

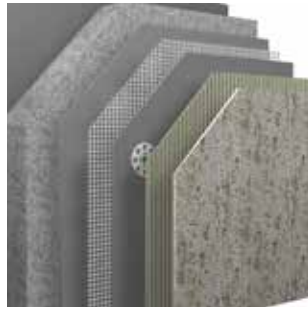


## **Cladding for facade insulation systems**

Application guideline

It should be noted that the details, illustrations, general technical information, and drawings contained in this brochure are only general proposals and details which merely describe the basic functions schematically. They are not dimensionally accurate. The applicator/client is independently responsible for determining the suitability and completeness for the product in question. Neighbouring works are described only schematically. All specifications and information must be adjusted or agreed in the light of local conditions and do not constitute work, detail or installation plans. The technical specifications and product information in the Technical Data Sheets and in system descriptions/certificates must be observed.

# Contents



## System information

<b>StoTherm Vario with cladding</b>	<b>6</b>
System build-up	6
System description	6
<b>StoTherm Mineral with cladding</b>	<b>7</b>
System build-up	7
System description	7
<b>StoVentec C</b>	<b>8</b>
System build-up	8
System description	8
<b>StoVentec S</b>	<b>9</b>
System build-up	9
System description	9
<b>StoVentec M</b>	<b>10</b>
System build-up	10
System description	10
<b>General information</b>	<b>11</b>
Installing insulation systems	11
Planning phase	11
Construction site information	12
Material orders	12
<b>System requirements (EWIS)</b>	<b>13</b>
Planning the joint pattern, insulation, reinforcing coat with glass fibre mesh	13
Fixing/dowelling: General information	13
Fixing/dowelling: Application steps	14
Facade cladding	14
<b>System requirements (RSC)</b>	<b>15</b>
Structural analyses, primer, planning the joint pattern	15
Facade cladding	15



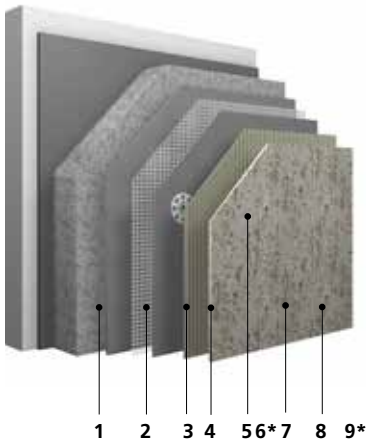
## Applying the system

<b>Preliminary work</b>	<b>16</b>
Substrate check before bonding the cladding	16
Substrate preparation	16
Dividing up the facade	17
<b>StoBrick brick slip</b>	<b>18</b>
Installation	18
<b>Sto-Glass Mosaic</b>	<b>20</b>
Installation	20
<b>Natural stone slab</b>	<b>21</b>
Sampling and tolerances	21
Installation	22
<b>Sto-Ceramic Tiles/Porcelain Stoneware</b>	<b>23</b>
Installation	23
<b>Pointing</b>	<b>24</b>
Types of pointing and joint filling compound (Butt joints and bed joints)	24
Recommended pointing	24
General information	26
Trowel pointing	26
Slurry pointing	27



## StoTherm Vario with cladding

### System build-up



- 1 Bonding: Sto System Plaster**  
Mineral bonding mortar
- 2 Insulation: Sto-Polystyrene Rigid Foam Board**  
(thermal conductivity group 032, 035 and 040)
- 3 Base coat: StoLevell Evo**  
Mineral base coat
- 4 Reinforcing coat with glass fibre mesh: Sto-Glass Fibre Mesh G**
- 5 Fixing**  
Dowelling through the mesh in accordance with wind suction certificate. In addition to that, the requirements of the responsible authorities need to be fulfilled.
- 6 Mineral levelling coat (if required): StoLevell Evo**  
Alternative: StoColl KM (can only level out minor unevenness).
- 7 Adhesive: StoColl KM**  
Mineral bonding mortar in accordance with EN 12004
- 8 Facade cladding**  
**StoBrick, Sto-Natural Stone Tiles, Sto-Rustication Brick Slips, Sto-Silver Quartzite, Sto-Glass Mosaic, ceramic tiles/porcelain stoneware or cast stone**
- 9 Pointing mortar**  
**StoColl FM-K**  
Mineral pointing mortar for trowel pointing  
or  
**StoColl FM-S**  
Mineral pointing mortar for slurry pointing

\*not shown

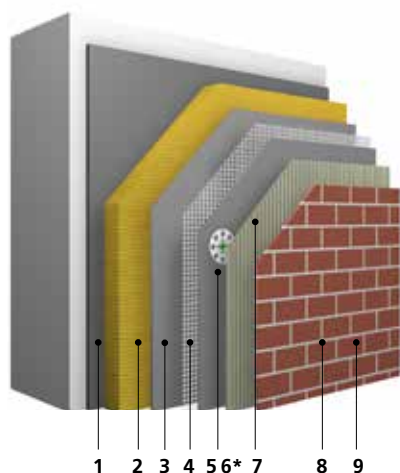
### System description

#### Variable external wall insulation system with a mineral base coat for a wide range of surfaces

<b>System advantages</b>	<ul style="list-style-type: none"> <li>Decorative facade design with ceramics and natural stone</li> <li>Pure mineral coating procedure possible</li> </ul>
<b>Areas of application</b>	<ul style="list-style-type: none"> <li>Installation limits according to national building regulations</li> <li>Existing and new buildings up to high-rise level</li> </ul>
<b>Substrate</b>	<ul style="list-style-type: none"> <li>Masonry such as brick, lime sandstone, fair-faced concrete and facing masonry</li> <li>Concrete</li> </ul>
<b>Fixing</b>	<ul style="list-style-type: none"> <li>Bonding and dowelling</li> </ul>
<b>Thermal protection</b>	<ul style="list-style-type: none"> <li>Insulation board made of EPS up to 200 mm</li> <li>For natural stone and ceramic cladding</li> </ul>
<b>Reaction to fire</b>	<ul style="list-style-type: none"> <li>Limited combustibility</li> <li>B-s1, d0 in accordance with EN 13501-1</li> <li>According to national requirements</li> </ul>
<b>Wind load</b>	<ul style="list-style-type: none"> <li>According to national requirements</li> <li>According to EN 1991-1-4</li> </ul>
<b>Impact resistance</b>	<ul style="list-style-type: none"> <li>Mechanically resistant</li> </ul>
<b>Design possibilities</b>	<ul style="list-style-type: none"> <li>Sto-Natural Stone Tiles, StoBrick, ceramic tiles/slabs</li> </ul>
<b>Colour spectrum</b>	<ul style="list-style-type: none"> <li>Light reflectance value <math>\geq 10</math> % (facade cladding)</li> </ul>
<b>Application</b>	<ul style="list-style-type: none"> <li>Complete detail solutions</li> </ul>

# StoTherm Mineral with cladding

## System build-up



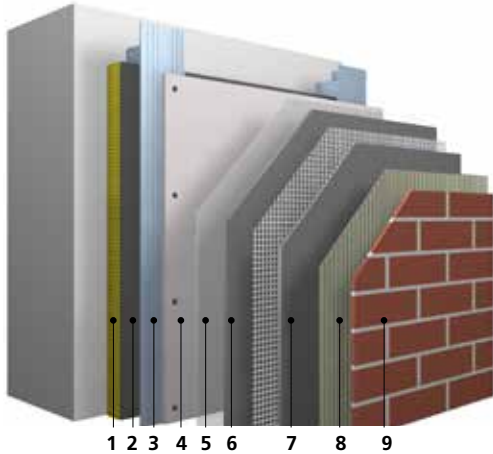
- 1 Bonding: Sto System Plaster**  
Mineral bonding mortar
- 2 Insulation: Sto-Stone Wool Insulation Board 040**  
Insulation board made of stone wool in accordance with EN 13162
- 3 Base coat: StoLevell Evo**  
Mineral base coat
- 4 Reinforcing coat with glass fibre mesh: Sto-Glass Fibre Mesh G**
- 5 Fixing**  
Dowelling through the mesh in accordance with wind suction certificate. In addition to that, the requirements of the responsible authorities need to be fulfilled.
- 6 Mineral levelling coat (if required): StoLevell Uni**  
Alternative: StoColl KM (can only level out minor unevenness).
- 7 Adhesive: StoColl KM**  
Mineral bonding mortar in accordance with EN 12004
- 8 Facade cladding**  
**StoBrick, Sto-Natural Stone Tiles, Sto-Rustication Brick Slips, Sto-Silver Quartzite, Sto-Glass Mosaic,** ceramic tiles/porcelain stoneware or cast stone
- 9 Pointing mortar**  
**StoColl FM-K**  
Mineral pointing mortar for trowel pointing  
or  
**StoColl FM-S**  
Mineral pointing mortar for slurry pointing

\*not shown

## System description

Non-combustible external wall insulation system especially suitable for high-rise and public buildings	
<b>System advantages</b>	<ul style="list-style-type: none"> <li>• Non-combustible</li> <li>• Decorative facade design with ceramics and natural stone</li> <li>• Pure mineral coating procedure possible</li> </ul>
<b>Areas of application</b>	<ul style="list-style-type: none"> <li>• Installation limits according to national building regulations</li> <li>• Existing buildings and new buildings</li> <li>• Especially suitable for high-rise buildings, public buildings and special constructions</li> </ul>
<b>Substrate</b>	<ul style="list-style-type: none"> <li>• Masonry such as brick, lime sandstone, fair-faced concrete and facing masonry</li> <li>• Concrete</li> </ul>
<b>Fixing</b>	<ul style="list-style-type: none"> <li>• Bonding and dowelling</li> </ul>
<b>Thermal protection</b>	<ul style="list-style-type: none"> <li>• Insulation board made of mineral wool up to 200 mm</li> <li>• For natural stone and ceramic claddings</li> </ul>
<b>Reaction to fire</b>	<ul style="list-style-type: none"> <li>• Non-combustible</li> <li>• A2-s1, d0 in accordance with EN 13501-1</li> </ul>
<b>Wind load</b>	<ul style="list-style-type: none"> <li>• According to national requirements</li> <li>• According to EN 1991-1-4</li> </ul>
<b>Impact resistance</b>	<ul style="list-style-type: none"> <li>• Mechanically resistant</li> </ul>
<b>Design possibilities</b>	<ul style="list-style-type: none"> <li>• Sto-Natural Stone Tiles, StoBrick, ceramic tiles/slabs</li> </ul>
<b>Colour spectrum</b>	<ul style="list-style-type: none"> <li>• Light reflectance value <math>\geq 5\%</math> (facade cladding)</li> </ul>
<b>Application</b>	<ul style="list-style-type: none"> <li>• Complete detail solutions</li> </ul>

## System build-up



### 1 Insulation: Sto-Stone Wool Insulation Board

RSC insulation board made of mineral wool according to DIN 4108-10, type WAB, non-combustible. Thickness variable: depends on the thermal insulation requirements

### 2 Sub-construction

Sub-construction made of timber or stainless steel/aluminium for fixing the render carrier boards. Is anchored into the substrate with dowels generally approved by the construction supervision.

### 3 Carrier board: StoVentec carrier board/StoVentec carrier board A

Carrier board made of recycled glass (expanded glass granulate), mesh-reinforced on both sides, 12 mm thick, format 1.20 x 0.80 m and 1.20 x 2.40 m; low weight (approx. 6 kg/m<sup>2</sup>), frost-resistant, limited combustibility within the system B1 according to DIN 4102/non-combustible A2-s1, d0 according to DIN EN 13501-1

### 4 Primer: Sto-Primer

Filled organic priming paint coat, adhesion-promoting, absorbency-regulating

### 5 Base coat: StoLevel Evo

Mineral base coat

### 6 Reinforcing coat with glass fibre mesh: Sto-Glass Fibre Mesh

### 7 Adhesive: StoColl KM

Mineral bonding mortar in accordance with EN 12004

### 8 Facade cladding: StoBrick

Alternative: ceramic tiles/porcelain stoneware

### 9 Pointing mortar

#### StoColl FM-K

Mineral pointing mortar for trowel pointing  
or

#### StoColl FM-S

Mineral pointing mortar for slurry pointing

## System description

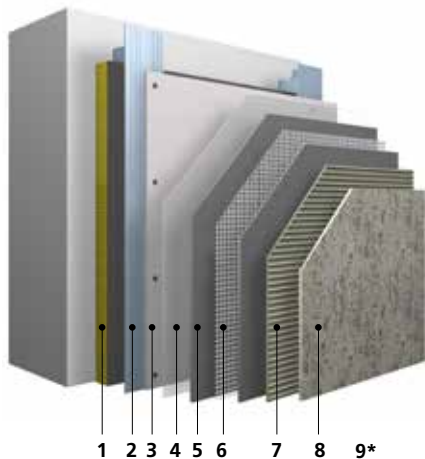
### Ventilated rainscreen cladding facade with ceramics

<b>System advantages</b>	<ul style="list-style-type: none"> <li>Physical benefits to the building thanks to rear ventilation of the facade (humidity, sound and thermal protection in summer)</li> <li>Levels unevenness by means of a flexible sub-construction</li> <li>Lowest thermal bridge coefficients due to own sub-construction made from a combination of stainless steel and aluminium</li> <li>Passive house certified, sub-construction free from thermal bridges possible</li> <li>Highly weather-resistant</li> </ul>
<b>Areas of application</b>	<ul style="list-style-type: none"> <li>Existing buildings and new buildings</li> <li>Suitable and certified for passive house standard</li> <li>Large wall structures (e.g. &gt; 60 cm) possible</li> </ul>
<b>Substrate</b>	<ul style="list-style-type: none"> <li>Masonry such as brick, lime sandstone, porous concrete, fair-faced concrete and facing masonry</li> <li>Light wall constructions</li> <li>Concrete</li> </ul>
<b>fixing</b>	<ul style="list-style-type: none"> <li>Sub-construction made of a stainless steel / aluminium combination</li> <li>In timber frame construction with timber supporting lathing</li> </ul>
<b>Thermal protection</b>	<ul style="list-style-type: none"> <li>Fleece-laminated mineral wool</li> </ul>
<b>Reaction to fire</b>	<ul style="list-style-type: none"> <li>Limited combustibility, B1 in accordance with DIN 4102-1</li> <li>Non-combustible with StoVentec carrier board A and mineral coating procedure; A2-s1, d0 in accordance with EN 13501 (D))</li> </ul>
<b>Impact resistance</b>	<ul style="list-style-type: none"> <li>Highly mechanically resistant</li> </ul>
<b>Sound protection</b>	<ul style="list-style-type: none"> <li>Improvement of up to 10 dB (A) in the airborne sound insulation index</li> </ul>
<b>Design possibilities</b>	<ul style="list-style-type: none"> <li>Brick slips, ceramics</li> </ul>
<b>Colour spectrum</b>	<ul style="list-style-type: none"> <li>Extensive selection of colours, see e.g. StoBrick</li> </ul>
<b>Application</b>	<ul style="list-style-type: none"> <li>Complete detail solutions</li> <li>Fast installation</li> </ul>
<b>Approvals/standards</b>	<ul style="list-style-type: none"> <li>The relevant European and/or national approvals apply.</li> </ul>



# StoVentec S

## System build-up



### 1 Insulation: Sto-Stone Wool Insulation Board

RSC insulation board made of mineral wool according to DIN 4108-10, type WAB, non-combustible. Thickness variable: depends on the thermal insulation requirements

### 2 Sub-construction

Sub-construction made of timber or stainless steel/aluminium for fixing the render carrier boards. Is anchored into the substrate with dowels generally approved by the construction supervision.

### 3 Carrier board: StoVentec carrier board/StoVentec carrier board A

Carrier board made of recycled glass (expanded glass granulate), mesh-reinforced on both sides, 12 mm thick, format 1.20 x 0.80 m and 1.20 x 2.40 m; low weight (approx. 6 kg/m<sup>2</sup>), frost-resistant, limited combustibility within the system B1 according to DIN 4102/non-combustible A2-s1, d0 according to DIN EN 13501-1

### 4 Primer: Sto-Primer

Filled organic priming paint coat, adhesion-promoting, absorbency-regulating

### 5 Base coat: StoLevell Evo

Mineral base coat

### 6 Reinforcing coat with glass fibre mesh: Sto-Glass Fibre Mesh

### 7 Adhesive: StoColl KM

Mineral bonding mortar in accordance with EN 12004

### 8 Facade cladding

Sto-Natural Stone, Sto-Rustication Brick Slips, Sto-Silver Quartzite, or cast stone

### 9 Pointing mortar

#### StoColl FM-K

Mineral pointing mortar for trowel pointing or

#### StoColl FM-S

Mineral pointing mortar for slurry pointing

\*not shown

## System description

### Ventilated rainscreen cladding system with natural stone panel tiles

#### System advantages

- For the decorative design of individual, true-to-original natural stone surfaces
- Physical benefits to the building thanks to rear ventilation of the facade (humidity, sound and thermal protection in summer)
- Levels unevenness by means of a flexible sub-construction
- Lowest thermal bridge coefficients due to own sub-construction made from a combination of stainless steel and aluminium
- Passive house certified, sub-construction free from thermal bridges possible
- Highly weather-resistant

#### Areas of application

- Existing buildings and new buildings
- Suitable and certified for passive house standard
- Large wall structures (e.g. > 60 cm) possible

#### Substrate

- Masonry such as brick, lime sandstone, porous concrete, fair-faced concrete and facing masonry
- Light wall constructions
- Concrete

#### fixing

- Sub-construction made of a stainless steel / aluminium combination
- In timber frame construction with timber supporting lathing

#### Thermal protection

- Fleece-laminated mineral wool

#### Reaction to fire

- Limited combustibility, B1 in accordance with DIN 4102-1
- Non-combustible with StoVentec carrier board A and mineral coating procedure; A2-s1, d0 in accordance with EN 13501 (D)

#### Impact resistance

- Highly mechanically resistant

#### Sound protection

- Improvement of up to 10 dB (A) in the airborne sound insulation index

#### Design possibilities

- Sto-Natural Stone Tiles
- Surface polished, honed, sand-blasted, or brushed, edges bevelled as standard (also without bevel on request)

#### Colour spectrum

- Wide selection of colours due to various natural stones, e.g. Sto-Fossil Bavaria Yellow, Sto-Fossil SKL, Sto-Granite Bianco Ozieri, Sto-Granite Final Red, Sto-Gneis Dark Green, Sto-Gabbro Nero Transvaal, Sto-Gabbro Super Dark

#### Application

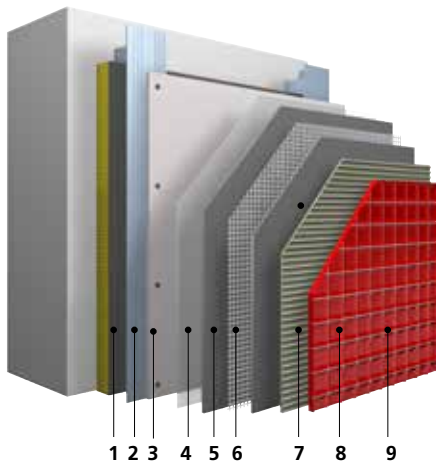
- Complete detail solutions
- Fast installation

#### Approvals/standards

- The relevant European and/or national approvals apply.

# StoVentec M

## System build-up



- 1 Insulation: Sto-Mineral Fibre Board** RSC insulation board made of mineral wool according to DIN 4108-10, type WAB, non-combustible. Thickness variable: depends on the thermal insulation requirements
- 2 Sub-construction**  
Sub-construction made of timber or stainless steel/aluminium for fixing the render carrier boards. Is anchored into the substrate with anchoring elements generally approved by the construction supervision
- 3 Carrier board: StoVentec carrier board/StoVentec carrier board A**  
Carrier board made of recycled glass (expanded glass granulate), mesh-reinforced on both sides, 12 mm thick, format 1.20 x 0.80 m and 1.20 x 2.40 m; low weight (approx. 6 kg/m<sup>2</sup>), frost-resistant, limited combustibility within the system B1 according to DIN 4102/non-combustible A2-s1, d0 according to DIN EN 13501-1
- 4 Primer: Sto-Primer**  
Filled organic priming paint coat, adhesion-promoting, absorbency-regulating
- 5 Base coat: StoLevell Evo**  
Mineral base coat
- 6 Reinforcing coat with glass fibre mesh: Sto-Glass Fibre Mesh**
- 7 Adhesive: StoColl KM**  
Mineral bonding mortar in accordance with EN 12004
- 8 Facade cladding: Sto-Glass Mosaic**
- 9 Pointing mortar: StoColl FM-S**  
Mineral pointing mortar for slurry pointing

## System description

### Ventilated rainscreen cladding facade with glass mosaic

<b>System advantages</b>	<ul style="list-style-type: none"> <li>For the decorative design of individual, gloss surfaces made of glass mosaic</li> <li>Physical benefits to the building thanks to rear ventilation of the facade (humidity, sound and thermal protection in summer)</li> <li>Levels unevenness by means of a flexible sub-construction</li> <li>Lowest thermal bridge coefficients due to own sub-construction made from a combination of stainless steel and aluminium</li> <li>Passive house certified, sub-construction free from thermal bridges possible</li> <li>Highly weather-resistant</li> </ul>
<b>Areas of application</b>	<ul style="list-style-type: none"> <li>Existing buildings and new buildings</li> <li>Suitable and certified for passive house standard</li> <li>Large wall structures (e.g. &gt; 60 cm) possible</li> </ul>
<b>Substrate</b>	<ul style="list-style-type: none"> <li>Masonry such as brick, lime sandstone, porous concrete, fair-faced concrete and facing masonry</li> <li>Light wall constructions</li> <li>Concrete</li> </ul>
<b>fixing</b>	<ul style="list-style-type: none"> <li>Sub-construction made of a stainless steel / aluminium combination</li> <li>In timber frame construction with timber supporting lathing</li> </ul>
<b>Thermal protection</b>	<ul style="list-style-type: none"> <li>Fleece-laminated mineral wool</li> </ul>
<b>Reaction to fire</b>	<ul style="list-style-type: none"> <li>Limited combustibility, B1 in accordance with DIN 4102-1</li> <li>Non-combustible with StoVentec carrier board A and mineral coating procedure; A2-s1, d0 in accordance with EN 13501 (D))</li> </ul>
<b>Impact resistance</b>	<ul style="list-style-type: none"> <li>Highly mechanically resistant</li> </ul>
<b>Sound protection</b>	<ul style="list-style-type: none"> <li>Improvement of up to 10 dB (A) in the airborne sound insulation index</li> </ul>
<b>Design possibilities</b>	<ul style="list-style-type: none"> <li>Sto-Glass Mosaic (glass mosaic tile)</li> <li>Gloss surface with depth effect</li> </ul>
<b>Colour spectrum</b>	<ul style="list-style-type: none"> <li>Wide selection of brilliant colour shades</li> </ul>
<b>Application</b>	<ul style="list-style-type: none"> <li>Complete detail solutions</li> <li>Fast installation</li> <li>Curves can be implemented</li> </ul>
<b>Approvals/standards</b>	<ul style="list-style-type: none"> <li>The relevant European and/or national approvals apply.</li> </ul>

### Installing insulation systems

Refer to the corresponding national application guideline for the application steps which relate to the insulation system. The System requirements (WDVS) and System requirements (RSC) chapters in this document describe deviations from the usual application guidelines. Natural deviations in application guidelines might occur.

### Planning phase

When planning an insulated facade construction, select a system that suits the properties and use of the building. Aesthetic criteria are secondary to technical requirements, unless otherwise agreed.

Facade claddings such as ceramics, natural stone slabs, or glass mosaic have no sealing function.

#### **Depending on the use, please note:**

- Normative standards – mandatory
- Construction conditions
- Building physical requirements
- Sound limitation requirements
- Mechanical stresses
- Thermal stresses
- Chemical stresses
- Stresses caused by all types of water
- Weather-related stresses
- Cleaning and maintenance
- Aesthetic appeal
- Ecological aspects

#### **Division of the facade cladding**

Field demarcation joints in the covering surface affect the appearance of the whole building. So already during the planning phase, make sure that the division of the facade suits the joint pattern of the facade cladding. This needs to be ensured through cooperation between the executing trades (planners, applicators, sealers and system supplier).

#### **Built-in parts**

Built-in parts, such as windows, doors, lighting structures, and scaffolding, must not be fixed to the facade cladding. They must be anchored in the load-bearing part of the structure and separated from the facade cladding by means of connection joints. Establish rain-proof, wind-proof, sound-insulating, and thermally insulating connections between built-in parts and the structure before installing the facade cladding.

Due to the horizontal joints running around the building, height differences between built-in parts (e.g. windows) become particularly apparent. Pay particular attention to this during the planning and execution of the built-in parts and check again before installing the insulation system. This also applies to vertical alignment of built-in parts for joints running vertically along the building.

## General information

### Construction site information

#### Storage

The facade cladding is delivered to the construction site on pallets. It needs to be stored off the floor and horizontally, and needs to be protected against the effects of the weather (sun, rain, etc.) and soiling.

#### Climatic conditions for installation work

The air and material temperatures (boards and cladding material) as well as the surface temperature of the substrate need to stay between 5–30 °C when carrying out the work and while the mortar products are curing.

While carrying out the work, the weather conditions should remain settled.

- No direct sunlight
- Wind not too strong
- No exposure to moisture caused by rain

#### Weather protection

A facade is never evenly exposed to sunshine and rain. This is why we recommend weather protection, e.g. tarpaulins/nets. Protection against the effect of the weather needs to be ensured during and after processing - for an appropriate period of time. Fluctuating boundary conditions lead to the mineral mortar hardening unevenly. This could cause visible colour differences to appear. Furthermore, the risk that bloom defects will occur increases.

In addition to that, the quality of the pointing mortar can differ, something which is not directly visible. Thus for example, aftereffects such as fine crack formation or increased water absorption can occur.

Uneven effects of rain can, for example, also occur due to:

- Rain water which drips all over the facade due to missing downpipes
- Rain water which sprays off the scaffolding onto the facade
- Components which vary in the way they direct rain water over the facade (window sills, cornices, etc.)

### Material orders

Only one material order should be made for each construction project to avoid batch differences. This applies in particular to cladding and pointing mortar.

If for organisational reasons, partial deliveries should become necessary, then every order needs to be made with reference to the construction project.

#### Determining quantities taking StoBrick brick slips as an example

	Normal format (NF)	Thin format (DF)	Herring-bone format (HF)	Danish format (DK)
Length in mm	240	240	240	228
Height in mm	71	52	50	54
Joint thickness (bed joint) in mm	12	10.5	8.8	12
Layer thickness in mm	83	62.5	58.8	66
Surface area requirements in pc./m <sup>2</sup>	48	64	72	63
Corner brick slip requirements in pc./m	12	16	17	16

\*To determine the corner brick slip requirements, you need to take the following into consideration:

- Building corner (vertically and horizontally),
- Building apertures (vertical and horizontal).

## System requirements (EWIS)

### Planning the joint pattern, insulation, reinforcing coat with glass fibre mesh

In the following, the special system requirements for perfect implementation of facade cladding on an external wall insulation system (EWIS) are described. The relevant European and/or national approvals apply for the planning and execution of external wall insulation systems.

#### Planning the joint pattern

When planning joint patterns, it is imperative to take the necessary system joints (field demarcation joints and connection joints e.g. on building apertures) into consideration. For further information on this, see page 18 as well as the chapter on application details.

#### Insulation

The insulation boards used for insulation need to meet specific requirements regarding transverse tensile strength and rigidity modulus. The following insulation boards are suitable for an EWIS with facade cladding:

- Sto-Polystyrene Rigid Foam Board  
Lateral strength TR  $\geq$  100 kPa (EN 1607)  
(up to 300 mm)
- Sto-Stone Wool Insulation Board  
Lateral strength TR  $\geq$  7.5 kPa (EN 1607)  
(up to 240 mm)

#### Bonding the insulation boards



The bonded proportion of the board needs to be  $\geq$  60 %. Apply the adhesive with dots and around the edge as follows: Draw a line of adhesive around the edge and distribute at least 6 spots of glue symmetrically over the back of the insulation plate.

#### Reinforcing coat with glass fibre mesh

With an EWIS with facade cladding, you need to use Sto-Glass Fibre Mesh G. Sto-Glass Fibre Mesh G has the following properties:

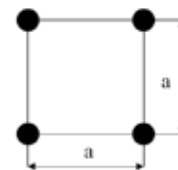
- Mesh width of mesh: 7 x 8 mm
- Surface weight: 210 g/m<sup>2</sup>
- Tensile strength:  $\geq$  2.4 kN/5 cm

### Fixing/dowelling: general information

Only use screw dowels with a dowel plate diameter of 60 mm with European Technical Approval or national usage approval. Carry out dowelling through the mesh or the reinforced base coat. When dowelling through the mesh, ensure that the dowels are drawing into the mortar which is still soft. This can be done in a fresh state or directly on the next day. A requirement for this is that the base coat is still malleable.

The number of dowels per m<sup>2</sup> is determined according to European Technical Approval or a national application approval depending on the system load class and dowel load class. This results in the following dowel spacing:

Number of dowels St./ m <sup>2</sup>	Dowel spacing a (cm)
2	71
3	58
4	50
5	45
6	41
7	38
8	35
9	33
10	32
11	30
12	29
13	28
14	27



## System requirements (EWIS)

### Fixing/dowelling: Application steps



On the day after applying the reinforcing coat with glass fibre mesh, place the dowels into the slightly hardened base coat. For this purpose, mark the horizontal spacing on the base of the number of dowels required per m<sup>2</sup> using a chalk line. Drill the dowel punch holes using a gauge for the required vertical spacing.



#### Important note

If you already place the dowels when the base coat is still fresh, cut into the reinforcing mesh diagonally (maximum 2 cm x 2 cm). This prevents the reinforcing mesh from moving when screwing in the dowel.



Set the dowels. The dowel plate needs to be slightly recessed. Finally, insert the EPS plug above the dowel screw so that it lies flush.



Full-surface level the dowel plates with the base coat or with StoColl KM to create an even base coat layer.

#### Important note

Avoid the use of organic base-coat. If used, prime the thoroughly dried base coat afterwards with StoPrep Contact according to the technical datasheet

### Facade cladding

#### Important note

All cladding in the Sto range meets the following criteria and has been tested in comprehensive tests in the system. Facade cladding outside the Sto range needs to be tested and approved by Sto in agreement with the corresponding Sto contact person.

#### StoBrick (ceramics, porcelain stoneware)

Pore volume  $\geq 20 \text{ mm}^3/\text{g}$  and pore radius  $> 0.2 \mu\text{m}$  with water absorption  $w \leq 6.0 \%$  according to EN 10545-3

or

pore volume  $20 \text{ mm}^3/\text{g} \geq x \geq 4 \text{ mm}^3/\text{g}$  and pore radius  $> 0.03$ , but  $< 0.2 \mu\text{m}$  with water absorption  $w \leq 6.0 \%$  according to EN 10545-3 with additional testing in the system

Maximum dimensions: Length x Width x Thickness = 400 x 300 x 15 mm

#### Tile slip

Water absorption according to EN 772-11  $\leq 25.0 \%$

Frost resistance based on EN 12371

Maximum dimensions: Length x Width x Thickness = 400 x 100 x 25<sup>1)</sup> mm

#### Sto-Natural Stone Tile

Water absorption according to EN 13755  $\leq 3.0 \%$

Frost resistance according to EN 12371

Maximum dimensions: Length x Width x Thickness = 610 x 305 x 20<sup>1)</sup> mm

#### Sto-Glass Mosaic

Water absorption according to EN 13755  $\leq 0.5 \%$

Frost resistance based on EN 12371

Maximum dimensions: Length x Width x Thickness = 50 x 50 x 10 mm

#### Additional coverings

Water absorption according to EN 13755

Frost resistance based on EN 12371 according to Sto internal test plan

Maximum dimensions: Length x Width x Thickness depending on project

<sup>1)</sup> Average thickness.

## System requirements (RSC)

### Structural analyses, primer, planning the joint pattern

In the following you will find a description of the special system requirements for flawlessly installing facade cladding on ventilated rainscreen facade systems (StoVentec C, StoVentec S, StoVentec M). The relevant European and/or national approvals apply for the planning and execution of ventilated rainscreen facade systems.

#### Planning of joint pattern

When planning joint patterns, it is imperative to take the necessary system joints (field demarcation joints and connection joints e.g. on building apertures) into consideration. Field demarcation joints and structural expansion joints require complete system division, including carrier board and sub-construction.

For further information on this, see page 18 as well as the chapter on application details.

#### Structural analyses

Pay particular attention to the following points regarding the required project-based structural analyses:

- The dead weight of the RSC system
- The joint division
- The arrangement of the field demarcation joints

#### Prime coating

Coat the StoVentec Carrier Boards/Carrier Boards A with Sto-Primer before reinforcement.

### Facade cladding

#### Important note

All cladding in the Sto range meets the following criteria and has been tested in comprehensive tests in the system. Facade cladding outside the Sto range needs to be tested and approved by Sto in agreement with the corresponding Sto contact person.

#### StoBrick (ceramics, porcelain stoneware)

Pore volume  $\geq 20 \text{ mm}^3/\text{g}$  and pore radius  $> 0.2 \mu\text{m}$  with water absorption  $w \leq 6.0 \%$  according to EN 10545-3

or

pore volume  $20 \text{ mm}^3/\text{g} \geq x \geq 4 \text{ mm}^3/\text{g}$  and pore radius  $> 0.03$ , but  $< 0.2 \mu\text{m}$  with water absorption  $w \leq 6.0 \%$  according to EN 10545-3 with additional testing in the system

Maximum dimensions: Length x Width x Thickness = 900 x 600 x 15 mm

#### Tile slip

Water absorption according to EN 772-11  $\leq 25.0 \%$

Frost resistance based on EN 12371

Maximum dimensions: Length x Width x Thickness = 400 x 100 x 25<sup>1)</sup> mm

#### Sto-Natural Stone Tile

Water absorption according to EN 13755  $\leq 3.0 \%$

Frost resistance according to EN 12371

Maximum dimensions: Length x Width x Thickness = 900 x 600 x 20<sup>1)</sup> mm

#### Sto-Glass Mosaic

Water absorption according to EN 13755  $\leq 0.5 \%$

Frost resistance based on EN 12371

Maximum dimensions: Length x Width x Thickness = 50 x 50 x 10 mm

#### Additional coverings

Water absorption according to EN 13755

Frost resistance based on EN 12371 according to Sto internal test plan

Dimensions: Length x Width x Thickness depending on project

<sup>1)</sup> Average thickness.

## Preliminary work

### Substrate check before bonding the cladding

#### 1. Load-bearing capacity

The reinforced base coat must be dry and grease and dust-free.

#### 2. Evenness

Cladding requires an absolutely smooth substrate: for this reason, the tender for the render work should define the substrate with increased precision. In particular avoid unevenness caused by integrated profiles and mesh overlaps etc.

The tender specification for installing cladding should draw attention to further treatment of substrates which have not been prepared accurately enough. It is not possible to level the substrate while applying the cladding.

To ensure flawless implementation, adhere to a pitch of max. 1 mm over 1 m length for the StoVentec systems (RSC), regardless of the cladding. For EWIS formats, the pitches listed in the table apply.

Pitch EWIS			
	100 cm	250 cm	400 cm
Pitch, in general	3 mm	4 mm	6 mm
Pitch, glass mosaic	2 mm	3 mm	5 mm
Pitch, large formats*	2 mm	3 mm	5 mm

\* Depending on the respective system approval, or respectively a side length of > 50 cm.

### Surface preparation



With the external wall insulation system StoTherm Classic, coat the reinforced, dowelled surface with StoPrep Contact (while adding 20 % cement). In the case of the ventilated rainscreen facade systems (StoVentec C, StoVentec S and StoVentec M), prime the ready installed carrier boards with Sto-Primer. Important: This application step is not necessary for the external wall insulation systems StoTherm Vario and StoTherm Mineral.



Before installing the facade cladding, check that the substrate is even, its slope, plumb-line, angles, heights and the alignment.



If required, apply a levelling coat with StoColl KM to provide the required evenness. The colour shades of the substrate, levelling coat and bonding also affect the final colour of the glass mosaic in the Sto-Glass Mosaic facade cladding. This is why StoColl KM is available in the colours grey and white.



#### Product tip

Thanks to the larger format (280 x 130 x 0.75 mm), the Sto Swiss smoothing trowel is particularly suitable for applying the levelling coat.

#### Notes

- The finished surface quality mainly depends on the evenness of the base coat. Depending on the visual requirements of the building owner, we recommend a levelling filler coating.
- Before installing the facade cladding, the filler and levelling coat must be completely dry.



## Preliminary work

### Dividing up the facade

**A specialist planner should provide a detailed definition of the following points as the basis for implementing facade cladding**

#### Cladding and formats

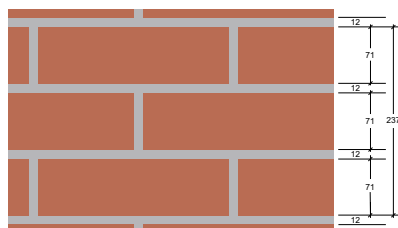
Sto offers a wide range of tested facade claddings in various formats. Our contact people are available to discuss individual requirements. In order to divide up the facade, the facade cladding including formats should already be defined.

#### Joint size (butt joints and bed joints)

Calculate the width of the joints according to the format of the cladding, the edge finish, surface texture, dimensional accuracy and thermal stress.

With EWIS facades, the proportion of joints should be at least 6 % of the covering surface. For deviating joint widths, the specialist planner should provide proof of the long-term lack of condensation using a calculation process (DIN EN ISO 13788). The joint width is measured without bevel. For further information, see the chapter on pointing. Our Sto employees would be glad to answer any of your questions.

#### Division using StoBrick in normal format (NF) as an example



#### Field demarcation joints

The layer and position of the field demarcation joints (see also application details) need to be defined during planning. This depends on the following factors:

- Window arrangement: The more evenly the windows are arranged, the better the distribution of stress in the brick system. If arranged unevenly, it may be necessary to decouple certain windows from the overall system using joints.
- Field size: the larger the fields, the greater the deformations and stresses in the cladding. If the specialist planner does not define any field demarcation joints, limit the field sizes to 6 m x 6 m for insulated systems. (10 m x 12 m might be possible for homogenous surfaces.) For the ventilated systems the field size should be limited to 3,5 m x 6 m.
- Building corners: There may be a significant difference in temperature between two sides of a building at inside and outside corners. The various resulting deformations are compensated with joints.
- Field demarcation joints run in straight lines. Thus for example the joint pattern is disrupted at a stretcher bond.

#### Structural expansion joints

Integrate structural expansion joints into the facade design (see application details).

#### Building apertures

Integrate building apertures into the facade design taking connection joints into consideration (see application details).

#### Bond

Depending on the formats of the cladding, the specialist planner needs to define the bond and test its feasibility by taking precise site dimensions. The building corners and apertures need to be taken into consideration here.

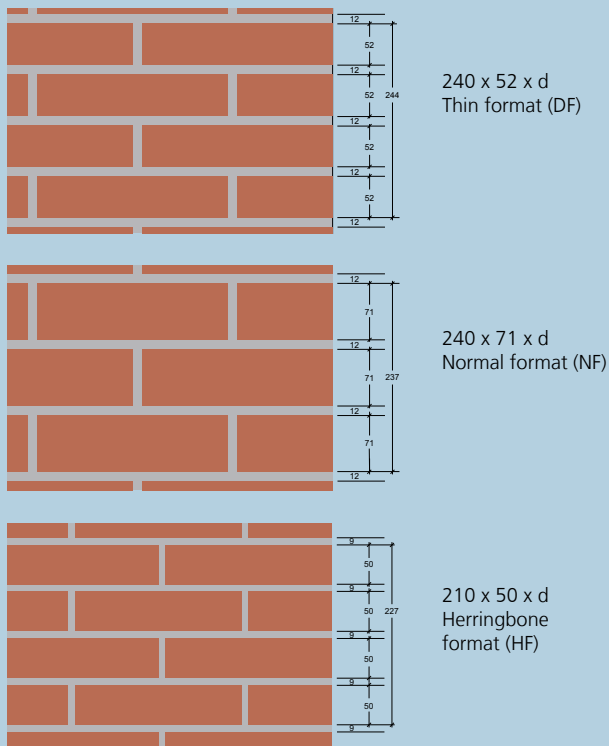
When installing StoBrick for example, brickwork bonds are frequently used. To be able to react flexibly when installing the cladding, we recommend a so-called random bond here.



Random bond, normal format (NF)

## Installation

### Division of the facade depending on the ceramics format [mm]



### Important notes

- Before installing the facade cladding, divide up the surface to be covered. To do this, if necessary put height markers all around the building. Also pay attention to the following points.
  - Formats of facade cladding
  - Joint width
  - Fix lines such as window and door lintels
- In order to achieve a harmonious play of colours, ensure a good mixture when installing the brick slips (if possible, mix brick slips from 5 different pallets together). This also applies to single-colour types.
- We recommend creating a test surface before application - if possible on a visually inconspicuous surface (e.g. on the side facing away from the street). Examine the test surface from a usual observation distance of 8 to 10 m. During application, continue to take a look at the surface regularly from a typically-viewed distance.
- For glazed brick slip joints and injection joints, keep to a joint width of 6 - 15 mm (recommended joint width 8 - 12 mm). For slurry joints, keep to a joint width of 2 - 15 mm (recommended joint width 8 - 12 mm).



Draw on 3 layers with the chalk line.  
**Note:** To minimise any soiling of the brick slip, install the slip from top to bottom where possible. With heavy covering, the wet adhesive strength of StoColl KM could be exceeded. Here, it is necessary to install from bottom to top using suitable installation aids (see page 23).



Separate the supplied brick slips into individual brick slips in the middle where necessary.



Apply StoColl KM bonding mortar to the full-surface and tooth vertically with a 10x10 toothed trowel. Only decant as much mortar as you can immediately cover. Ensure that no skin forms.



Apply stipple filling to the slip. This bonding procedure is described in the EN 12004 standard as a combined process (floating buttering).

It may be necessary to slightly moisten very highly absorbent brick slips first to prevent the adhesive from burning out. This applies in particular to tile slips.



Bond the slip starting from the building corners and where possible, from top to bottom.

## Installation



6 Press on the brick slips flush in a horizontal pushing motion. Take care not to create cavities! Install the brick slip within the division. A sense of proportion is sufficient when aligning the joints.



10 After the bonding mortar has dried through, clean out the joints.



**Important note**  
Ensure full-surface bonding (on average 90 % over the entire surface, for single brick slips at least 70 %).

**Important notes**

- Do not dilute mortar retrospectively once it has been mixed. Material which is already curing cannot be made ready-to-use again by adding water.
- Remove any soiling on the brick slip with a sponge (08318-001: Sto-Tile Sponge) and as little water as possible. Remove any soiling which has already dried on with a wooden spatula or scrubbing brush.
- When using cleaning agents, only use commercially available agents while complying with the application guidelines. Using acidic cleaning agents is not permitted for ecological reasons.



7 If required, cut the brick slips to size using suitable tools.



8 After the bonding mortar has initially hardened, align again row by row using a cord.



9 Smoothen the joints with a hose or a jointing iron. This ensures that the slips are surrounded by adhesive which prevents any water running behind until final pointing. This also ensures an even and adequate joint depth (joint depth > slip depth). Remove any soiling with a sponge.

# Sto-Glass Mosaic

## Installation

### Notes

- The application steps for installing StoBrick slips also apply to Sto-Glass Mosaic. Deviations are described in the following notes and application steps.
- Sto-Glass Mosaic is delivered on sheets. The film / the paper is applied on the front side. Mesh on the back is not allowed.
- The standard joint width is 2.5 mm.
- Sto-Glass Mosaic is always pointed with slurry pointing.
- Sto-Glass Mosaic can be installed as you like from top to bottom or bottom to top.
- Order adhesive suitable for the colour of the glass mosaic (Light colours = white adhesive, dark colours = grey adhesive).



Cut the backing film along the mosaic joints into approx. 10 cm strips using a carpet knife. After an adequate curing time for the adhesive (usually at least 48 hours), pull off the backing film diagonally to the joint and at a flat angle with a slow, flowing movement. Remove any adhesive residue on the glass mosaic using Sto-Ultracleaner (17070-011) or an alcohol-based solvent (if applicable with acetone) before pointing.

### Notes

- We recommend placing solar protection on the facade on the side of the building in direct sunlight.
- Remove the film when there is no sunlight shining directly on the surface - preferably early in the morning.
- Heat may cause adhesive residue from the backing film to stick to the mosaic in some places. This can be removed using Sto-Ultracleaner (17070-011) or an alcohol-based cleaning agent before pointing.



1 Mark surfaces to be covered using height markers. Afterwards, draw an arc on the facade using the chalk line.



2 Apply StoColl KM bonding mortar to the full surface. Depending on the substrate and the format of the mosaics, tooth with the Sto-Adjustable Toothed Trowel (item no. 08255-001) or the Sto-Toothed Blade, tooth shape 7 (item no. 08373-008).



3 Press on and align the glass mosaic sheet using the Sto-Plasterer's Float with cellular rubber covering (floating process, i.e. don't apply any mortar to the glass mosaic).

# Natural stone slab

## Sampling and tolerances

### Sampling natural stone slab

In practice, every now and then there is a complaint about the appearance of the stones after natural stone work has been completed. In such cases, the parties often dispute what has been agreed and what statements were made before concluding the contract. To provide clarification, in the following we have formulated a definition for each of the terms "sampling of the range" and "sample facade":

#### 1. Sampling of the range

In accordance with DNV information (Deutscher Naturwerkstein Verband e. V.) on expert assessment issues, section 2.1., the term "boundary samples" should be avoided as there are no boundaries in nature. Every stone is unique. Furthermore, the stones at the time of sampling usually come from a different quarry run than during execution.

Geological and mineralogical shades and changes in natural stone quarries cannot be ruled out. In particular, if the entire capacity of a quarry is required within a short space of time for a large project, the natural spectrum of the quarry runs cannot be limited.

The possibility of limiting the spectrum of natural differences depends on the material and the quantity, and is discussed by supplying individual characteristically extreme stones and excluding any possible natural appearance. It can only be done using material from the current quarry layers and can only be taken into consideration for small quantities.

However, if in an exceptional case an exclusion is agreed, then a record of the exclusion criteria needs to be prepared identifying the boundary samples (e.g. date, signature) and the samples are secured and cannot be changed.

#### 2. Sample facade

Sample facades are only used for terms of reference and show a representative average of a type of stone. This is why they may not be referred to as "Boundary sample facades".

Even a specialist company cannot guarantee that a facade will conform based on a sample facade when large quantities of natural stone slab are involved. In particular sedimentary rock, such as limestone, may appear darker or lighter depending on the occurrence of inclusions, so shades of colour cannot be avoided.

Apart from that, the requirements of EN 12057 up to 12 mm and EN 1469 over 12 mm are applicable.

### Tolerances (DIN EN 12057):

Property applies up to 12 mm thickness: above that, DIN EN 1469	Limits and tolerances for dimensions and shape	
	Uncalibrated stones	Calibrated stones*
Nominal size of length or width	< 600	> 600
Thickness of cutting edges. $\leq$ 50 mm	$\pm$ 1 mm	$\pm$ 1.5 mm
Thickness of cutting edges. < 50 mm	$\pm$ 2 mm	$\pm$ 2 mm
Length, Width	$\pm$ 1 mm	$\pm$ 0.5 mm
Thickness	$\pm$ 1.5 mm	$\pm$ 0.5 mm
Evenness (only for honed and polished surfaces)	0.15 %	0.10 %
Rectangularity	0.15 %	0.10 %

\* Calibrated stones are subjected to specific mechanical surface finishing to improve their dimensional stability. These products are suitable for being fixed with a thin mortar bed or adhesives.

# Natural stone slab

## Installation

### Notes

- With have grouped together the following Sto products under the umbrella term "natural stone slab": Sto-Natural Stone Tiles, Sto-Rustication Brick Slips and Sto-Silver Quartzite.
- The application steps for installing StoBrick slips also apply to natural stone slabs - with the following exceptions.
- For glazed brick slip joints and injection joints, keep to a joint width of 6 - 15 mm (recommended joint width 8 - 10 mm). For slurry joints, keep to a joint width of 2 - 15 mm (recommended joint width 5 - 10 mm).
- With natural stone slab, the wet adhesive strength of StoColl KM is often exceeded. Therefore it is important to adhere to the following application steps.



Mark surfaces to be covered using height markers. Use a wood lath (or similar) to align the stones as the bottom stop.  
**Note:** If the facade cladding starts in the plinth area, then do not fix the stop with nails or plaster hooks, but line appropriately.



Starting from the bottom, draw 3 layers on the facade with the chalk line.



Apply StoColl KM bonding mortar to the full surface of the wall. Depending on the substrate and stone format, tooth vertically with the 8x8 or 10x10 toothed trowel. Only decant as much mortar as you can immediately cover. Ensure that no skin forms.



Apply the stipple filling to the natural stone slabs. This bonding procedure is described in the EN 12004 standard as a combined process (floating buttering).  
**Note:** slightly moisten very highly absorbent stones first to prevent the adhesive from burning out.



Install natural stone slabs starting from the corners. Press on the stones flush in a horizontal pushing motion and align them using a spacer. Take care not to create any cavities



After the bonding mortar has slightly hardened, remove the spacer.

# Sto-Ceramic Tiles/Porcelain Stone-ware

## Installation

### Notes

- The application steps for installing StoBrick slips also apply to ceramic tiles/porcelain stonework - with the following exceptions.
- If the wet adhesive strength of StoColl KM is exceeded with the cladding used, then the cladding needs to be laid from bottom to top using suitable installation aids (see natural stone slab, p. 23).
- For glazed brick slip joints and injection joints, keep to a joint width of 6 - 15 mm (recommended joint width 8 - 12 mm). For slurry joints, keep to a joint width of 2 - 15 mm (recommended joint width 5 - 12 mm).



1 Align the first tiles. To do this, mark a vertical line on the facade.



2 Apply StoColl KM bonding mortar to the full surface. Depending on the substrate and tile format, tooth vertically with the 6x6 or 8x8 toothed trowel. Only decant as much mortar as you can immediately cover. Ensure that no skin forms.



3 After the tiles have been applied in a combined process (floating buttering), clean the surface with a sponge

## Pointing

### Types of pointing and joint filling compound (butt joints and bed joints)

#### Mortar jointing compound

Technical reasons which favour trowel pointing:

- Rough surfaces
- Absorbent surfaces
- Porous surfaces

Visual reasons which favour trowel pointing:

- Rustic joint pattern

#### Slurry-pointed joint

Technical reasons which favour slurry pointing:

- Quick, simple application

Visual reasons which favour slurry pointing:

- Fine joint pattern

### Recommended joint filling compound (butt joints and bed joints)

Pointing with mineral pointing mortar (StoColl FM-K or FM-S):

Material	Slurry-pointed joint	Glazed brick slip joint
StoBrick slips	8 – 12 mm	8 – 12 mm
Sto-Natural stone tiles	5 – 10 mm	8 – 10 mm
Ceramic tiles	5 – 12 mm	8 – 12 mm
Sto-Glass Mosaic	2.5 mm Delivered in sheets	-



# Pointing

## Recommended pointing

Material	Glazed brick slip joint	Slurry-pointed joint
<b>Sto-Natural stone tiles</b>		
Sto-Fossil SKL C 60	✓	
Sto-Fossil SKL C 320	✓	✓
Sto-Fossil SKL, blasted	✓	
Sto-Fossil SBL C 60	✓	
Sto-Fossil SBL C 320	✓	✓
Sto-Fossil SBL, blasted	✓	
Sto-Fossil Bavaria Yellow C 60	✓	
Sto-Fossil Bavaria Yellow C 320	✓	✓
Sto-Fossil Bavaria Yellow, blasted	✓	
Sto-Fossil Bavaria Greyblue C 60	✓	
Sto-Fossil Bavaria Greyblue C 320	✓	✓
Sto-Fossil Bavaria Greyblue, blasted	✓	
Sto-Fossil Bavaria Travertin C 60	✓	
Sto-Fossil Bavaria Travertin C 320	✓	✓
Sto-Fossil Bavaria Travertin, blasted	✓	
Sto-Granite Bianco Ozieri polished	✓	✓
Sto-Granite Bianco Ozieri C 320	✓	✓
Sto-Granit Bianco Ozieri blasted	✓	
Sto-Gabbro Nero Transvaal polished	✓	✓
Sto-Gabbro Nero Transvaal C 320	✓	✓
Sto-Gabbro Nero Transvaal blasted	✓	
Sto-Granit Final Red polished	✓	✓
Sto-Granit Final Red C 320	✓	✓

Material	Glazed brick slip joint	Slurry-pointed joint
Sto-Granit Final Red blasted	✓	
Sto-Gneis Dark Green polished	✓	✓
Sto-Gneis Dark Green C 320	✓	✓
Sto-Gneis Dark Green blasted	✓	
Sto-Gabbro Super Dark polished	✓	✓
Sto-Gabbro Super Dark C 320	✓	✓
Sto-Gabbro Super Dark blasted	✓	
<b>Sto-Rustication Brick Slips</b>		
Sto-Rustication Brick Slips SKL (NSF004)	✓	
Sto-Rustication Brick Slips SBL (NSF005)	✓	
Sto-Rustication Brick Slips MKL (NSF106)	✓	
<b>Sto-Silver Quartzite</b>		
<b>Ceramic tiles</b>	✓	✓

# Pointing

## General information

Once the bonding mortar has dried all the way through, you can start pointing the facade cladding. To attain visually and optically perfect results, you need to work particularly precisely here.

Pay attention to the following points:

- The bonding mortar needs to dry for a total of 7 days.
- To attain a harmonious appearance, you should have all the pointing carried out by the same tradesmen.
- Particularly with coloured mortar, all the material required should be available on the construction site.
- Only use the system-related StoColl FM-K or StoColl FM-S pointing mortar during application.
- Where possible, work only on days with high humidity and little air movement, and also not too much solar radiation. Unfavourable weather conditions (strong solar radiation, increased wind movement) require additional protection (e.g. hanging tarpaulins from the scaffolding). The temperature of the ambient air and the part should not exceed 30 °C.
- Check the existing joints for any soiling and adhesions and if necessary clean them. Scrape out bonding mortar residues which affect the joint cross section.
- Before starting pointing, wet the surface with water so that the pointing mortar does not bake on.
- Make sure there is no standing water in the joints, as otherwise flank adhesion is at risk.
- To avoid colour differences, always mix the pointing mortar with the same amount of water. Markers on the water container or a litre scale are helpful.
- Use clean water.
- Do not add any more water during application.
- Afterwards, moisten the pointed surfaces at regular intervals with a fine spray of water. This will ensure that the pointing mortar bonds properly and develops its defined properties.  
Note: Do not start spraying water on too early, as otherwise stains may appear on the facade.
- Care information: Clean the cladding with suitable cleaning agents.

## Trowel pointing



Prepare approx. 2 l water/25 kg sack. Then stir in StoColl FM-K for approx. 2 minutes using the stirrer. Allow it to mature for approx. 3 minutes and then stir well again.

Note: Use a slowly rotating stirrer (approx. 400 rpm) and in the case of highly pigmented special colour shades, pre-mix the required quantity of water with 23 kg of dry mortar. Stir in the remaining quantity of dry mortar after the maturing time.



### Important note

The consistency check using a hand pressure test shows whether the pointing mortar is properly adjusted. The mortar sample should not fall apart and it should not be possible to squeeze any water out of it.



Point a bed joint using a jointing iron (jointing iron, 8 mm, Item No. 08285-009). Then compact the pointing mortar with the jointing iron.

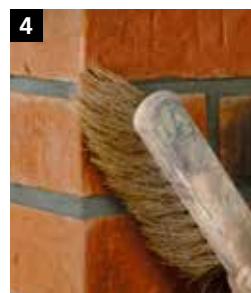
Note: Uniform application is essential to get a consistent colour shade. To prevent colour difference, do not add any more water during application.

Note: Depending on the covering, the pointing must be applied in 2 layers.



Point the butt joints manually using a jointing iron. Then compact the pointing mortar with the jointing iron.

Note: Depending on the covering, the pointing must be applied in 2 layers.



Once the pointing mortar has hardened, gently sweep loose material off the surface.

# Pointing

## Slurry pointing



1

Prepare approx. 5 l water per 25 kg sack. Then stir in StoColl FM-S for approx. 2 minutes using the stirrer. Allow it to mature for approx. 3 minutes and then stir well again.



2

Use a sponge board (Sto-Hydro Grid Sponge Layer, item no. 08241-007) to rub StoColl FM-S as slurry pointing into the entire cross-section of the joint. Note: Uniform application is essential to get a consistent colour shade. To prevent colour difference, do not add any more water during application.



3

Once the pointing mortar has hardened, clean the surface several times with clean water and a sponge (Sto-Velour Base Handle without pad, item no. 08241-006, with Sto-Latex Sponge, item no. 08241-002).



4

Finally, rub off the glass mosaic with a damp sponge or cloth again. Repeat if required.

Sweden

**Sto Scandinavia AB**

Box 1041

SE-581 10 Linköping

Street address:

Gesällgatan 6, SE-582 77 Linköping

Phone +46 13 37 71 00

Fax +46 13 37 71 37

kundkontakt@sto.com

www.sto.se

Denmark

**Sto Danmark A/S**

Avedøreholmen 48

DK-2650 Hvidovre

Phone +45 70 27 01 43

Fax +45 70 27 01 46

kundkontakt@sto.com

www.stodanmark.dk

Finland

**Sto Finexter Oy**

Mestarintie 9

FI-01730 Vantaa

Phone +358 207 659191

Fax +358 207 659192

asiakaspalvelu@sto.com

www.sto.fi

Norway

**Sto Norge AS**

Waldemar Thranes gate 98A

NO-0175 Oslo

Phone +47 66 81 35 00

Fax +47 66 81 35 01

info.no@sto.com

www.sto.no