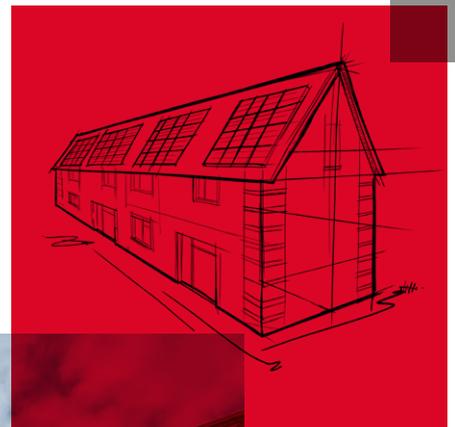


THERMAL TIMBER FRAME SLAB

Provides thermal, fire and acoustic protection in
timber frame external walls

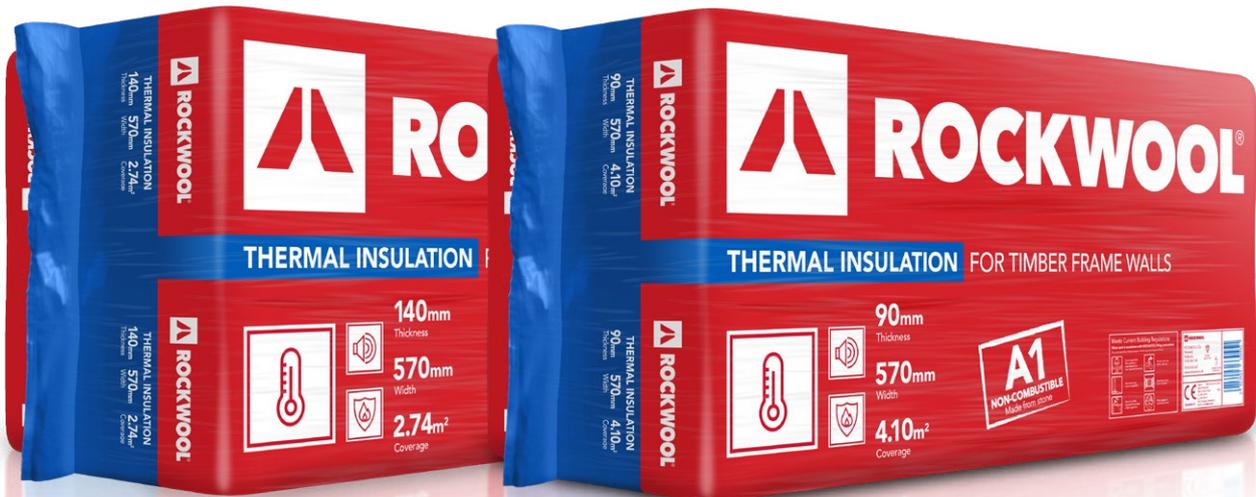


THERMAL TIMBER FRAME SLAB

The Thermal Timber Frame Slabs are designed for use in timber frame constructions. The 570mm slab width makes installation easy, ensuring that the slabs friction fit, without the need for precise cutting and without leaving performance reducing gaps.

The slabs continue to stay firmly in place, even as timber studs dry out and contract over time. Being made from stone wool means outstanding fire resilience, able to withstand temperatures of over 1,000°C, as well as exceptional acoustic properties.





Advantages

- Euroclass A1 non-combustible
- Excellent acoustic performance
- Low Thermal Conductivity - 0.034 W/mK
- Will not slump, even if studs shrink
- Water repellent and vapour permeable
- Easy to handle and install

Description

ROCKWOOL Thermal Timber Frame Slab are a semi-rigid insulation designed specifically for use in between the studwork of external timber frame walls. Offering a low thermal conductivity (0.034 W/mK), exceptional resistance to fire and outstanding sound absorption.

When building with timber, using non-combustible ROCKWOOL insulation can help to reduce the risk of fire, and fire spread, especially during the more vulnerable construction phase, when the building may be exposed. ROCKWOOL stone wool insulation acts as a barrier to fire, withstanding temperatures over 1,000°C and, vitally, it will not produce any toxic smoke.

ROCKWOOL stone wool insulation is also a highly effective thermal insulator, not only helping keep the heat in during winter but also the heat out during summer; maintaining a comfortable

indoor environment by protecting against fluctuations in outside temperature.

Made up of thousands of high density stone wool fibres that trap sound waves and absorb vibration, ROCKWOOL Thermal Timber Frame Slab helps to prevent unwanted noise from disturbing home comfort.

Stone wool insulation has a unique physical structure, meaning that it keeps its shape over time, despite changes in temperature or humidity. This dimensional stability means performance is unchanged, decade after decade, maximising performance throughout a building's lifetime. It adapts to irregularities in frames and will not sag or slump over time, leaving no gaps in the insulation layer so that in-situ performance is maximised

Application

ROCKWOOL Thermal Timber Frame Slab is designed for use in framed external walls, offering thermal, fire and acoustic insulation. The 90 and 140mm thicknesses and 570mm slab widths means less time to cut and fit and performance that does not diminish throughout the life time of the building.

Performance

Thermal resistance

Tested to BS EN 13162:2012+A1:2015 achieving a lambda value of 0.034 W/mK. ROCKWOOL Thermal 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, Thermal Timber Frame Slab is non-combustible and achieves a Euroclass A1 classification using test data from the reaction to fire test.

Acoustic performance

Thermal 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	9	36.94
140	570	1200	4	2.74	9	24.62

Standards and Approvals

ROCKWOOL Thermal 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'.

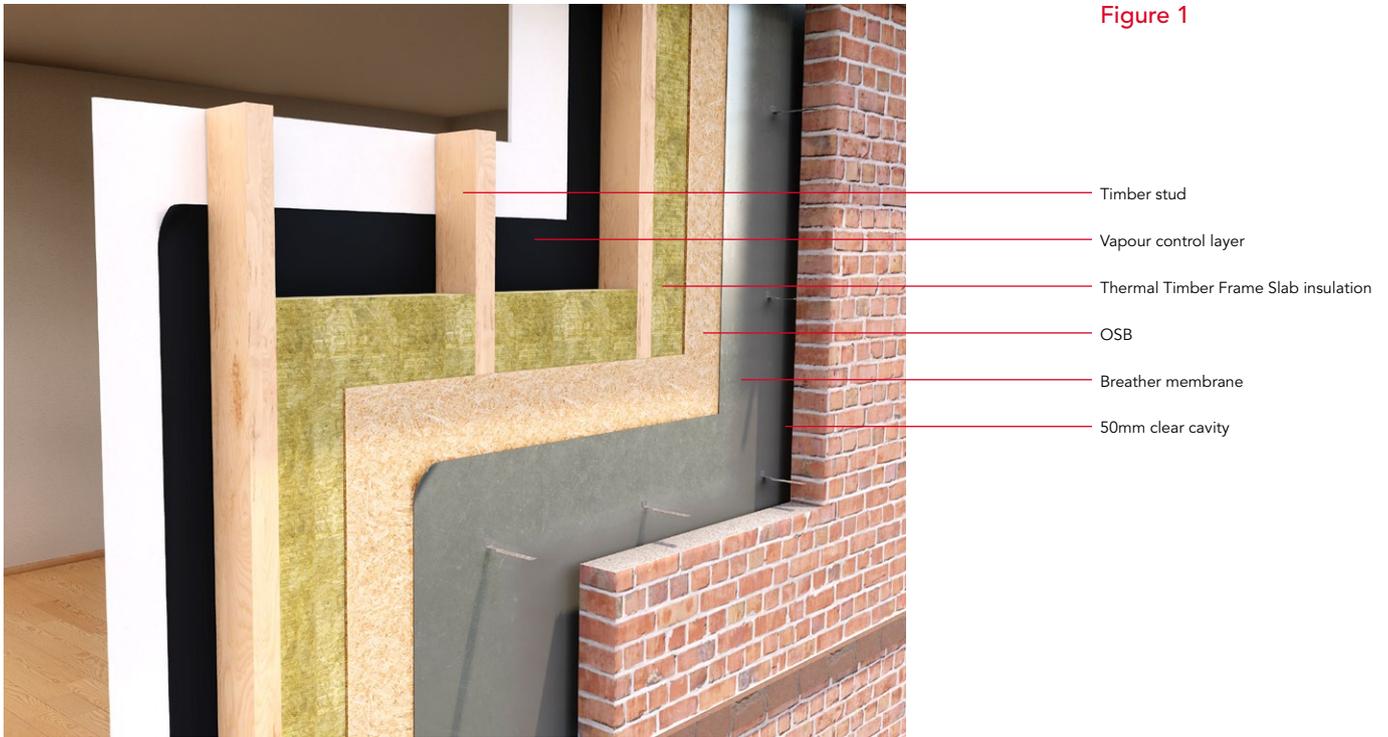
Installation

With an engineered optimal density, Thermal 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



U-value (W/m ² K)	Thermal 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

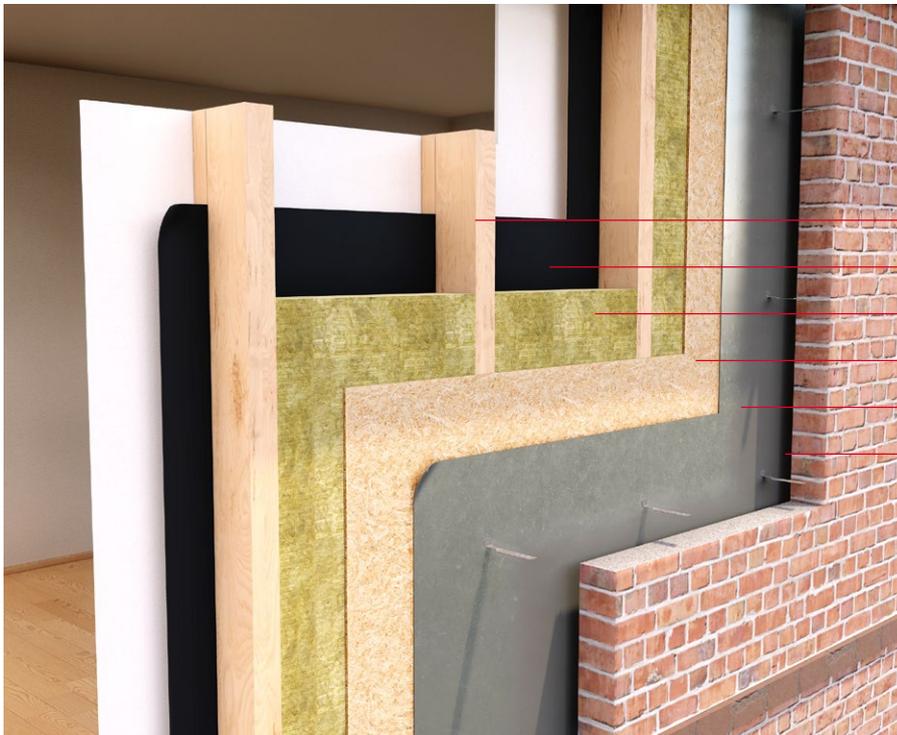


Figure 2

- Timber studs with 25mm service void
- Vapour control layer
- Thermal Timber Frame Slab Insulation
- OSB
- Breather membrane
- 50mm clear cavity

U-value (W/m ² K)	Thermal Timber Frame 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

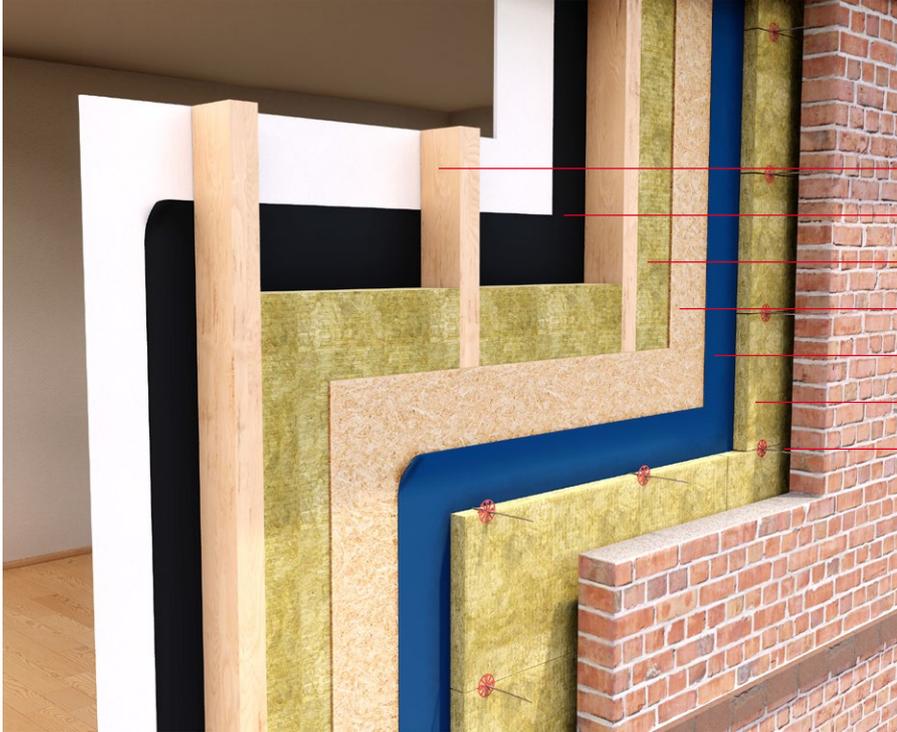


Figure 3

- Timber stud
- Vapour control layer
- Thermal Timber Frame Slab Insulation
- OSB
- Breather membrane
- RAINSCREEN DUO SLAB®
- 50mm clear cavity

U-value (W/m ² K)	Thermal Timber Frame Slab (mm)	Stud depth	RAINSCREEN DUO SLAB® (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

- Timber studs with 25mm service void
- Vapour control layer
- Thermal Timber Frame Slab Insulation
- OSB
- Breather membrane
- RAINSCREEN DUO SLAB®
- 50mm clear cavity

U-value (W/m ² K)	Thermal Timber Frame Slab (mm)	Stud depth	RAINSCREEN DUO SLAB® (mm)	Vapour control layer		Breather membrane
				Standard	Tyvek Airguard	Protect VC Foil Ultra
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 m²K/W
- TYVEK AirGuard = 0.680 m²K/W
- Protect VC Foil = 0.780m²K/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 = 0.180m²K/W
- TYVEK Reflex = 0.540m²K/W
- Protect TF200 Thermo = 0.770m²K/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

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.

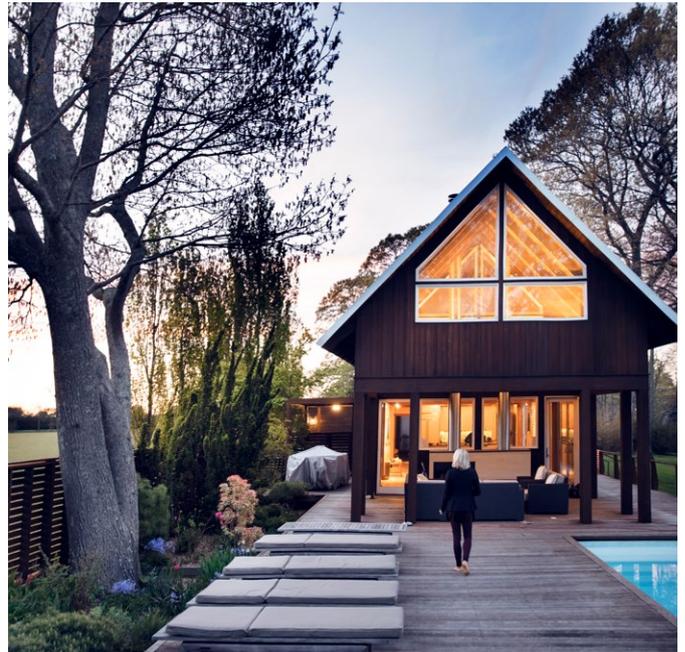
ROCKWOOL insulation does not contain (and has never contained) gases that have ozone depletion potential (ODP) or global warming potential (GWP).

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.

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).



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 world.

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

If you require permission to use the ROCKWOOL logo for your business, advertising or promotion. You must apply for a Trade Mark Usage Agreement. To apply, write to:
marketcom@rockwool.com.

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HARDROCK®

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June 2019

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