



**SOLTHERM ICF FINISH SYSTEM  
WITH TRADITIONAL  
BRICK SLIPS & STONE SLIPS**

**APPLICATION GUIDE**



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# INTRODUCTION

## For Application to ICF Structures

Soltherm render systems & other finish like traditional slips & stone slips onto ICF structures, the following issues must be considered. In addition reference should be made to the Soltherm installation manual for the full list of application instructions.

The Soltherm render only system may be applied to the external polystyrene insulation of ICF systems, that have been assessed and approved by Soltherm technical personnel, in accordance with the conditions of Soltherm NSAI certificate: in conjunction with a suitable ICF system, that have approved the use of this render system finish and who's EPS characteristics meet the minimum characteristic values of Soltherm NSAI certificate.

The designer should select a construction appropriate to the local wind-driven rain index, paying due regard to the design detailing, workmanship and materials to be used. Before any product application can proceed, fire barriers must be fitted as required e.g. at compartment wall locations, etc. The location of all fire barriers should be agreed with the Architect/ and or a suitably qualified fire / chartered engineer. The location of fire breaks should be specified by the Architect or Fire consultant on a project-specific basis.

Engineer construction and structural building design of ICF system should be comply with the Building Regulations and best installation practice. This is outside the scope of Soltherm render only system.

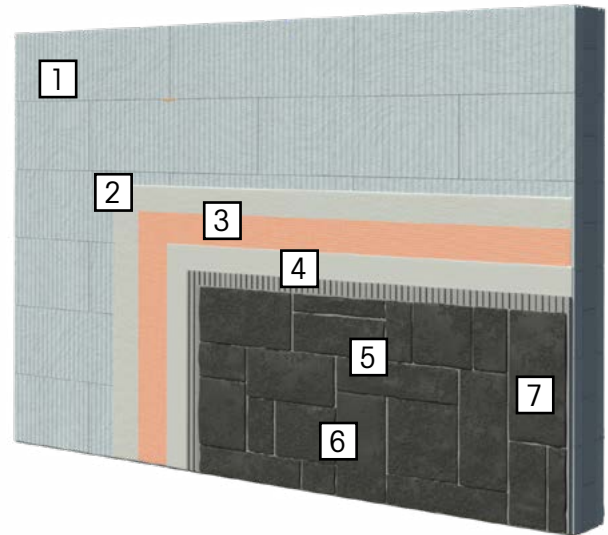
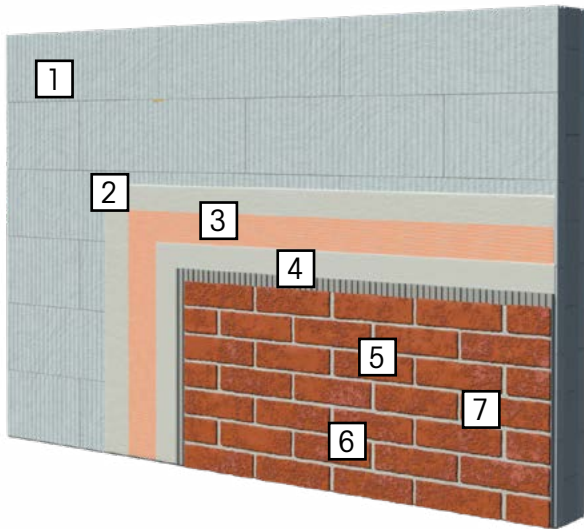
The surface condition/finish and EPS characteristics of ICF system must be thoroughly inspected to ensure it meets all technical surface finish requirements. The surface must be stable, sound, dry, clean of surface contaminants such as dust, grease, form oils, bitumen, salts and other barrier materials that may affect adhesion like organic growth and chemical deposits.(algae, fungi). The substrate must be even and provide a plane surface.

## Important information

Prior to commencing with the installation of the SOLTHERM SYSTEM, the Soltherm Registered Contractor is required to ensure the following:

- The installation team have had SOLTHERM SYSTEM training.
- A non-draft project specification has been issued by Soltherm with fixing pattern and any unique detailing requirements.
- Datasheets of all the Soltherm materials are readily available and guidelines contained within are adhered to in relation to application, preparation and health and safety (H&S).
- Scaffold and/or access is in accordance with all H&S requirements.
- Enabling works have been completed to a satisfactory standard.
- Windows, walkways, driveways and other features are protected from damage.
- Requirement for mechanical fixing pull out tests (if required).
- Wind load calculations (if required).

# THE SYSTEM



## SOLTHERM ICF FINISH SYSTEM WITH TRADITIONAL BRICK SLIPS & STONE SLIPS

### For Application to ICF Systems

#### 1. ICF NSAI-approved system

#### 2. SOLTHERM BC-P Quick

Premium white cementitious basecoat designed to encapsulate the reinforcement mesh, providing the system with water resistivity, breathability and impact protection.

#### 3. SOLTHERM Glass Fibre Mesh

An alkali resistant reinforcement mesh bedded into the basecoat providing increased flexibility, durability and impact resistance.

#### 4. SOLTHERM SE

Super elastic brick slips & stone slips adhesive designed to provide improved adhesion & reduced slumping properties.

#### 5. Brick Slips / Stone slips

Decorative brick slips & stone slips offering a diverse range of colours and textures, compliant with ETA & NSAI certificates.

#### 6. SOLTHERM KL

Polymer modified pointing mortar designed to provide increased cracking and frost resistance.

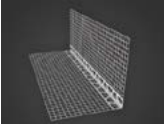







#### 7. SOLTHERM IMP (if required)

Hydrophobic coating designed to provide additional protection and stain resistance, ultimately improving the system durability and water absorption.



# SYSTEM COMPONENTS & MATERIALS

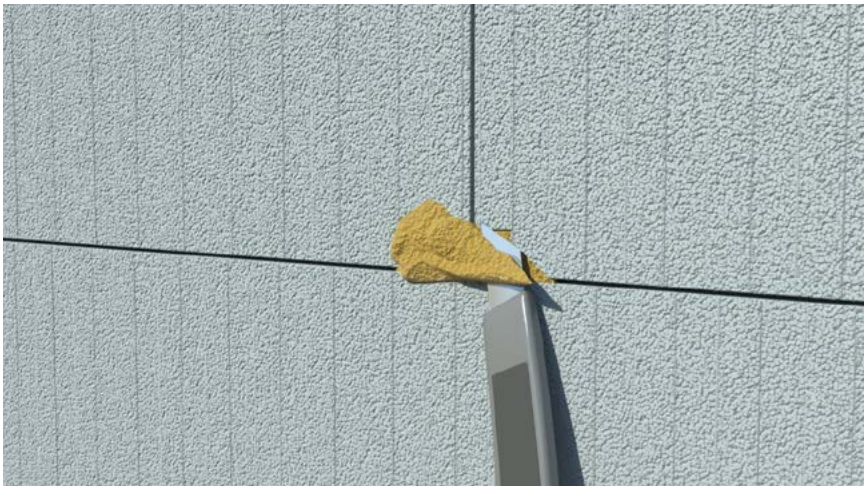
**IMPORTANT:** When using any component, product or material, refer to the technical datasheet before proceeding with the installation.

<b>SOLTHERM PROFILES &amp; BEADS</b>	Aluminium, PCG steel & PVC full system surface mounted profiles.	Mostly 2.5m or 2.0m in length. Always refer to the specification and quotation	Full system beads are mechanically fixed and surface beads mainly bedded into base coat used as the adhesive. Always refer to the specification.	
<b>SOLTHERM BC-P Quick</b>	White flexible, polymer modified base coat specifically formulated for application onto Grey EPS insulation and MW boards and ICF structures	25 kg bag	Mix thoroughly with clean water (5.0 - 5.5 litres) allow to stand for 5 minutes and remix before applying in accordance with the specification.	
<b>MECHANICAL FIXINGS (if required)</b>	ETA certified screw-in fixings with steel nails.		The fixing is installed through scrim coat in accordance with the specification.	
<b>SOLTHERM GLASS-FIBRE MESH</b>	An alkali resistance reinforcement mesh	55x1m roll	Cut to size with sharp knife.	
<b>SOLTHERM SE</b>	Cementitious super elastic brick & stone slips adhesive specifically formulated for use with ceramic and clay brick slips, concrete and stone slips and natural stone.	25kg bag	Mix thoroughly with clean water (5.75 - 6.25 litres) allow to stand for 5 minutes and remix before applying in accordance with the specification.	
<b>BRICK SLIPS / STONE SLIPS</b>	Ceramic and clay brick slips, concrete and stone slips and natural stone manufactured to EN 14411, EN 771-1, EN-771-3, EN 1469, EN 771-5, EN 771-6 - subject to specification.		6.5-20mm thick brick slips, 10-20mm natural stone slips with mass <45 kg/m <sup>2</sup> and max size of 0.36 m <sup>2</sup>	
<b>SOLTHERM KL</b>	Cementitious pointing mortar specifically formulated for use with clay and concrete brick slips.	25kg bag	Mix thoroughly with clean water (2.5 - 3.0 litre) allow to stand for 5 minutes and remix before applying in accordance with the specification.	
<b>SOLTHERM IMP</b>	Silicone based water repellent sealer.	5kg bucket	Supplied as a ready-to-use product. Shake several times prior to application. Do not admix.	

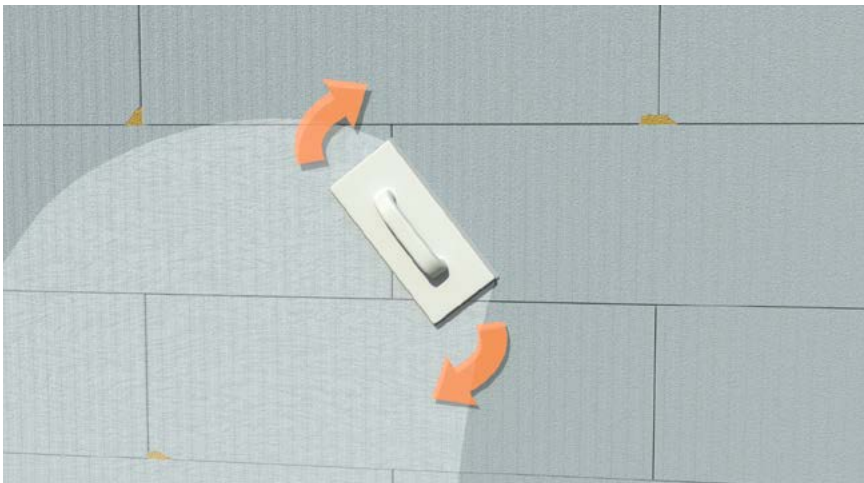
# SUBSTRATE PREPARATION



Any gaps between adjacent ICF insulation panels must be filled with SOLTHERM PM-L FOAM or EPS off-cuts.



Once fully cured, excess SOLTHERM PM-L FOAM must be removed with a knife to ensure it is flush with the surface of ICF EPS boards.



Where approved by the ICF system manufacturer, it is recommended that the outer surfaces of the EPS insulation panels, are lightly rasped with coarse sandpaper or an abrasive float rasp for EPS, to remove dust from the EPS surfaces. Where the insulation panels have grooves on the outer surface, a levelling coat shall be applied using Soltherm basecoat to plane and smooth the surface grooves and irregularities prior to standard basecoat application.

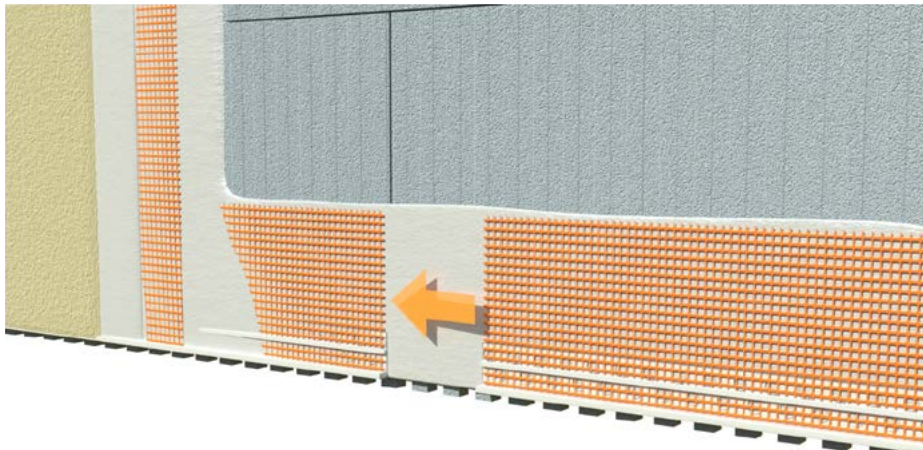


# GENERAL SURFACE MOUNTED BEAD APPLICATION

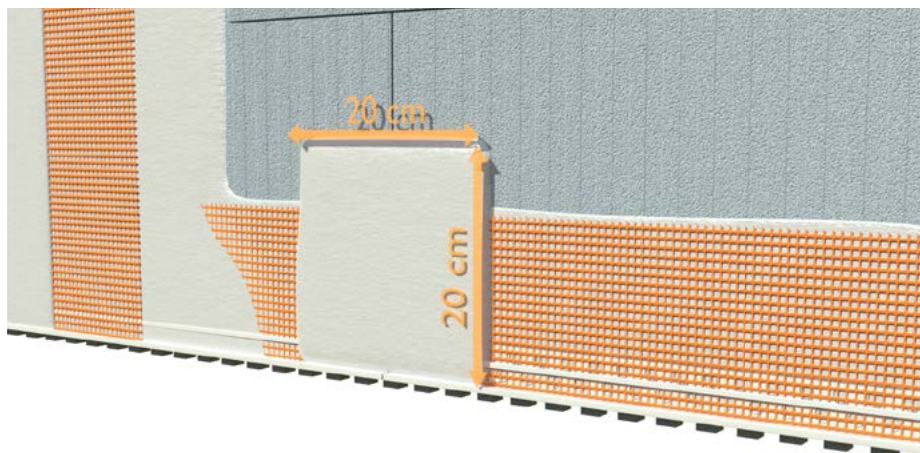
Provide beads/stops at all external angles and stop ends except where specified otherwise.

Where uneven dub out the substrate in line of new base bead sufficient to provide flat surface ready to receive render. Cut neatly, form mitres at return angles and remove sharp edges, swarf and other potentially dangerous projections. Fix securely, using the longest possible lengths, plumb, square and true to line and level, ensuring full contact of wings with background. All surface mounted beads must have an additional reinforcing mesh patch, min. 200x200 mm, placed over the joint of adjacent beads to prevent cracking in the future.

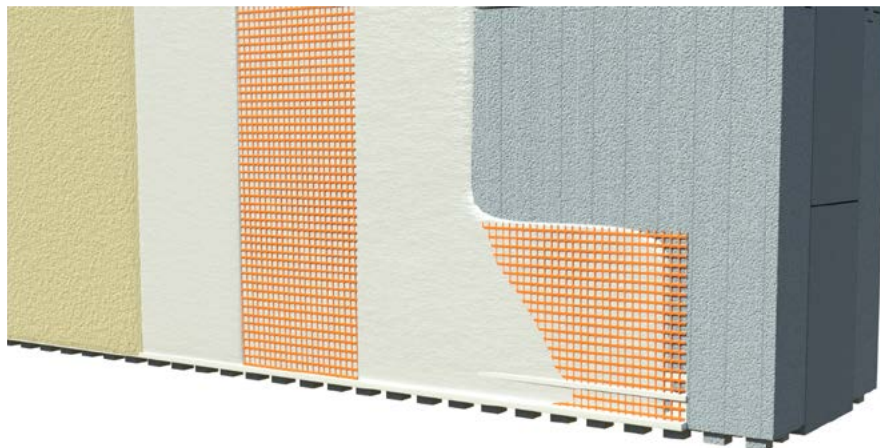
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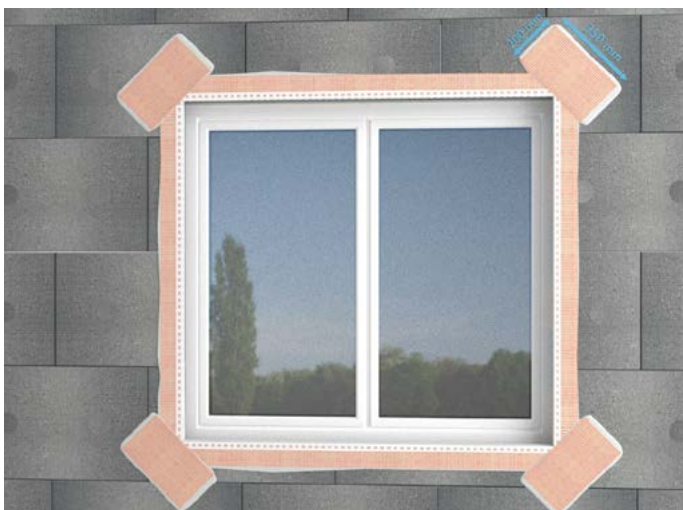
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# GENERAL SURFACE MOUNTED BEAD APPLICATION

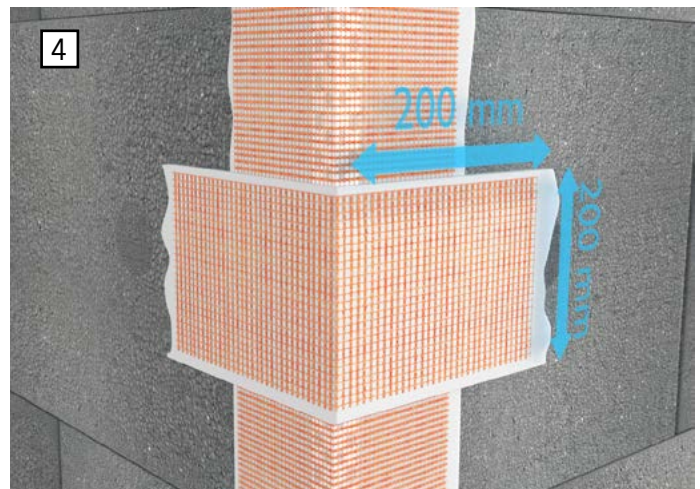
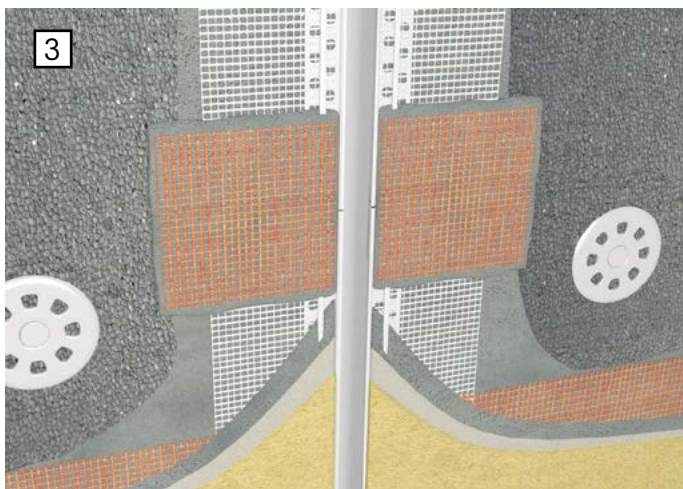
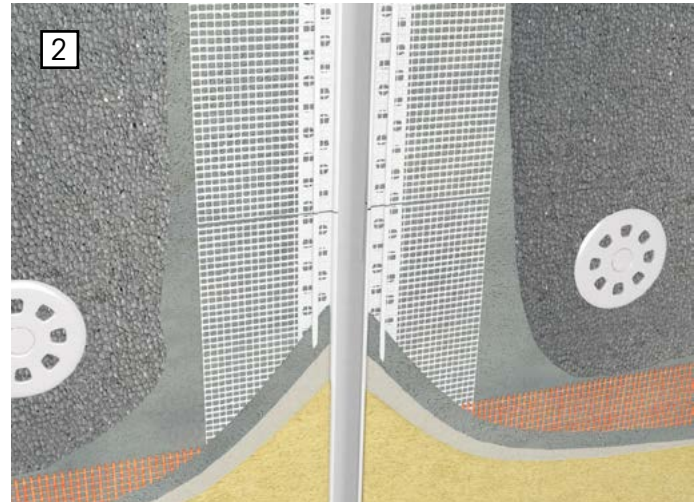
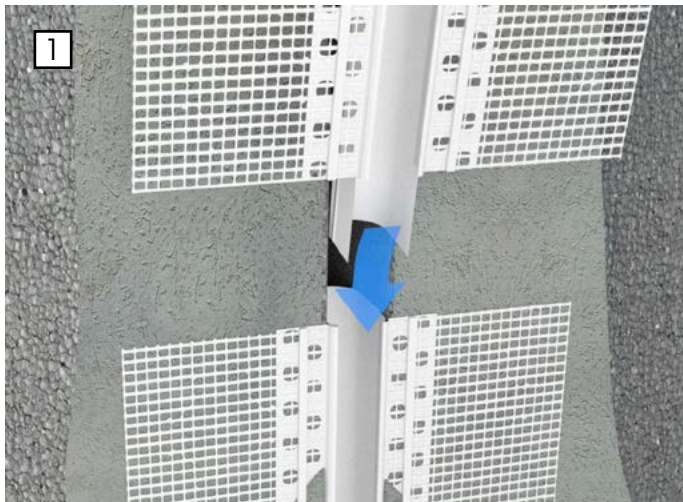
All surface mounted beads must have an additional reinforcing mesh patch, min. 200x200 mm, placed over the joint of adjacent beads to prevent cracking in the future. Additional stress patches of minimum 200x350 mm cut from standard reinforcing mesh must be placed at the corners of all structural openings at an approximate 45° angle.





# GENERAL SURFACE MOUNTED BEAD APPLICATION

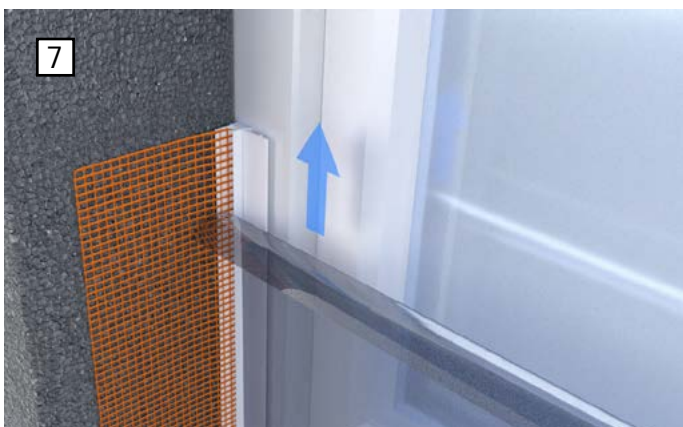
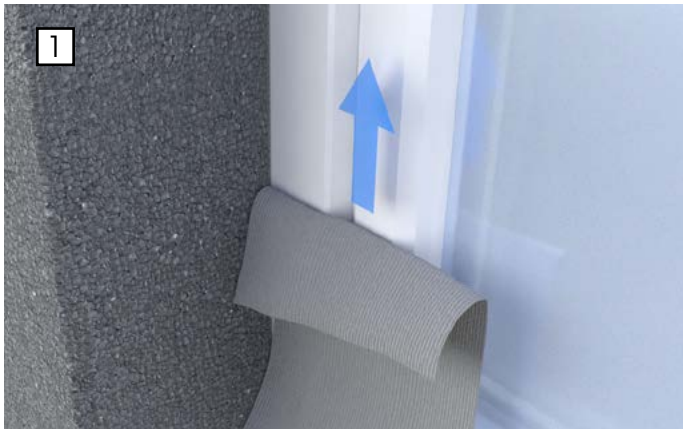
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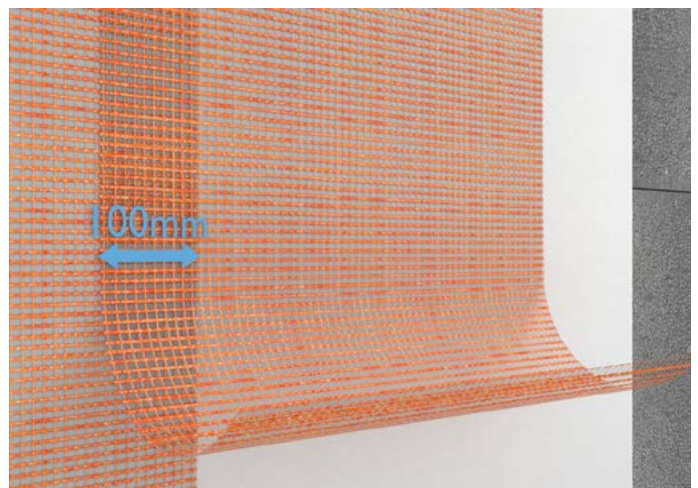
# WINDOW BEAD APPLICATION

Window beads are used where the system interfaces with window frames. The beads interface perfectly with accommodating sacrificial window protection. The window must be cleaned prior to the application of the window bead.



# BASE COAT APPLICATION

Once all the insulation boards are securely fixed in place, mix SOLTHERM BC-P Quick basecoat in accordance with the technical datasheet. Using a clean stainless steel trowel, apply a layer of basecoat to the EPS insulation at an even thickness of 3 - 4 mm.



While the base coat is thoroughly wet, using an 8-10 mm notch trowel, apply a vertical notch. Gently lay the reinforcement mesh into the wet base coat, keeping the mesh in the top third of the material and ensuring the mesh has a minimum lap of 100 mm with all adjacent meshes.



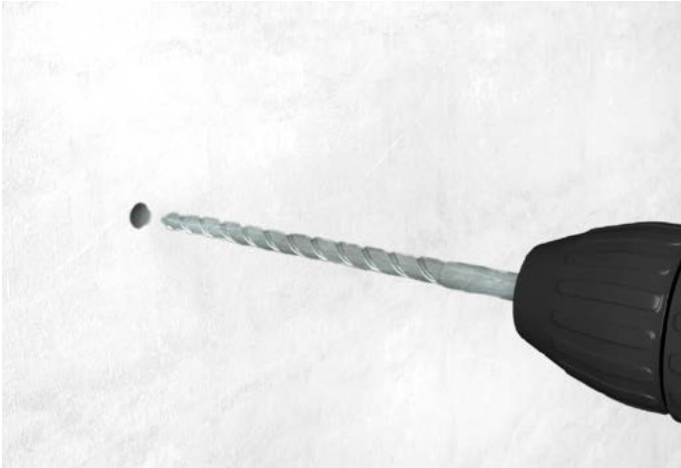
Allow the basecoat to dry for approximately 24 hours before applying a tight slurry coat 1-2 mm. The overall thickness of the basecoat should be relatively thicker between 4-6mm.



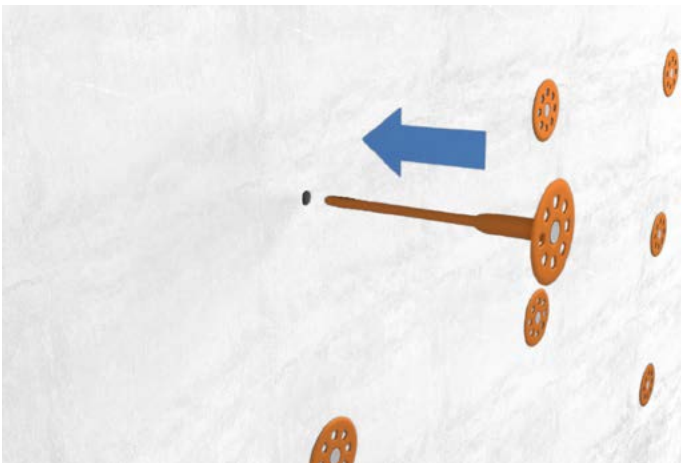
# FIXING THROUGH THE MESH

## APPLICATION (if required, subject to project specific design)

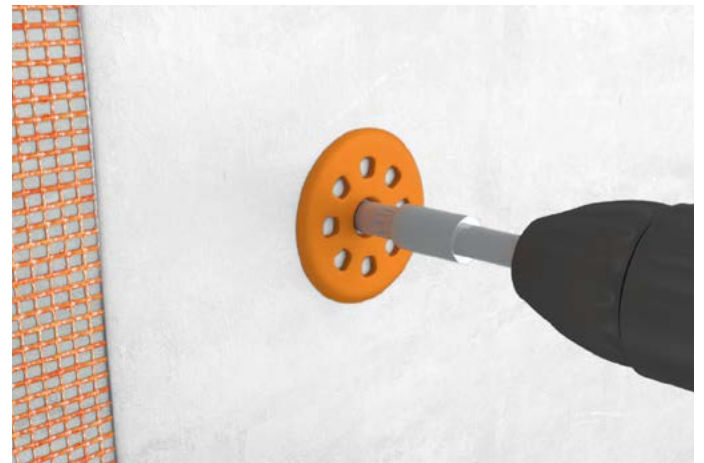
Whilst the specified basecoat is still wet and the Soltherm reinforcing mesh has been bedded in, proceed with the installation of the mechanical fixings. Always refer to the specification for the appropriate fixing pattern.



Following the specified fixing pattern, first drill through the basecoat and mesh, insulation and into the masonry substrate with an 8mm diameter drill bit to the appropriate depth.



Place the fixing into the pre-drilled hole and push the fixing in until the head of the fixing is flush with the face of the base coat.



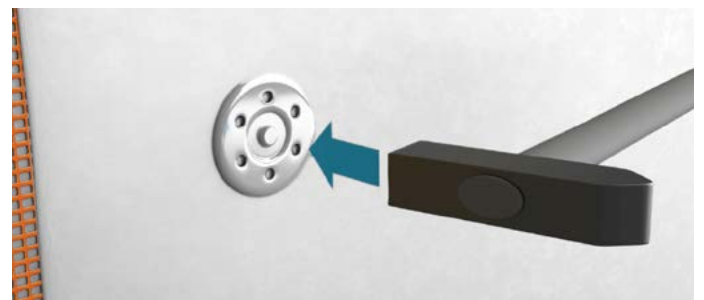
Screw or hammer the fixing into place ensuring the central pin is either flush with the fixing head or slightly recessed. The fixing head should be slightly recessed into the scrim coat face about 1-2mm.

# FIRE FIXING INSTALLATION

## (if required, subject to project specific design)



Drill an 8 mm diameter hole through the scrim and wet base coat at the required depth. Insert the stainless steel fixing into the hole with your hand as far as physically possible.



Using a hammer, gently hit the fixing centrally until it is recessed within the mesh and base coat approx. 1-2mm.

# BRICK SLIPS & STONE SLIPS APPLICATION

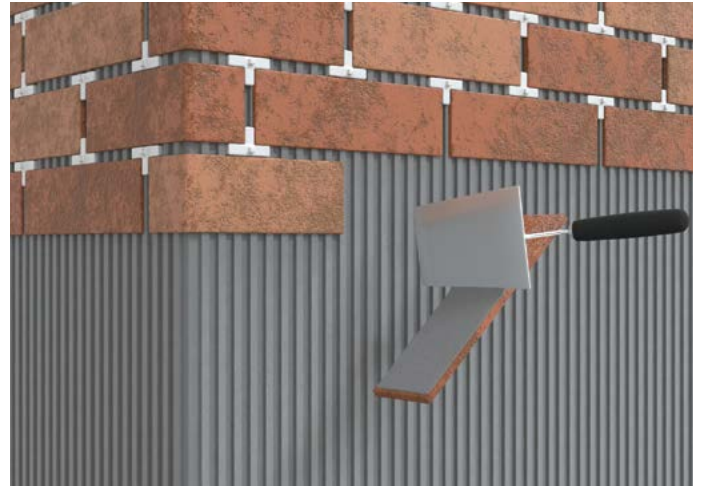
SOLTHERM BC-P Quick must be allowed to fully cure and the application of SOLTHERM SE must be no earlier than 48h (2 days) in optimal weather conditions (e.g. +23°C, 50% RH).

Mix SOLTHERM SE in accordance with the technical datasheet.

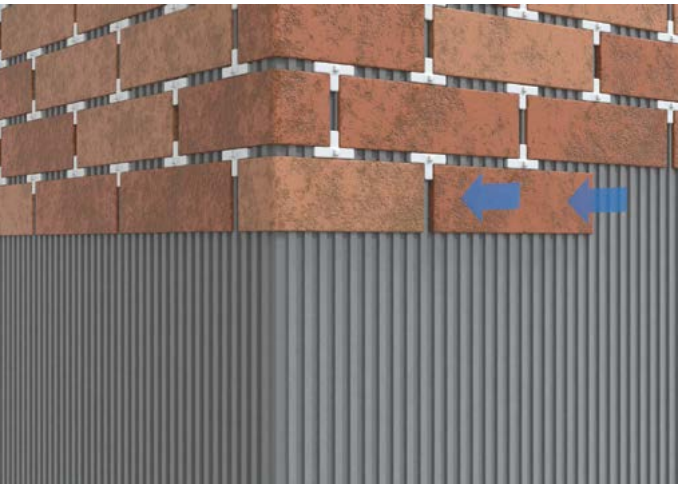
It is recommended that installation of the brick slips begins from building corners and openings.



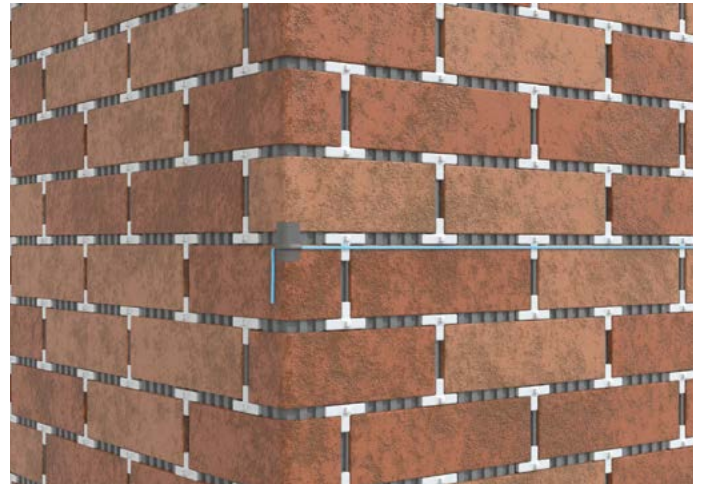
Apply SOLTHERM SE to the cured base coat with an 8mm notched trowel, notching in various directions to allow optimal adhesion strength.



Apply a light contact layer of SOLTHERM SE to back of the individual brick slips. Always ensure full coverage.



Firmly press the brick slip into place using a horizontal pushing motion, ensuring the collapse of the notched adhesive and 100% adhesion.



Following the general practices of brick laying, paying particular attention to the brick bond, apply the remaining brick slips, using plastic packers as guides to maintain the required joint width. Laser levels and string lines should be used to ensure application of the slips is level.

Allow SOLTHERM SE to fully cure before proceeding with the installation of the system.



# POINTING MORTAR APPLICATION

SOLTHERM SE brick slip adhesive must be allowed to fully cure and the application of SOLTHERM KL must be no earlier than 72h (3 days) in optimal weather conditions (e.g. +23°C, 50% RH).

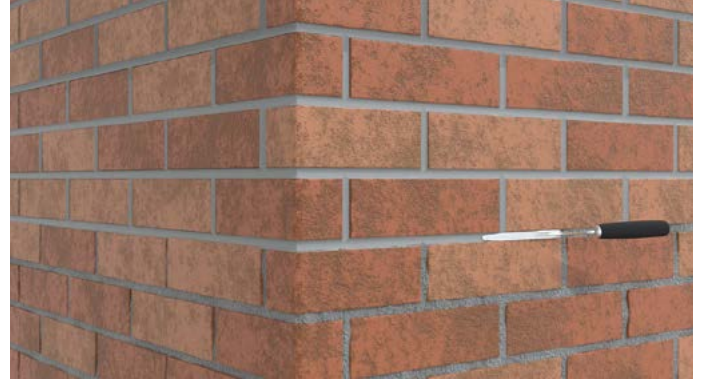
Mix Soltherm KL in accordance with the technical datasheet.

Soltherm KL pointing mortar can be applied using one of two methods:

## HANDBOARD/HAWK METHOD

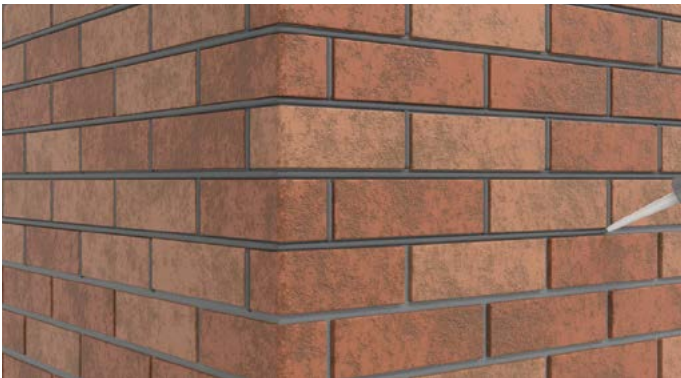


Place the fixing into the pre-drilled hole and push the fixing in until the head of the fixing is flush with the face of the base coat.

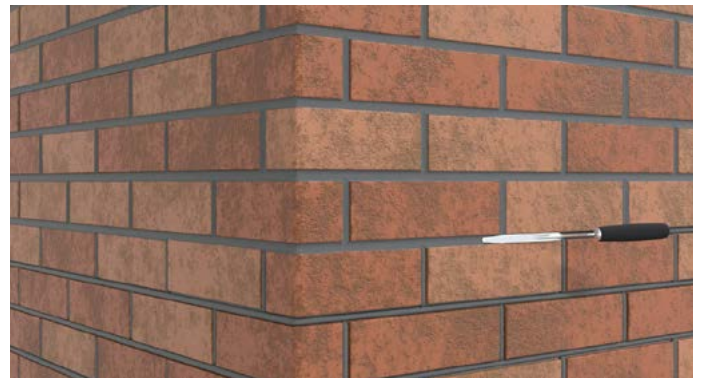


Screw or hammer the fixing into place ensuring the central pin is either flush with the fixing head or slightly recessed. The fixing head should be slightly recessed into the scrim coat face about 1-2mm.

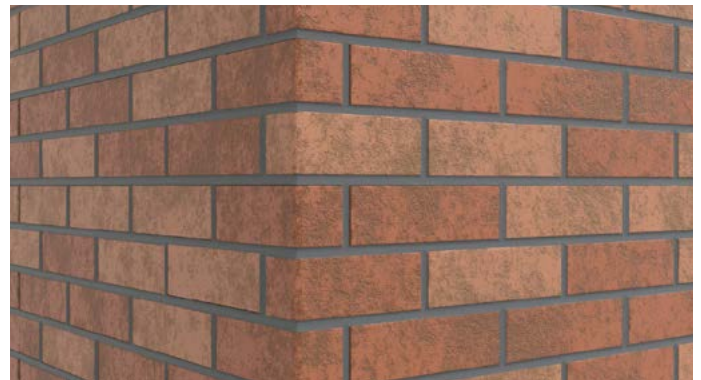
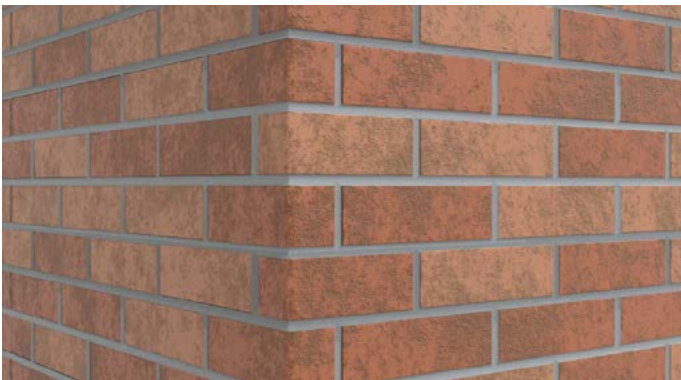
## POINTING GUN METHOD



Place SOLTHERM KL pointing mortar into a suitable pointing gun. Using the pointing gun, fill the brick joints with SOLTHERM KL, fully filling the joint.



Once SOLTHERM KL pointing mortar has sufficiently picked up but remains 'green', point the mortar to the required method. Once complete, the walls are to be brushed down with a soft brush at an approximate 45° angle, removing excess pointing mortar and cleaning the face of the brick slips.  
(Note: recessed pointing is not recommended)



Once the system has fully cured, proceed with the installation of SOLTHERM IMP.



# SOLTHERM IMP APPLICATION

The system must be allowed to fully cure and the application of SOLTHERM IMP must be no earlier than 14 days in optimal weather conditions (e.g. +23°C, 50% RH).

Always ensure brick slip surfaces are dry, clean and free from any dust or other contamination.

SOLTHERM IMP is supplied as a ready-to-use product. Shake the product several times prior to application.

Apply SOLTHERM IMP by roller, brush or spray equipment until the substrate is thoroughly and evenly saturated.

Apply a second coat of SOLTHERM IMP in the same manner, immediately after the first, taking care to ensure the first coat does not completely dry out.

Care must be taken to ensure SOLTHERM IMP is not applied over the surfaces of polyurethane sealants and compressed sealing tapes.



Refer to Soltherm Technical Services for further guidance.



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