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ROCKSILK® RAINSCREEN SLAB INSTALLATION GUIDE - CLADDING OUTER LEAF

WHAT YOU NEED TO KNOW

BBA APPROVAL INSPECTION TESTING CERTIFICATION
CERTIFICATE 19/5609

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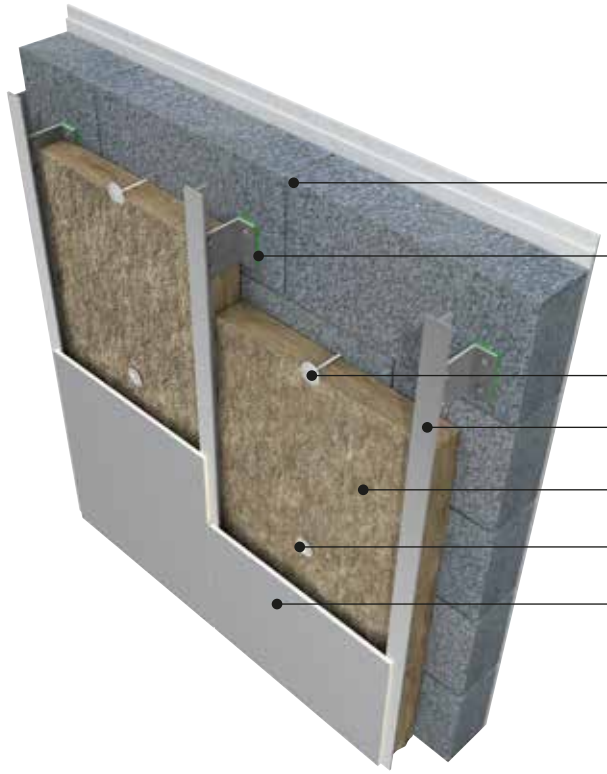
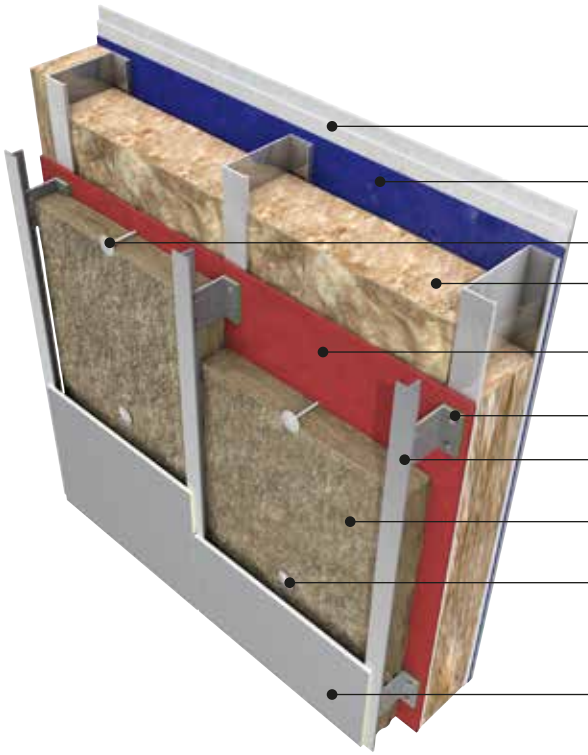
TYPICAL RAINSCREEN SYSTEMS

MASONRY SUBSTRATE INSTALLATION



- Masonry substrate
- Fixing bracket
- Polypropylene washer
- Support rail
- Rocksilk® RainScreen Slab
- Stainless steel washer
- Rainscreen Cladding Panel

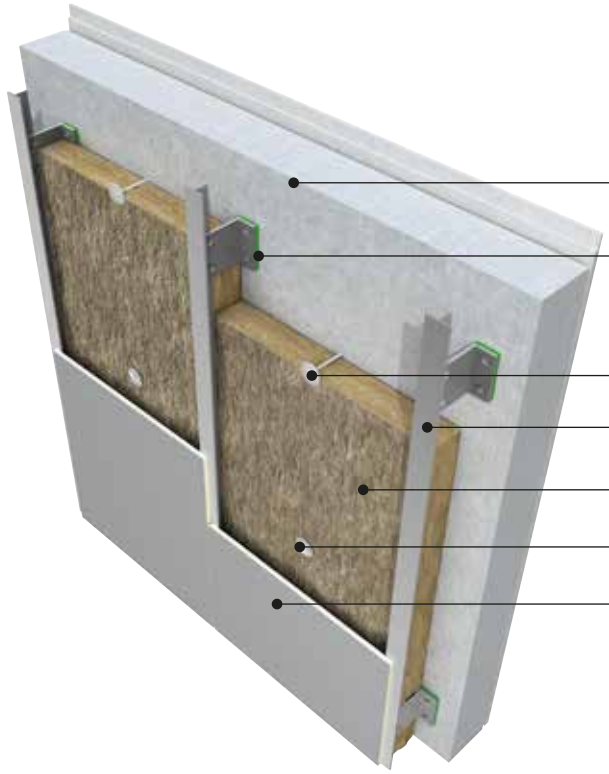
STEEL FRAME RAIL INSTALLATION



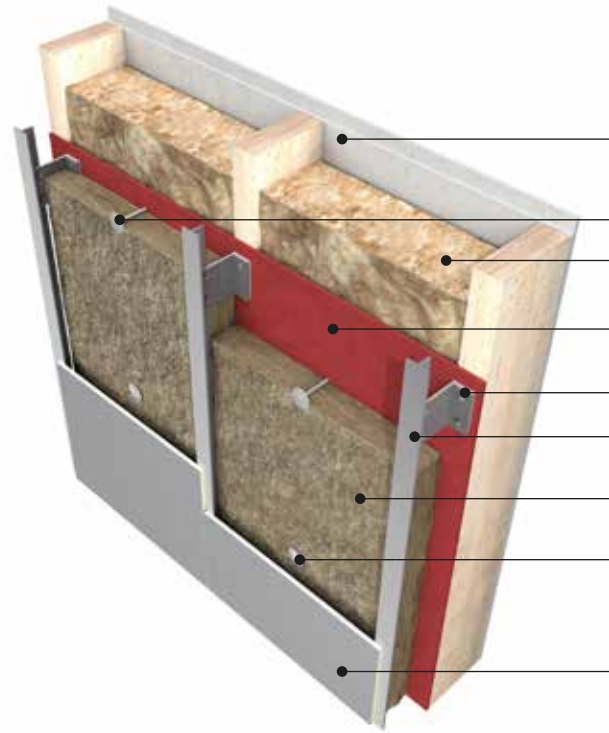
- Two layers of plasterboard
- Vapour control layer
- Polypropylene washer
- OmniFit® Slab 35 between steel studs
- Sheathing board
- Fixing bracket
- Support rail
- Rocksilk® RainScreen Slab
- Stainless steel washer
- Rainscreen Cladding Panel

TYPICAL RAINSCREEN SYSTEMS

PRECAST CONCRETE INSTALLATION



TIMBER FRAME INSTALLATION



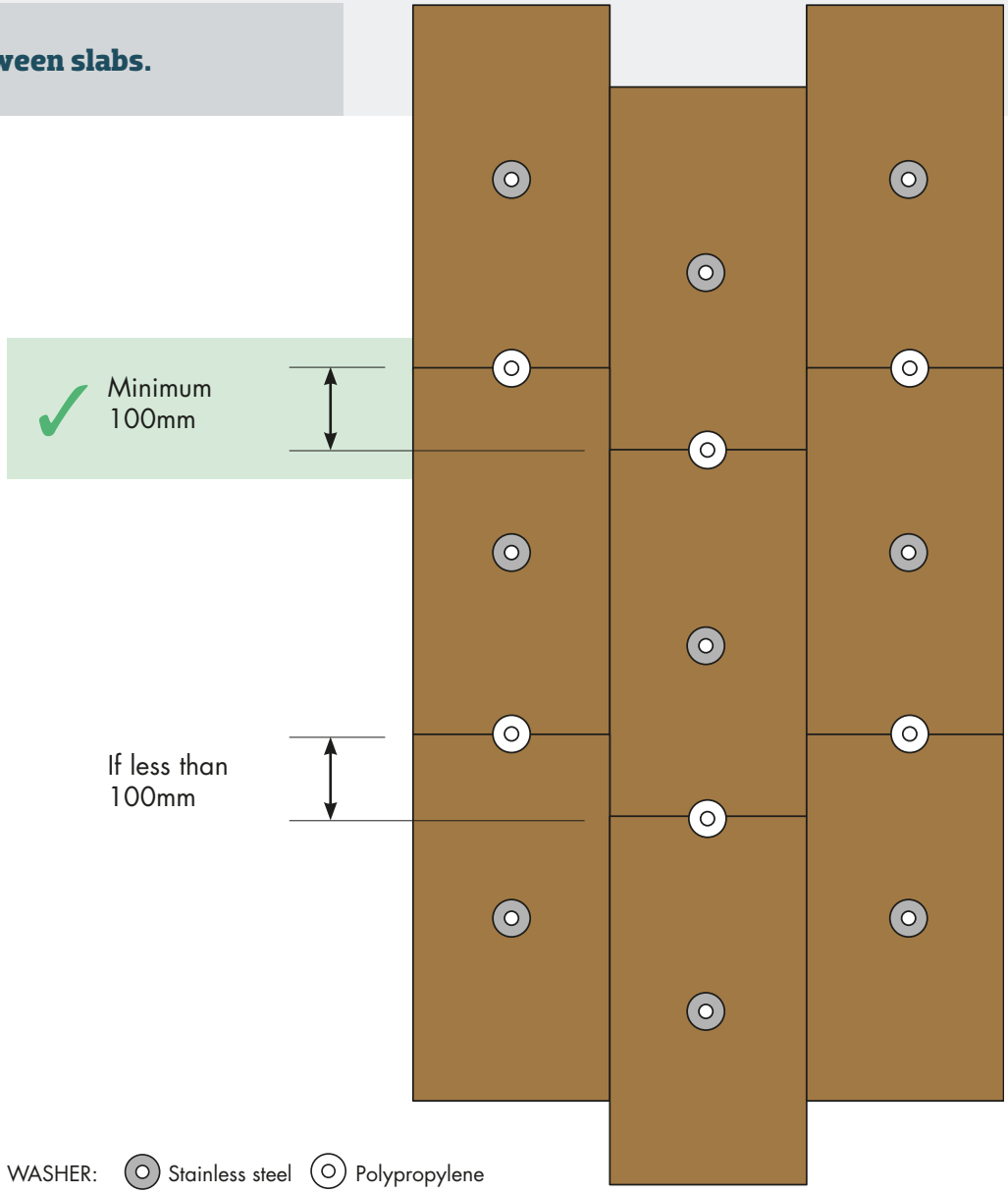
Note: Breather membrane can be used although not shown

PLACEMENT

JOINTS BETWEEN SLABS SHOULD BE STAGGERED

Joints between 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

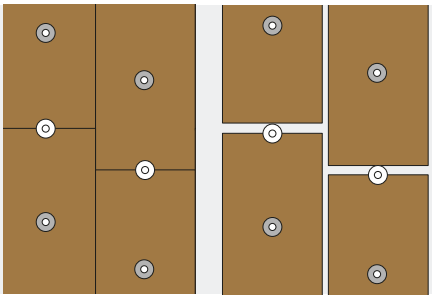
DOUBLE-FACED
IT DOESN'T MATTER WHICH WAY ROUND IT IS INSTALLED

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.

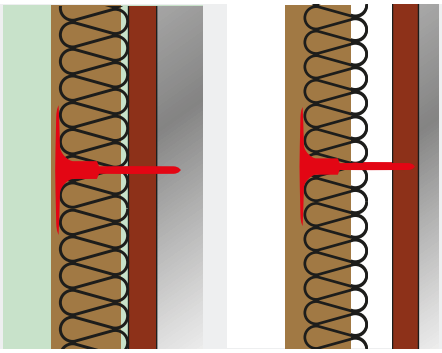


✓

INTIMATE CONTACT WITH SUBSTRATE

Rocksilk® RainScreen Slab 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.



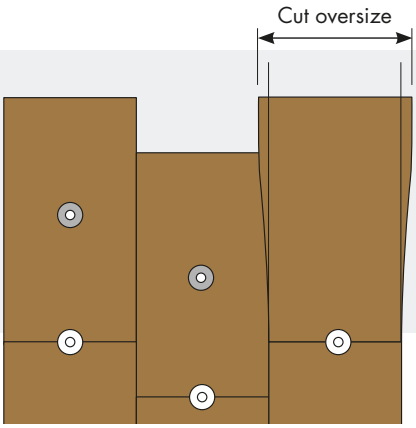
✓

PLACEMENT

COMPRESSION FIT INTO PLACE

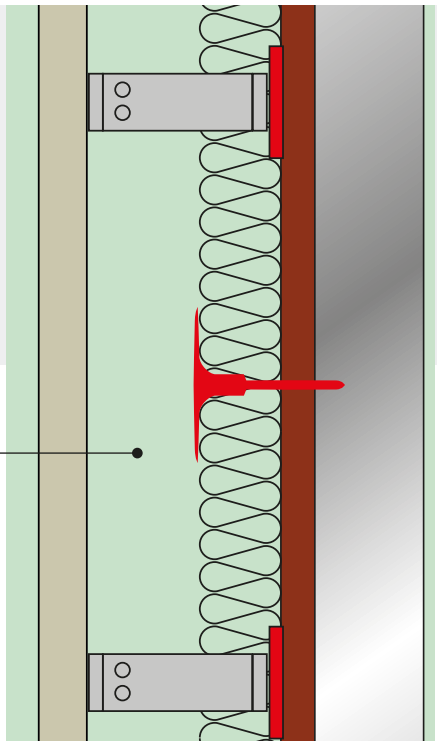
Rocksilk® RainScreen Slab should be cut slightly oversize and compression fitted into place.

? To create a snug fit between slabs, reducing the chance for air gaps and ensuring 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.



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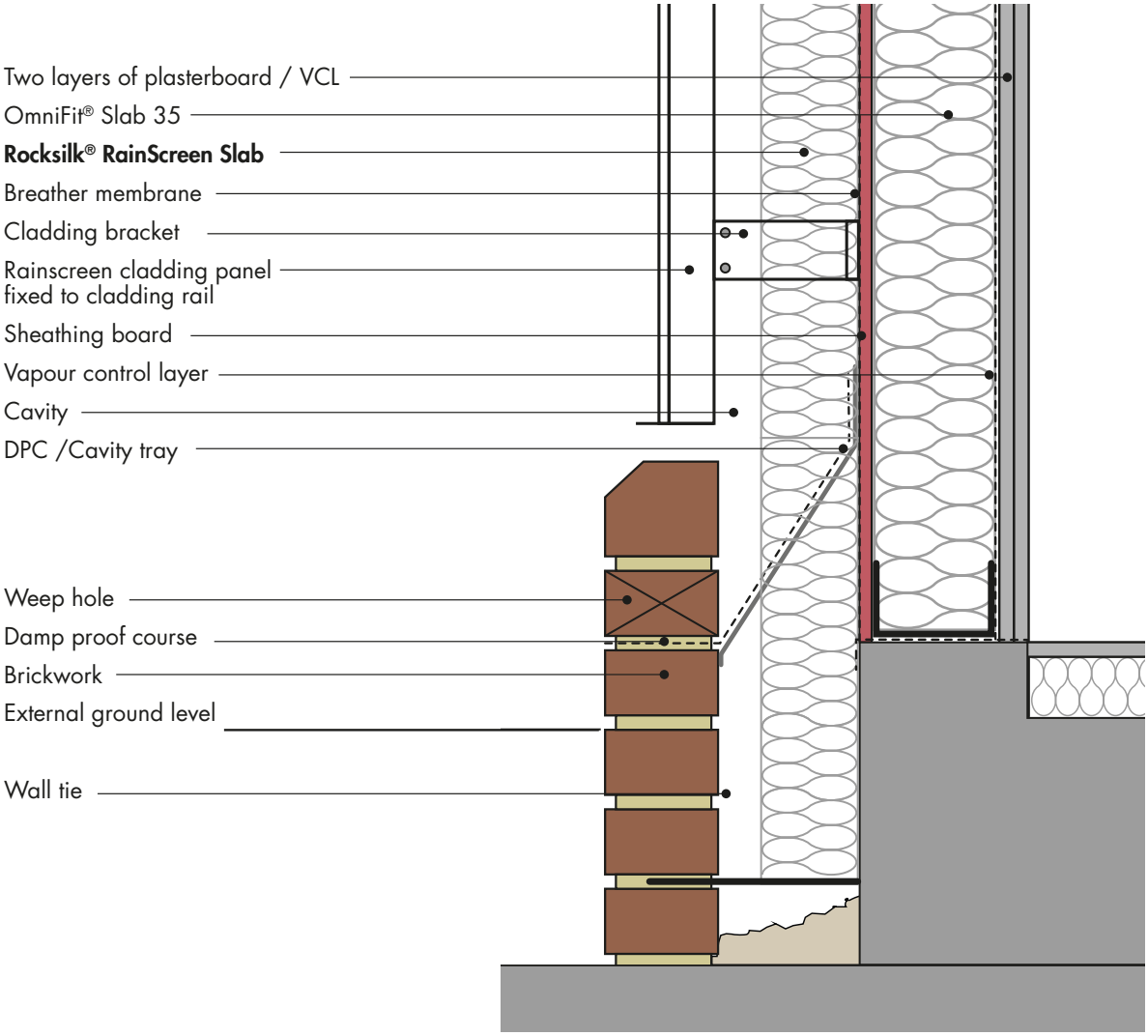
PLACEMENT

ROCKSILK® RAINSCREEN SLAB BELOW DAMP PROOF COURSE

Rocksilk® RainScreen Slab does not absorb water by capillary action and may therefore be used in situations where it bridges the dpc's of the inner and outer leaf.

? To simplify installation



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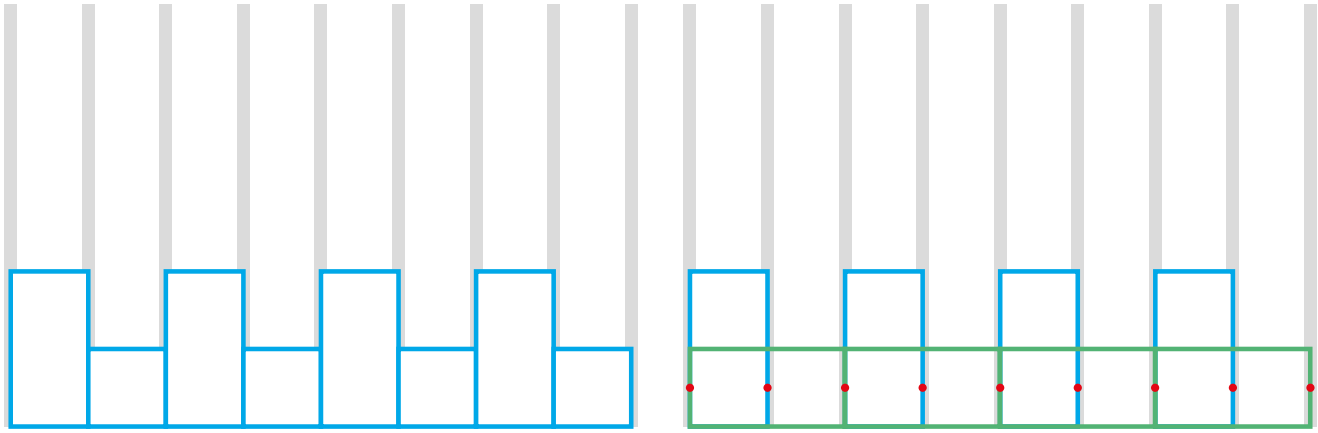
PLACEMENT

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 Slab 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 Slab
- Second layer of Rocksilk® RainScreen Slab
- Fixings

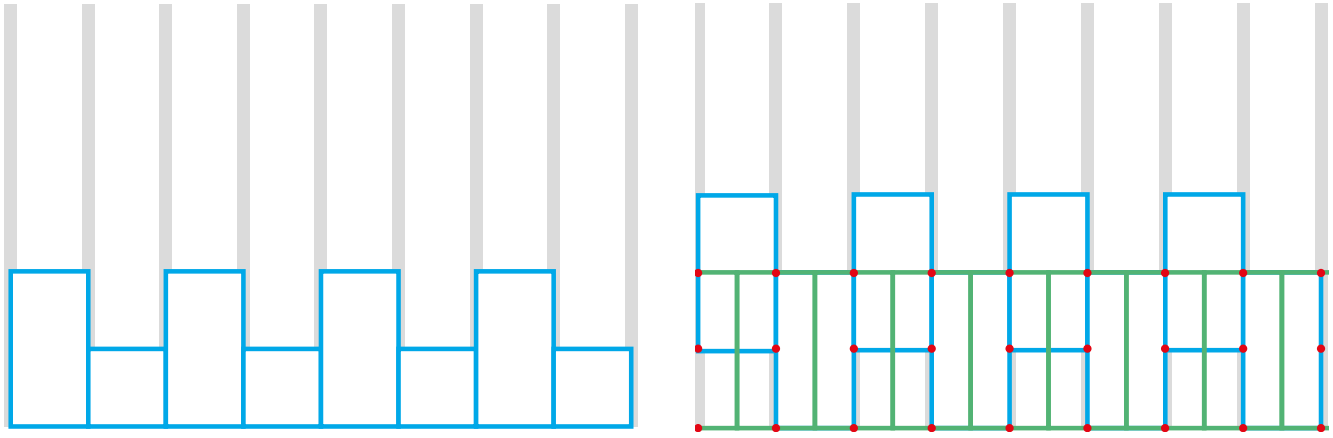
PLACEMENT

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 CP board for additional support
3. The next layer of Rocksilk® RainScreen Slab 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 Slab
- Second layer of Rocksilk® RainScreen Slab
- Fixings

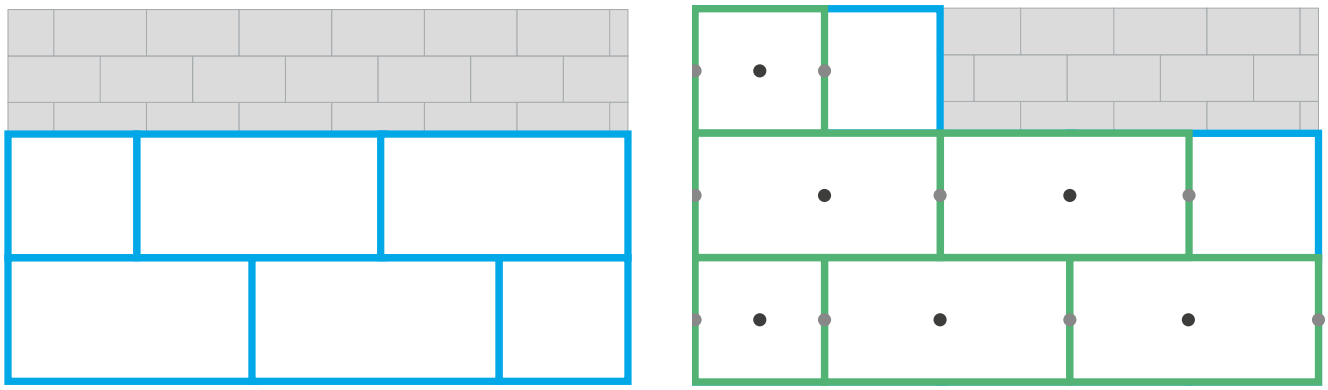
PLACEMENT

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 Slab 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 Slab
Second layer of Rocksilk® RainScreen Slab

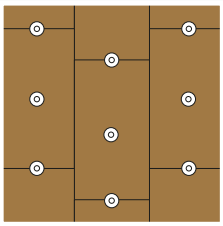
FIXINGS

POLYPROPYLENE AND STAINLESS STEEL WASHERS

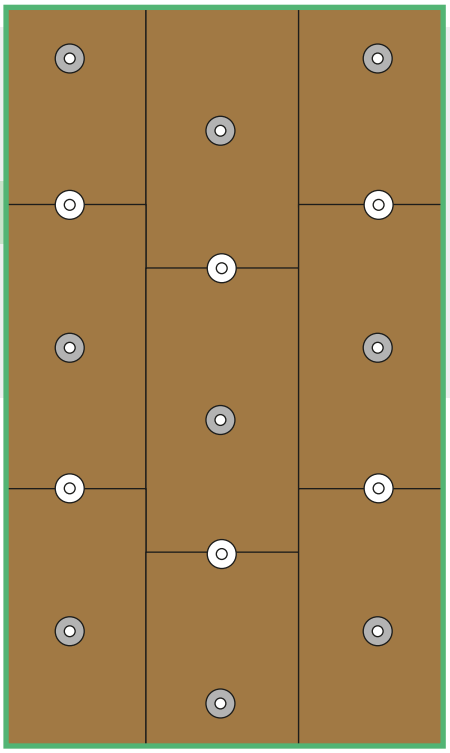
Fix using all stainless steel or a combination of stainless steel and polypropylene washers in accordance with the detailed fixing pattern.

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

All plastic washers



WASHER: Stainless Steel Polypropylene



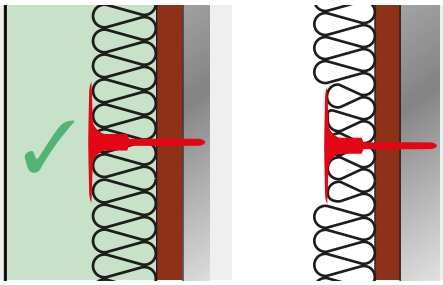
? **Stainless steel washers for fire safety**
Stainless steel washers retain their strength in the event of a fire

Fixing pattern
For fire safety and retention of insulation slab

DON'T OVERTIGHTEN MECHANICAL FIXINGS

Ensure that mechanical fixings are not over tightened, surface compression of the product is not recommended.

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



FIXINGS

FIXINGS TO USE

Exact fixings will depend on the type of substrate. Suitable Fixing Manufacturers:

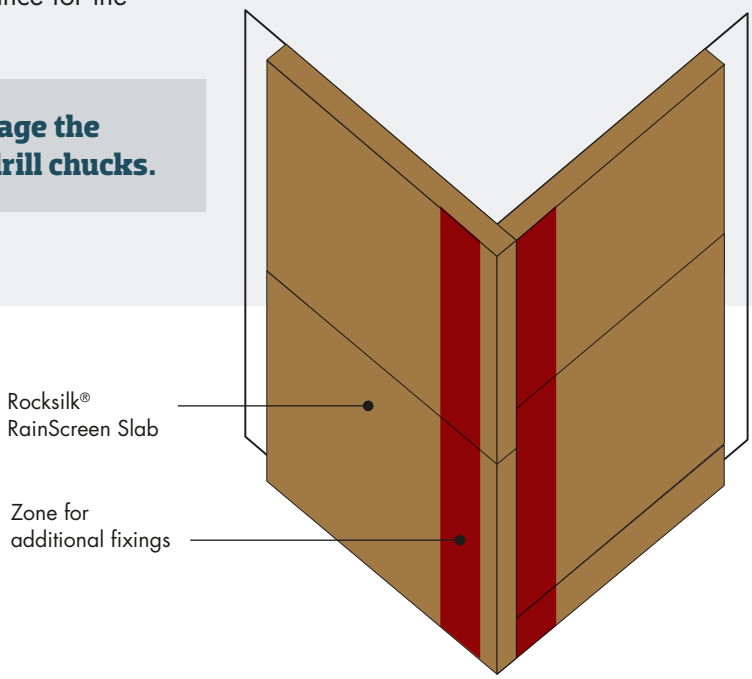
Hilti:	0800 886100	Ejot:	01977 687040
Fischer:	01491 827900	Fixfast:	0800 304 7616

Consult fixing manufacturer guidance. A minimum of one non-combustible fixing should be provided for each slab and must be provided in addition to other fixings. Fixings should be corrosion resistant and provide satisfactory in-service performance for the design life of the building.

! 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.

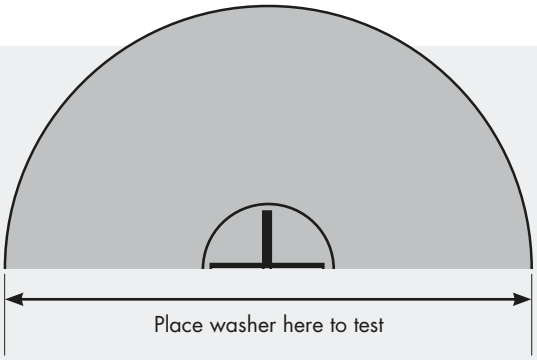


WASHER MINIMUM DIAMETER OF 70MM

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**



FIXINGS

WIND LOADING

Rocksilk® RainScreen Slab has 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.

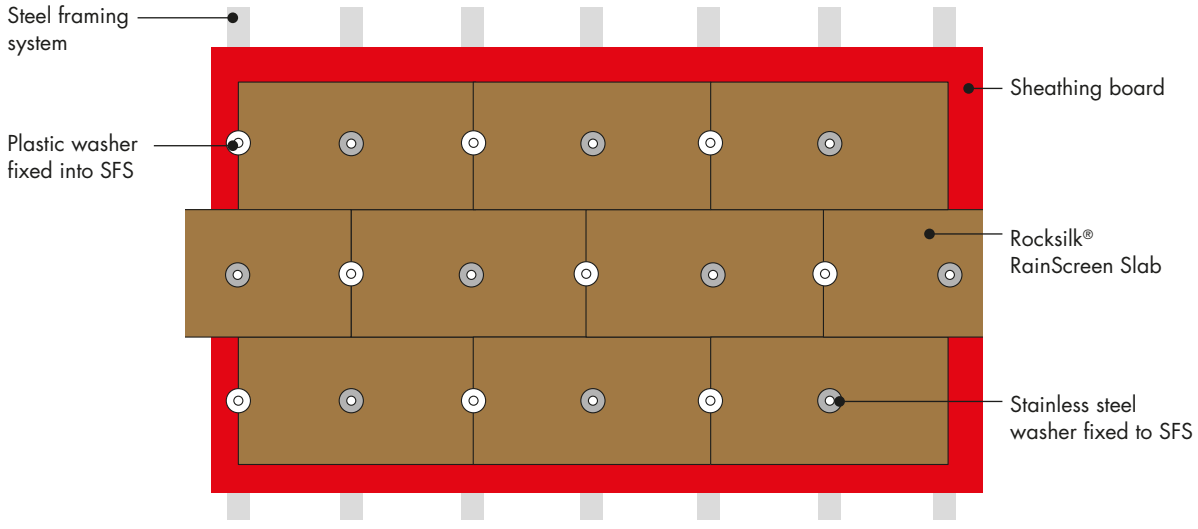
For accurate data on fixings or substrates such as Concrete, Structural Framing Systems, or Cross Laminated Timber please consult individual manufacturers.

FIXINGS

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

Some system manufacturers have included Rocksilk® RainScreen Slab 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 requirement and those detailed in this guidance. If in doubt please consult Knauf Insulation Technical Services.

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.

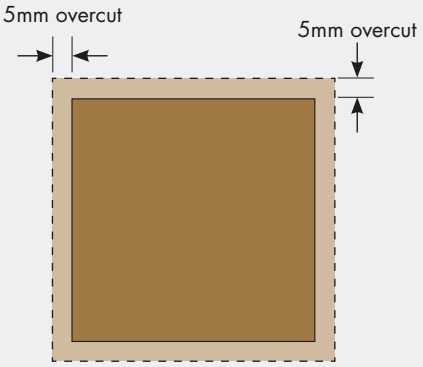


This is an illustrative example of the Knauf UK ThroughWall System only, other build ups are suitable.

CUTTING

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.

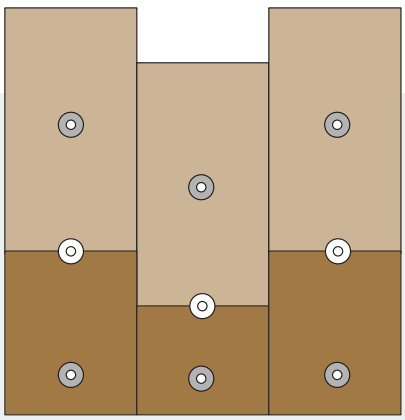
? Gives a factory quality cut and prevents tearing

✓ **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**

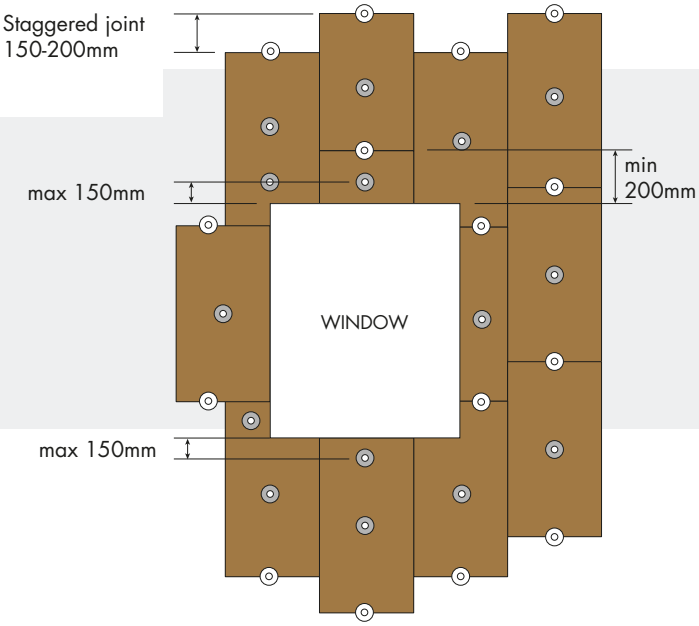
DETAILS

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 slab to 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.

MAINTENANCE

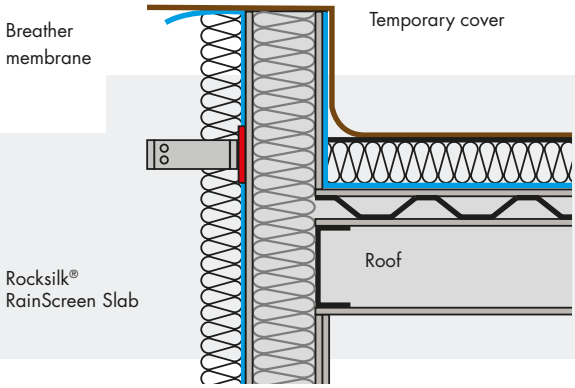
ROLLING FRONT - BEST PRACTICE

Rocksilk® RainScreen Slab is designed to be weather resistant, however wherever possible Rocksilk® RainScreen Slab should be covered up with the cladding as work proceeds, on the basis of an advancing front.

✓ **Cladding 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.

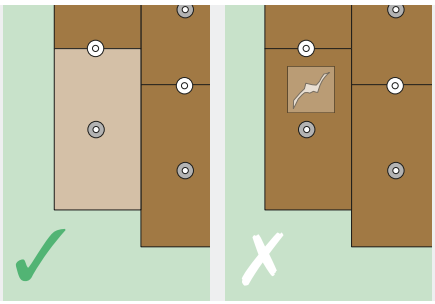


CONSTRUCTION REPAIRS

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**



MAINTENANCE

PRE-INSTALLATION STORAGE ON SITE

Rocksilk® RainScreen Slab is supplied in polythene packs or shrink wrapped pallets which 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.

✓ **Slabs protected from weathering potential**

✗ **Slabs permanently exposed to the elements**

SITE VISIT CHECK LIST ROCKSILK® RAINSCREEN SLAB

System type?	Cladding	Brickwork
Is the product plain or Black Glass Veil facing?	Plain	BGV
Has product been stored off-ground and undercover?:	Yes	No
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
Does product being installed appear dry at the time of survey?	Yes	No
Has a single or double layer of insulation been used?	Yes	No
If double layered, have layers been staggered?	Yes	No
Has the product been mechanically damaged during installation?	Yes	No
Have the slabs been installed in "portrait" or "landscape" orientation?	Portrait	Landscape
Is the primary fixing washer a metal washer?	Yes	No
Is there a minimum of one metal washer on every slab?	Yes	No
Are the secondary fixing washers plastic or metal?	Plastic	Metal
Do washers have a min head diameter of 70mm?	Yes	No
Are all washers fixed so as to be flush with the surface of the slab?	Yes	No
Have additional fixings & washers been used around windows corners and or other features?	Yes	No
Are all slabs closely butted together such that there are no visible gaps between them?	Yes	No
Has the slab been cut to fit neatly over brackets?	Yes	No
Is the insulation bridged by another other component of the construction other than the bracket?	Yes	No
Is there at least a 38mm residual vented cavity if cladding panel joints are baffled or 50mm residual vented cavity if open-jointed or brickwork?	Yes	No
If installed to parapet level has the product been protected?	Yes	No
Have multiple cut pieces been avoided where possible?	Yes	No
Have slab joints been staggered at least 150 - 200mm?	Yes	No
What percentage of the installation is exposed to the elements?		
What percentage of the installation of insulation has been completed?		

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CONTACTS

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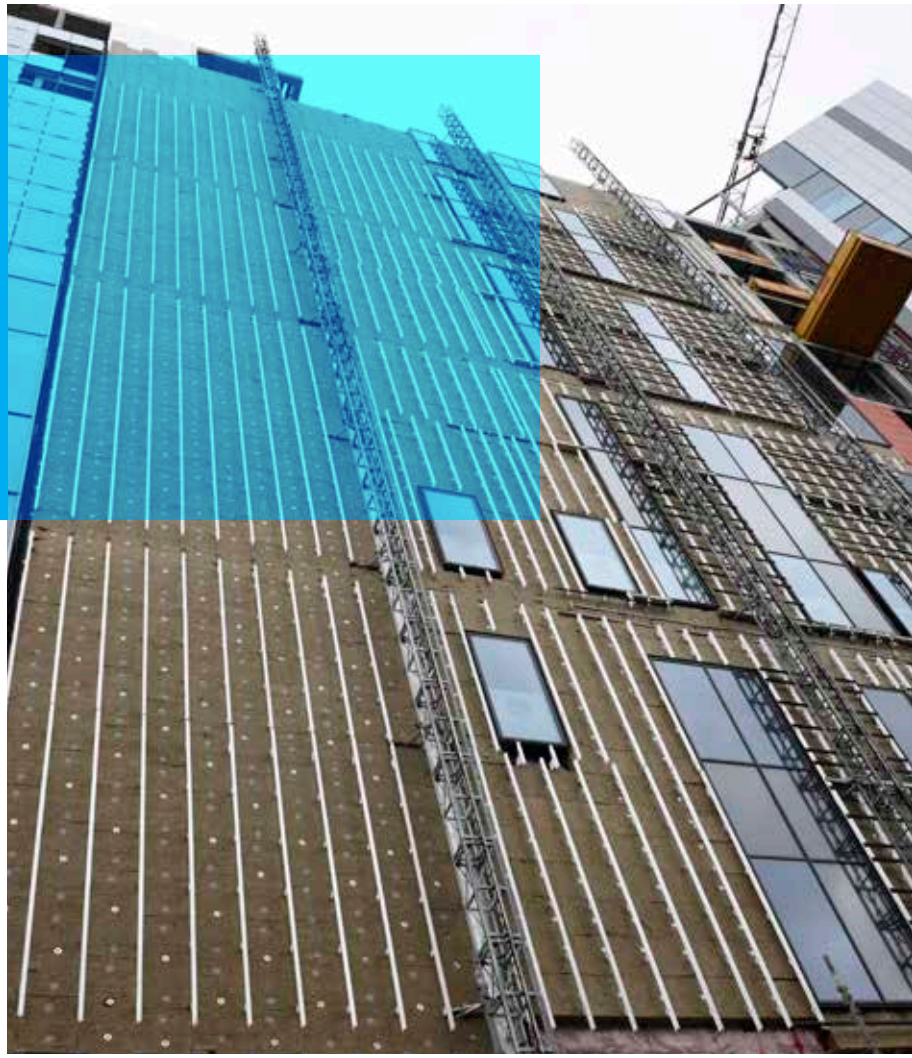

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For more information please visit **knaufinsulation.co.uk**

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