

Installation Instructions

Öko Skin – application as facade cladding

Öko Skin concrete slats are installed as wall panels based on the principle of curtain-type, rear-ventilated facades. In order to ensure a sufficient rear ventilation of the complete system, adequate air circulation must be provided behind the cladding. Rear-ventilated space is required for discharging moisture that comes from inside the building as vapour or has remained inside the structure after precipitation.

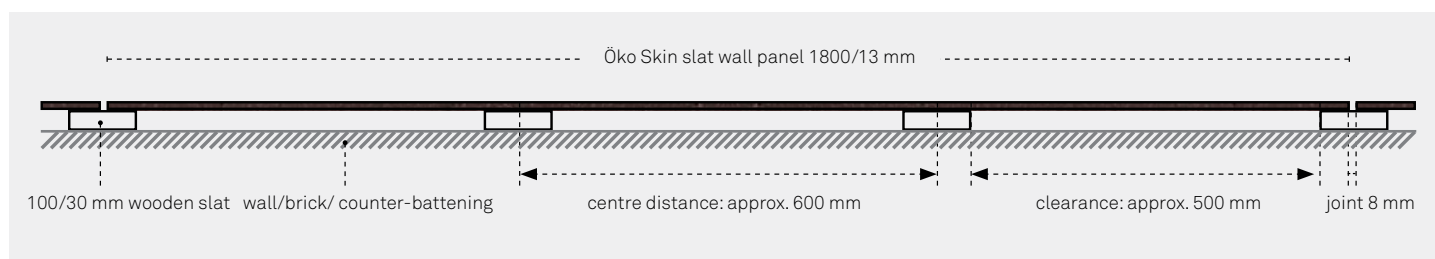
Substructure

The panels must be mounted to a bending-resistant, stable and even substructure. In general Öko Skin is mounted to a simple or double framework of wooden slats (counter and main battening). Alternatively the substructure can also be made of aluminium or other sheet metal profiles. The substructure must be mounted to a suitable solid base, such as brickwork, concrete or wood. The cross section of the slats and the corresponding fasteners must be suitable and adequately dimensioned for the planned function of the facade.

The substructure must be made of sufficiently dried wood (15% +/- 3%) with a cross section of at least 100x30 mm. The use of planed wooden slats is recommended, but not compulsory. The wood used must comply with the guidelines for structural timber acc. to EN 338.

The type of wooden slats used and the distance between slats depend on the desired patterning of the Öko Skin slat wall panels (patterning see next page). If Öko Skin slat wall panels are installed vertically on the ground and first floor of a building under average conditions, the distance between wooden slats should not exceed 600 mm. Owing to the advantages of concrete as a building material, Öko Skin can be mounted down to the floor. To protect the panels against soiling, 300 mm distance from the floor is recommended.

Öko Skin concrete slats with a length of 1800 mm are suitable for a substructure with approx. 600 mm distance between the wooden slats. Every Öko Skin slat must be mounted with at least four fasteners.



Requirements

3.6 slats per m² finished surface incl. joint width are required.

Installation

Öko Skin concrete slats should be installed from the left side to the right side and from the bottom upwards.



Öko Skin Packaging

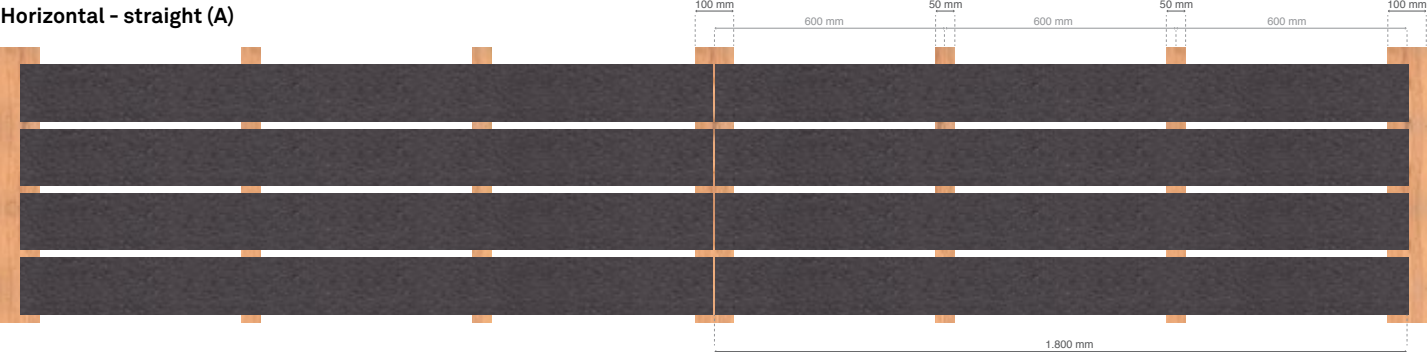
One packing unit contains 23 layers with 5 concrete slats each (115 pc. Öko Skin slats), wrapped and flatly aligned. The slats are packed on euro pallets with a protection plate. Weight per pallet 935 kg. Opened pallets or individual panels must be protected from weather influences (for more information see "Handling Instructions").

Glassfibre concrete is a natural material. The raw materials used for its production create a unique surface finish that is characteristic of concrete. This play of colours within a certain colour shade is intentional and enhances the vivid character of concrete as natural building material. When laying the slats please note that the colour intensity of the individual slats can vary (for more information see "Characteristics"). We recommend the mixing of concrete slats from various pallets and layers for an optimal installation result.

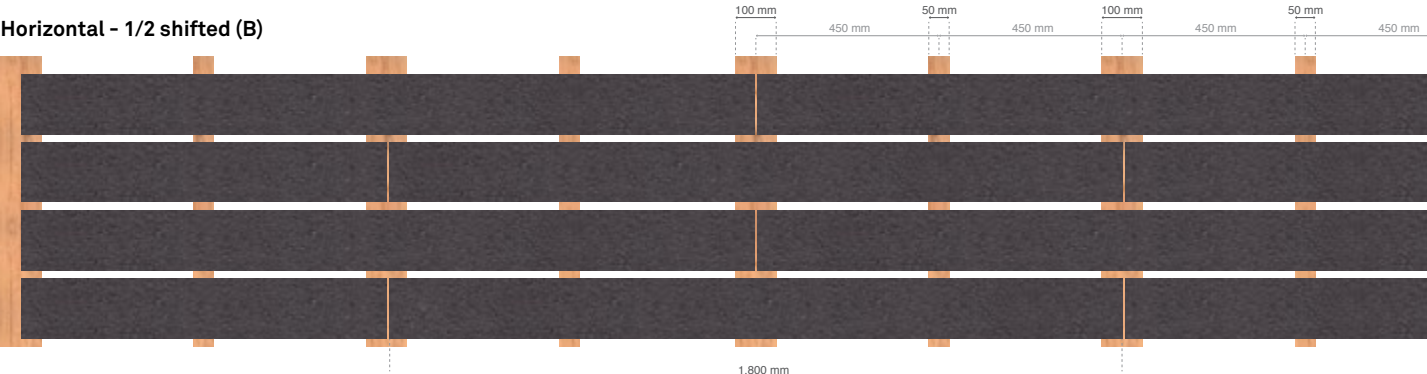
Patterning

The following patterning for wooden substructures should be understood as sketches. They can be applied vertically and horizontally. The type of patterning influences the complexity of substructure and assembly.

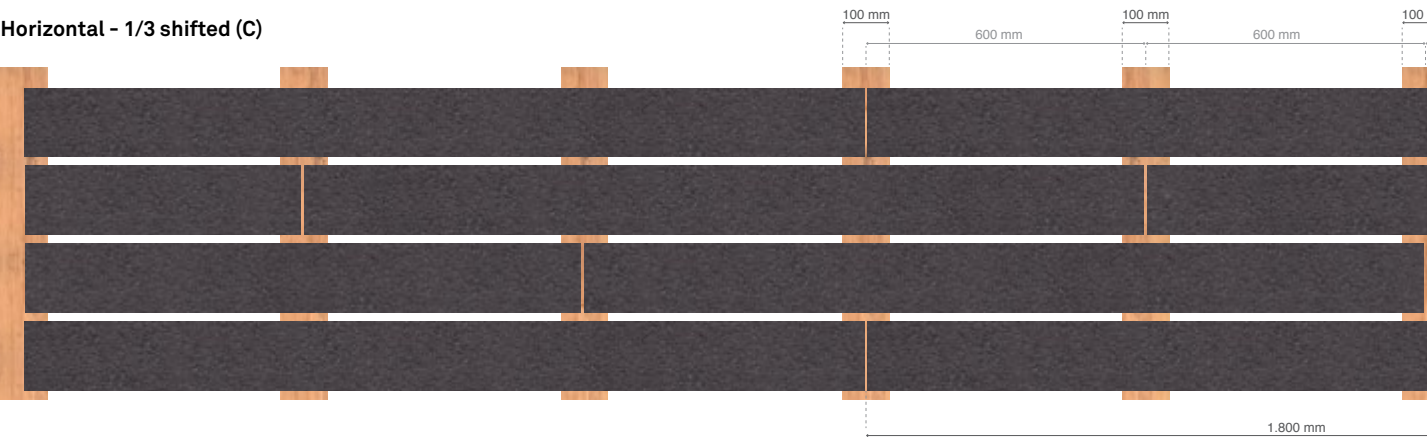
Horizontal - straight (A)



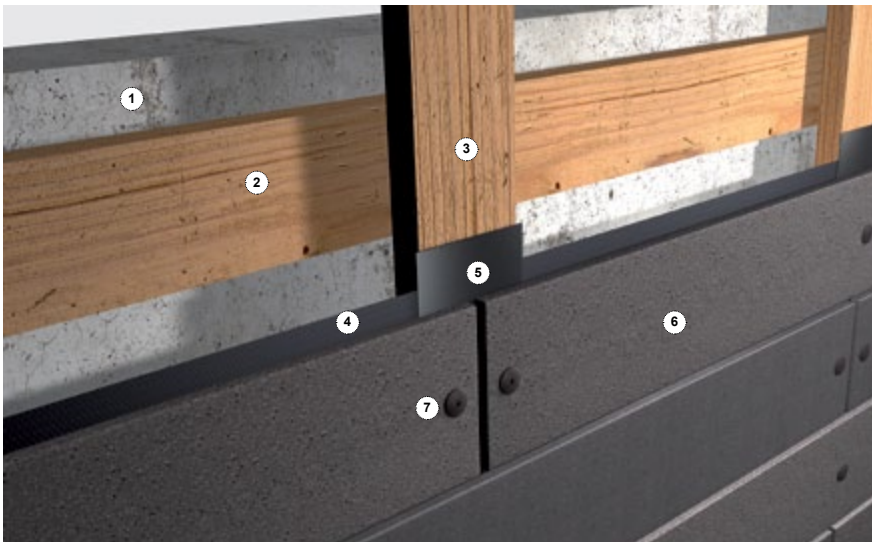
Horizontal - 1/2 shifted (B)



Horizontal - 1/3 shifted (C)

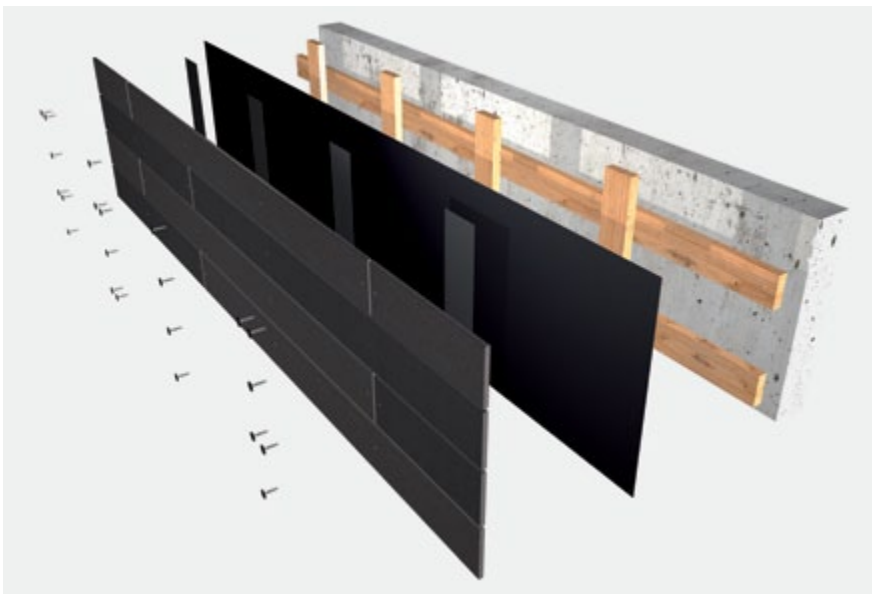


Structural assembly (wooden substructure)



Assemblies

- 1 wall / brickwall
- 2 counter-battening (vertical) e.g. wooden slats, optional insulation
- 3 main battening (horizontal) e.g. wooden slats 100/30 mm, distance between slats depending on patterning 450 - 600 mm
- 4 flexible sheets for waterproofing / protective membrane e.g. DuPont™ Tyvek UV Facade
- 5 waterstop / joint tape e.g. made of rubber, neoprene; width 110 mm
- 6 Öko Skin slat wall panels 1800/147/13 mm
- 7 screw 4,8/38 mm, coated with colour of slat wall; centrally drilling 6 mm
- 8 joint 8 mm



Drilling dimensions

Drill holes made into Öko Skin slats must have a minimum distance of 30 mm from the edge to avoid tearout.

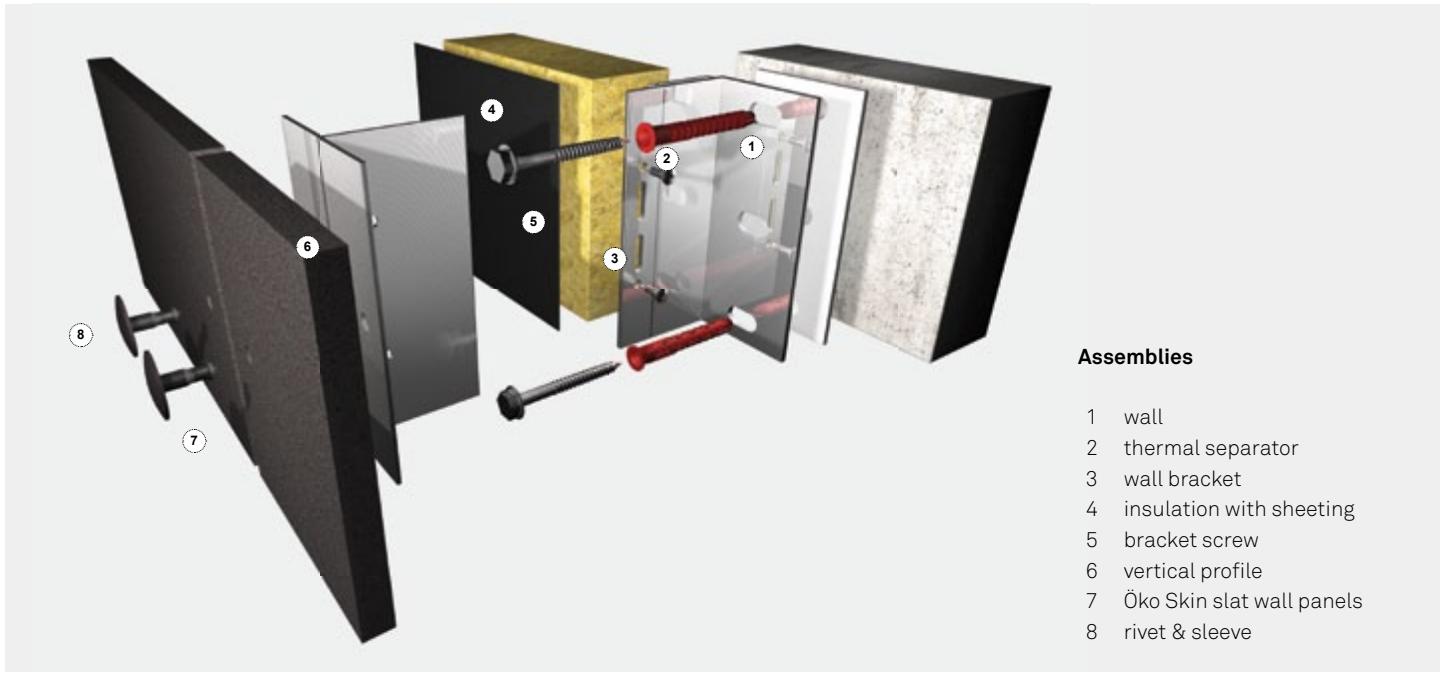
Open corner

Joint width 8 mm

Closed corner

Mitre cut, joint width 5 mm

Structural assembly (rivets on metal substructure)

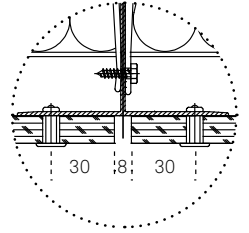


Fastening

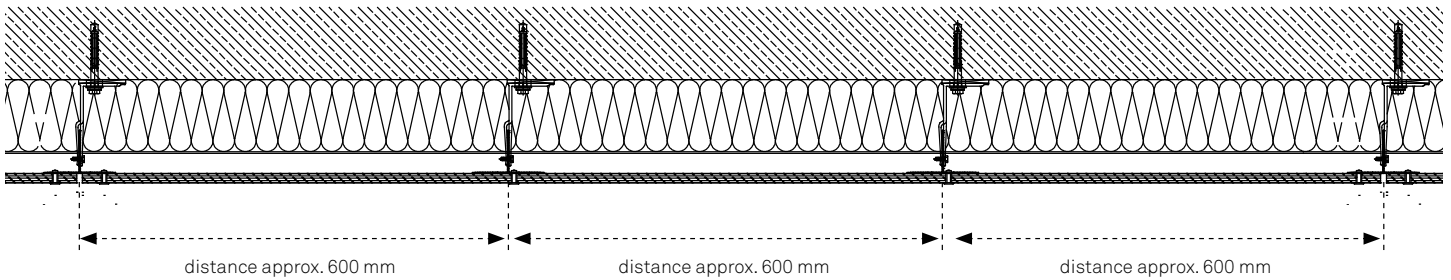
With rivets on vertical aluminium support profiles. Recommended rivets with special colours matching Öko Skin surfaces are available from different fastener manufacturers. Indicate the standard Öko Skin colour used and the manufacturer will give you a matching recommendation for the rivet colour.

Preparation

Holes in the substructure must be drilled using a centre sleeve to ensure the bore hole is centrally aligned. The bore diameter for the substructure is 5.1 mm. Two sleeves must be used per slat and they must usually be arranged in the centre point of the slat. There might be country-specific variations depending on the respective approval. The sleeves fix the panels; they are described as a fixed point. The rivets must be tightened using a rivet template matching the rivets. The rivet template has a load-distributing effect and creates a small clearance between rivet head and cladding board, with the result that movements in the cladding board can be absorbed.



Fastening distances



Cladding rivet aluminium / Niro with head varnish:

Dimension: 5 x 23 mm
 Head diameter: 14 mm
 Clamping range: 14.00 – 17.5 mm
 Bore hole substructure: 5.1 mm
 Bore hole Öko Skin slat: 8 mm

Appropriate sleeves for the rivet:

Article: distance sleeve aluminium
 Dimension: 7.7 mm x 5.1 mm x 12 mm

Decoupling:

The metal substructure must be decoupled as per EN 18516.



Contact for sleeves: www.mwk-components.de

Structural assembly for terrace flooring

Processing

The panels can be cut to size and through-holes can be drilled directly on site; no special tools are required. Öko Skin concrete slats must be processed with care. Concrete slats must be handled in an upright position to avoid swinging or deflection of the panels (see "Handling Instructions").

Cutting

The panels can be cut to size at the building site using a hand-held circular saw equipped with a side bar (e.g. Festool plunge-cut saw TS 55 EBQ-Plus-FS, 5200 rpm, saw blade diameter 160 mm or Festool building materials saw AXT50 LA, 2100 rpm, saw blade diameter 170 mm).

Öko Skin concrete slats can also be cut to size with a bench saw and a diamond saw blade.

Saw blade

A slightly toothed, diamond circular saw blade is recommended for standard cuts, e.g. Focus Diamant Master Sprint Ø 150 mm, acceptance 20mm.

A diamond circular saw blade with diamond impregnation, e.g. Focus Profi Ceramic Ø150 mm or Focus Profi Carmina Turbo or a diamond keyhole saw blade are recommended for very fine cuts, e.g. mitres. Closed diamond impregnation reduces the cutting capacity by approx. 25 %.

Drilling

The standard diameter for through-holes of facade screws 4.8 x 38 mm is 6 mm. We recommend standard stone drills, e.g. a Bosch „BlueGranite“ Ø 6 mm, l = 100 mm drill, for through-holes. The visible side of the panels must face upwards during drilling. For drilling through-holes, a wooden block must be placed underneath the panel to prevent tearout on the bottom side.

We recommend using a cordless screwdriver or a standard drilling machine (not in percussion mode).

Screws

Facade screw e.g. A2, ISR T20, head 12 mm, 4.8 x 38 mm.

Screw heads are painted to match Öko Skin colour shades.

Requirement per m² of finished surface: approx. 16 pc., Packing unit: 250 pc.

Torx insert bit T20 to avoid damaging the powder coating.

We recommend the use of screws with partial thread.

Optional for vertical installation direction: Countersunk screws (stainless steel). Drill holes must be horizontally counterbored according to the diameter of the screw head used.

Screws should not be tightened with too much force to avoid tearout (this applies in particular to holes near the edge). Minimum depth of insertion into the wooden slat: 23 mm.

Important note

Drilling and cutting dust has to be removed immediately and before installation thoroughly to prevent it from damaging or soiling the panel surface.

Safety goggles and a fine dust mask are required for all drilling and cutting work. The use of a vacuum cleaner or compressed air equipment is recommended.



Handling Instructions

Instructions for the correct handling of Öko Skin panels to avoid damage. These handling guidelines have to be complied by all persons and companies involved in the transport and installation of Öko Skin slats.

Storage space

Suitable storage space (dry and level) for Öko Skin concrete slats must be provided already during project planning, e.g. underground car park, warehouse etc. The panels must be placed on an even surface! Pallets must not be stacked upon each other at the building site.

No leaning

Avoid swinging and deflection. Do not place slats on edges or corners without adequate protection (e.g. styro-foam or styrodur).

Protection when stacking panels on top of each other

No stacking of slats without adequate protection between the individual layers. No glassfibre concrete or wood elements may be placed between layers of Öko Skin slats.

Protection from weather influences

Öko Skin slats must be properly stored and protected until installation. Unpack the slats immediately before installing them. Open pallets must be closed again after the removal of slats. The slats must be adequately protected from humidity. The packaging film delivered with the panels does not constitute adequate protection from the weather.

Carefully twist panels – do not pull

Do not push or pull Öko Skin slats from the stack. Always turn the slats before lifting them. Eliminate friction between the slats.

Correct carrying / handling

Concrete slats must be manually handled in upright position! Use protective gloves and wear adequate personal protective equipment (PPE). Avoid swinging and deflection.

Cleaning of panels before installation

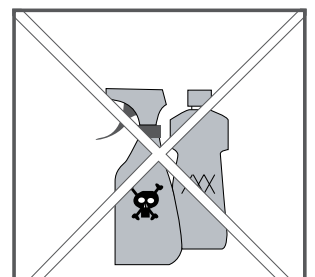
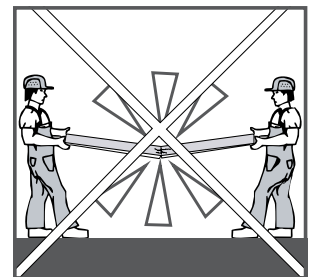
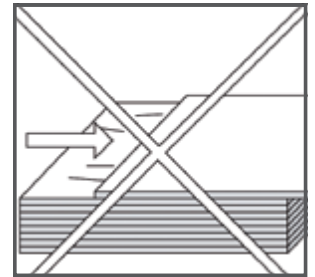
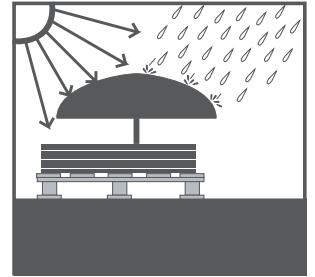
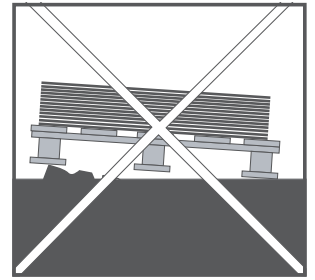
If the panels are cut or drilled on site, cutting and drilling dust has to be removed immediately from the surface to prevent permanent dirt on the panels. Remove the cutting and drilling dust with a hand broom or vacuum cleaner. Make sure that the dust is not spread out over the entire panel surface. In most cases it should be sufficient to blow off the panels with compressed air to remove the remaining dust. Alternatively use the MC-Duroprob B cleaner and wipe the surface with a non-abrasive brush, sponge or microfiber cloth. Then rinse thoroughly with clean water. If the panels are not installed immediately after cleaning ensure that the panels are not stacked while wet. Position the panels at an angle during cleaning. For more details, refer to the "Cleaning Instructions".

Cleaning systems

Do not use chemicals, stream-jet or high-pressure cleaning systems. Water jets with excessive pressure cause stripes on the concrete surface. For normal soiling we recommend the cleaning system MC Duroprob B manufactured by MC-Bauchemie (www.mc-bauchemie.de) or equivalent products.

Important note

All information provided in these instructions is based on the experience of Rieder Smart Elements GmbH and complies with the current state of technology. The scope of supply of Rieder Smart Elements GmbH includes Öko Skin concrete slats and facade screws, but explicitly excludes any assembly materials and sub-constructions. The applications described are examples and do not take into account specific site requirements. Specifications and suitability of the material for the intended purpose must be examined and verified individually for every project. Although we carefully examine the contents we cannot assume any liability for the accuracy, completeness and topicality of the information provided. The same applies to printing errors and subsequent alterations and amendments of technical specifications.



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