



**SOLTHERM RENDER SYSTEM FOR ICF  
(Insulated Concrete Formwork)  
BUILDINGS**

**APPLICATION GUIDE**



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# INTRODUCTION

## For Application to ICF Structures

For application of the Soltherm render systems 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.

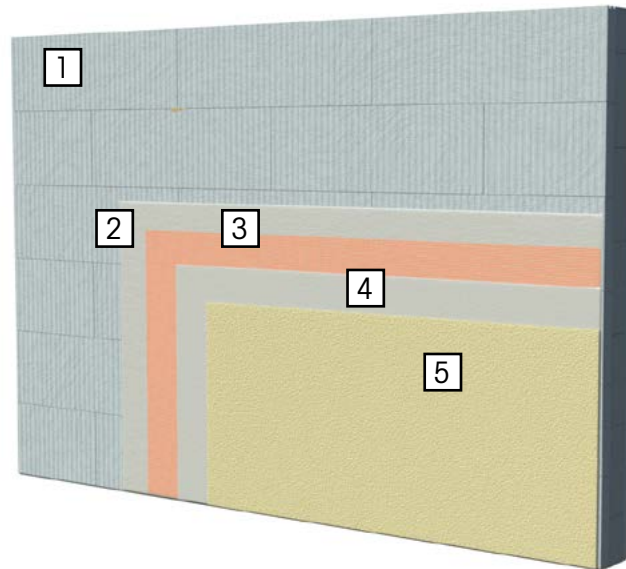
The surface condition/finish and EPS characteristics of ICF system must be thoroughly inspected to ensure it meets all technical surface finish requirements. The surface must be stable, sound, dry, clean of surface contaminants such as dust, grease, form oils, bitumen, salts and other barrier materials 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 RENDER SYSTEM, the Soltherm Registered Contractor is required to ensure the following:

- The installation team have had SOLTHERM RENDER 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 Wind load calculations (if required)

# THE SYSTEM



## SOLTHERM ICF FINISH WITH RENDER

### 1. ICF NSAI-approved structure

### 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 SNP Colour (If required)

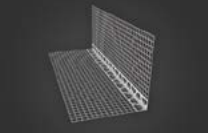





Tinted base coat primer, allowing it to penetrate deep into the base coat. This aids the adhesion of the finish coat and ultimately improves the systems durability.

### 5. 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

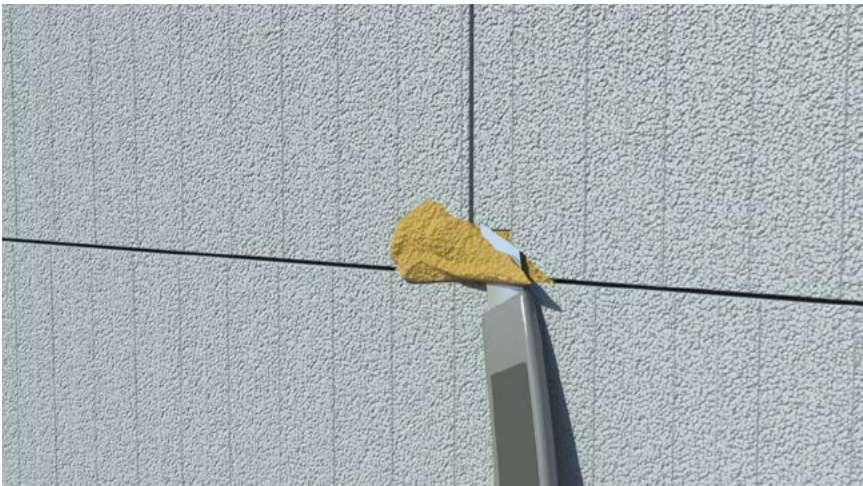
**IMPORTANT:** When using any component, product or material, refer to the technical datasheet before proceeding with the installation.

<b>SOLTHERM PROFILES &amp; BEADS</b>	Aluminium, PCG steel & PVC full system surface mounted profiles.	Mostly 2.5 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.	25 kg bag	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 GLASS-FIBRE MESH</b>	An alkali resistance reinforcement mesh	50x1,1m roll	Cut to size with sharp knife.	
<b>SOLTHERM SNP COLOUR</b>	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.	
<b>SOLTHERM SFC-P 15</b>	A 1.5mm textured silicone topcoat, colour tinted as required.	25 kg bucket	Mix thoroughly, a small amount of water ( $\leq 330$ ml) can be added to achieve the desired viscosity.	
<b>SOLTHERM AF-P+ 15</b>	A 1.5 mm textured siliconeacrylic topcoat, colour tintes as required)	25 kg bucket	Mix thoroughly, a small amount of water ( $\leq 330$ ml) can be added to achieve the desired viscosity.	

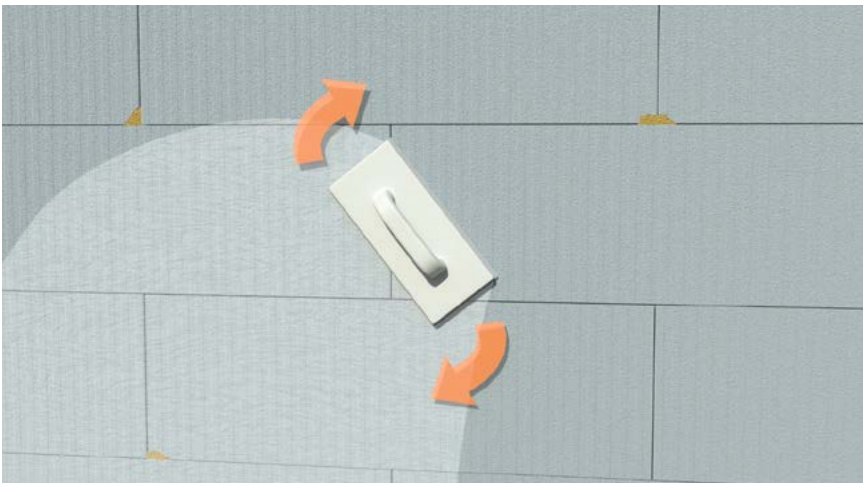
# SUBSTRATE PREPARATION



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.



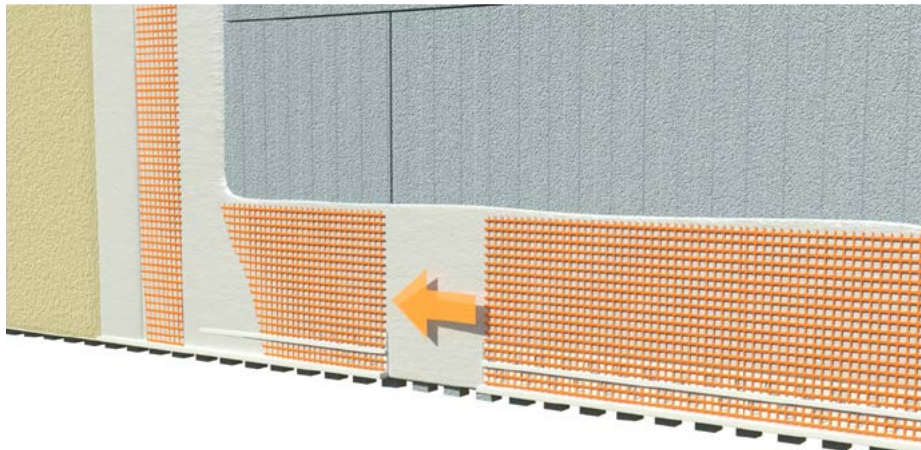
Where approved by the ICF system manufacturer, it is recommended that the outer surfaces of the EPS insulation panels, are lightly rasped with coarse sandpaper or an abrasive float rasp for EPS, to remove dust from the EPS surfaces.

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.

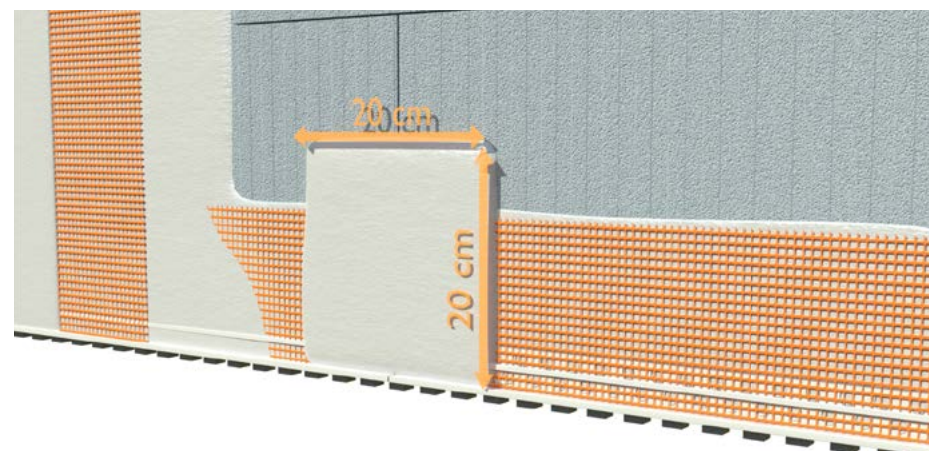
# GENERAL SURFACE MOUNTED BEAD APPLICATION

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.

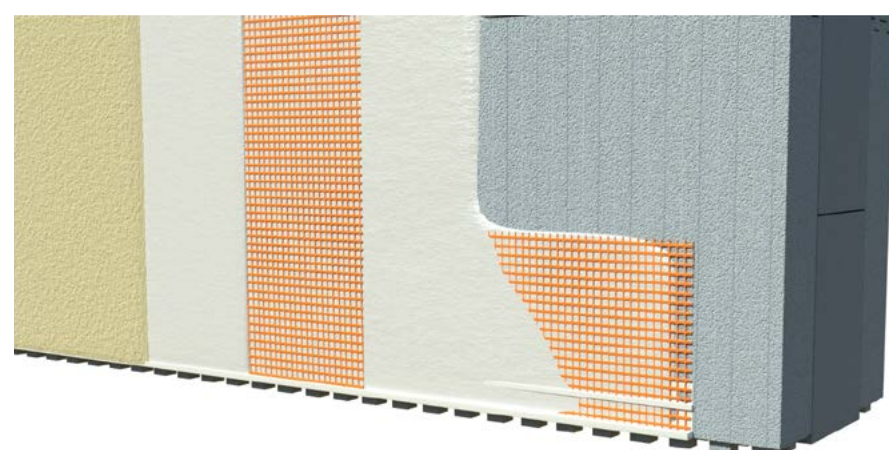
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# GENERAL SURFACE MOUNTED BEAD APPLICATION

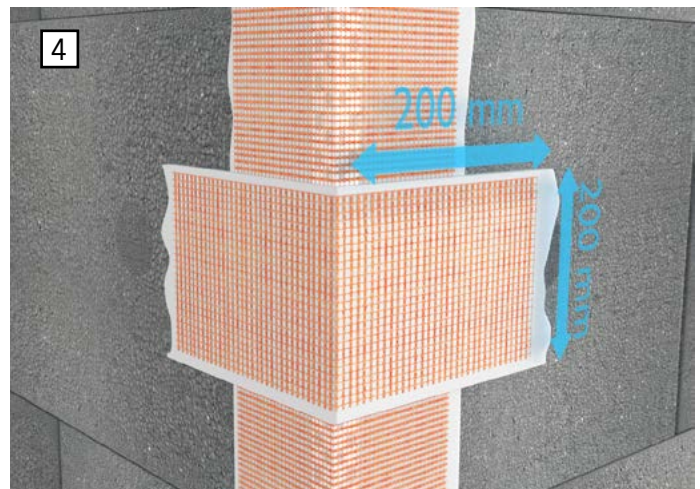
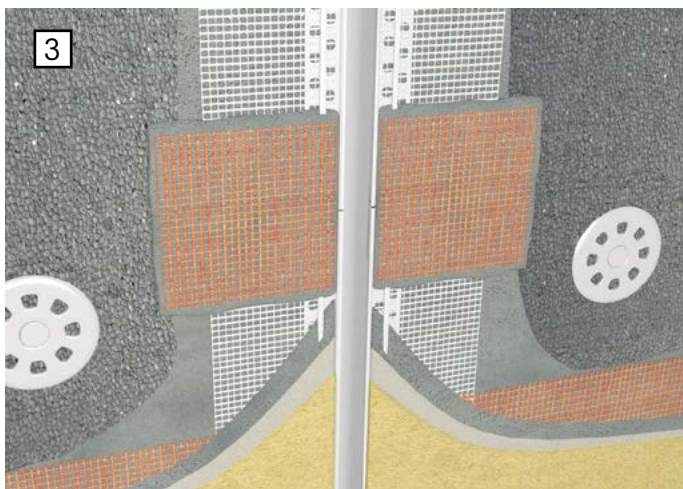
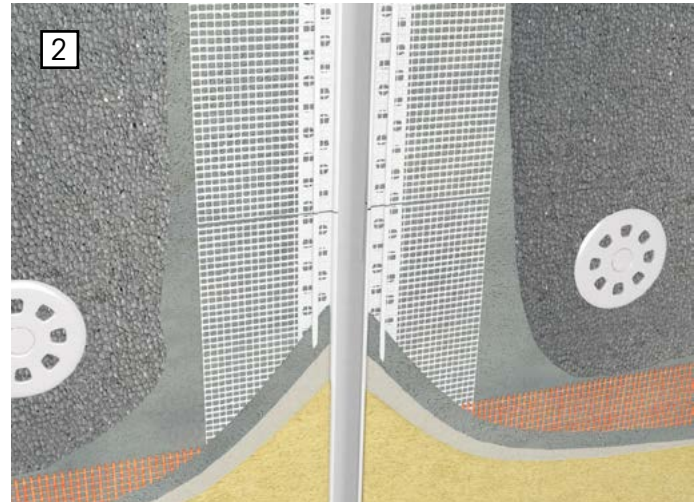
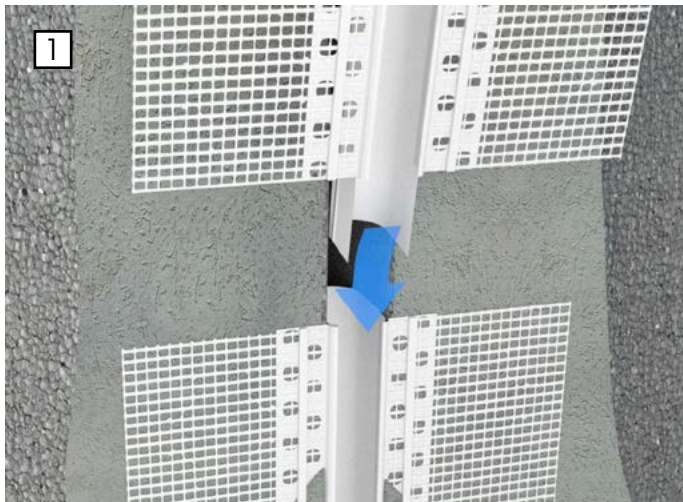
All surface mounted beads must have an additional reinforcing mesh patch, min. 200x200 mm, placed over the joint of adjacent beads to prevent cracking in the future. Additional stress patches of minimum 200x350 mm cut from standard reinforcing mesh must be placed at the corners of all structural openings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





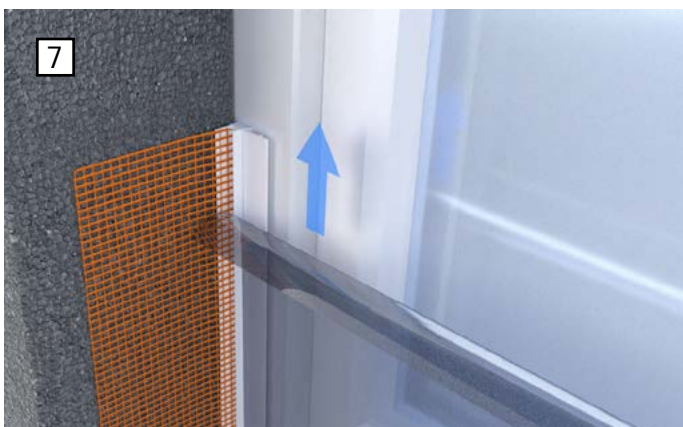
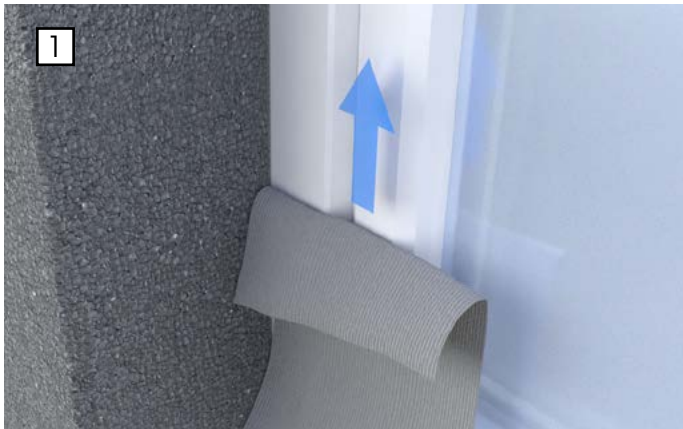
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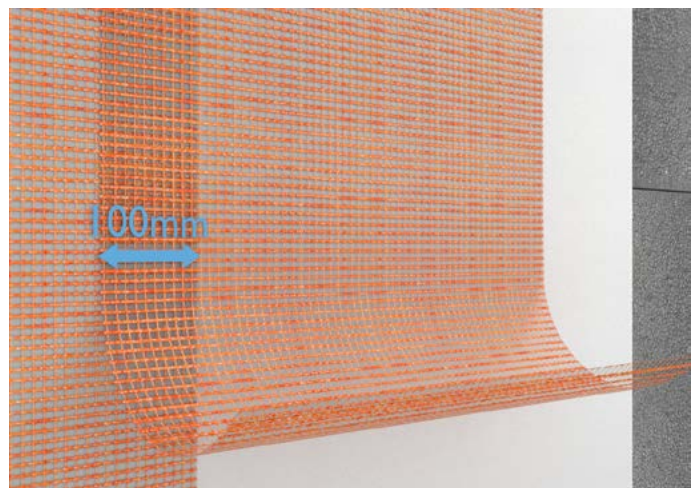
# WINDOW BEAD APPLICATION

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 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 between 3-5 mm.

# SILICONE-ACRYLIC OR SILICONE TOPCOAT APPLICATION



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

For dark colour renders (HBW<20) it is recommended to perform a patch test on the area of 1 m<sup>2</sup> to eliminate the risk of base coat showing through and lack of colour consistency and stability.

Primer is recommended, if the base coat is going to be applied in temperatures at the upper temperature limits or to extend the open time of the render.



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.



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