KNAUF INSULATION

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ROCKSILK® RAINSCREEN SLABS

Installation Guide - Cladding Outer Leaf

WHAT YOU NEED TO KNOW

BBA APPROVAL INSPECTION TESTING CERTIFICATION
CERTIFICATE 19/5609

* Excludes Rocksilk® RainScreen Slab EE

Interactive document

Build on us.

Contents

STORAGE ON SITE

Rocksilk® RainScreen Slabs should be stored properly and handled in such a way as to ensure that the product remains clean and undamaged.

The shrink-wrapped pallets used for the supply of Rocksilk® RainScreen Slabs are designed for short-term protection only. For longer term protection on site, the product should either be stored indoors or under cover and off the ground. Rocksilk® RainScreen Slabs should not be left permanently exposed to the elements.

If the main hood is removed or damaged, the remaining packs should be kept under cover indoors or protected from the elements by a weatherproof cover. In coastal locations where weather is more extreme and bird damage is more common, use additional covering or store indoors.

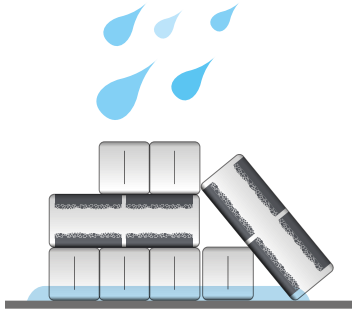
The product must be protected from prolonged exposure to sunlight, and stored dry and flat.

✓ **Slabs protected from weathering potential**

HANDLING

Rocksilk® RainScreen Slabs are light and easy to handle; care should be exercised to avoid crushing their edges or corners. If damaged, the product should be discarded. Damaged, contaminated or wet product must not be used.

During construction exposed areas of slabs should always be covered at the end of a day's work or in heavy rain. Polyethylene covers should be used to provide protection and prevent work from becoming saturated.



✗ **Slabs exposed to the elements**

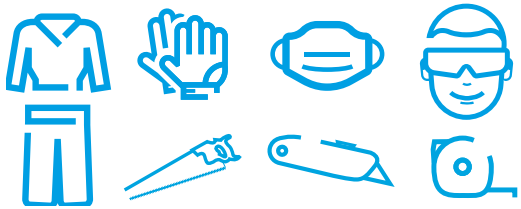
SAFETY EQUIPMENT AND TOOLS

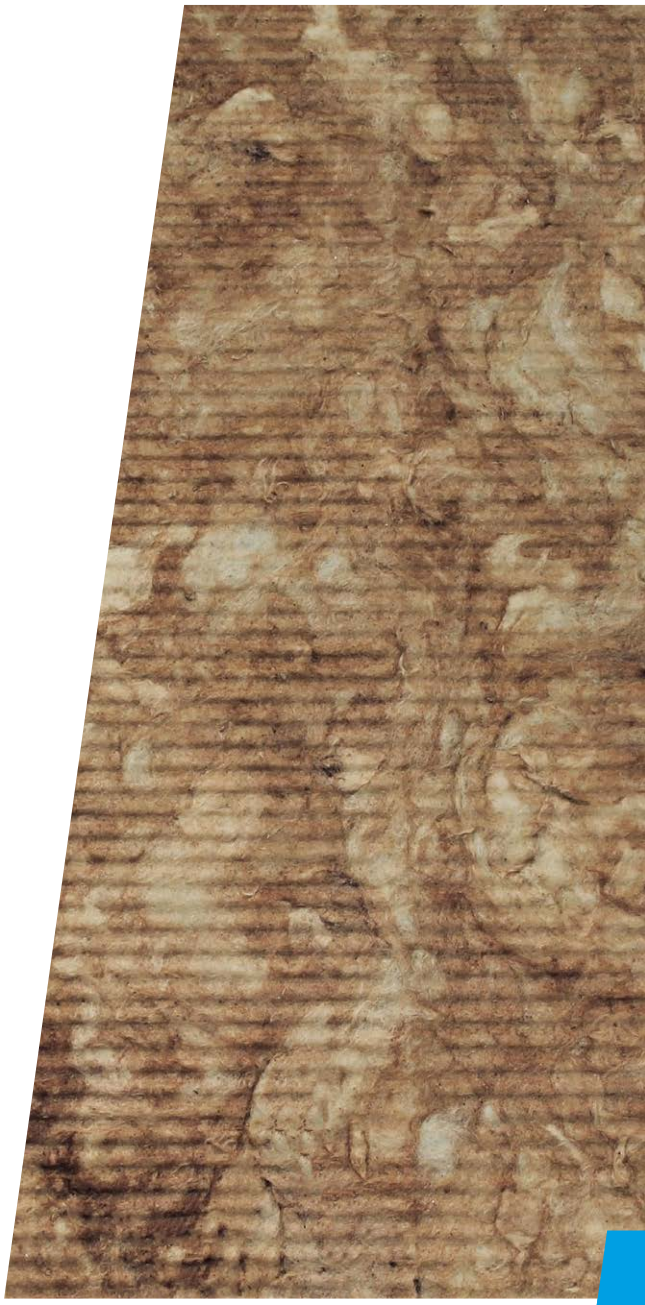
It is recommended that the following Personal Protective Equipment should be used while handling the product:

PPE: Dust mask (FFP1 minimum), gloves, safety glasses

Tools: Knife or fine-toothed saw, tape measure

It is recommended that dust masks, gloves and long-sleeved clothing should be worn during cutting and handling of the product.

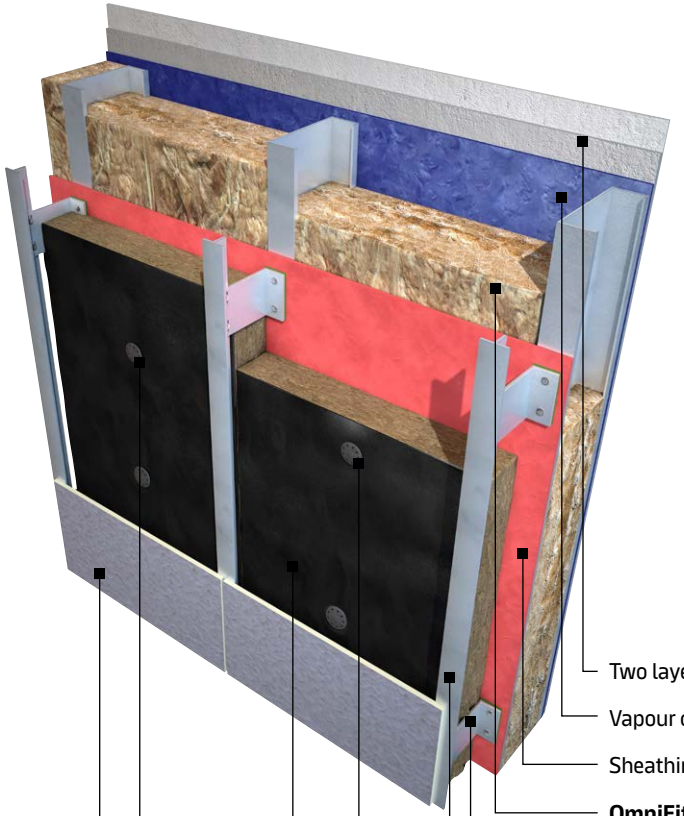




MASONRY SUBSTRATE INSTALLATION

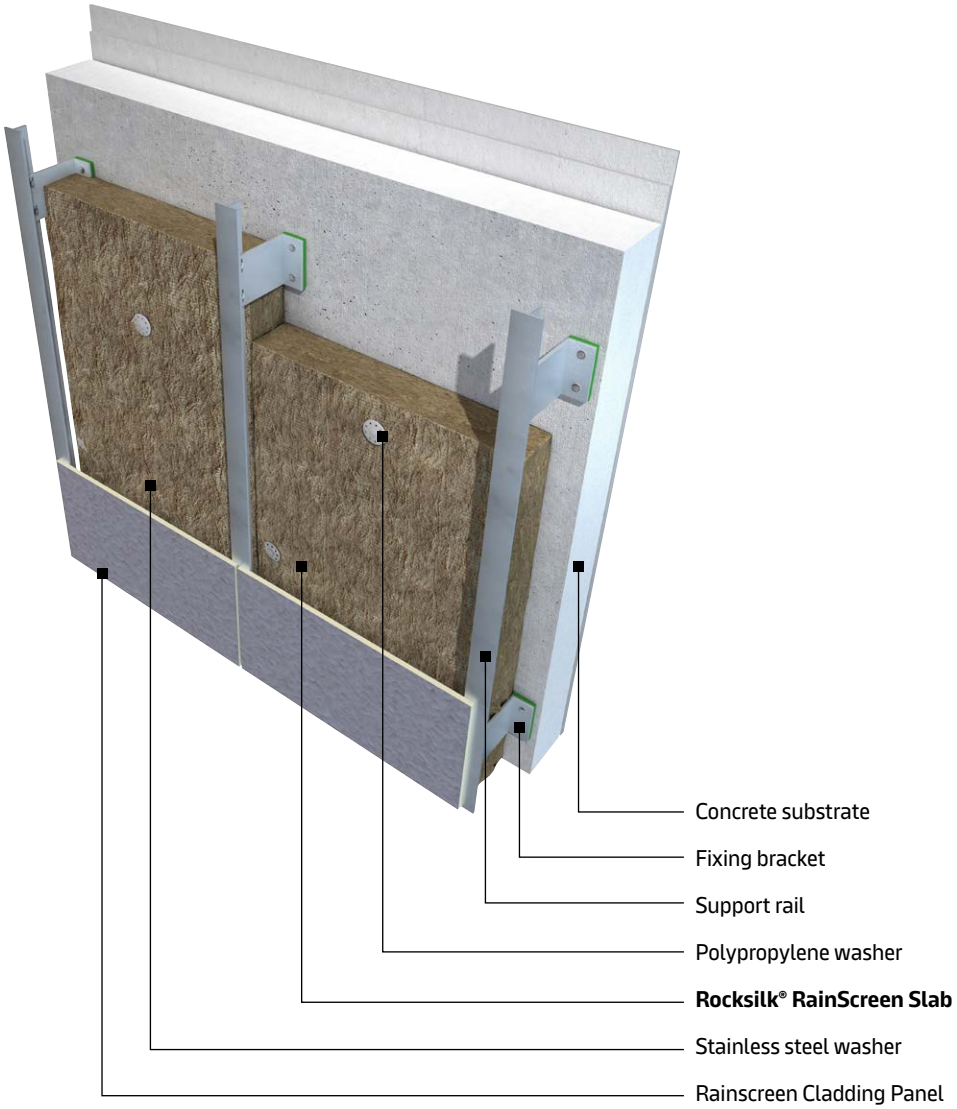
- Masonry substrate
- Fixing bracket
- Support rail
- Rocksilk® RainScreen Black Plastic Washer
- **Rocksilk® RainScreen Slab**
- Rocksilk® RainScreen Black Plastic Washer
- Rainscreen Cladding Panel

STEEL FRAME RAIL INSTALLATION

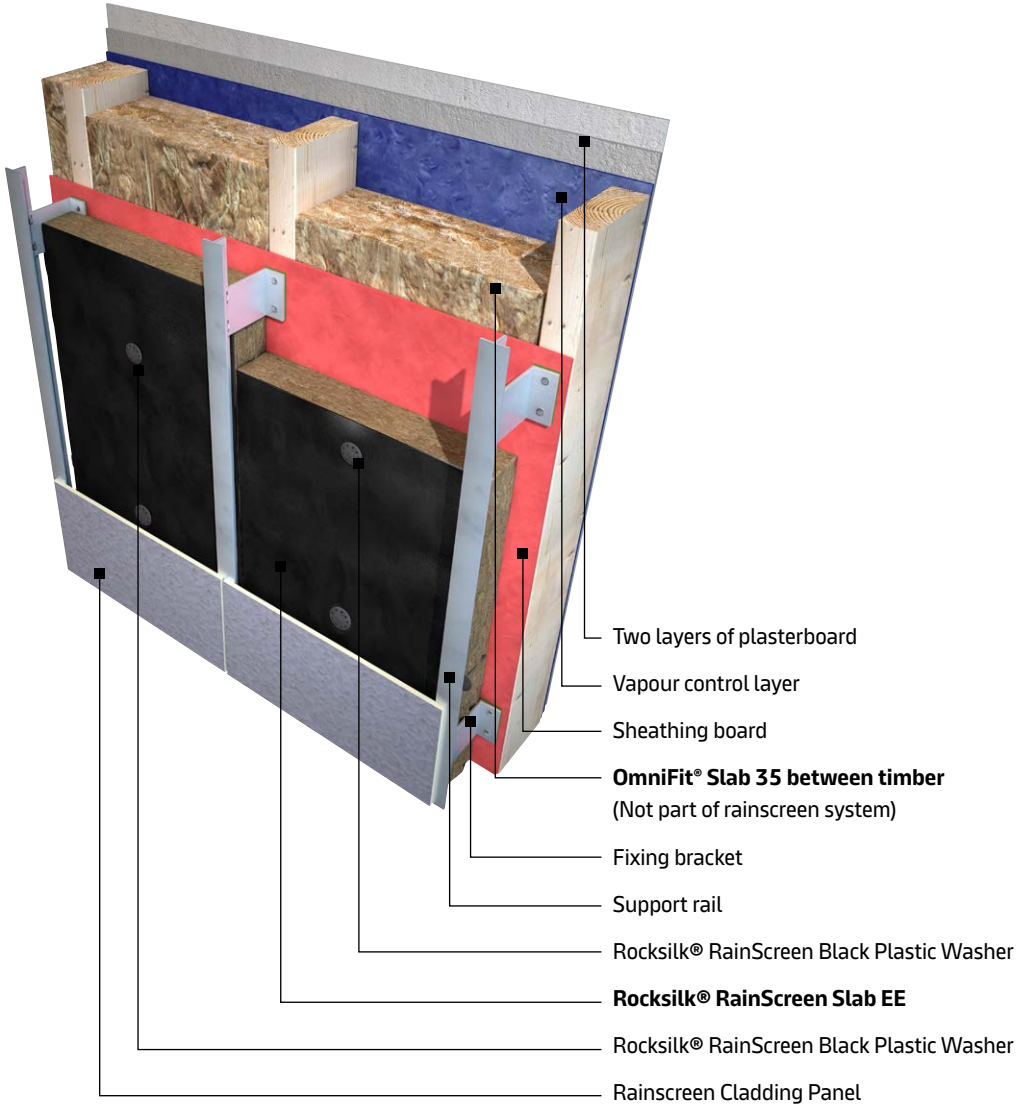


- Two layers of plasterboard
- Vapour control layer
- Sheathing board
- **OmniFit® Slab 35 between steel studs**
- Fixing bracket
- Support rail
- Rocksilk® RainScreen Black Plastic Washer
- **Rocksilk® RainScreen Slab EE**
- Rocksilk® RainScreen Black Plastic Washer
- Rainscreen Cladding Panel

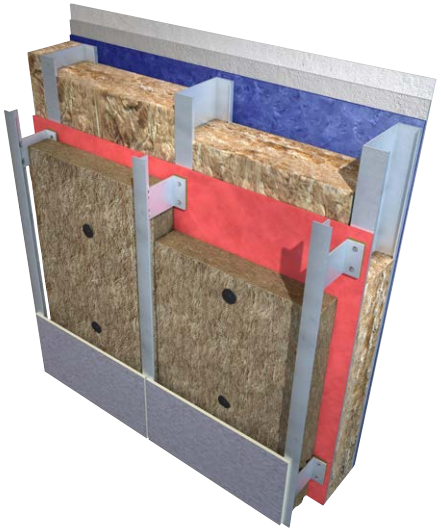
PRECAST CONCRETE INSTALLATION



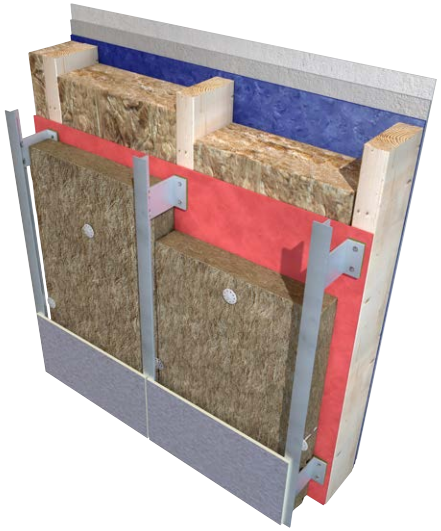
TIMBER FRAME INSTALLATION



Note: Breather membrane can be used although not shown.

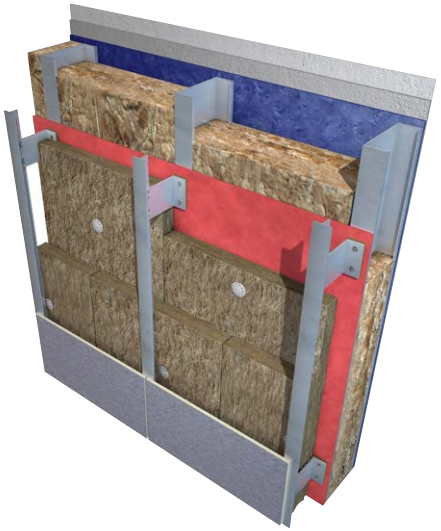


STEEL FRAME SINGLE LAYER



TIMBER FRAME

REINFORCED CONCRETE



STEEL FRAME DOUBLE LAYER

MASONRY

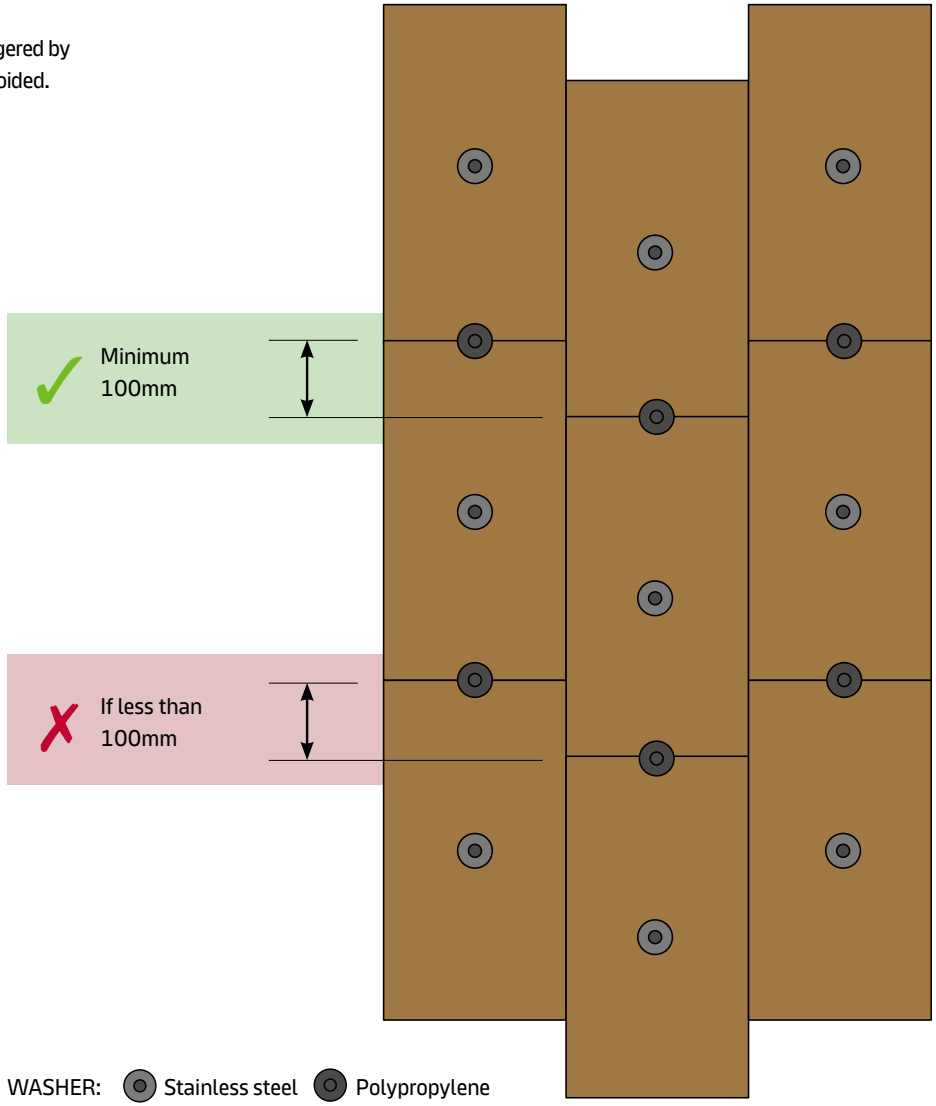
CROSS LAMINATED TIMBER

Note: Rocksilk® RainScreen Slab EE does not currently hold an Agrément certificate from the BBA.

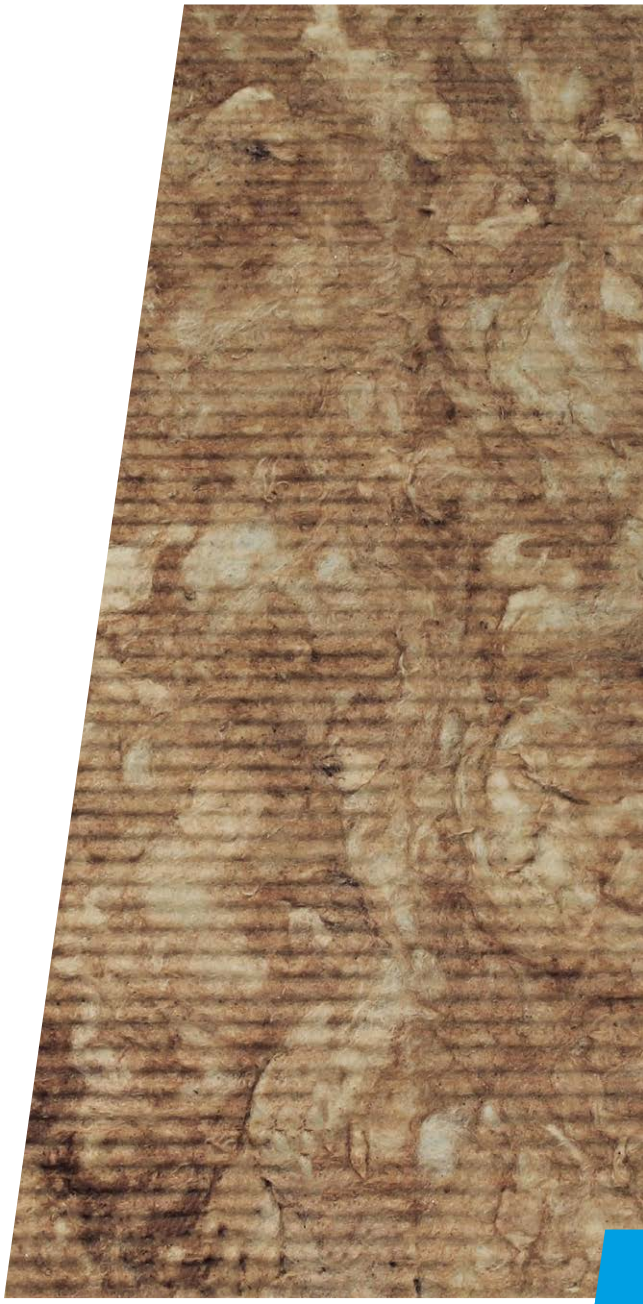
Joints between slabs should be staggered

Joints between Rocksilk® RainScreen Slabs should be staggered by a minimum of 100mm and coincidental joints should be avoided.

? To avoid gaps between slabs.



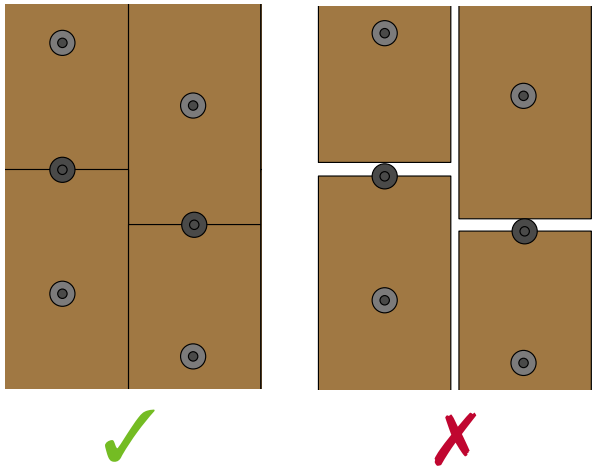
Note: Fixings as per guidance given in section 6.3 BR 135 3rd Edition



Placement

Double-faced - It doesn't matter which way round it is installed

Installed with either face in continuous intimate contact with the substrate without affecting its durability or thermal properties.



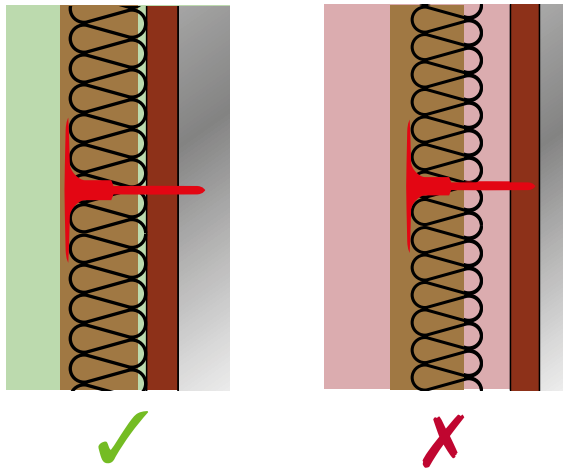
Slabs to be in contact with each other

Installed such that they are tightly butted together at joints and joints staggered by a minimum of 100mm.

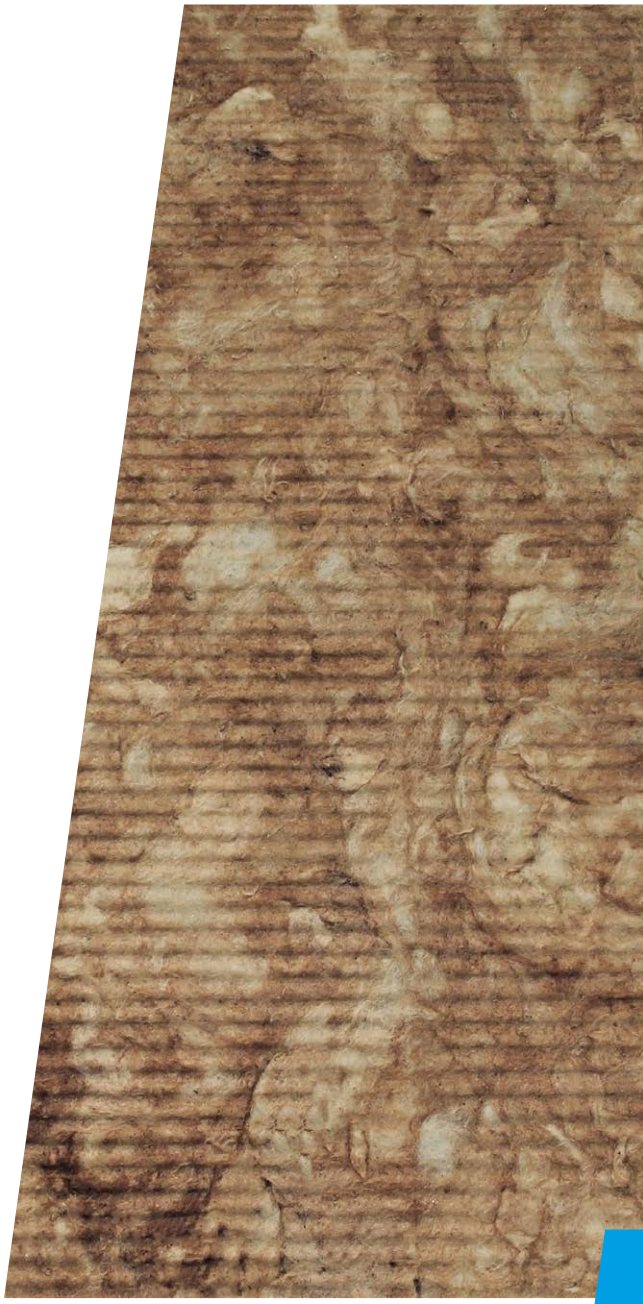
? **To avoid coincidental joints and maintain thermal, acoustic and weather performance.**

Intimate contact with substrate

Rocksilk® RainScreen Slabs should be in intimate contact with the building substrate. The nature of the insulation material lends itself to accommodate any irregularities in the surface of the substrate.



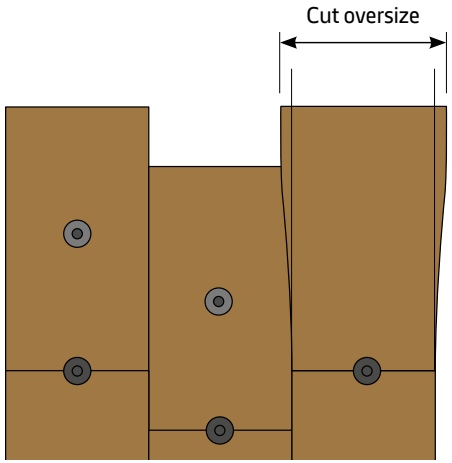
? **Creating a snug fit between the slabs and the wall reduces the chance for air gaps and ensures thermal efficiency.**



Compression fit into place

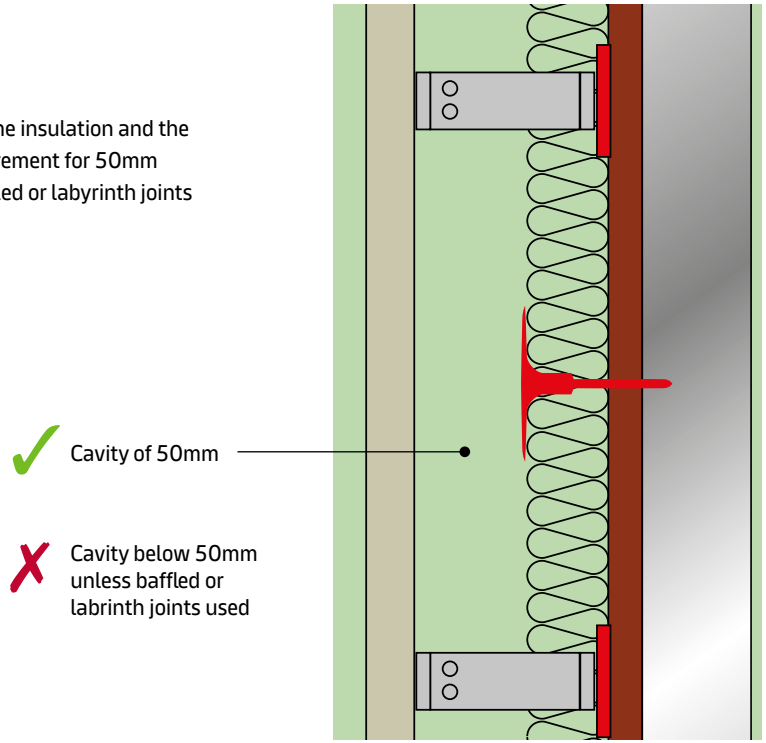
Rocksilk® RainScreen Slabs should be cut slightly oversize and compression fitted into place.

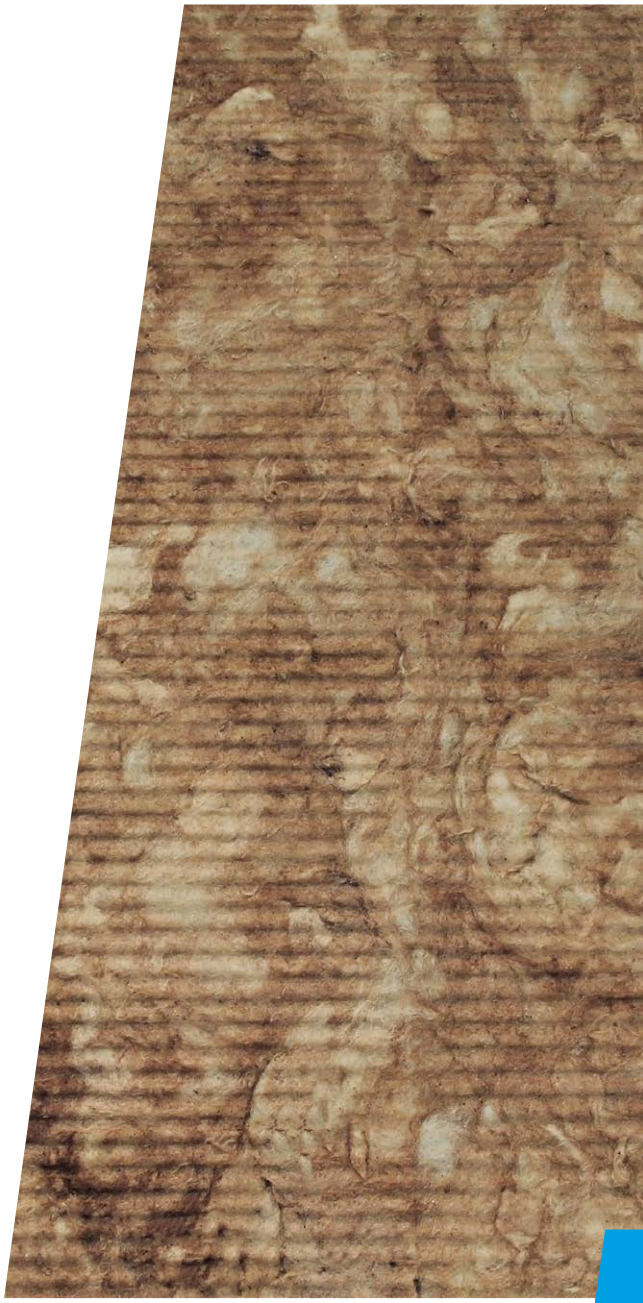
? **Creating a snug fit between the slabs and the wall reduces the chance for air gaps and ensures thermal efficiency.**



Maintain a ventilated cavity

Make sure a ventilated cavity remains between the insulation and the external cladding. NHBC guidance states a requirement for 50mm when open joints are used and 38mm when baffled or labyrinth joints are used.

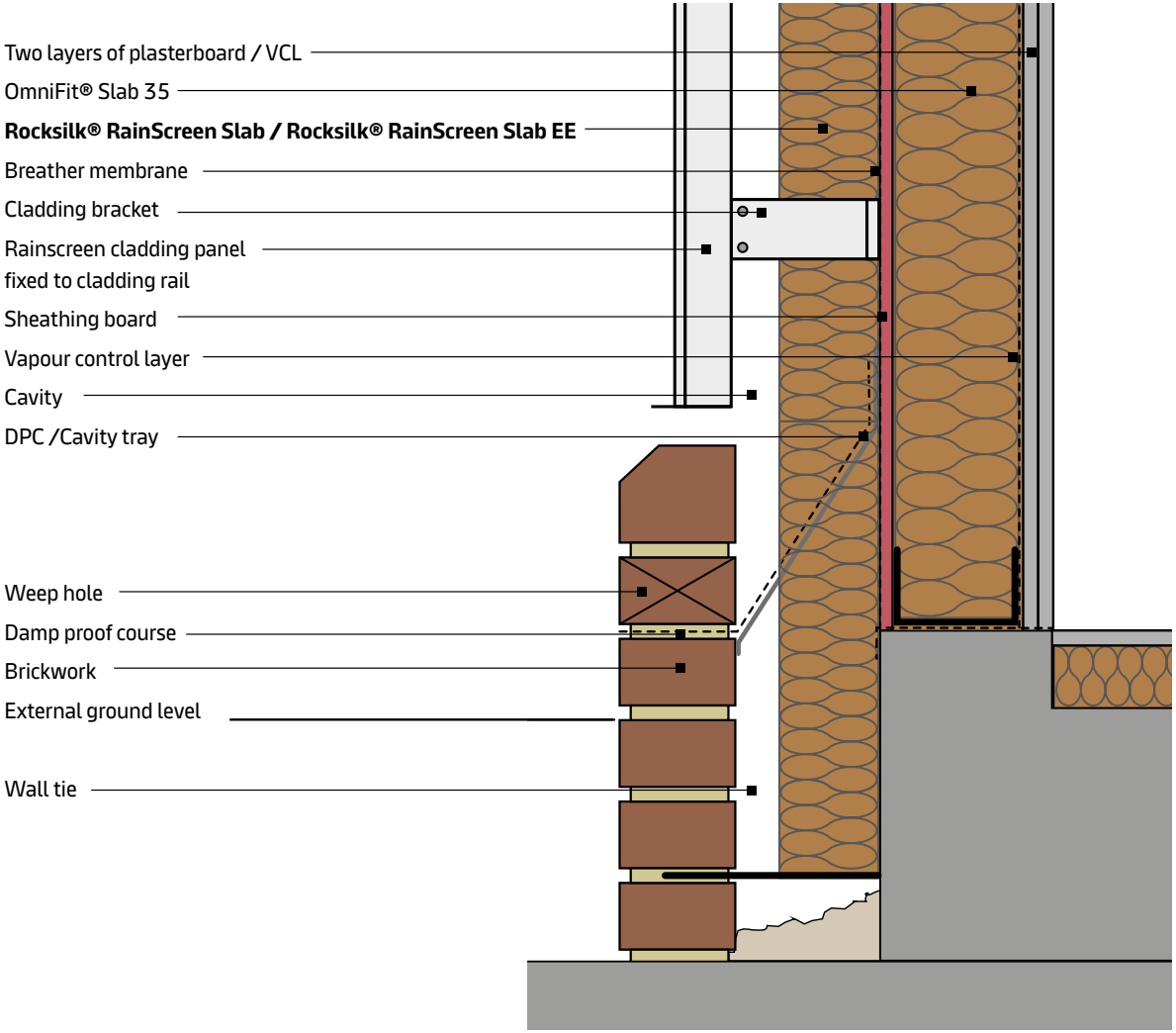


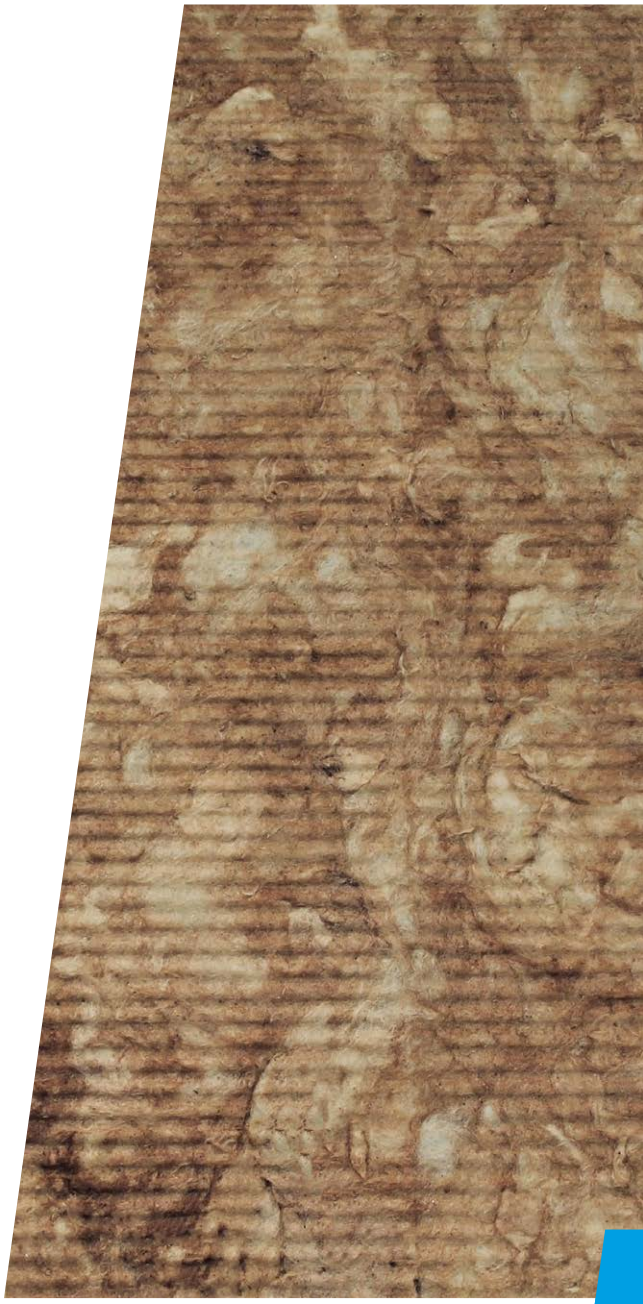


Rocksilk® Rainscreen Slab below damp proof course

Rocksilk® RainScreen Slabs do not absorb water by capillary action and may therefore be used in situations where they bridge the DPC's of the inner and outer leaf.

? **To simplify installation.**



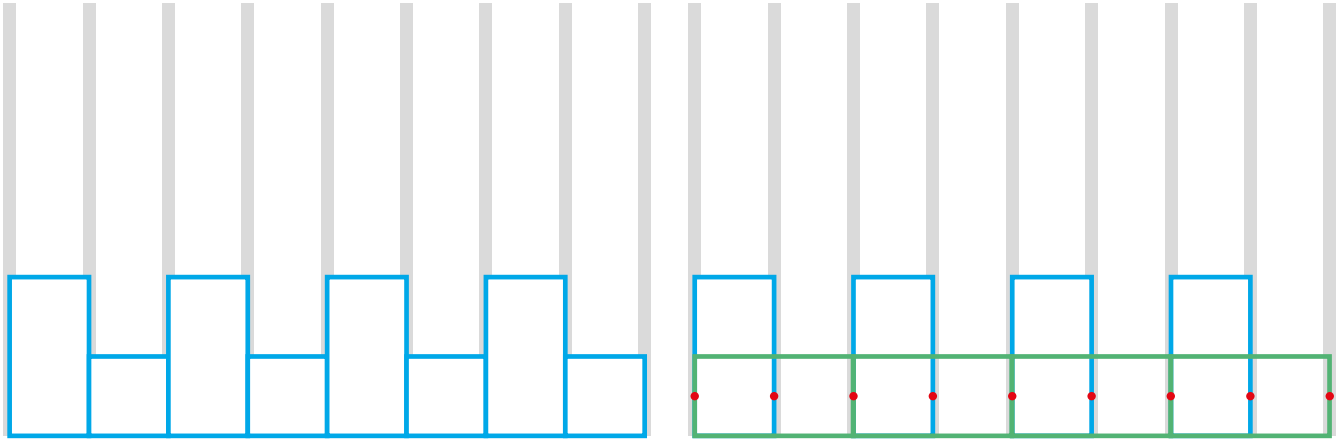


Rainscreen cladding outer leaf dual layering

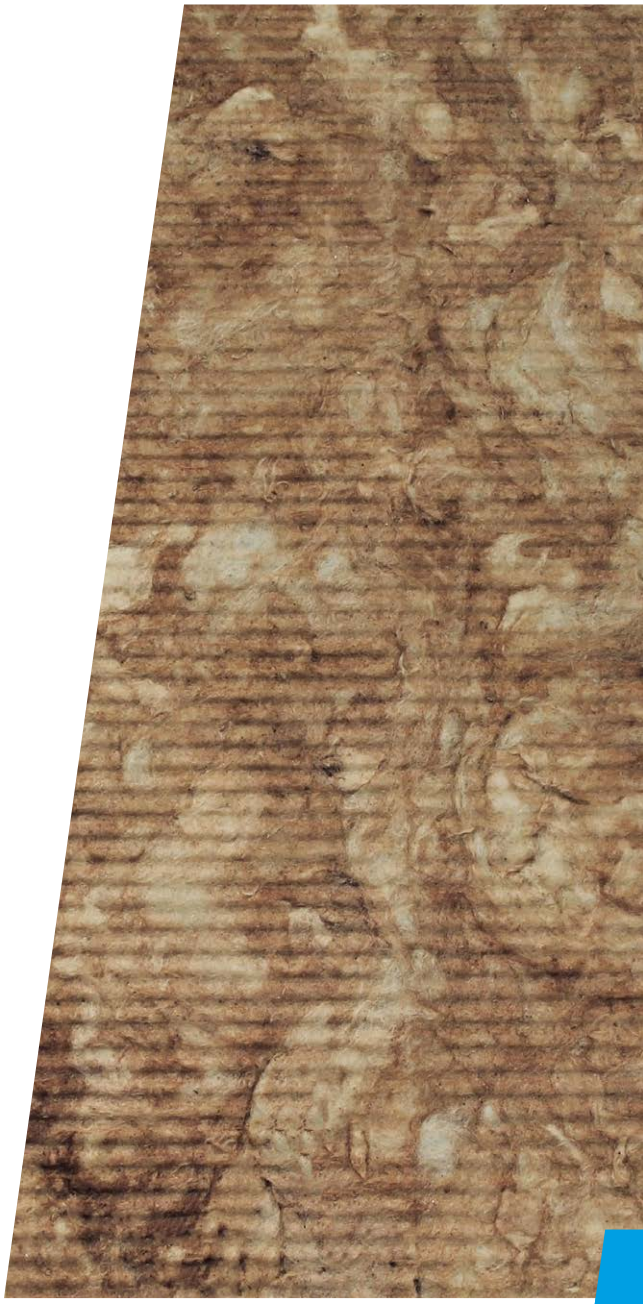
SFS or timber substrate

Option 1

1. The first row should be installed in line with edges of the slab being in the centre of the studs.
2. Should it be necessary, the first row of slabs can be fixed with fixings through the centre of the slabs directly into the sheathing board for additional support.
3. The next layer of Rocksilk® RainScreen Slabs should be installed in the opposite orientation. These slabs should be fixed in position using one stainless steel fixing in the centre of the slab through to the stud, and either stainless steel or plastic washers at horizontal slab joints. Where slabs are installed over cladding brackets care should be taken to ensure that they are tightly fitted, ensuring optimum thermal performance.



KEY:
- SFS or timber studs
- First layer of Rocksilk® RainScreen Slabs
- Second layer of Rocksilk® RainScreen Slabs
- Fixings

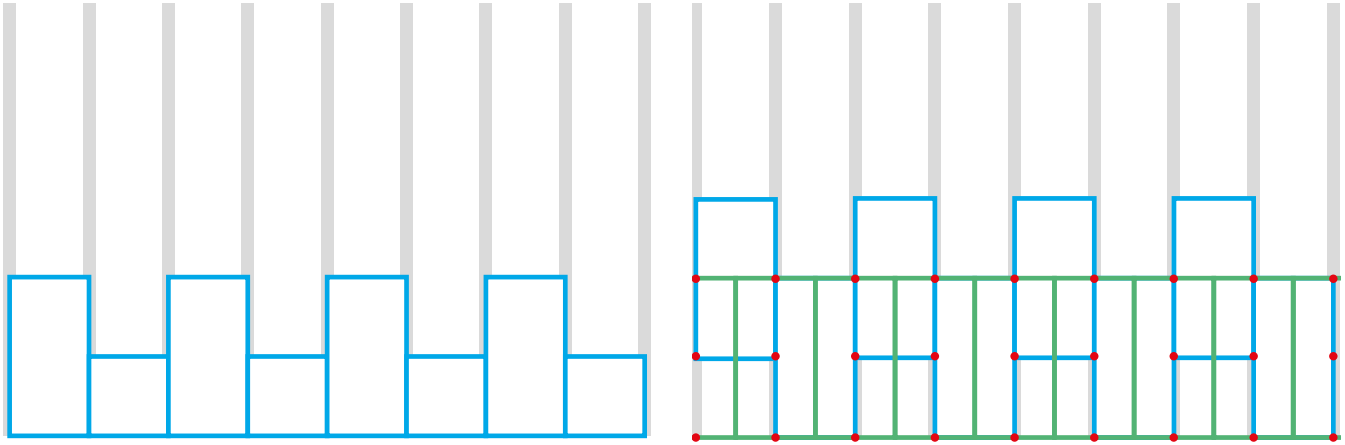


Rainscreen cladding outer leaf dual layering

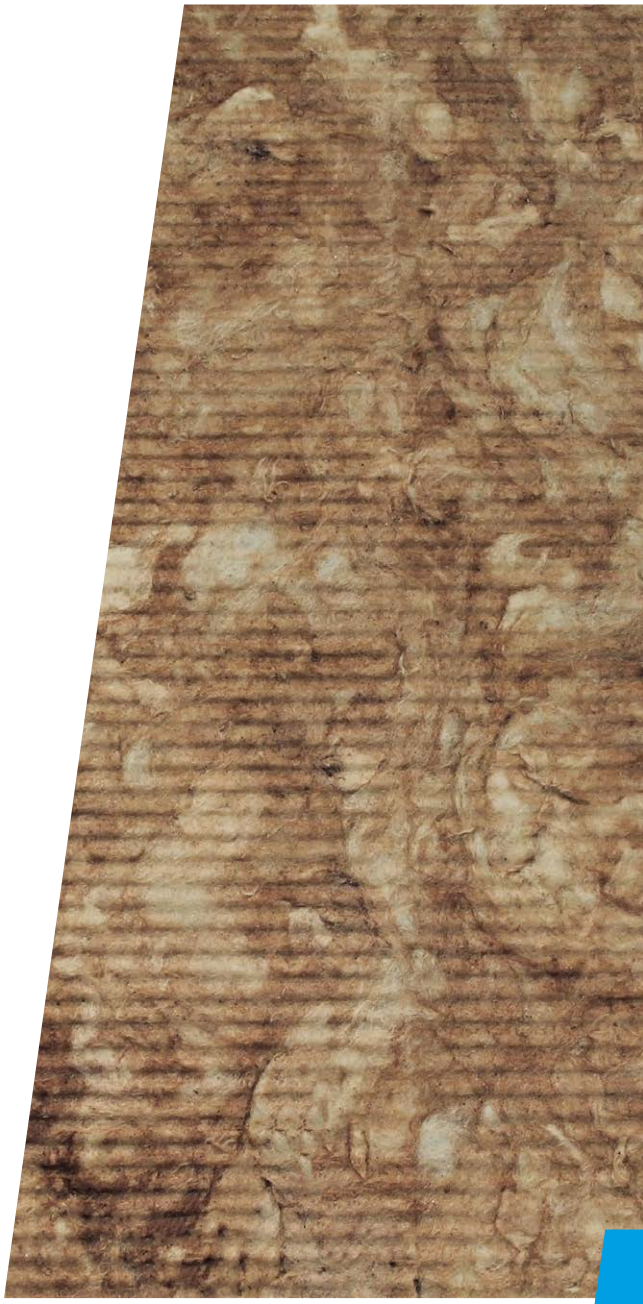
SFS or timber substrate

Option 2

1. The first row should be installed in line with edges of the slab being in the centre of the studs.
2. Should it be necessary, the first row of slabs can be fixed with fixings through the centre of the slabs directly into the sheathing board for additional support.
3. The next layer of Rocksilk® RainScreen Slabs should be installed in the same orientation staggered by 300mm to the first layer so that the slabs run evenly through the centre of the stud. Stainless steel fixings should then be installed through the centre of each slab with either stainless steel or plastic washers used for additional support at vertical slab joints.



KEY:
- SFS or timber studs
- First layer of Rocksilk® RainScreen Slabs
- Second layer of Rocksilk® RainScreen Slabs
- Fixings

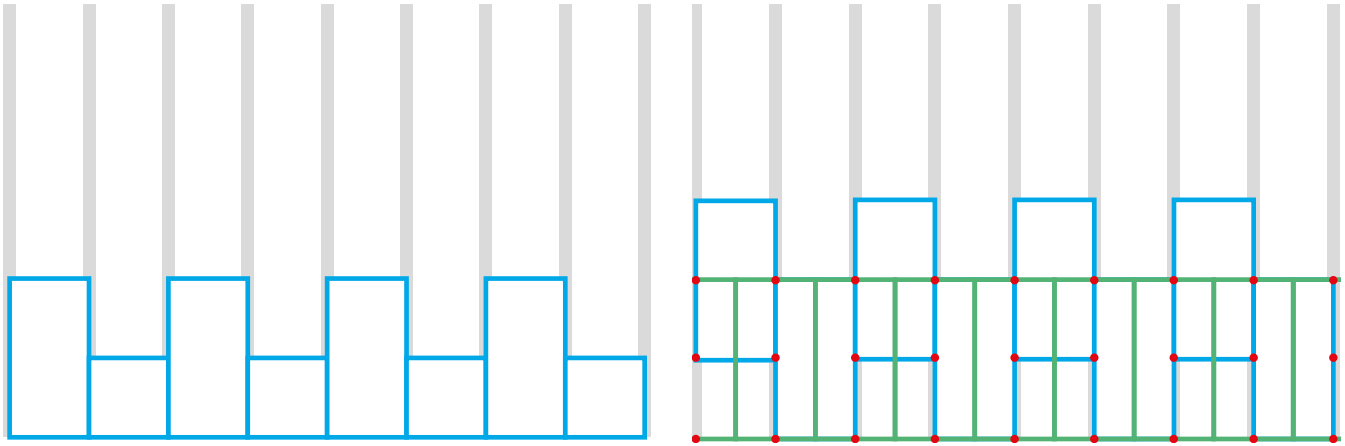


Rainscreen cladding outer leaf dual layering

Masonry or concrete substrate

Either of the SFS or timber substrate installation techniques can be used on a masonry or concrete substrate, along with the further option below. The key design consideration is to ensure at least one stainless steel fixing goes through each of the second layer of slabs.

1. The first 2 rows should be installed in a landscape or portrait orientation.
2. Should it be necessary, the first two rows of slabs can be fixed with fixings through the centre of the slabs directly into the concrete/ blockwork for additional support.
3. The next layer of Rocksilk® RainScreen Slabs should be installed in the opposite orientation staggered by 600mm to the first layer of Rocksilk® RainScreen Slab. The slabs are then fixed in position using one stainless steel washer in the centre of the slab through to the concrete/blockwork and either metal or plastic washers at horizontal slab joints, directly into the concrete/blockwork.



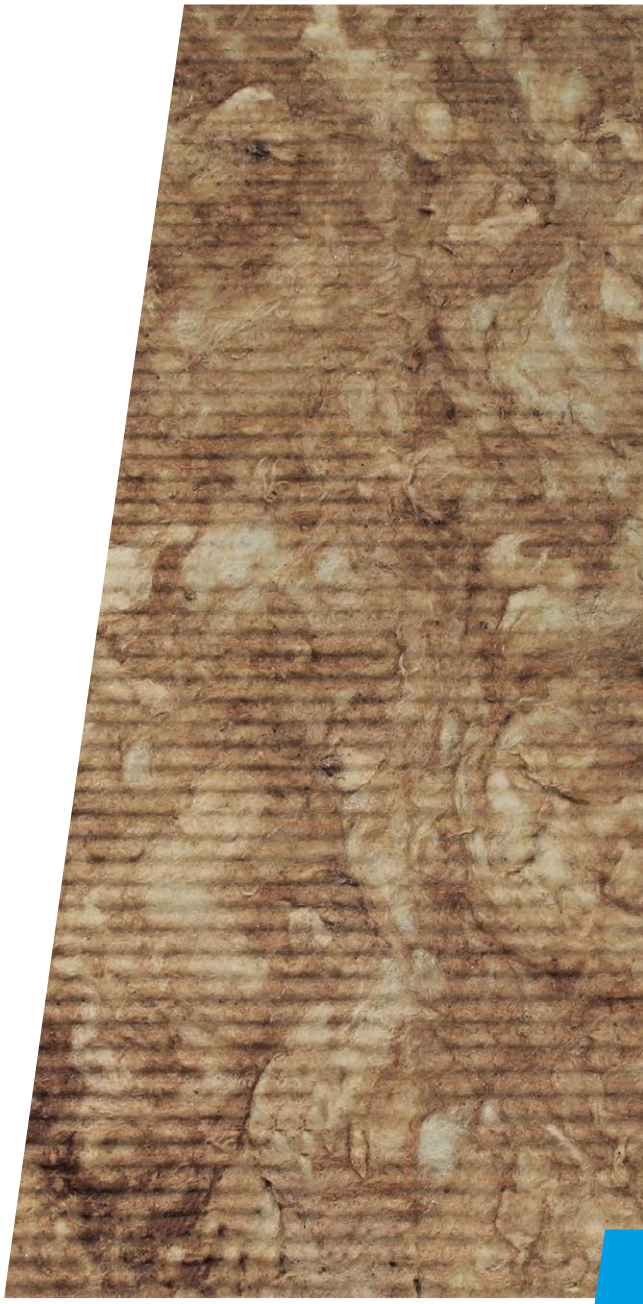
KEY:
- SFS or timber studs
- First layer of Rocksilk® RainScreen Slabs
- Second layer of Rocksilk® RainScreen Slabs
- Fixings

Installation sequence with Rocksilk® Rainscreen Slab EE

When installing Rocksilk® RainScreen Slab EE the same installation sequence should be used. However, since Rocksilk® RainScreen Slab EE has a water repellent black tissue facing that provides exposure protection to the insulation during construction it does not not need to be installed a floor at a time and can be left exposed as a full elevation before the cladding is installed over it.

Installation sequence with Rocksilk® Rainscreen Cavity Barriers

Both Rocksilk® RainScreen Slab and Rocksilk® RainScreen Slab EE are suitable for use with the entire range of Rocksilk® RainScreen Cavity Barriers. For more information on the installation of Rocksilk® RainScreen OSCB, Rocksilk® RainScreen FireStop Slab or Rocksilk® RainScreen FFCB please visit the individual installation guides, available on our website.



Rainscreen cladding outer leaf dual layering

Masonry or concrete substrate

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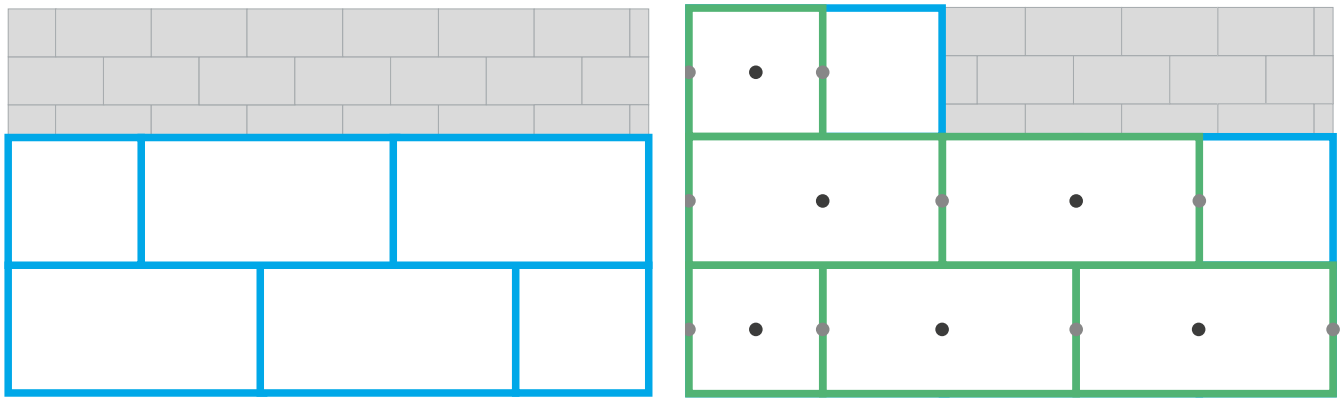
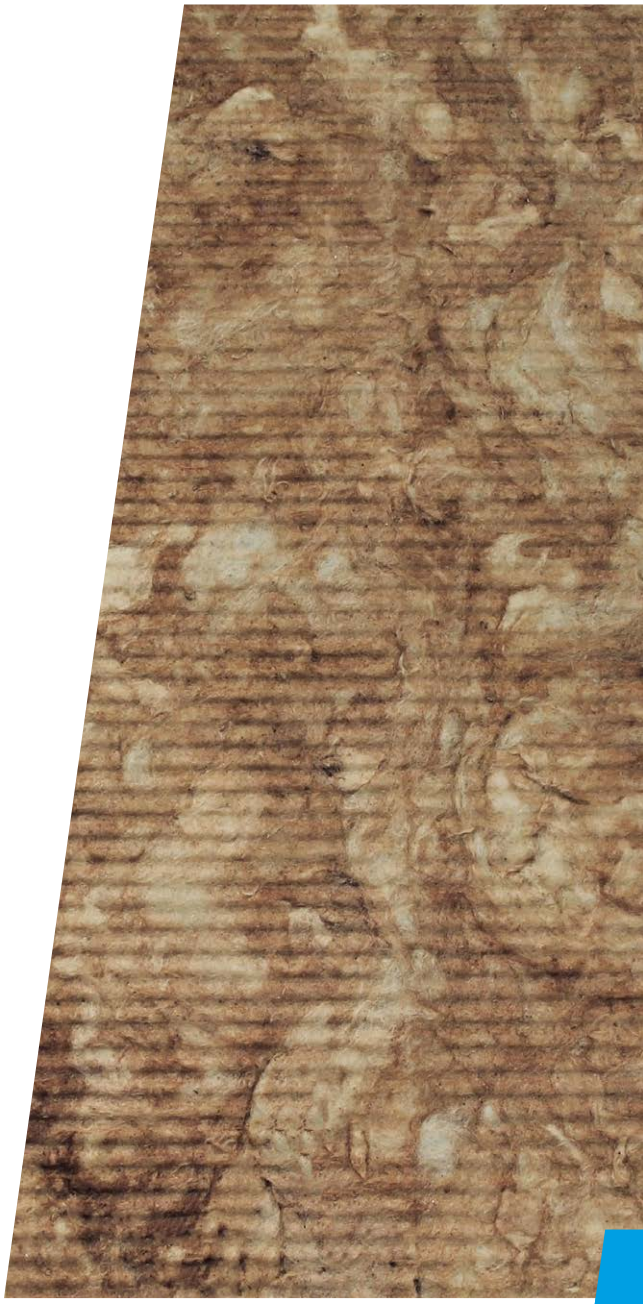
2. Should it be necessary, the first two rows of slabs can be fixed with fixings through the centre of the slabs directly into the concrete/ blockwork for additional support.
3. The next layer of Rocksilk® RainScreen Slabs should be installed in the opposite orientation staggered by 600mm to the first layer of Rocksilk® RainScreen Slab. The slabs are then fixed in position using one stainless steel washer in the centre of the slab through to the concrete/blockwork and either metal or plastic washers at horizontal slab joints, directly into the concrete/blockwork.

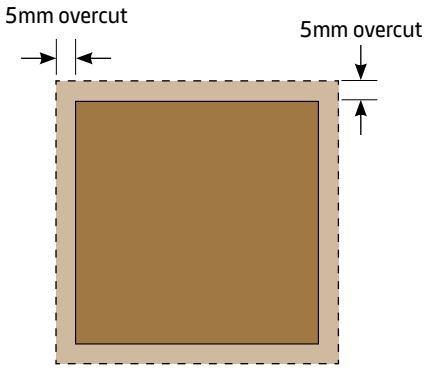


KEY: Blockwork or concrete panel
First layer of Rocksilk® RainScreen Slabs
Second layer of Rocksilk® RainScreen Slabs



CUT NEATLY AROUND PENETRATIONS AND CONSTRUCTION DETAILS - CUT OVERSIZE BY 5mm

Cut neatly around penetrations and construction details using a sharp bladed knife or insulation saw. When cutting around penetrations, cut oversize by 5mm to allow some local compression of the slab around the feature to ensure a snug fit.



? **To maximise thermal performance.**

✓ **Leave 5mm overcut**

✗ **Cut directly up to penetrations**

CUT NEATLY WITH A SHARP INSULATION SAW/KNIFE

Cut neatly with a fine serrated saw or a large bladed knife.

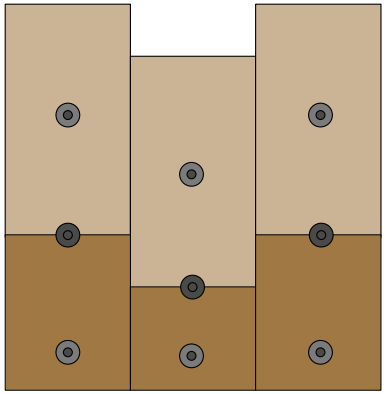
? **Gives a factory quality cut and prevents tearing**

✓ **Use insulation saw or knife**

✗ **Rip using coarse blade**

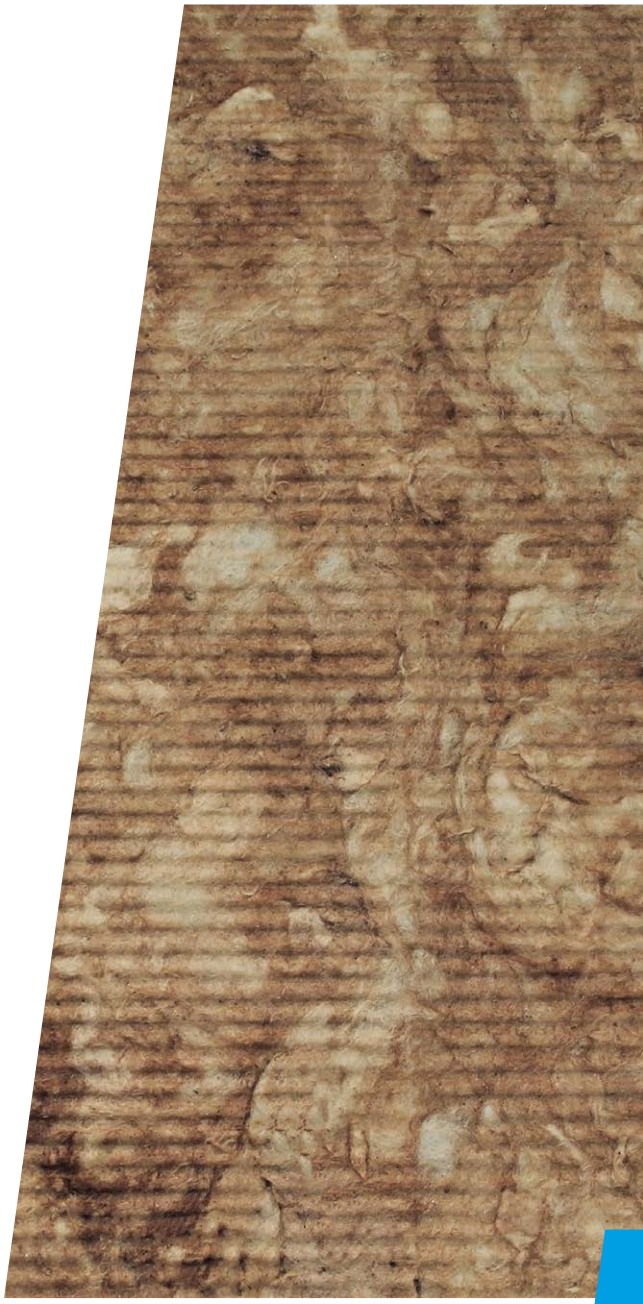
AREAS THAT CANNOT ACCEPT FULL SLAB SHOULD USE A SLAB SECTION

Areas of insulation that do not require a full slab (aside from corners where a full slab must be used) can be filled using a slab section, where the section is cut slightly oversize to give a snug fit and fixed at 600mm intervals in the centre of the section. Each slab section should receive one non-combustible fixing and washer in addition to any other fixings as required to maintain continuity of the insulation.



✓ **Slab cut and snug fit**

✗ **Loose fit for cut slab section**

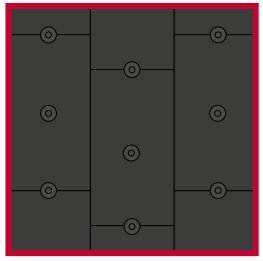


POLYPROPYLENE AND STAINLESS STEEL WASHERS

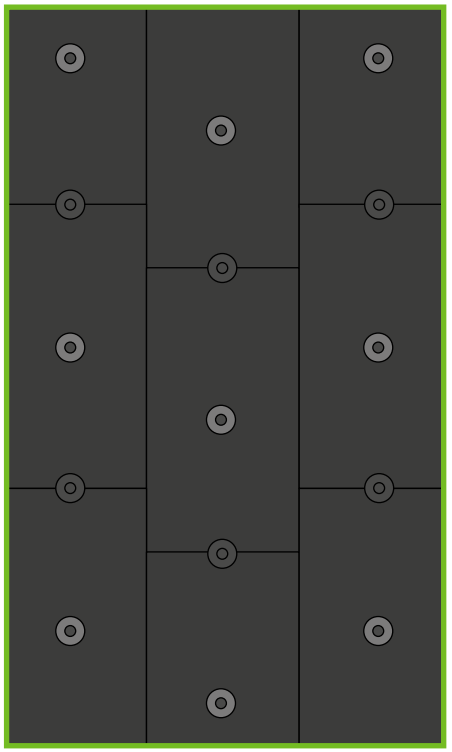
Fix using all stainless steel or a combination of stainless steel and polypropylene washers in accordance with the detailed fixing pattern.

✓ **Min 1 stainless steel washer per slab**

✗ **All plastic washers**



WASHER: Stainless Steel Polypropylene



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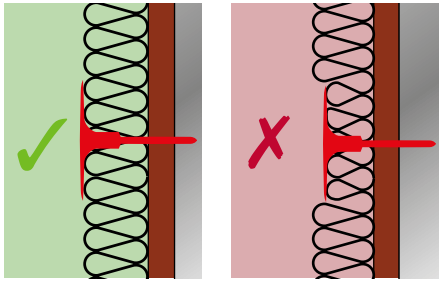
Stainless steel washers for fire safety
Stainless steel washers retain their strength in the event of a fire.

Fixing pattern
For fire safety and retention of insulation slab.

DON'T OVERTIGHTEN MECHANICAL FIXINGS

Ensure that mechanical fixings are not overtightened; surface compression of the product is not recommended.



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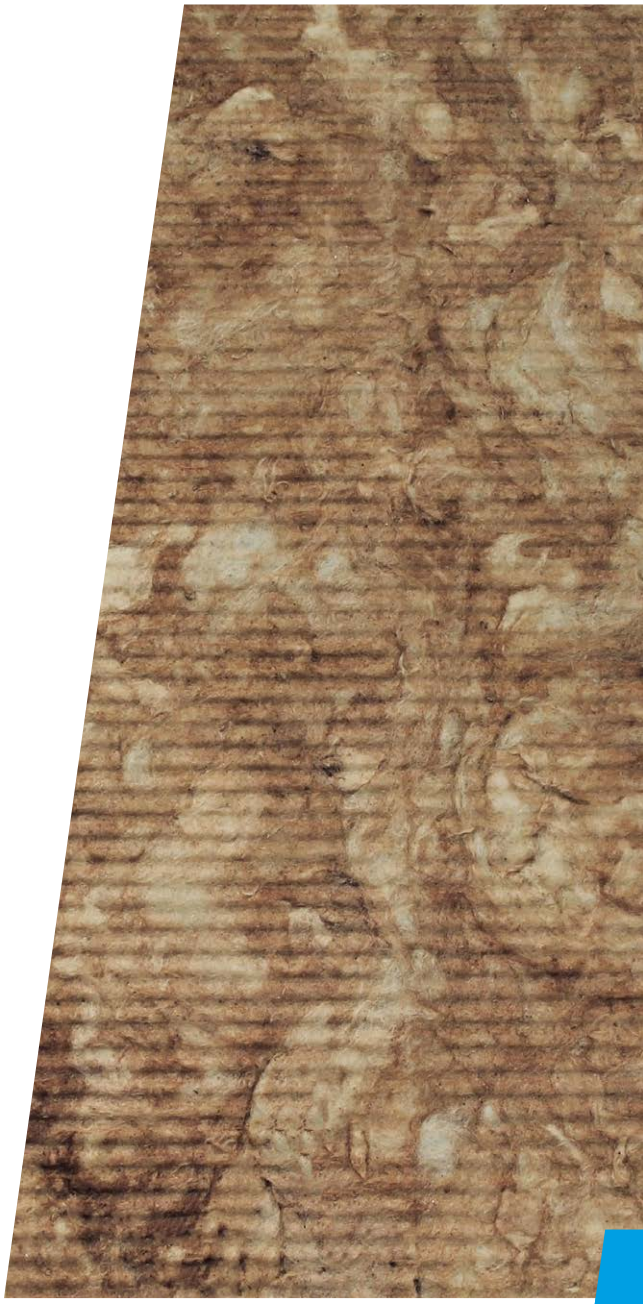
This compromises the thermal performance and can lead to localised moisture pooling.



FIXINGS TO USE

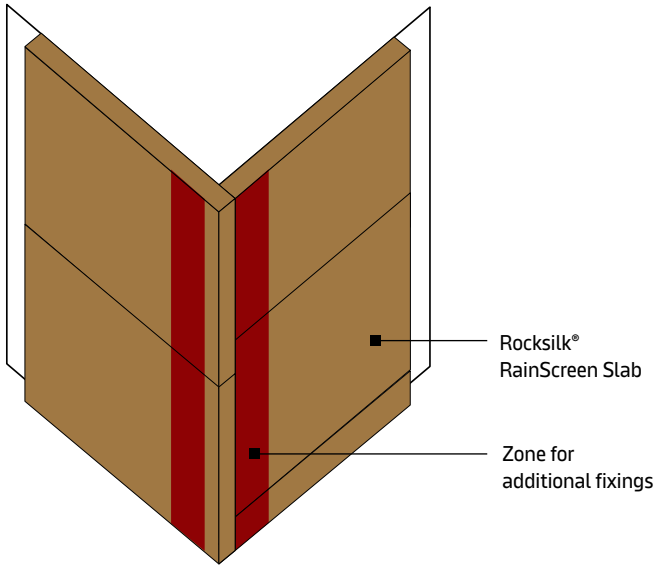
Rocksilk® RainScreen Fixings are designed for installing Rocksilk® RainScreen Slab and Rocksilk® RainScreen Slab EE onto steel or timber framed constructions.

The black plastic and metal washers are designed to match the colour of the facing on Rocksilk® RainScreen Slab EE.

Ensure fixing equipment does not damage the product during the fixing process e.g. drill chucks.

CORNER DETAILS - ADDITIONAL FIXINGS

Rocksilk® RainScreen Slab should be installed using additional fixings around corner details, where fixings are added to each slab corner such that it is fixed firmly to the super structure.

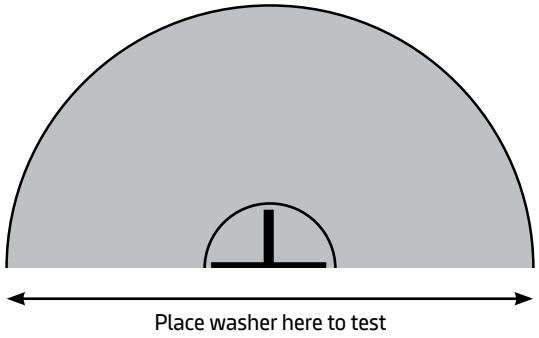


WASHER MINIMUM DIAMETER OF 70mm

When installing the fixings to retain the insulation, a washer with a minimum diameter of 70mm must be used to ensure optimum strength of fixing between Rocksilk® RainScreen Slab and substrate.

✓ **Washers 70mm or ABOVE**

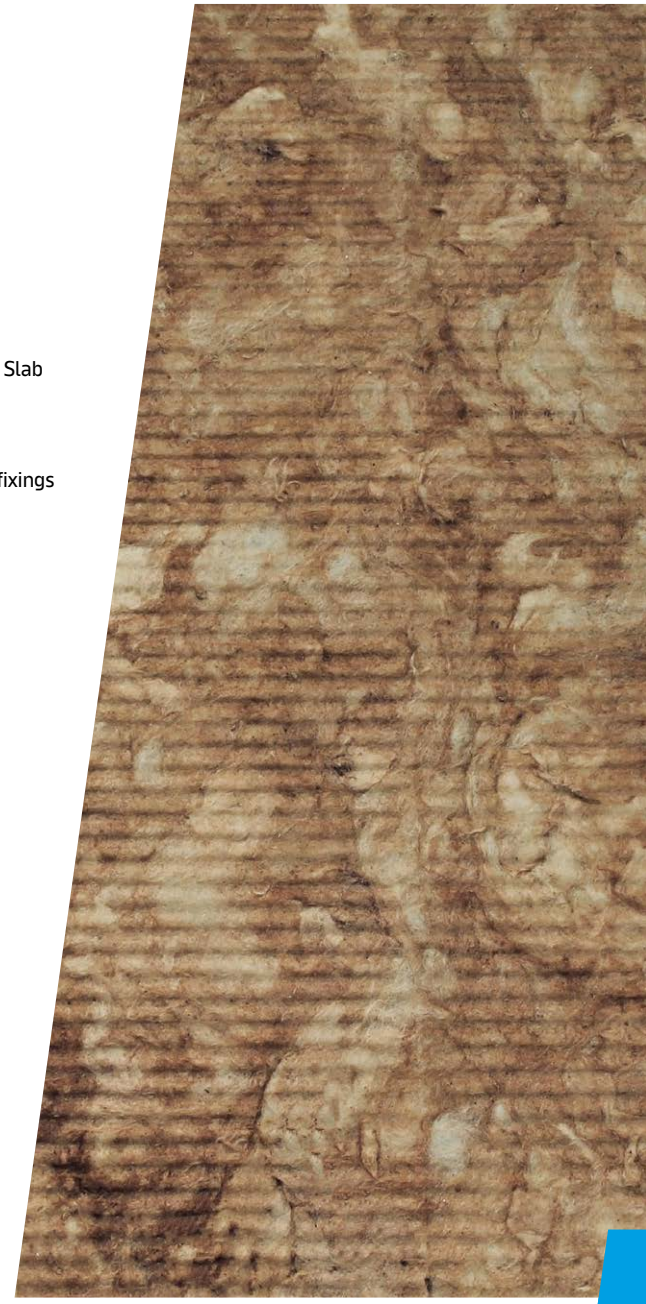
✗ **Washers BELOW 70mm**



WIND LOADING

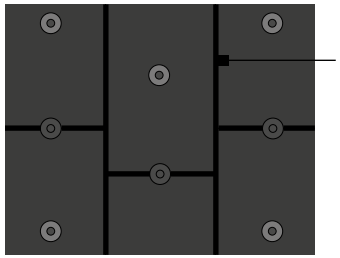
Rocksilk® RainScreen Slabs have been tested by BRE to BRE digest 346. The assessment of wind loads – part 7: Wind speeds for serviceability and fatigue assessments. The slab withstood the applied dynamic wind loading at a maximum design pressure of -3600Pa, or 76m/s as calculated to BS EN 1991 without showing signs of damage or distress, maintaining its structural integrity.

Wind load performance of the overall system is generally limited not only by the integrity of the insulation, but also by the material strength of either the structure or the anchor. It is necessary to ensure that the performance of both the substrate and the anchor are greater than that of the insulation. For accurate data on fixings or substrates such as Concrete, Structural Framing Systems, or Cross Laminated Timber, please consult individual manufacturers.



TAPING JOINTS

When installing Rocksilk® RainScreen Slab EE, the joints between slabs can be sealed using Rocksilk® RainScreen Slab EE Tape. This tape is designed as a membrane sealing tape and helps to provide a further level or protection against moisture ingress during and after construction. The tape also provides an effective seal between slabs and prevents gaps during installation.

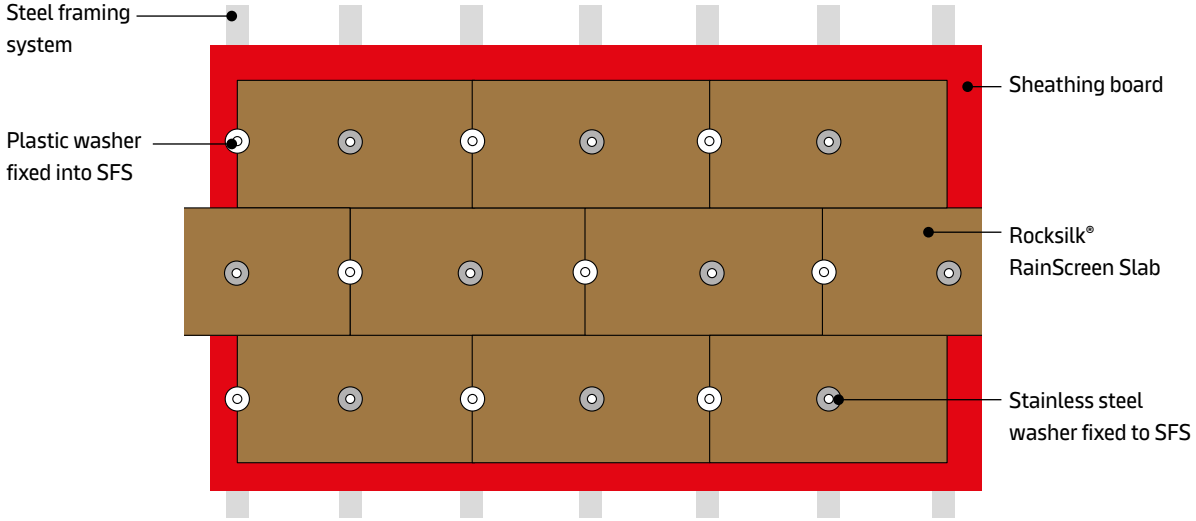


WHERE ROCKSILK® RAINSCREEN SLAB HAS BEEN INCLUDED IN COMPLETE SYSTEM TEST

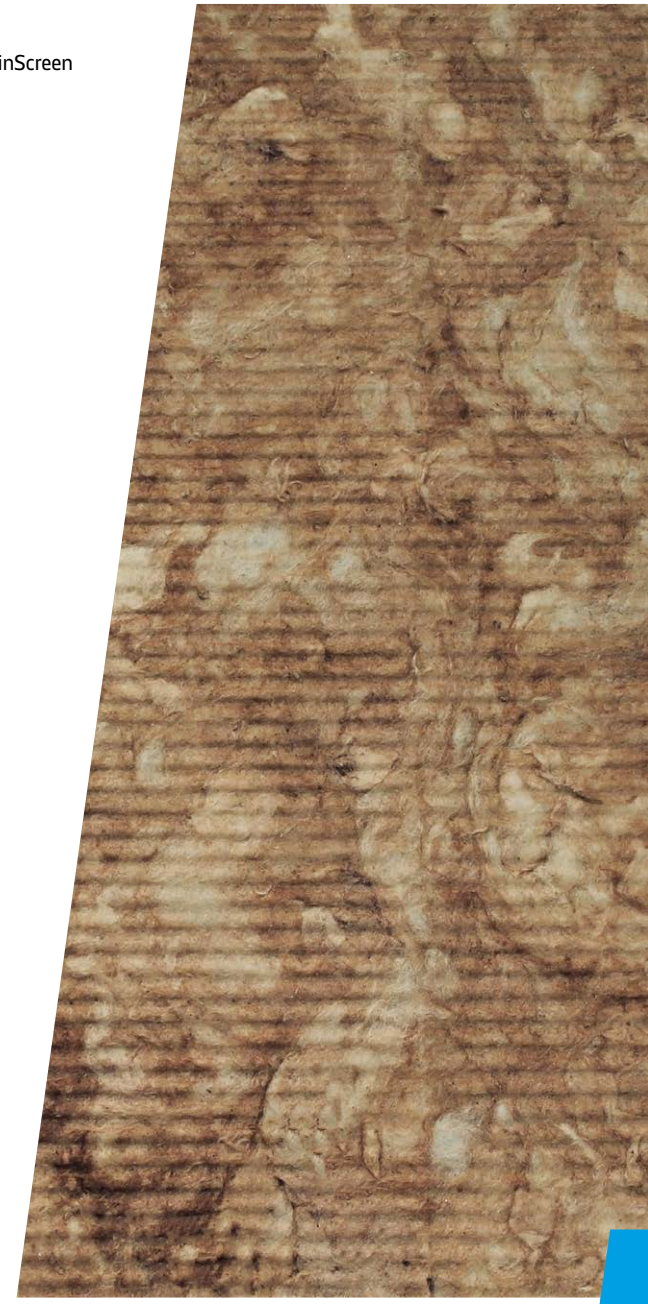
Some system manufacturers have included Rocksilk® RainScreen Slabs in complete system tests for fire and acoustic performance. In principle, the fixing detail - including the location of the fixings - should be in line with both the system holder's requirements and those detailed in this guide. If in doubt, please consult Knauf Insulation Technical Services Team.

Knauf Insulation Rocksilk® RainScreen Slab* can be combined with Knauf UK ThroughWall Systems, providing the unique advantage of being able to specify the façade infill through to the internal partitions. This combination has been tested for fire resistance of 120 minutes when exposed to fire on the inside and outside (Rocksilk® RainScreen Slab face) of the structure. The installation specifications used in these tests require the fixings for retaining the mineral wool to be directly into the SFS studs.

* Not Rocksilk® RainScreen Slab EE



This is an illustrative example of the Knauf UK ThroughWall System only, other build-ups are suitable.

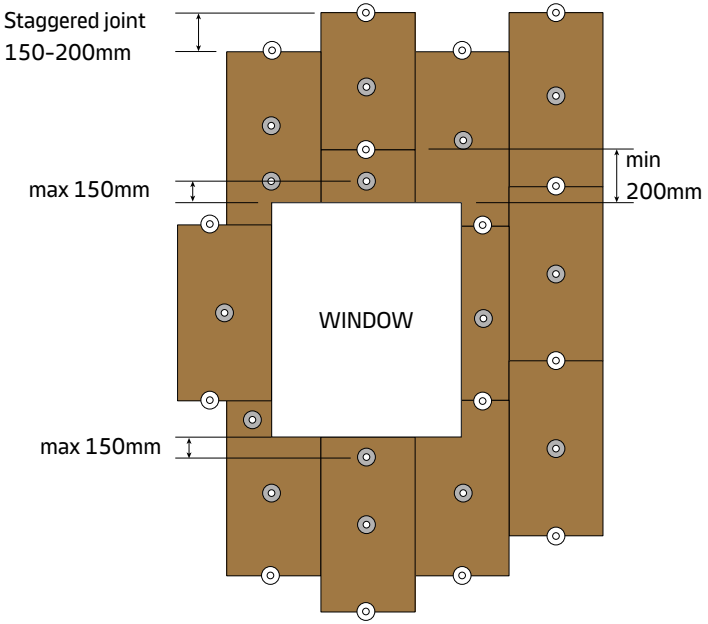


WINDOW DETAILS

Cut slabs to fit neatly around window details. Additional fixings and washers may be required to firmly retain the slabs and ensure continuity of the insulation layer. Fixings should have a minimum of one non-combustible (metal) washer per cut slab in addition to other fixings.

Each slab should contain at least one stainless steel washer.

WASHER: Stainless Steel Polypropylene



INSTALLATION AROUND BRACKET PENETRATIONS

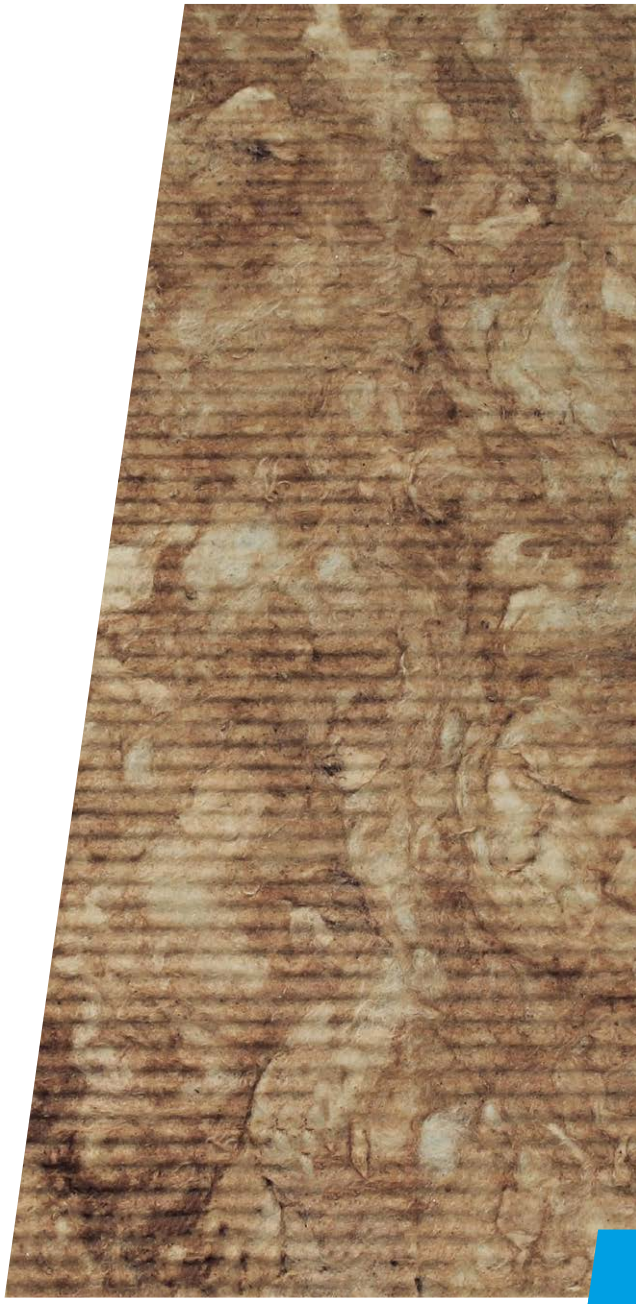
Product should be offered up to penetration, applying sufficient pressure to allow a small indent to be made in the product. Indent should be made on the face that will come into contact with the substrate when the product is installed.

Cut a slot in the product with an insulation saw or large bladed knife. Install product over the bracket taking care not to damage the external face of the slab. Ensure that the product is in intimate contact with neighbouring slabs. Secure the slab to the wall substrate with mechanical fixings in accordance with the design specification.

? **Ensures a tight fit of slabs around penetrations, ensuring maximum thermal efficiency.**

FIRE BARRIERS

Cavity barriers should be installed to meet the requirements of Approved Document B - England and Wales, Handbook Section 2 - Scotland and Technical Booklet E - Northern Ireland.



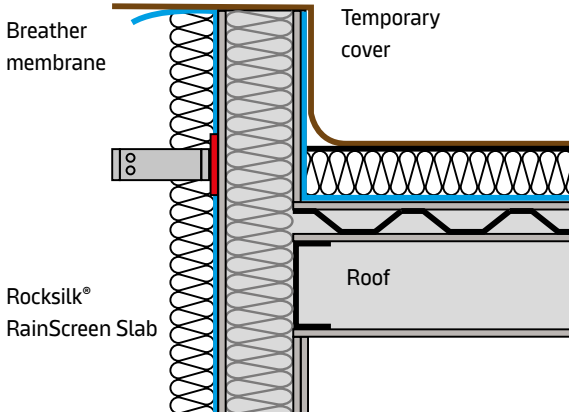
ROLLING FRONT - BEST PRACTICE

Rocksilk® RainScreen Slabs are manufactured with a water repellent additive, however best practice is for the insulation to be covered up by the cladding as the works proceed, on the basis of an advancing front. This protects the insulation from prolonged exposure during construction.

✓ **Cladding should be immediately installed to cover Rocksilk® RainScreen Slab to reduce weathering.**

PARAPET / ROOF LEVEL PROTECTION DURING INSTALLATION

The top edge of the slabs should be covered and any run off water directed away from running down the face of the slabs.

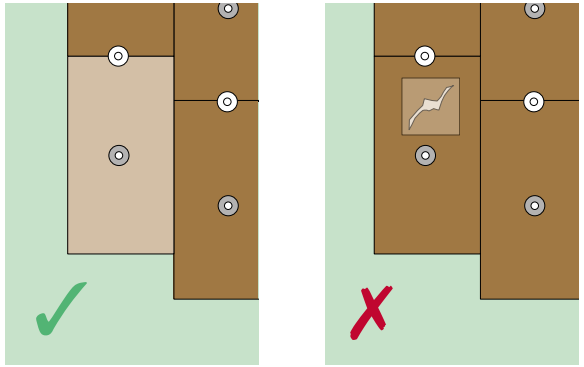


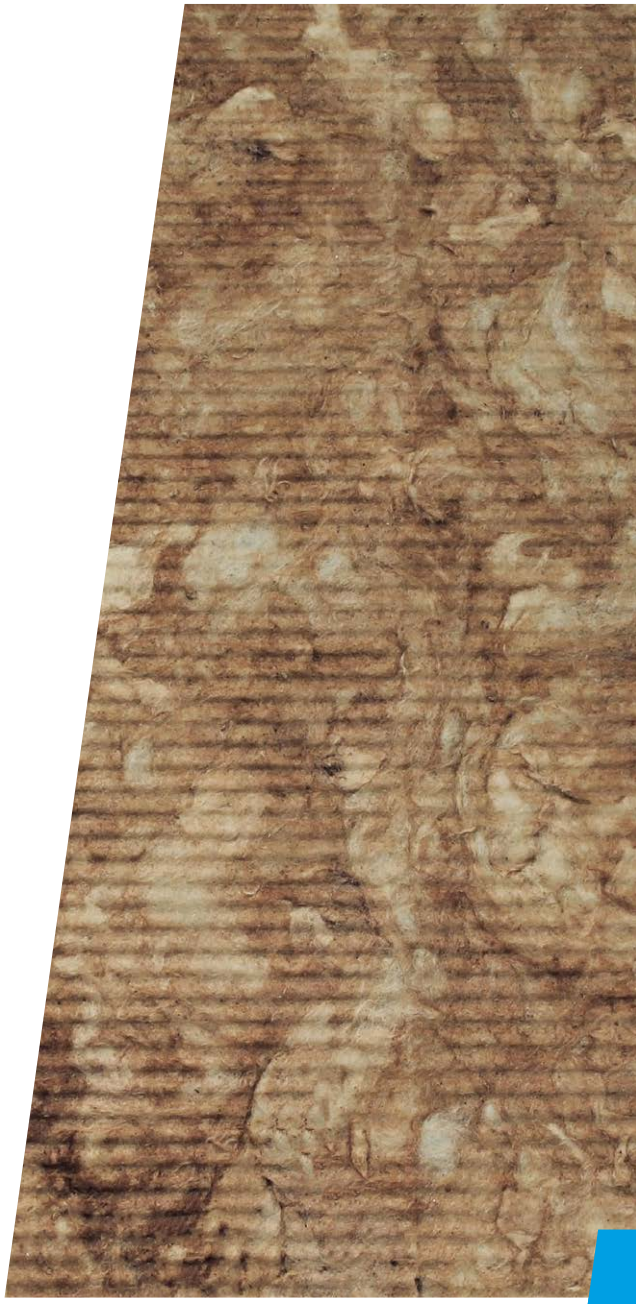
CONSTRUCTION REPAIRS

In the event of small repairs being needed on site, Knauf Insulation recommends the replacement of full slabs wherever possible before installing the rainscreen panels.

✓ **Full slab replacement after damage**

✗ **Small patched repair**





Site check list Rocksilk® RainScreen Slab

System type?	☐ Cladding	☐ Brickwork
Is the product Unfaced or Rocksilk® RainScreen Slab EE?	☐ Rocksilk® RainScreen Slab Unfaced	☐ Rocksilk® RainScreen Slab EE
Is there a breather membrane being used in the construction?	☐ Yes	☐ No
› If yes, is the breather behind or in front of the insulation layer?	☐ Behind	☐ In front
Has a single or double layer* of insulation been used?	☐ Yes	☐ No
› If double-layered, have layers been staggered?	☐ Yes	☐ No
› If no, the product will dry out if there is no mechanical damage. If the product is wet and damaged, replace the slab.		
Have the slabs been installed in “portrait” or “landscape” orientation?	☐ Portrait	☐ Landscape
Does the minimum width of the residual cavity conform with the best practice recommendations of the cladding supplier?	☐ Yes	☐ No
› If unsure, please check with your cladding supplier		
Have non-combustible metal washers been used throughout or a combination of plastic and metal washers?	☐ All metal	☐ Combination
Is the insulation bridged by another ocomponent of the construction other than the bracket?	☐ Yes	☐ No
Has the slab been cut to fit neatly over brackets?	☐ Yes	☐ No
What percentage of the installation is exposed to the elements?		
What percentage of the installation of insulation has been completed?		
Has the product been stored off-ground and undercover?	☐ Yes	☐ No
Has the product been mechanically or physically damaged in any way during installation?	☐ Yes	☐ No
› If yes, then replace the full damaged slabs		
Does the product being installed appear dry at the time of survey?	☐ Yes	☐ No
› If no, the product will dry out if there is no mechanical damage. If the product is wet and damaged, replace the slab.		
If installed to parapet level, has the product been protected?	☐ Yes	☐ No
Are all slabs closely butted together such that there are no visible gaps between them?	☐ Yes	☐ No
Have slab joints been staggered by at least 100mm?	☐ Yes	☐ No
› If no, ensure all slabs are repositioned to remove any gaps		
Have multiple cut pieces been avoided where possible?	☐ Yes	☐ No
Is the primary fixing washer a metal washer?	☐ Yes	☐ No
Is there a minimum of one metal washer on every slab?	☐ Yes	☐ No
› If no, ensure at least one fixing has a metal washer in each slab, including cut sections	☐	☐
Do washers have a minimum head diameter of 70mm?	☐ Yes	☐ No
Are all washers fixed so as to be flush with the surface of the slab?	☐ Yes	☐ No
› If no, ensure fixings do not compress the slab or damage the insulation layer		
Have additional fixings & washers been used around windows, corners or other features?	☐ Yes	☐ No
› If no, ensure at least 1 metal fixing per slab		

**Rocksilk® RainScreen Slab BBA certified in single or double layer only. Rocksilk® RainScreen Slab EE does not hold an Agrément certificate from the BBA.*
This checklist is for on-site install guidance only, and is not a confirmation that Knauf Insulation has inspected or approved install of Rocksilk® RainScreen Slab during or after construction.

Contacts

Specification Team

Click here to find out more

Technical Services Team

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technical.uk@knaufinsulation.com

For more information please click here

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