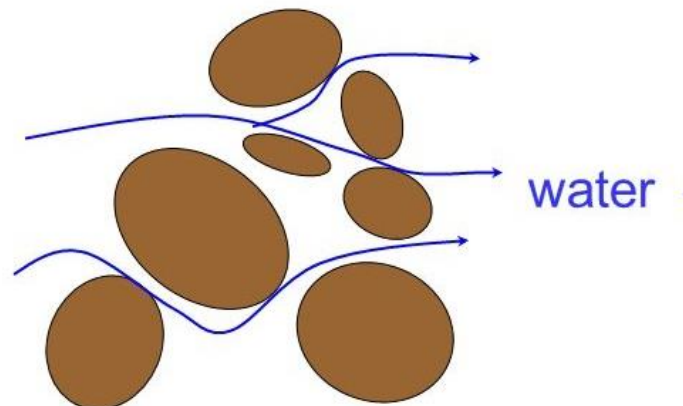


WHY DO YOU NEED A SURFACE IMPROVER ON A POROUS MATERIAL SUCH AS FIBER CEMENT BOARD?



The degree of density of a solid substance gives water the opportunity to penetrate between the fixed parts of the solid. In a porous material, like the word says, water is able to find its way into the pores in the solid easily.

Each material increases moisture to a greater or lesser extent. Tension due to its own weight and wind load is partly absorbed by the grain tension in the material of the panel. The remainder of this tension is absorbed by the water tension.

Normally this causes a slight change in shape, but in porous material it reacts different. Then the grains will slide over and even roll.

But that can only happen if they dodge, which results in an increase of the pore volume between the grains. This process gives water the opportunity to fill the available spaces. This process continues to repeat.

The adhesive mass applied to the porous material does not provide this opportunity which ultimately will result in the development of a water film between the adhesive mass and the porous material until the adhesion of the glue joint collapses.

To support the imagery compare it with a slide. You'll be on a dry slide and the friction of your rough skin or clothing on the slide's slide will not let you slip. Once a water film can form between your skin or clothing and the slide, the friction reduces and you will slide down.

In order to avoid detachment of the bonding due to this phenomenon we recommend the use of TWEHA PreFix X-tra, a surface improver.

The surface friction of a material ensures that the facade panel is not slipping off. The coefficient of friction, whether or not shift, is partly dependent on:

- The type of surface (rough, smooth)
- Uneven surface (protrusions, pits)
- Other factors (such as water).

Stress, as a result of the panel weight and wind loads, is absorbed partly by the granules of the sheet material. But also absorbed by the water enclosed. Normally, this causes a substantially no deformation, but in case of porous material it is different.

Then the granules will slide over one another and even roll. But this is only possible when they separate from each other also, which leads to an increase of the pore volume between the granules. This process gives water the ability to fill up the available spaces more and more, the panel is swelling up.

This process repeats itself until the cohesion of the adhesive bond collapses. The applied adhesive mass, which is porous in no or lesser degree, will absorb no or less water which will, in the end, lead to the development of a water film between the adhesive mass and the porous material.

For imaging you may compare it with a slide. You sit down on a dry slide and the cohesion of your rough skin or clothing on the material of the slide makes you will not slip. The moment a film of water between your skin or clothing and slide is formed cohesion reduces and you will slide down.

The surface improver TWEHA PreFix X-tra closes the pores on the surface of the panel to be bonded, distributes the stress over a wider area and precludes the phenomenon mentioned hereinbefore.