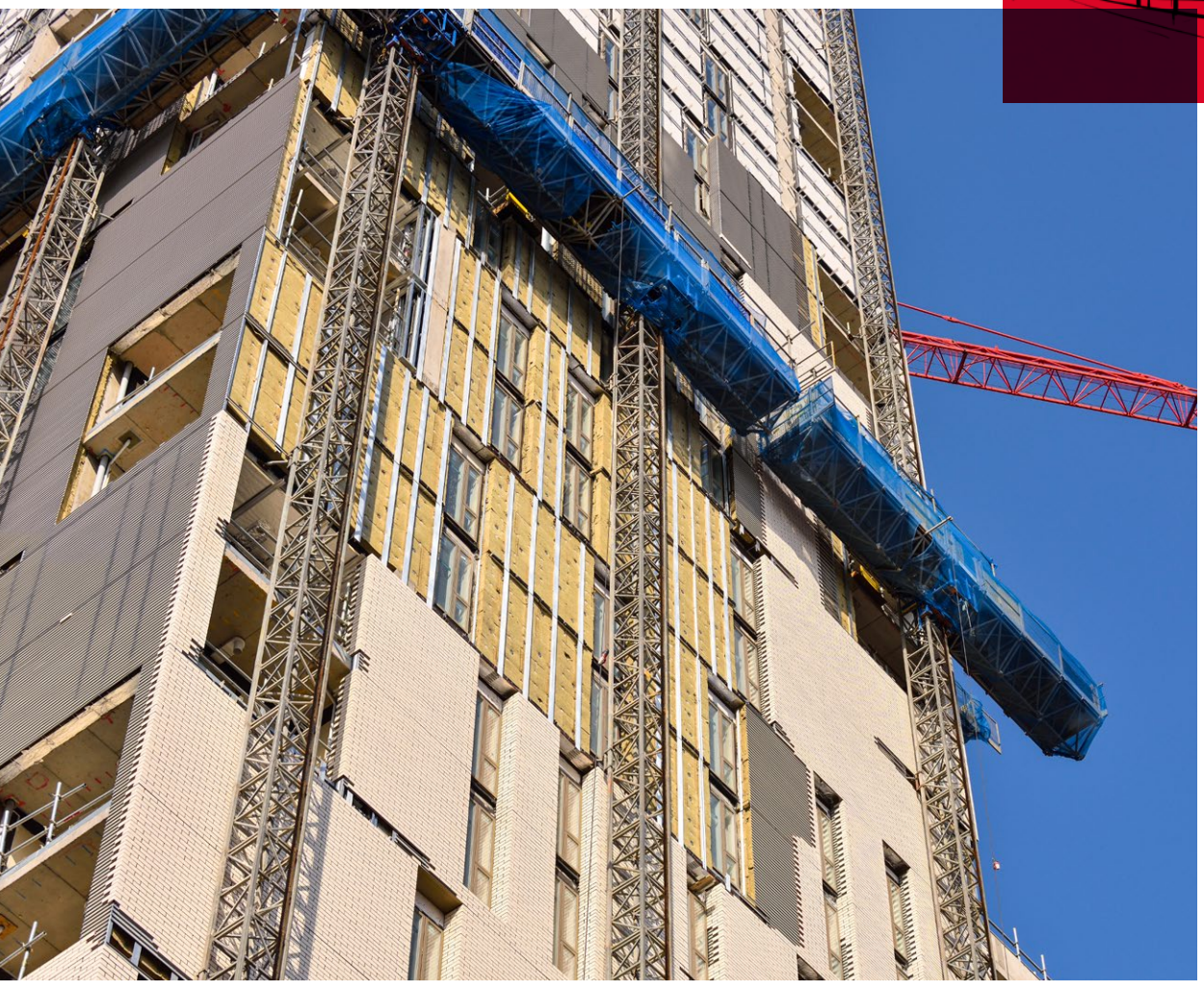
RAINSCREEN DUO SLAB®

Non-combustible thermal insulation



ROCKWOOL®

RAINSCREEN DUO SLAB®

Effective, non-combustible thermal insulation for ventilated rainscreen and overcladding applications.

RAINSCREEN DUO SLAB® is a dual density slab which has been specifically developed for insulation behind rainscreen cladding systems and also for sealed cladding systems such as curtain wall and other over cladding systems.

The following NBS Plus clauses include RAINSCREEN DUO SLAB®: H92:776, H20:10, H11:110, P10:42, 217

Advantages

- Designed for use on high rise buildings
- Water-repellent: Fibres impregnated with a water-repelling agent during manufacture
- Fewer fixings required for installation compared to standard stone wool slabs
- Robust front face resists damage and over-driving of fixings

Description

RAINSCREEN DUO SLAB® is a dual density slab comprising a robust outer surface (designed to withstand the rigours imposed on site), and a resilient inner face (designed to accommodate the substrate to which it is being applied).

The robust outer surface offers improved weather resistance and a more clearly defined cavity width, whilst the resilient inner surface accommodates itself to irregularities in the surface of the substrate, thus maximising thermal performance.

The slabs will knit together when tightly butt jointed so that way extraneous heat loss caused by gaps is eliminated.

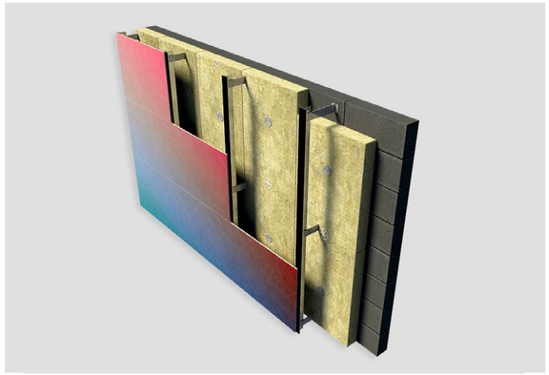
This also prevents water transmission through the insulation layer and is proven over 25 years in traditional masonry wall construction.

The slab is designed for use in conditions of severe climatic exposure. Because of its unique dual density construction, the product requires fewer fixings, thus providing a cost-effective solution in overcladding applications.

Standards and approvals

ROCKWOOL RAINSCREEN DUO SLAB has been examined by the British Board of Agrémént (BBA) and granted Certificate 17/5402 for use in Ventilated Rainscreen Cladding Systems on both domestic and non-domestic buildings.

RAINSCREEN DUO SLAB® satisfies the requirements of BS EN 13162: 2012 – 'Thermal insulation products for buildings – Factory made mineral wool (MW) products – specification'.



Dimensions

RAINSCREEN DUO SLAB® satisfies Standard size of 1200 × 600 mm and is available in standard thicknesses from 50 to 180mm. For all other thicknesses please contact ROCKWOOL.

Performance

Fire
Rated A1 when tested to EN 13501-1 classification using test data from reaction to fire test.

Wind resistance
RAINSCREEN DUO SLAB® fixed as indicated in Figure 1 has successfully undergone wind resistance testing by the Building Research Establishment. Windloading fatigue tests were used to simulate the performance of the slabs when fully exposed and subjected to fluctuating wind loads during the construction stages of buildings. The tests simulated and exceeded the maximum UK basic wind speed of 56 m/s as defined by BS CP3: Chapter 5: Part 2: 1972. Test report BRE GI2801

Water resistance
ROCKWOOL stone wool repels liquid water due to its fibre orientation and the presence of water repellent additives.

Acoustic performance
The slabs can significantly improve the acoustic performance of the external building structure. Condensation control Vapour resistivity = 5.9 MNs/gm. The slabs, therefore reduce the risk of condensation, allowing natural drying out of the structure. See typical relative humidity / temperature graph above right.

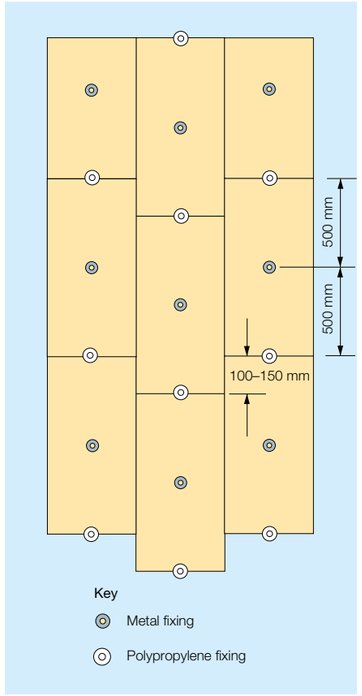
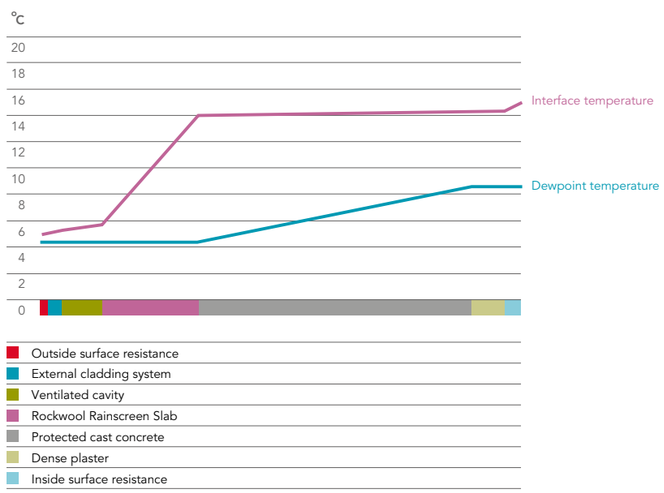


Figure 1
Typical fixing pattern with 3 fixings per square metre

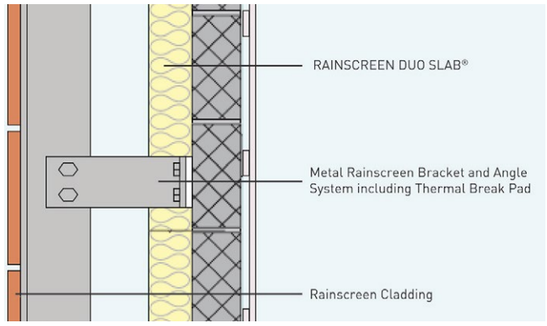
Interface/dewpoint temperatures



U-values - RAINSCREEN DUO SLAB® Ventilated Rainscreens

Construction 1:
RAINSCREEN DUO SLAB® between Metal Bracket System on 150 mm Reinforced Concrete or dense block wall. Internal finishes: (a) plaster (b) plasterboard on dabs

Internal finish	a	b
Thickness (mm)	U-Values W/m²K	U-Values W/m²K
125	0.35	0.34
150	0.32	0.31
175	0.28	0.28
200	0.26	0.26
275	0.22	0.22
325	0.20	0.20

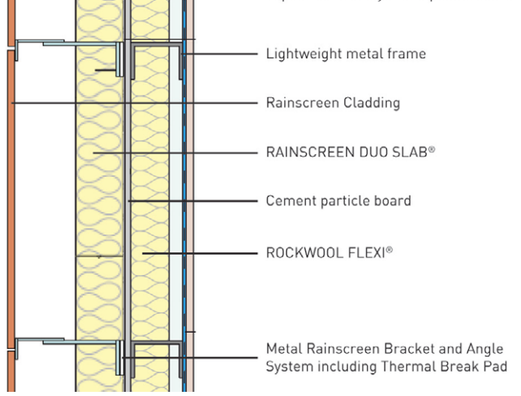


Notes for Construction 1:

- Tables based on pointloss scenarios where only the rainscreen brackets bridge the thermal insulation layer.
- A thermal bridging allowance of 0.1 W/m2K has been added to the wall U-value (e.g. a calculated U-value of 0.25 will be increased to 0.35 W/(m2K) to allow for predicted bridging). (Based on data supplied by the BRE using a 5 mm thick thermal break pad and brackets at 600 mm x 600 mm fixing matrix).

Construction 2:
RAINSCREEN DUO SLAB® on 150mm deep metal studs at 600mm centres with 140mm ROCKWOOL FLEXI installed within the frame.

Thickness (mm)	ROCKWOOL FLEXI® thickness (mm)	U-Values W/m²K
75	140	0.25
100	140	0.22
125	140	0.20
150	140	0.18
180	140	0.17



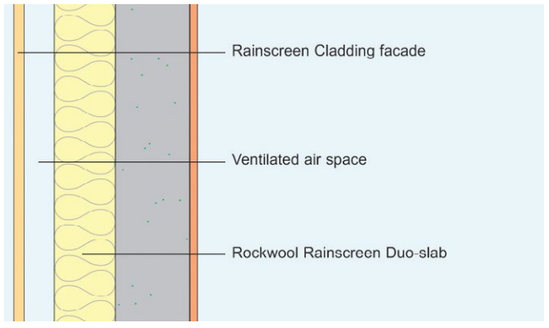
Notes for Construction 2:

- U-values shown have been calculated with a thermal bridging allowance which has been determined using a 3-Dimensional analysis in accordance with BR443. The systems modelled included 8mm ROCKPANEL Rockclad and FastFrame rainscreen Brackets

ROCKWOOL recommend all U-value calculations for rainscreen application be verifed by the cladding manufacturer utilising 3D thermal modelling software.

Construction 3:
RAINSCREEN DUO SLAB® between timber rails on 150 mm Dense Concrete or dense block wall. Internal finishes: (a) plaster-Lambda 0.180 W/mk (b) Plasterboard on dabs

Internal finish Thickness (mm)	a U-Values W/m²K	b U-Values W/m²K
100	0.35	0.34
125	0.29	0.28
140	0.26	0.26
150	0.25	0.24
200	0.19	0.19
225	0.17	0.17

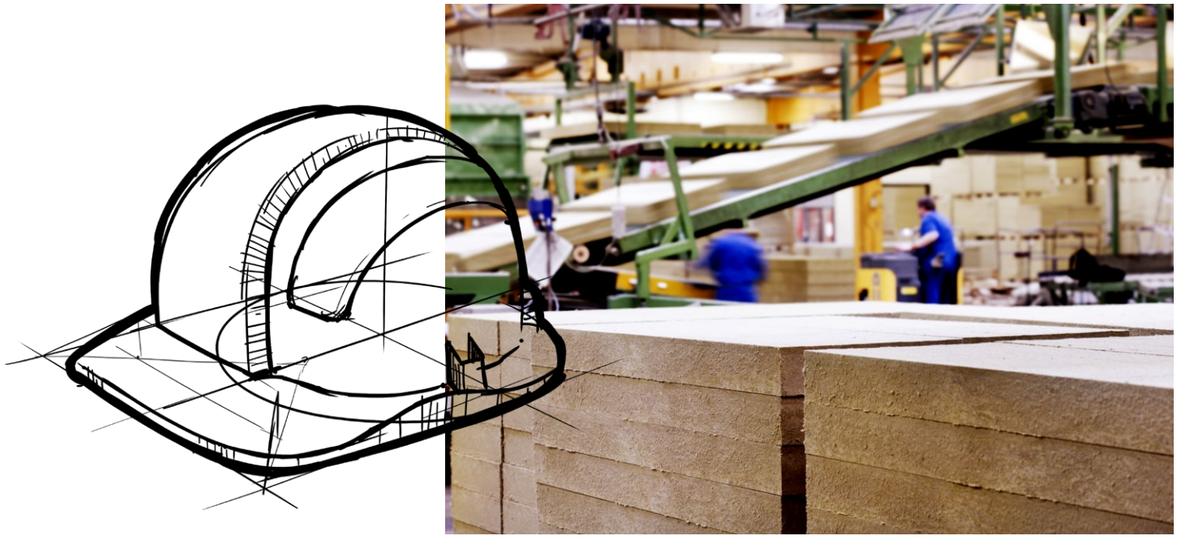


Typical specification

The rainscreen insulation is to be RAINSCREEN DUO SLAB® ..... mm thickness, as manufactured by ROCKWOOL Limited, Pencoed, Bridgend cf 35 6ny, secured to the substrate with metal and polypropylene fixings in accordance with RAINSCREEN DUO SLAB® Data sheet.

Horizontal joints should be staggered and all joints tight butted.

The Slabs should be fixed with the robust (patterned) surface facing outwards.



Installation

Work on site

RAINSCREEN DUO SLAB® are light and easy to cut to any shape with a sharp knife. They are shrink wrapped in polyethene and supplied on pallets that are shrouded with a waterproof hood suitable for outside storage. Once installed, due to their robust outer facing surface, the slabs can be left unprotected for an extended period of time prior to fixing the rainscreen cladding.

Workability

Light and easy to handle, the slabs are easy to cut to shape or size with a sharp knife, to suit the cladding system.

Rainscreen cladding – Metal rail systems

To obtain the optimum performance of the system, the Slabs should be applied with the patterned side facing outwards (see Figure 4). The resilient inner layer will accommodate surface irregularities (see Figure 3).

Close butt the slabs at all vertical and horizontal joints.

Stagger the horizontal joints of the insulation in accordance with good fixing practice.

Fix using a combination of metal and polypropylene fixings in accordance with the detail shown in Figure 1. Fixings should have a minimum head diameter of 70 mm.

RAINSCREEN DUO SLAB® should be cut and tightly fitted around wall brackets where these occur. See 'Construction 1' on the back page for typical U- values relating to this construction.

Suitable Fixing Manufacturers

Hilti: 0800 886100
ITW Construction Products Ltd.: 01592 771132
Ejot: 01977 687040
Fischer: 01491 827900

Rainscreen cladding – Timber rail application

The Slabs should be tightly fitted between the treated timber rails prior to the installation of the external cladding boards and mechanically fixed as shown in Figure 2. Provision should be made for a minimum 25 mm ventilated air space behind the cladding boards.

All horizontal joints should be closely butted to optimise the insulation performance.

See 'Construction 3' on the back page for typical U-values relating to this construction.

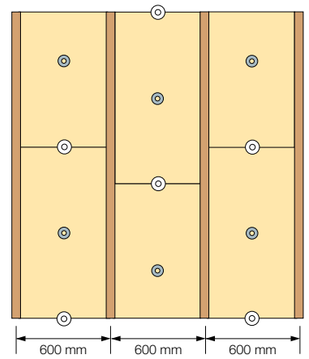


Figure 2
Typical fixing pattern between treated timber cladding rails

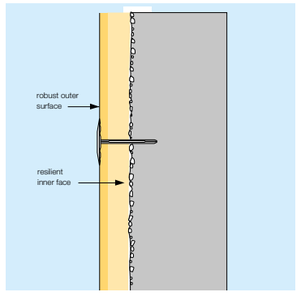


Figure 3
Dual density

Figure 4
Textured outer face of slab

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 occuring 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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RAINSCREEN DUO SLAB DATASHEET

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July 2017

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