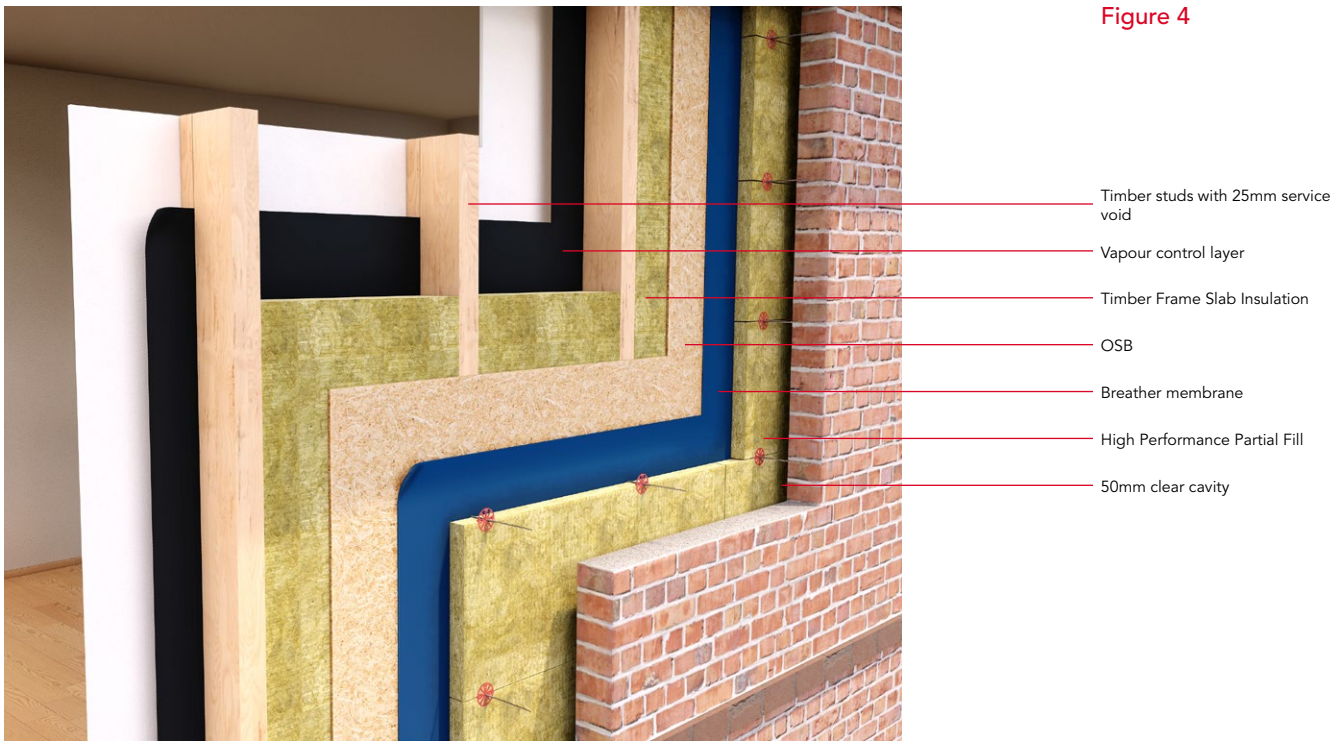
Figure 3




| U-value ($W/m^2K$) | TF 034 slab (mm) | Stud depth | High Performance Partial Fill (mm) | Vapour control layer Standard | Breather membrane Standard |
|---|---|---|---|---|---|
| 0.24 | 90 | 89 | 50 | ✓ | ✓ |
| 0.19 | 140 | 140 | 50 | ✓ | ✓ |

## 4. Insulation between the studs and with sheathing insulation and service void

Figure 4




| U-value ($W/m^2K$) | TF 034 slab (mm) | Stud depth | High Performance Partial Fill (mm) | Vapour control layer | | | Breather membrane |
|---|---|---|---|---|---|---|---|
| | | | | Standard | Tyvek Airguard | Protect VC Foil Ultra | Standard |
| 0.23 | 90 | 89 | 50 | ✓ | | | ✓ |
| 0.21 | 90 | 89 | 50 | | ✓ | | ✓ |
| 0.21 | 90 | 89 | 50 | | | ✓ | ✓ |
| 0.19 | 140 | 140 | 50 | ✓ | | | ✓ |
| 0.17 | 140 | 140 | 50 | | ✓ | | ✓ |
| 0.17 | 140 | 140 | 50 | | | ✓ | ✓ |

Thermal bridging is assumed at 15%, with the thermal conductivity of the studs being 0.12 W/mK

## Vapour control and breather membranes – managing moisture

### Vapour control membranes

A vapour control layer is essential on the 'warm' side of the insulation and frame, to reduce the risk of condensation forming inside the building. Thermal benefits can be achieved by using high performance vapour control membranes when they have a low emissivity reflective surface, and 20mm or more of non-ventilated air space. The benefit to the u-value can be seen in the performance tables.

The low emissivity R-values used in the calculations for the service zone are based on manufacturers claims:

- Standard VCL = 0.180 $m^2K/W$
- TYVEK AirGuard = 0.680 $m^2K/W$
- Protect VC Foil = 0.780$m^2K/W$

### Breather membranes

A vapour permeable membrane on the outside of the sheathing board is also necessary, this protects the timber frame from water penetration whilst allowing water vapour to escape. Again, enhanced thermal benefits are offered by reflective low emissivity membranes, where there is a clear air space of 20mm or more. The effect on the overall wall u-value can be seen in the tables.

The low emissivity R-values of the external cavity used in the calculations above are based on manufacturers claims:

- Standard breather membrane = 0.180$m^2K/W$
- TYVEK Reflex = 0.540$m^2K/W$
- Protect TF200 Thermo = 0.770$m^2K/W$

For further U-Value calculations, and to download BIM models please visit:
www.rockwool.co.uk/technical-support/tools/U-value-Calculator/

## Sustainability

As an environmentally conscious company, ROCKWOOL promotes the sustainable production and use of insulation and is committed to a continuous process of environmental improvement.

All ROCKWOOL products provide outstanding thermal protection as well as four added benefits:

- **Fire resistance**
- **Acoustic comfort**
- **Sustainable materials**
- **Durability**

## Health & Safety

The safety of ROCKWOOL stone wool is confirmed by current UK and Republic of Ireland health & safety regulations and EU directive 97/69/EC:ROCKWOOL fibres are not classified as a possible human carcinogen.

A Material Safety Data Sheet is available and can be downloaded from www.rockwool.co.uk to assist in the preparation of risk assessments, as required by the Control of Substances Hazardous to Health Regulations (COSHH).

## Environment

Made from a renewable and plentiful naturally occurring resource, ROCKWOOL insulation saves fuel costs and energy in use and relies on trapped air for its thermal properties.

ROCKWOOL insulation does not contain (and has never contained) gases that have ozone depletion potential (ODP) or global warming potential (GWP).

ROCKWOOL is approximately 97% recyclable. For waste ROCKWOOL material that may be generated during installation or at end of life, we are happy to discuss the individual requirements of contractors and users considering returning these materials to our factory for recycling.

## Interested?

For further information, contact the Technical Solutions Team on 01656 868490 or email technical.solutions@rockwool.co.uk

Visit www.rockwool.co.uk to view our complete range of products and services.

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## The ROCKWOOL Trademark

ROCKWOOL® - our trademark

The ROCKWOOL trademark was initially registered in Denmark as a logo mark back in 1936. In 1937, it was accompanied with a word mark registration; a registration which is now extended to more than 60 countries around the word.

The ROCKWOOL trademark is one of the largest assets in the ROCKWOOL Group, and thus well protected and defended by us throughout the world.

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