



**SOLTHERM PREMIUM ACRYLIC
& PREMIUM SILICONE**
External Wall Insulation System
on EPS boards

APPLICATION GUIDE



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INTRODUCTION

SOLTHERM PREMIUM ACRYLIC & PREMIUM SILICONE is adhesively bonded with supplementary mechanical fixings external wall insulation system incorporating EPS boards insulation with a thin coat silicone and siliconeacrylic render finish.

Soltherm silicone renders contain encapsulated biocides. These prevent the growth of algae and mould for longer periods than standard biocides, without affecting other technical performance parameters. This has been proven and demonstrated in Soltherm's on-site R&D centre, ensuring the paints and renders that arrive on your project are perfect for the environment they are to be used within.

SOLTHERM PREMIUM ACRYLIC & PREMIUM SILICONE is a cost-effective solution ideally suited to refurbishment projects and new buildings.

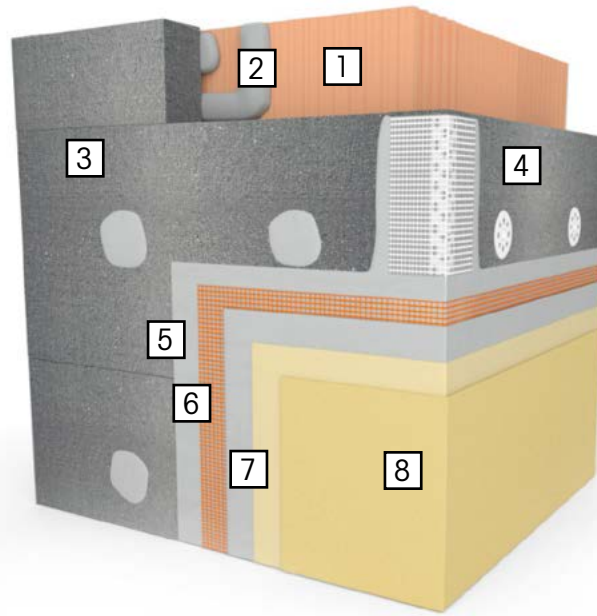
Important information

Prior to commencing with the installation of the SOLTHERM PREMIUM ACRYLIC & PREMIUM SILICONE, the Soltherm Registered Contractor is required to ensure the following:

- The installation team have had SOLTHERM PREMIUM ACRYLIC & PREMIUM SILICONE 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
- Wind load calculations (if required)
- 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 breaks should be specified by the Architect or Fire consultant on a project specific basis.

The image displays three overlapping technical data sheets for Soltherm products. The top sheet is for SOLTHERM AF-P+ 15, updated on 10.02.2017. The middle sheet is for SOLTHERM SNP COLOUR, updated on 30.02.2017. The bottom sheet is for SOLTHERM UB SPECIAL, updated on 05.11.2018. Each sheet contains detailed product descriptions, usage instructions, substrate preparation, and application methods. The SOLTHERM UB SPECIAL sheet includes a 'Base coat application' section with specific instructions for applying a continuous layer of adhesive and a 'Finish' section for the final render application.

THE SYSTEM



SOLTHERM PREMIUM ACRYLIC & PREMIUM SILICONE

1. Substrate

SOLTHERM PREMIUM ACRYLIC & PREMIUM SILICONE must only be utilised on masonry substrates. The substrate must be clean, dry and free from friable and/or deleterious material prior to the application of the system.

2. Adhesive

Grey cementitious adhesive with great adhesion strength for bonding EPS insulation.

3. EPS insulation

Graphite-enhanced (grey) EPS insulation boards or white EPS boards may be used with thermal conductivity coefficient 0.031 W/mK or more. EPS UHD 200 may be also used below DPC level.

4. Mechanical Fixings

ETA approved screw-in or hammerset fixings with steel nails are used. Refer to Soltherm standard details as well as fixing pattern implemented in the specification. Stainless steel fire fixings are required above second storey and are to be installed through the reinforcing mesh coat.

5. SOLTHERM UB or SOLTHERM UB Special

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

6. SOLTHERM Glass Fibre Mesh

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

7. SOLTHERM SNP Colour














Tinted base coat primer, allowing it to penetrate deep into the base coat. This aids the adhesion of the finish coat and ultimately improves the systems durability.

8. SOLTHERM SFC-P 15 or SOLTHERM AF-P+ 15

Silicone textured silicone finish offering the diverse colour, enhanced algae and fungal growth resistance, UV radiation resistance, lower water absorption and flexibility.

SYSTEM COMPONENTS & MATERIALS

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

FUNGICIDAL WALL WASH	A concentrated biocide for cleaning masonry walls	5L Bottle	Diluted with clean water in accordance with the datasheet. The level of dilution will depend on the severity of the fungal growth on the wall.	
SOLTHERM SP	A substrate primer for absorptive substrates	10kg Bucket	Applied directly to the masonry wall by brush, roller or low pressure spray.	
SOLTHERM CS	A substrate primer for smooth, low porous substrates	14kg Bucket	Applied directly to the masonry wall by brush, or roller.	
SOLTHERM PROFILES & BEADS	Aluminium, PCG steel & PVC full system & surface mounted profiles.	Mostly 2.5 or 2.0 m 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.	
SOLTHERM SA	Standard adhesive with great adhesion strengths for bonding EPS insulation	25kg bag	Mix thoroughly with clean water (4,8 - 5,3 litre) allow to stand for 5 minutes and remix before applying in accordance with the specification.	
EPS Grey Insulation	Graphite-enhanced (grey) EPS Insulation boards with excellent thermal conductivity coefficient 0.031 W/mK	1200x600mm or 1000x500mm slab of varying 10mm incremental thicknesses, 20-250mm	If required, insulation slabs can be cut with a saw or hot wire.	
MECHANICAL FIXINGS	ETA certified screw-in fixings with steel nails.		The fixing is installed through insulation and through scrim coat in accordance with the specification.	
SOLTHERM UB	Grey polymer modified base coat specifically formulated for application onto Grey EPS insulation.	25kg 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.	
SOLTHERM UB Special	Grey polymer modified base coat specifically formulated for application onto Grey EPS insulation and MW boards	25kg bag	Mix thoroughly with clean water (5.0 - 6.0 litres) allow to stand for 5 minutes and remix before applying in accordance with the specification.	
SOLTHERM GLASS-FIBRE MESH	An alkali resistance reinforcement mesh	50x1,1m roll	Cut to size with sharp knife.	
SOLTHERM SNP COLOUR	Base coat primer to aid the adhesion of the silicone topcoat to the base coat.	25 kg bucket	Mix thoroughly before application to the entire base coated area with a brush or roller.	
SOLTHERM SFC-P 15	A 1.5mm textured silicone topcoat, colour tinted as required.	25 kg bucket	Mix thoroughly, a small amount of water (≤ 330 ml) can be added to achieve the desired viscosity.	
SOLTHERM AF-P+ 15	A 1.5 mm textured siliconeacrylic topcoat, colour tints as required)	25 kg bucket	Mix thoroughly, a small amount of water (≤ 330 ml) can be added to achieve the desired viscosity.	

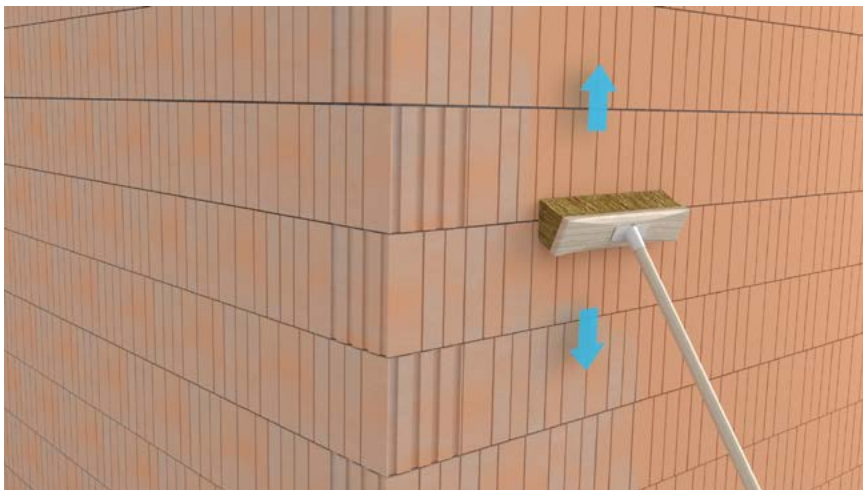
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SUBSTRATE PREPARATION



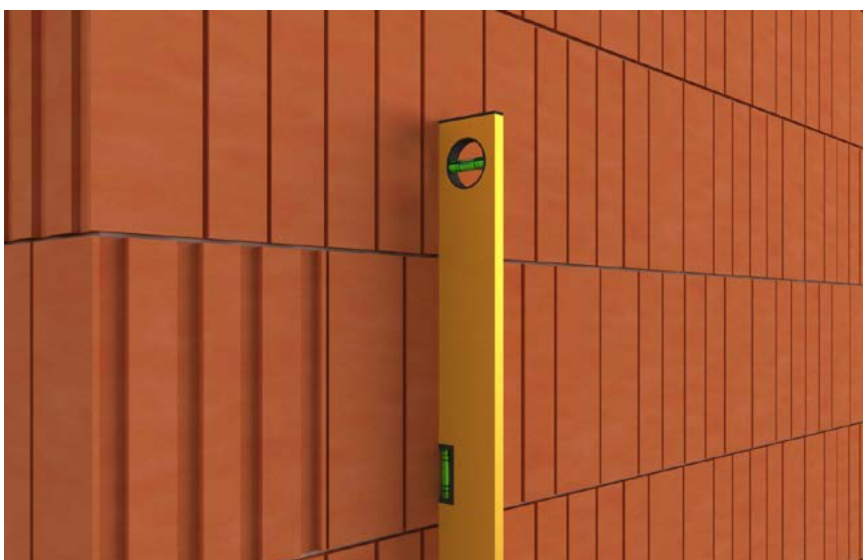
All heavy fungal growth must be removed from the substrate by either scraping or power wash and allowed to dry.

If the system is to be applied to an existing render substrate, it must be hammer tested first.



If required, apply FUNGICIDAL WALL WASH to the substrate in accordance with the specification and technical datasheet and allow to dry.

Apply either the SOLTHERM SP or SOLTHERM CS to the substrate in accordance with the specification and technical datasheet and allow to dry.



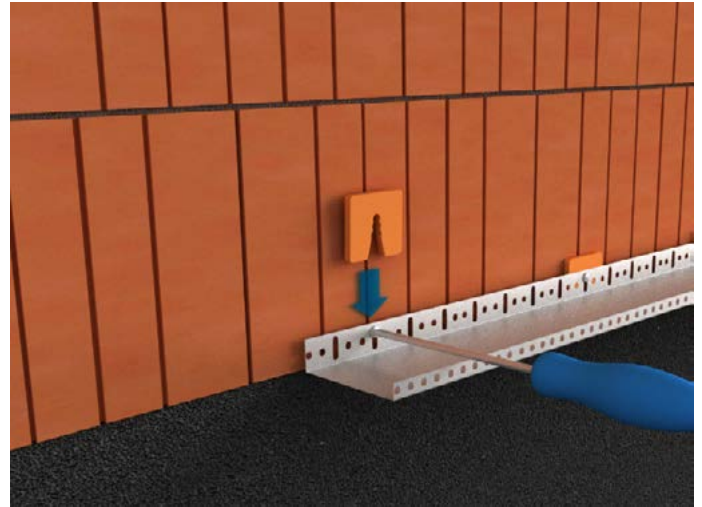
Surface irregularities and cavities (5- 15mm) must be made good with SOLTHERM LRC, irregularities ≤ 5 mm can be levelled using SOLTHERM UB or SOLTHERM UB Special.

STARTER TRACK INSTALLATION

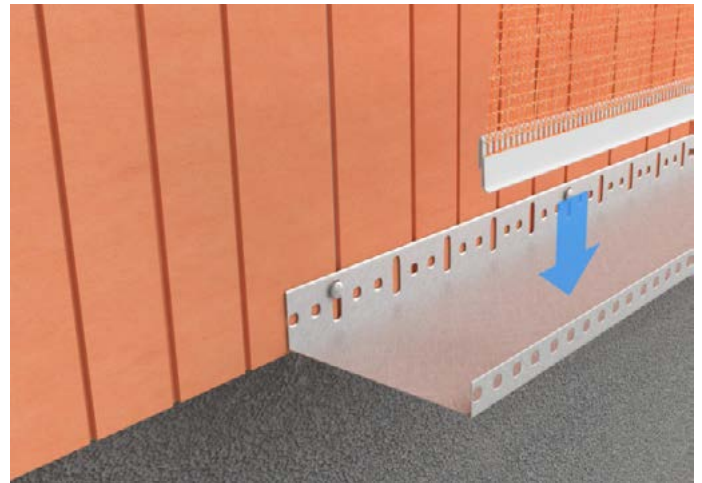


The SOLTHERM STARTER TRACK is installed at DPC level and at least 150 mm above ground. The starter track is mechanically fixed at 300 mm centres with specified fixing and approx. 50 mm from the edge.

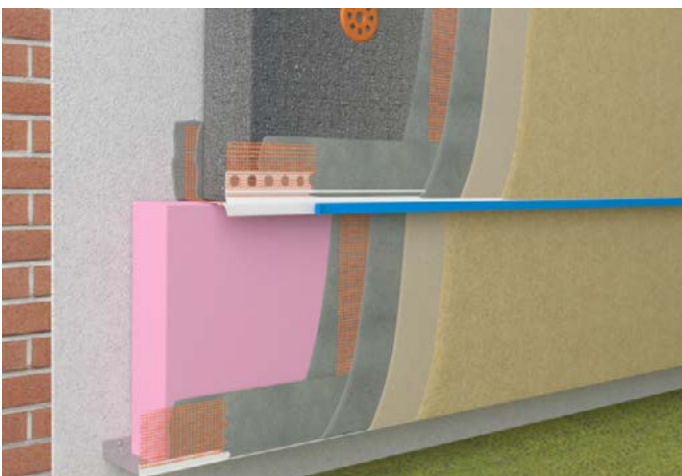
The SOLTHERM STARTER TRACK must be mitred at external corners and linked together with adjacent profiles using profile joint clips.



If the substrate is undulating and not line and level, it is acceptable to use packers.



Once the starter track is installed, the SOLTHERM CLIP-ON STARTER BEAD can be clipped to the front of the SOLTHERM STARTER TRACK.



If the contract does require insulation below DPC, please refer to your specification and contact Soltherm Technical with any queries relating to the materials, installation techniques and detailing.

INSULATION ADHESIVE APPLICATION

Insulation adhesive, SOLTHERM SA or SOLTHERM UB Special, must be applied in all circumstances.

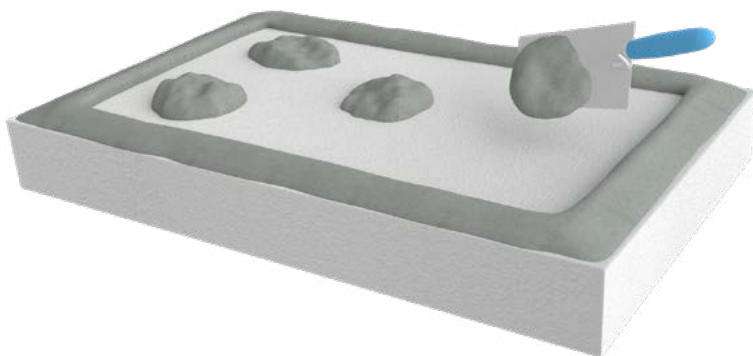
There are two approved application options for the installer to choose from.

1. Ribbon & Dab Method – Suitable for substrate that have slight undulations
2. Notch Trowel Method – Suitable for line and level substrates,

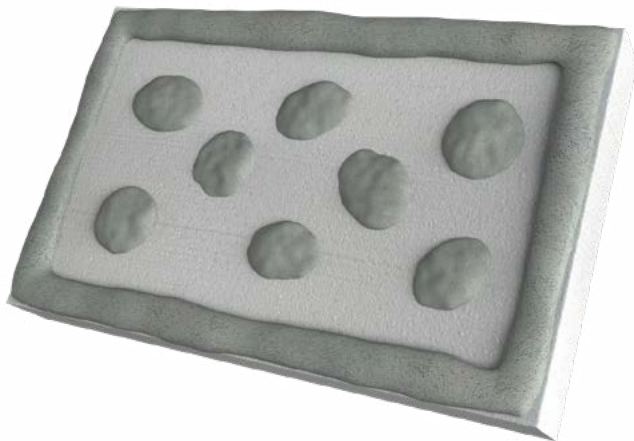


Ribbon & Dab Method

Apply the SOLTHERM SA or SOLTHERM UB Special to the insulation around the perimeter of the board, minimum 30 mm.

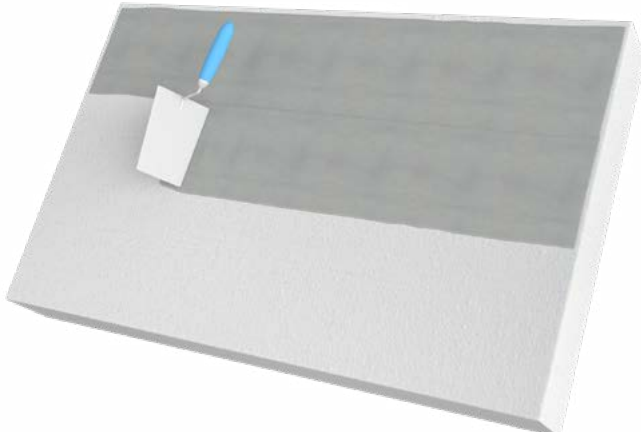


Apply 6 - 8 large dabs (80 - 100 mm) to the centre of the board.



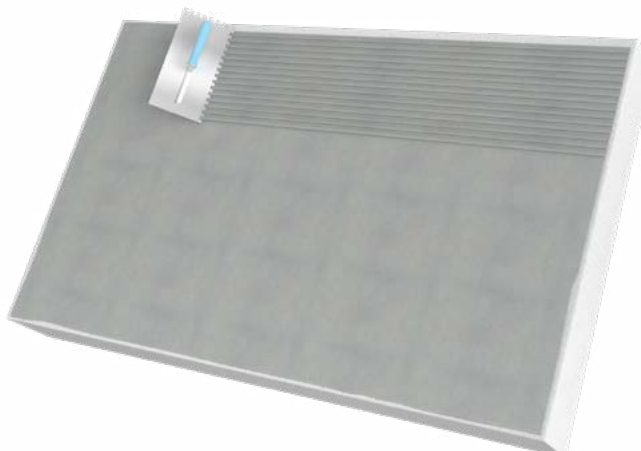
The adhesive thickness of the insulation adhesive layer, after pressing against the substrate wall, must be ≤ 10 mm and cover $\geq 60\%$ of the overall area of the board.

INSULATION ADHESIVE APPLICATION



Notch Trowel Method

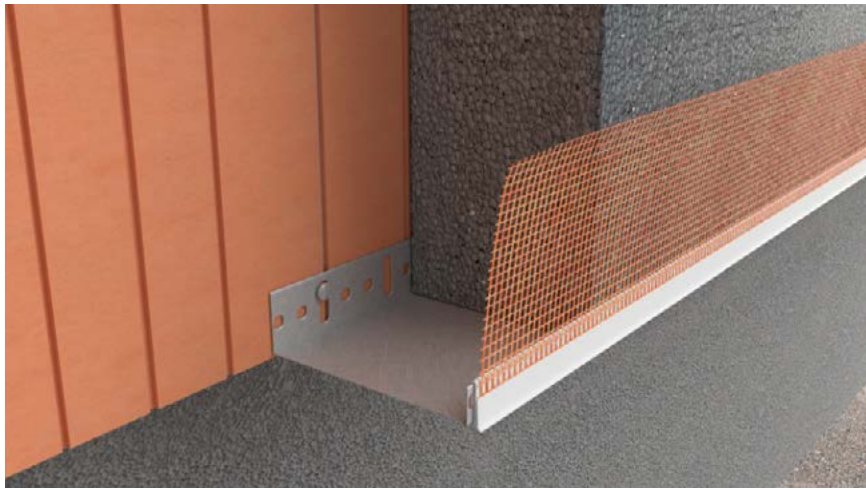
The insulation adhesive can be applied with a 10x10 mm notch trowel.



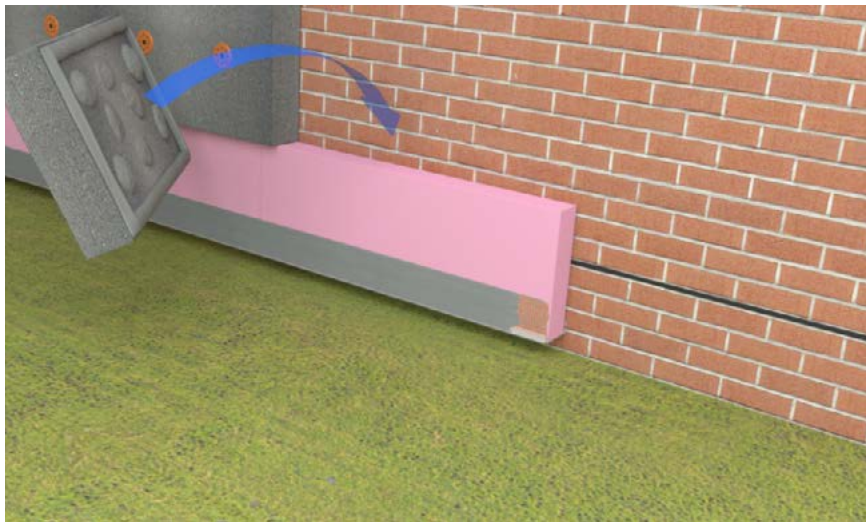
The insulation board is then pressed against the substrate wall and should achieve $\geq 90\%$ contact area.

Important Note: The insulation adhesive must be allowed to dry before installing the mechanical fixings.

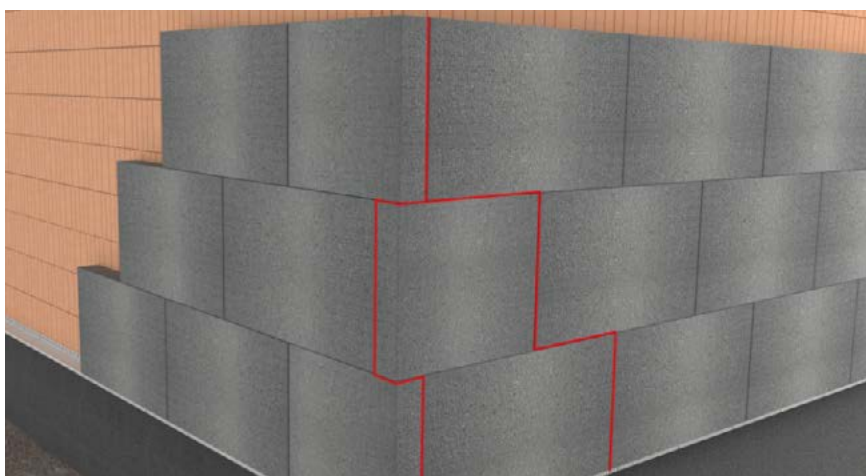
INSULATION BOARD INSTALLATION



The first course of Grey EPS boards are placed into the SOLTHERM STARTER TRACK with the mesh of the clip on bead facing outwards.

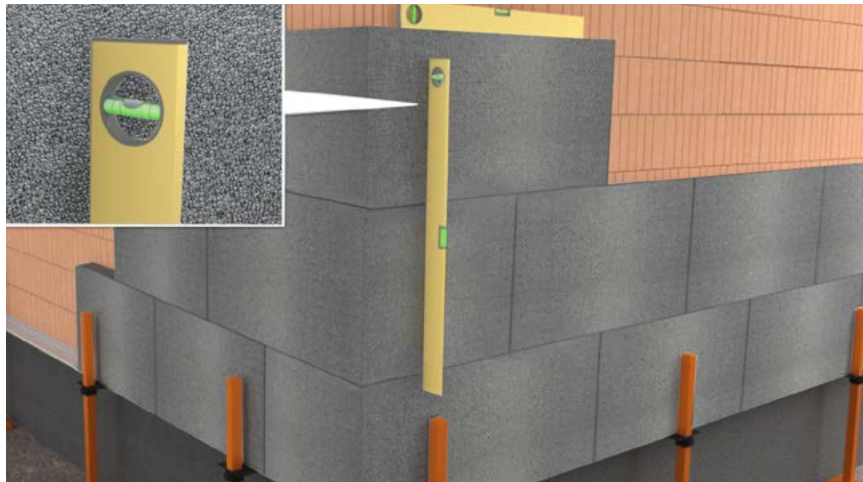


Insulation boards must be placed against the substrate in a brickbond manner achieving a minimum 150 mm stagger with the above/below insulation panel.



External corners are formed as per a brickwork corner, ensuring a full brickbond.

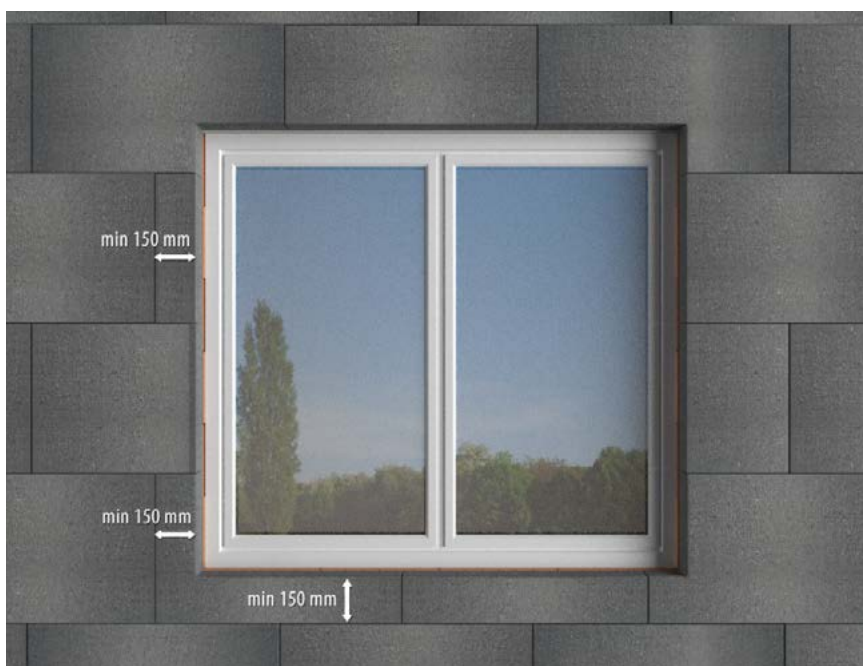
INSULATION BOARD INSTALLATION



Always ensure that the insulation board are line and level throughout the façade, paying particular attention to external corners.



L shaped boards must be installed around all openings ensuring that no edge is smaller than 150 mm and no piece of insulation smaller than 150 mm throughout the installation.



INCORRECT

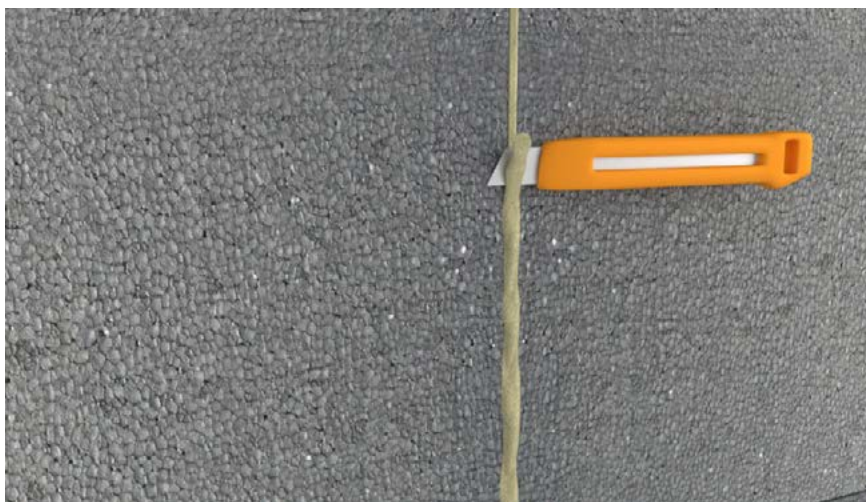


CORRECT

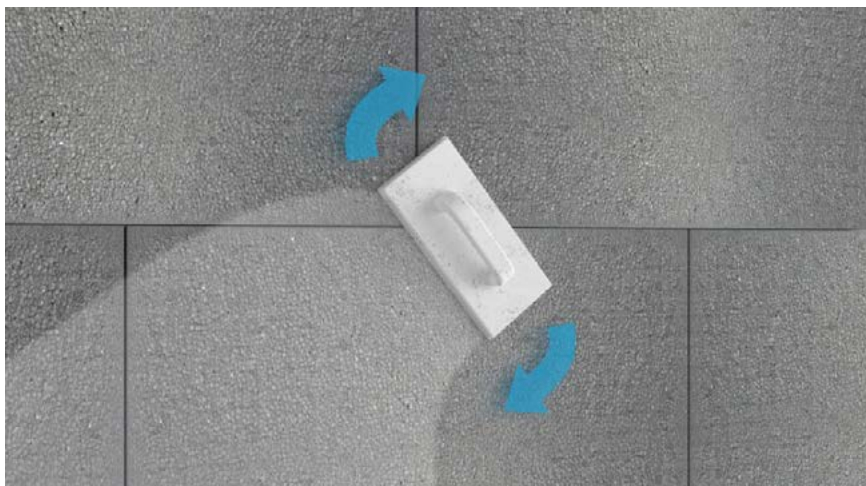
INSULATION BOARD INSTALLATION



Any gaps between adjacent 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 EPS boards.

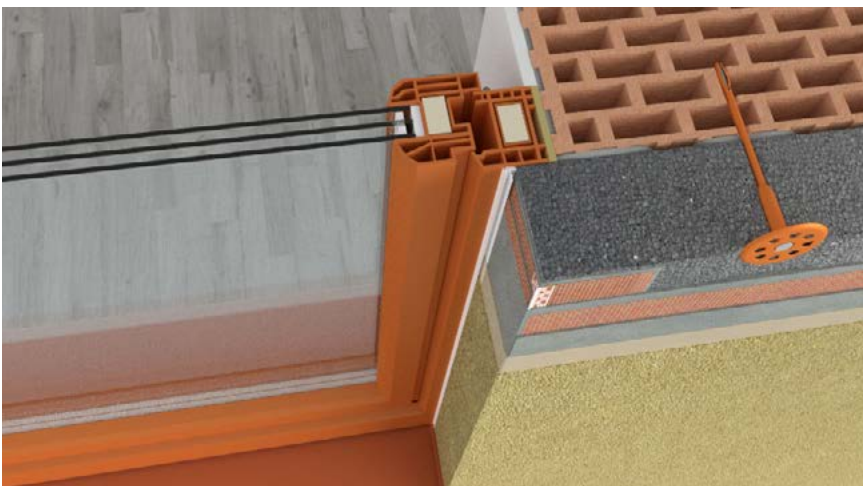


if required, the surface of the EPS can be rasped to ensure the EPS line & level, prior to proceeding with the installation of the system.

INSULATION BOARD INSTALLATION



Where windows have recessed reveals and/or heads, oversail the insulation board beyond the existing to create a channel to set 20 mm or 30 mm thick EPS insulation strip in place within the reveal, adhesively fit as appropriate.



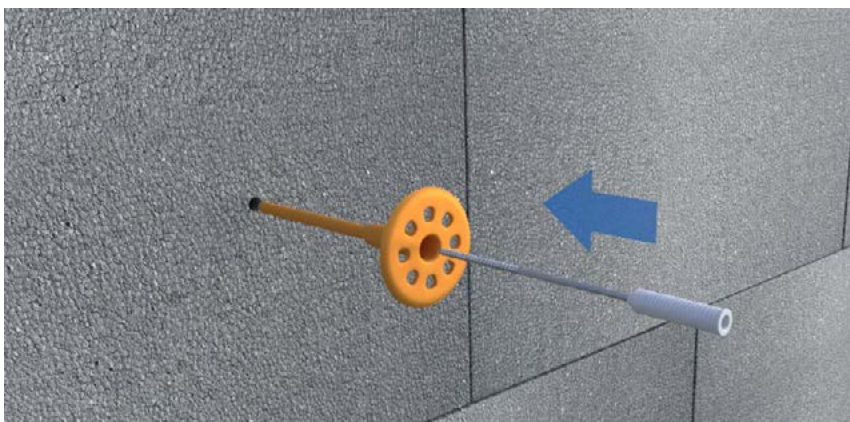
If windows are flush with the substrate, the main elevation insulation panels can simply over sail onto the window frame a minimum 20 mm..

INSULATION FIXING APPLICATION FOR PREMIUM ACRYLIC & PREMIUM SILICONE

Always refer to the specification for the appropriate fixing pattern



Following the specified fixing pattern, first drill through the insulation and into the masonry substrate with an 8 mm or 10 mm diameter drill bit (subject to a fixing) to the appropriate depth.



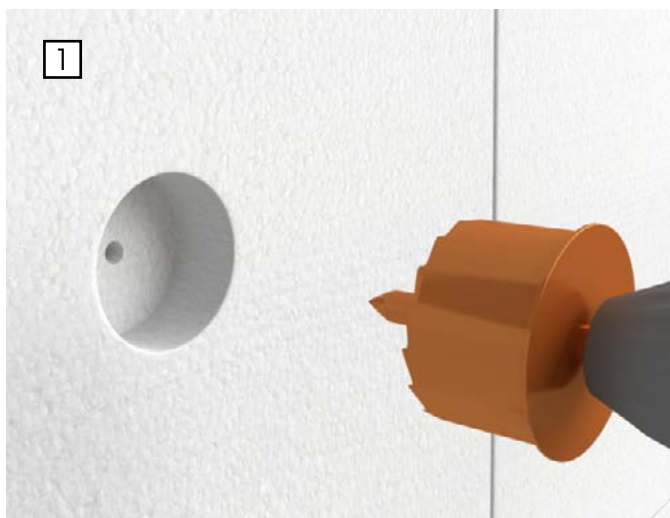
Place the fixing into the pre-drilled hole and push the fixing in until the head of the fixing is flush with the face of the insulation.



Screw or hammer (depending on fixing specification) 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 insulation face about 1 - 2 mm.

COUNTERSUNK INSULATION FIXING APPLICATION

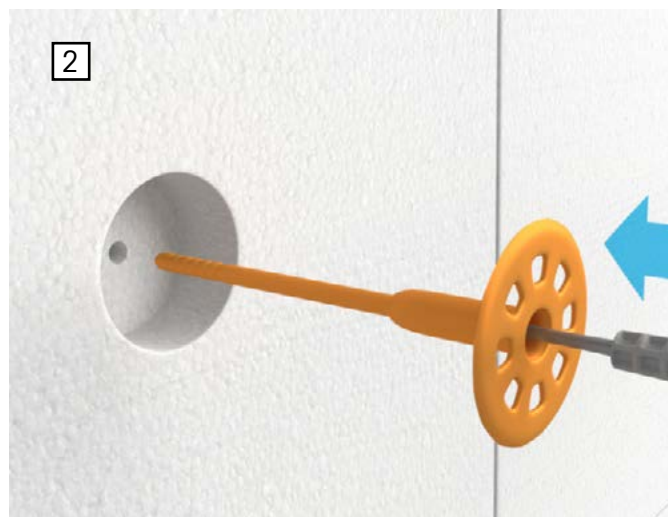
This application requires a minimal thickness of EPS boards not less than 80 mm, depending on used fixing type.



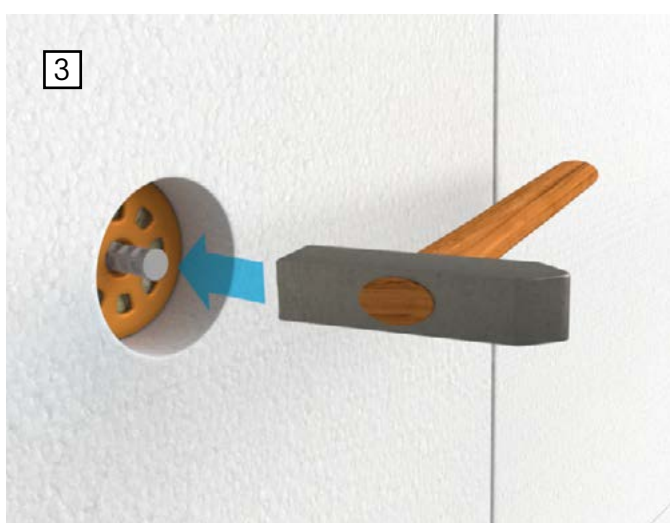
Following the specified fixing pattern, first drill through the insulation and into the masonry substrate with an 8 mm or 10 mm diameter drill bit (subject to a fixing) to the appropriate depth.

After drilling the openings the cylindrical openings should be cut with the use of drill/screwdriver.

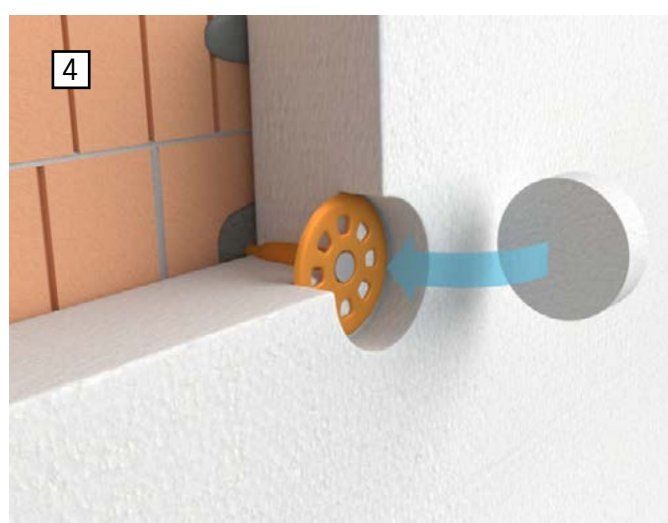
The thickness is determined by a cutter limit equals to approx. 20 mm.



In the pre-drilled and cleaned hole place the fixing and push the fixing in until the head of the fixings is flush with the face of the pre-drilled gap.



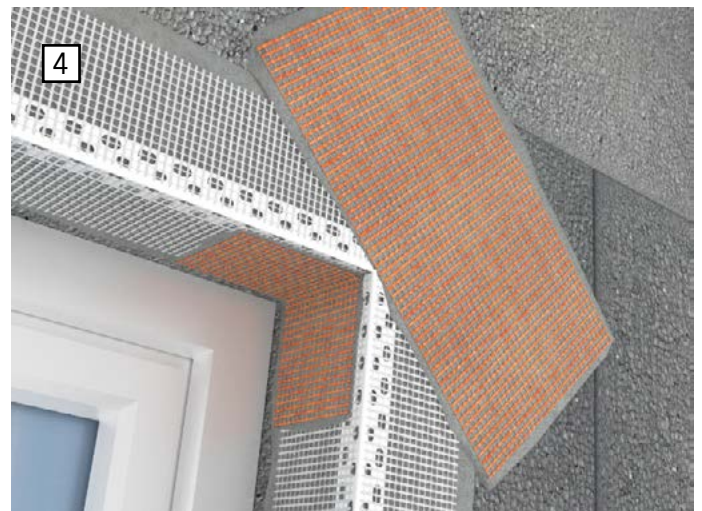
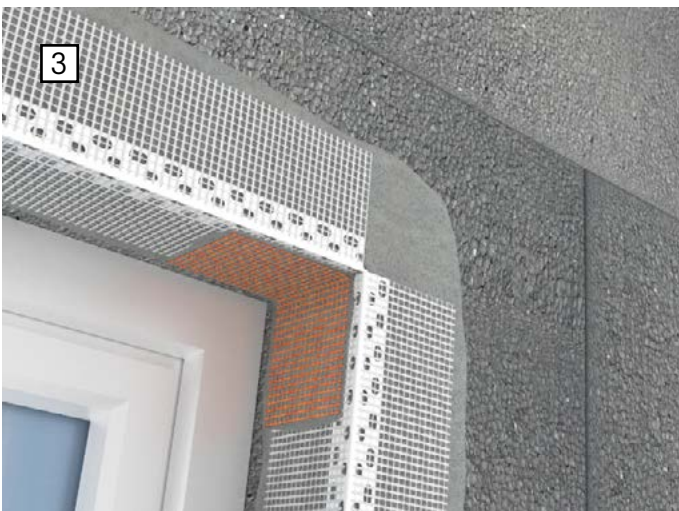
Screw or hammer (depending on fixings specification) the fixing into place ensuring the central pin is either flush with the fixing head.



Install the anti cold-bridge EPS cap.

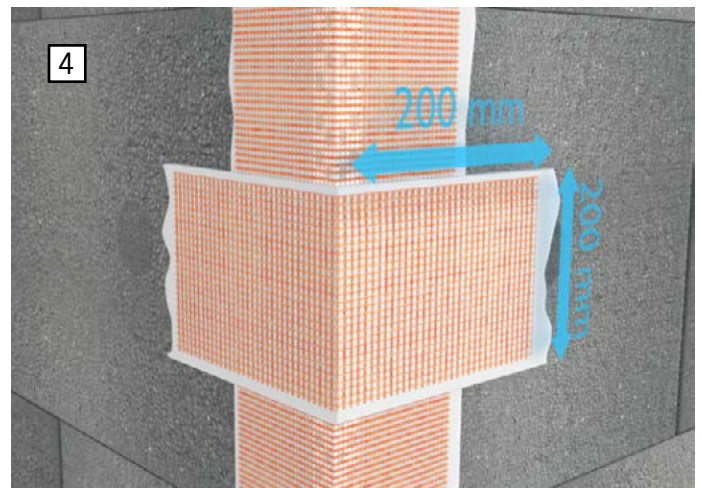
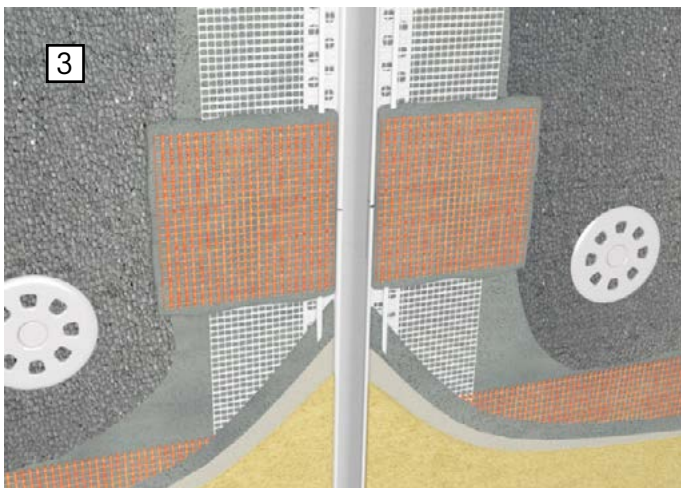
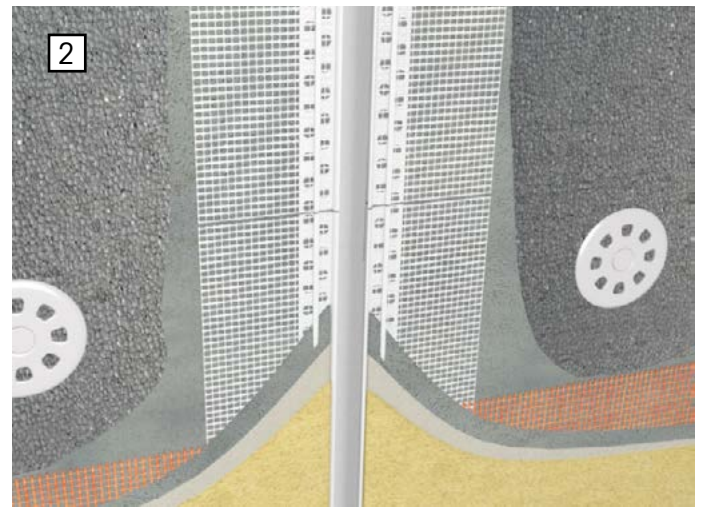
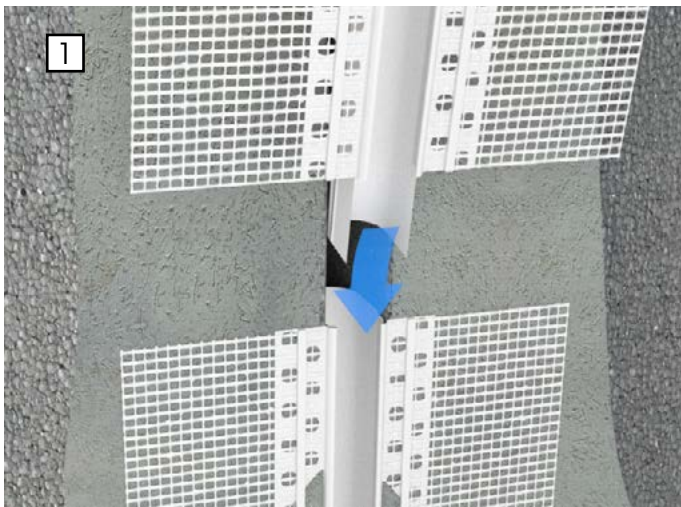
GENERAL SURFACE MOUNTED BEAD APPLICATION

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.



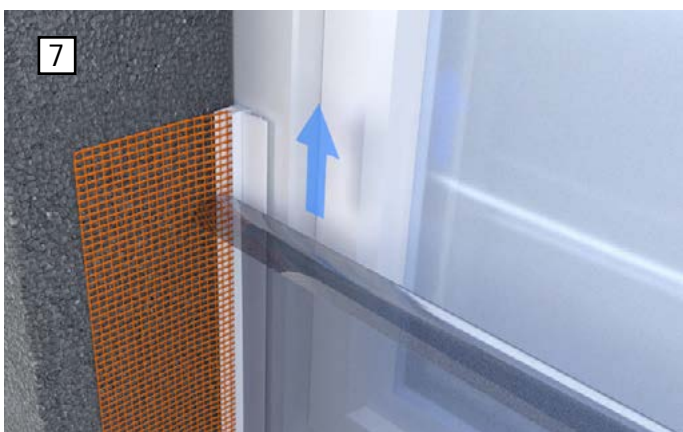
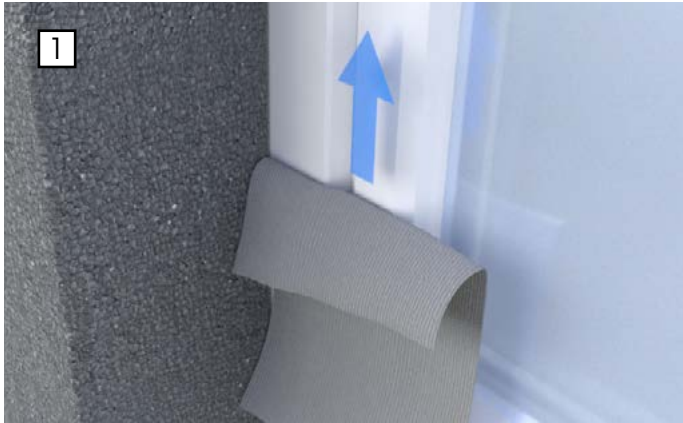
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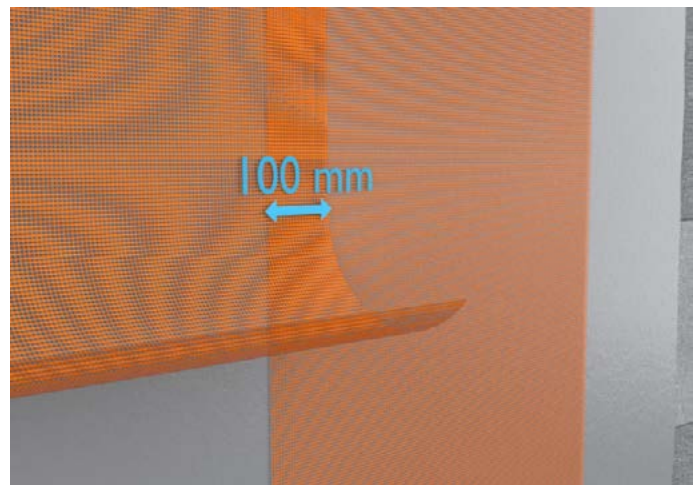
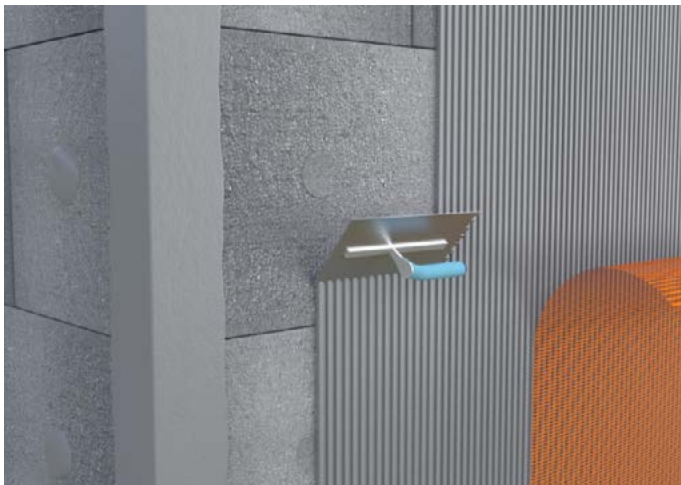
WINDOW BEAD APPLICATION

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 UB or SOLTHERM UB Special 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.

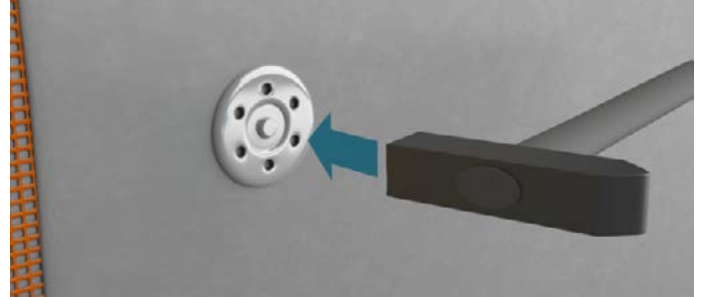


Allow the basecoat to dry for approximately 24 hours before applying a tight slurry coat 1-2 mm. The overall thickness of the basecoat should be between 3-5 mm.

FIRE FIXING INSTALLATION (if required)



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 basecoat approx. 1-2 mm. Whilst the base coat is still wet, place a mesh patch (100x100 mm) over the fixing head and smooth with additional base coat if required.

SILICONE-ACRYLIC OR SILICONE TOPCOAT APPLICATION



Primer SOLTHERM SNP COLOUR is applied in with a brush or a paint roller and allowed to completely dry for 4 to 6 hours prior to the application of the topcoat.



The silicone-acrylic texture coat SOLTHERM AF-P+ 15 or silicone texture coat SOLTHERM SFC-P 15 is applied to the required thicknesses (1.5 mm grain size), using a stainless steel trowel and finished with a plastic float to create a textured finish. The drying time is dependent on weather conditions.

Once the system has fully cured, apply mastic seals in accordance with specification



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