

SYSTEM FOR ROOF INSULATION USING FOAM CONCRETE, EPS SHEETS & HEAT REFLECTIVE COATING.



Summary of Application

STEP 1: Waterproofing of slab using **Water Guard 491**.

STEP 2: Flood Test.

STEP 3: Application of **Ressi Foam Crete**.

STEP 4: Application of EPS Sheet using **Ressi Insufix 200**.

STEP 5: Application of metal mesh over the surface of EPS Sheet.

STEP 6: Application of screed over the metal mesh surface using **Ressi SBR 5850** and **Silmix**.

STEP 7: Making of chamfers between the screed and parapet walls using **Ressi SBR 5850** and **Silmix**.

STEP 8: Application of **Heat Guard 1000** over the screed surface.

Detailed Description

Insulation is the most effective way to improve the energy efficiency of a home, commercial or an industrial space. Insulation of the building envelope helps keep heat in during the winter, but also lets heat out & cooling inside the structure during summer. If a structure is properly insulated it can easily save up to 60 ~ 70% in heating & cooling costs after installation.

An un-insulated structure is subject to considerable winter heat losses and summer heat gains. Ressichem has a variety of products that can be used for the insulation of a roof. The following system describes a waterproofing and insulation systems with the effective use of Foam Concrete (Ressi Foam Crete), EPS Sheets and a heat reflective coating of **Heat Guard 1,000**.

Step 1: Waterproofing of slab using Water Guard 491

It is recommended to apply the waterproofing coating of **Water Guard 491**. It is a 2 component highly flexible cementitious copolymer coating ideally designed as an excellent waterproofing coat over concrete and other cementitious surfaces to resist positive water ingress. It is essential to apply **Water Guard 491** Correctly, it is recommended to apply 2 coats of the material in right angled directions. If the first coat is applied top to bottom, the second coat should be applied in a left to right direction (Please refer product datasheet for further information).

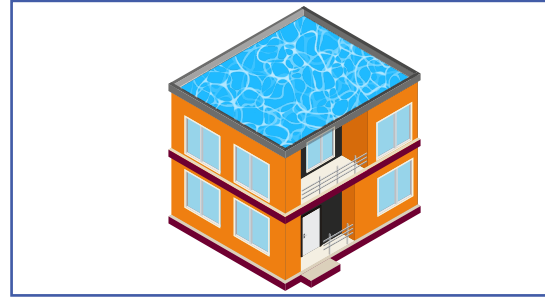


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Step 2: Flood Test of the roof slab.

Once the coating of **Water Guard 491** has been dried, it is recommended to conduct a flood test over the roof slab by filling it with 3 to 4 inches of water for at least 48 to 72 hours. The leakage points after the flood test should be rectified using appropriate means and the flood test should be repeated until all the leakage points have been rectified.



Step 3: Application of Ressi Foam Crete

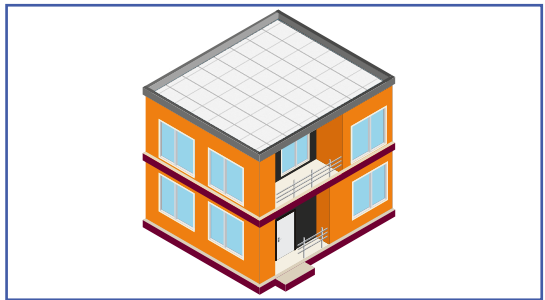
Once it is ensured that the roof slab is watertight, the Application of **Ressi Foam Crete** (Foam concrete system by Ressichem) should be done over the roof slab. **Ressi Foam Crete** is a system of generating a lightweight cement matrix by adding a highly efficient foaming agents in a specialized foaming generator. The weight density of **Ressi Foam Crete** can vary from 11 KG / m³ to 14.5 KG / m³ Depending on the quality of cement, site conditions and requirements. Please watch video of **Ressi Foam Crete** for better understanding of the system, you can also refer to the technical datasheet of the system for better understanding. Finishing **Ressi Foam Crete** in a proper level is essential to this system as it will create ease in laying the subsequent layer of EPS sheets. If Proper level of **Ressi Foam Crete** is not achieved.



A screed including **Ressi SBR 5850** with the inclusion of **Silmix** may be needed to provide a proper base for the subsequent placement of EPS Sheets.

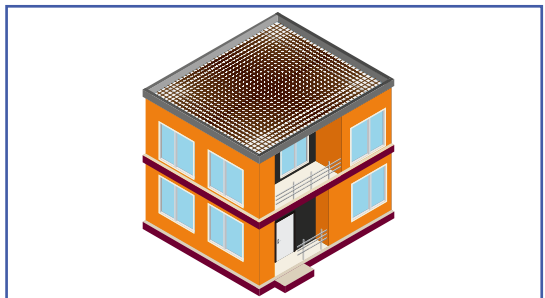
Step 4: Application of EPS sheets using Ressi Insufix 200.

Once Ressi Foam Crete has been laid, and properly dried, EPS sheets are to be applied using a compatible adhesive of **Ressi Insufix 200**. It is essential to lay the mortar of **Ressi Insufix 200** at a thickness of minimum 8mm in a notched trowel formation and place the EPS over the wet mortar. It is essential to make sure that the EPS sheet is properly pressed over the mortar not leaving any hollow space for air. The recommended minimum thickness of the EPS sheet should be at least 2 inches and should have a minimum density of 32 KG / m³. It is also highly recommended to use a flame-retardant EPS sheet. There should not be very wide gaps between the EPS sheets, the sheets be placed as close of each other as possible.



Step 5: Application of Metal Mesh over the EPS Surface.

Once the EPS sheets have been placed properly, it is recommended to lay a metal wire mesh over the EPS surface. It is essential to make sure that parts of the wire mesh are embedded into the EPS sheets and are mechanically fixed. The metal mesh should be overlapped to at least 1 inch. The Metal mesh can also be nailed down & fixed to the EPS sheets.

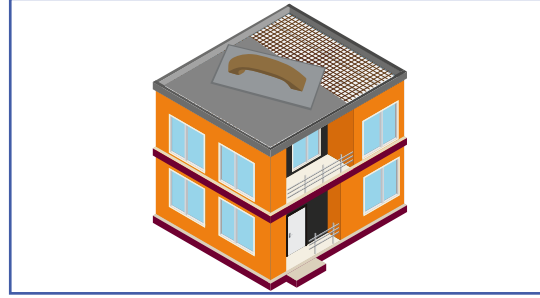


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Step 6: Application of Screed with the addition of Ressi SBR 5850 & Silmix.

A screed is usually poured over the metal mesh & EPS surface of the roof slab. It is recommended to use good strong mix design for the screed. It is also recommended to add **Ressi SBR 5850** along with the addition of **Silmix** within the mix of the screed. The recommended dosage of **Ressi SBR 5850 & Silmix** is 1 Ltr each for every 50 KG Bag of cement used in the placement of floor screed over the roof & balcony slab. It is to be strictly ensured that the screed is placed in a slope moving towards the water drainpipes of the slab. If the slopes are not properly maintained, the functioning life of the slab will be reduced drastically and will cause many issues within the lifetime of the slab. Proper screeding in slope moving towards water drains is one of the most important elements in this system.



For larger areas proper panel grooves should be given in the screed at regular intervals to avoid cracks forming in the screed over time.

Step 7: Chamfer making with the addition of Ressi SBR 5850 & Silmix in the mortar mix.

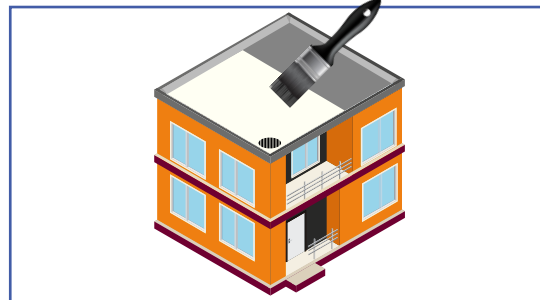
Once screeding works have been completed it is recommended to make chamfers between the parapet walls & the floor screed. The material recommended for making the chamfers in this case is a combination of **Ressi SBR 5850 & Silmix**. Both these materials are added as 1 Ltr each with each 50 KG bag of cement as an additive to promote bonding & waterproofing of the chamfers. The chamfers should be at least 4 inches tall and 4 inches wide along the entire area intersecting the parapet walls & floor screed.



Step 8: Application of Heat Guard 1000

Heat Guard 1000 is a single component high heat resistant reflective and waterproof coating which has been designed to dissipate and reflect solar radiation by providing a protective coating. **Heat Guard 1000** is applicable on a variety of substrates such as concrete, blocks, bricks, plaster and screeds, and a variety of shaded metal roofs. **Ressi Heat Guard 1000** had added glass beads aggregates embedded into it which can reflect heat off the surface to a great extent.

Saturate the surface with clean water. Apply first coat while the surface is still damp but free from standing water. Apply using a short stiff bristle brush, roller at a rate of 1-2mm. Required thickness is achieved by applying 2 to 3 layers, taking care that each layer is not thicker than 1mm. Leave the first coat to dry for 2 to 3 hours before applying the second coat. Second coat can be rubbed down with a soft sponge. Spray or trowel application is acceptable provided that the mixing ratio is adjusted to achieve the right consistency. Leave the final coat of **Heat Guard 1000** to cure overnight & keep moist for 3-4



days before proceeding to conduct water proofing test. It is recommended that for over hollow blocks or highly porous areas a minimum of 3 to 4 coats at 1 mm thickness to be applied.

Note: Heat Guard 1000 is also a waterproof material. It can also make the surface of the roof watertight a well. A proper flood test can also be conducted with **Heat Guard 1000** if needed.

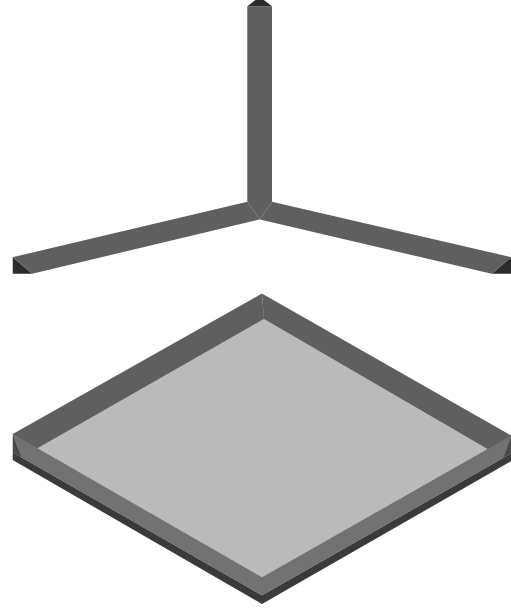
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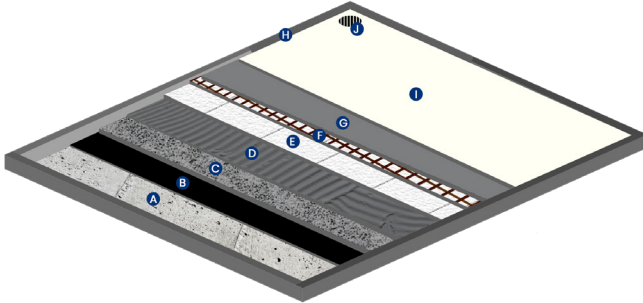
What is a Chamfer?

Is a transitional edge between two faces of an object. Sometimes defined as a form of bevel, it is often created at a 45° angle between two adjoining right-angled faces. (Wikipedia).

In waterproofing systems, making a **chamfer** is of great significance. Water normally gets stuck in areas which have sharp corners of 90° & on several occasions the leakage of water occurs from this the sharp angle of the water retaining bodies or areas where significant waterproofing is required. To minimize the effect of this, a **chamfer** is usually created to make sure that there are no sharp angles in the structure to minimize the effect of water coming in & out of the structure.



System Summary



FOAM CONCRETE + EPS + HEAT REFELCTIVE COATING

- A: RCC Slab
- B: Water Guard 491
- C: Ressi Foam Crete
- D: Ressi Insufix 200
- E: EPS Sheets
- F: Metal Mesh
- G: Floor Screed (Ressi SBR 5850 and Silmix)
- H: Chamfer
- I: Heat Guard
- J: Drain Point

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