ROOF INSULATION SYSTEM USING FOAM CONCRETE.

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Summary of application

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

STEP 2: Flood Test of the RCC Surface.

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

STEP 4: Application of floor screed with the addition of **Ressi SBR 5850** and **Silmix.**

STEP 5: Chamfer making with the use of **Ressi SBR 5850** and **Silmix.**

STEP 6: Finishing of the screed surface (if Needed).

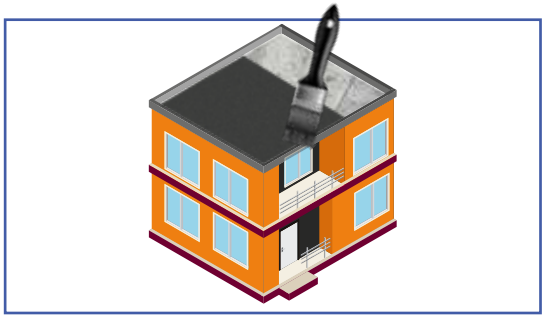
Detailed Description

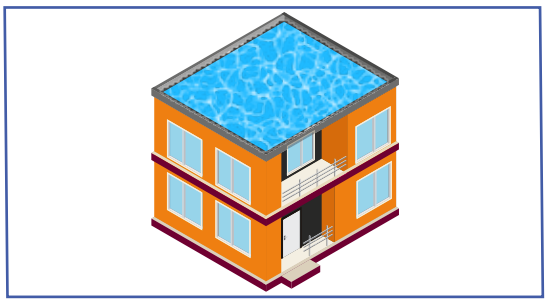
Insulation is the most effective way to improve the energy efficiency of a home, commercial or an industrial space. Insulation of the building envelope helps keep heat in during the winter, but also lets' heat out and cooling inside the structure during summer. If a structure is properly insulated it can easily save up to 60 ~ 70% in heating and 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 **Ressi Foam Crete** (Ressichem system for the execution of foam concrete).

Step 1: Waterproofing of RCC concrete 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 & 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).





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.

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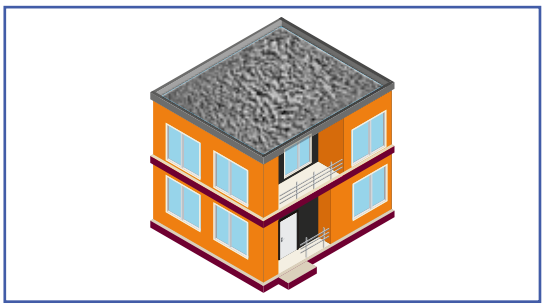
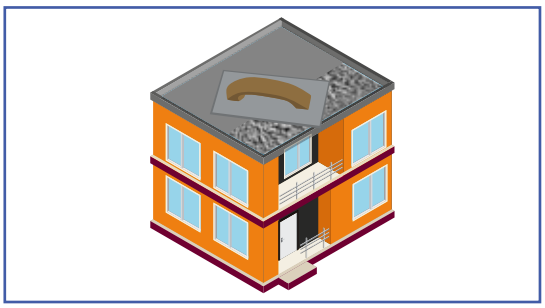
Step 3: Application of Ressi Foam Crete

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 / m^3 to 14.5 KG / m^3 Depending on the quality of cement, site conditions & 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.



Step 4: Application of floor screed with the addition of Ressi SBR 5850 & Silmix.

A screed is usually poured over **Ressi Foam Crete**. 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** and **Silmix** is 1 Ltr each for every 50 KG Bag of cement used in the placement of floor screed over the roof. 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 of 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 5: Making of chamfers

Once screeding works have been completed it is recommended to make chamfers between the parapet walls and the floor screed. The material recommended for making the chamfers in this case is a combination of **Ressi SBR 5850** and **Silmix**. Both these materials are added as 1 Ltr each with each 50 KG bag of cement as an additive to promote bonding and 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 and floor screed. These are to be implemented over sky light openings as well (if any).

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Step 6: Finishing of the screed

Once the screed has been laid, cured, & dried out completely, it can be finished with a suitable material such as tiles, marble, or any other finish as per requirement. The screed itself can also be left as is if no further finish is required.

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.