

Waterproofing Systems / Capillary Waterproofing Systems**AQUAFIX®****Crystallized Water Insulation Material****DESCRIPTION**

Cement based crystallized mortar in powder form, made of specifically selected fine aggregates and chemicals activated by water and moisture. It is applied in positive and negative directions and the chemicals it contains penetrate into the concrete in depth by reacting with moisture and free lime present in the concrete, and form crystals that do not dissolve in capillary voids and pores.

APPLICATION AREAS**Negative Water Pressure:**

- Waterproofing of basement walls and grounds from inside
- Waterproofing of water tanks from outside
- Retaining walls
- Tunnels, subways
- Floors and horizontal joints
- Elevator excavations.

Positive Water Pressure:

- Water tanks
- Swimming pools
- Waterproofing of curtain walls and ground walls
- Irrigation canals
- Concrete pipes
- Dams
- Cisterns.

TECHNICAL PROPERTIES

Appearance	Grey or red colored fine powder
Powder Density	~ 1.20 kg/L
Mixture Rate	Slurry: 1 water / 2.25 - 2.50 Aquafix Trowel Consistency: 1 water / 3.25 - 3.50 Aquafix Plaster: 1 Aquafix / 2 measures of water to obtain trowel consistency
Resting Period	3 - 5 minutes
Pot Life	20 minutes
Application Temperature	Between +5°C and +35°C
Service Temperature	-20°C / +70°C

ADVANTAGES

- Effective in both **positive** and **negative** water pressure
- Integrates with the surface it is applied to, penetrates into the surfaces and provides long lasting and complete waterproofing
- At each contact with the water, it fills the capillary voids of the concrete with its crystallized structure and provides impermeability
- Non-poisonous. Perfect for water tanks
- Dry sprinkle application is a very easy and effective method for waterproofing in horizontal work joints
- Protects the concrete and reinforcement iron by preventing corrosion
- Does not need to be protected with materials such as isolation plates prior to the filling application
- Air and water vapor permeable, allows the construction to breathe
- Can be applied on fresh concrete that has not set yet
- Resistant to freeze-thaw cycle.

CONSUMPTION

Slurry	Positive water pressure : 1 - 2 kg/m ² (on 2 layers) Negative water pressure: 2 kg/m ² (on 2 layers)
Plaster	2 - 3 kg/m ² (on 5 mm plaster)
Dry Sprinkle	3 kg/m ²

APPLICATION**PREPARATION OF THE SURFACE**

- The surface must be clear of materials which prevent bonding, such as dust, oil, tar, bitumen, paint, silicone, curing agents, detergents and mold release oils.
- Weak parts of the concrete must be repaired, plasters that are not adhered well must be removed, the surface must be smooth and sound, and the static cracks must be repaired using a plaster with **AQUALATEX** or **REPAIRGROUT EXPAN High Strength Shrinkage Compensated Grout Mortar**. The dynamic (moving) cracks must be repaired with FIXA's appropriate MS, hybrid or polyurethane based sealants. The holes with water leakage must be plugged with **AQUASTOP**.
- The surface must be saturated with water and must be kept moist during application.
- Corners must be beveled.

PREPARATION OF THE MORTAR

- 25 kg of AQUAFIX Crystallized Water Insulation Material is mixed with 10 liters of water for applications with brush, with 7 liters of water for applications with trowel, preferably with a low speed drill until there are no lumps.
- Always add water into AQUAFIX and prepare only the amount to be consumed in 20 minutes.

APPLICATION

- There are three alternative methods of application:
 - 1- **Slurry (Mortar with Water):** Applied on the moisturized surface with a brush in two layers that are perpendicular to each other. If you need the first layer to penetrate the surface deeper; prefer **AQUAFIX C Concentrated Crystallized Water Isolation Material**. This material is prepared in red color to ensure that the whole surface is covered. Second layer is applied when the first layer is hardened but not completely dry, in about 3 - 4 hours.
 - 2- **Plaster:** Can be applied by adding into the plaster of 5-10 mm thickness for very old concrete, brick wall or briquette surfaces. **AQUAFIX C Concentrated Crystallized Water Isolation Material** can be added into the plaster, and AQUAFIX can be applied as slurry on this plaster as a second layer.
 - 3- **Dry Shake:** In cold joint applications, AQUAFIX can be sprinkled in powder form into the joints on horizontal surfaces.
- **Curing** with water is very important after all types of application. Following the application, AQUAFIX must be prevented to dry fast and kept moist for about 1 week. Water spraying or laying out moist sack as implemented in concrete curing operations are useful.
- One or more application methods can be selected depending on the state of the structure being old or new.
 - 1- **Slurry or dry shake methods must be chosen in applying on new structures:**
 - For isolating the water coming from the ground, AQUAFIX can be applied as slurry or dry shake on the leveling concrete surface right before pouring floor covering concrete. This method prevents the surface to be flooded by preventing the water to leak inside. In groundwork, water

isolation must be made on outer surface (the direction of water in-flow) if possible and if not, it must be made on inner surface.

- In cold joint applications due to breaks while pouring the concrete during the construction, it can be applied as dry shake horizontally and as slurry vertically.

2- Slurry or plaster methods must be chosen in applying on old structures:

- **In concrete curtain walls with water leakage or high water pressure:**
 - If there are holes on the surface with high water flow, the holes are enlarged first with a drill or a chisel in order to evacuate the water and reduce the water pressure in these holes.
 - If there are leakages in more than one spot, water must be evacuated by drilling a hole at the lower sections of the wall.
 - If the water pressure is too high, a thin plastic pipe is placed inside the holes. If the pressure is not too high there is no need for a plastic pipe.
 - The whole surface is isolated with AQUAFIX, except the plastic pipe. The mortar must be cured for 24 hours.
 - After completing the isolation of the entire surface except the holes, the plastic pipe is removed and the hole is plugged with a mortar obtained by mixing 3 - 4 measures of AQUAFIX with 1 measure of AQUAFIX HARDENER, its complementary product.
 - It is pressed strongly by hand with gloves for 1 - 2 minutes until the plugging mortar hardens.
 - After AQUAFIX is cured, the isolation is provided by applying AQUAFIX slurry by covering also the surrounding area of the hole.
- **In isolating very old concrete, brick wall or briquette surfaces:** Aquafix is added into the plaster.

CAUTION

- Avoid application below +5°C and over +35°C.
- Avoid application on frozen areas, on areas under risk of freezing in 24 hours or on areas open to direct sunlight or wind.
- Never attempt to extend the expired mortar by adding powder and water. To maintain the consistency of the mortar during the application mix it often.
- Structures such as water tanks should be filled with water 24 hours after the last layer of AQUAFIX application since water pressure speeds up crystal formation and penetration of AQUAFIX into the concrete. In general, absolute water isolation is reached in 5 - 7 days. Soil filling is done at the end of this period.
- The degree of formation of crystal and penetration depends on the density of the concrete and the absorbancy of the surface.
- Crystals that are formed by Aquafix may not have a decorative appearance. In order to avoid this, plaster must be applied on the last layer of Aquafix when it is still wet and the paint must be applied on the plaster. In the case of ceramic or tile coverings, ceramic adhesive must be applied directly on freshly applied AQUAFIX. If these coverings will be made on AQUAFIX that is cured, crystals on the surface must be wiped off with diluted hydrochloric acid or bleach before the plaster. Wiping process only removes the crystals on the surface but does not damage the crystals penetrated inside the concrete.

PACKAGING

25 kg kraft bags

SHELF LIFE

Unopened packages can be stored in a non-humid environments for 12 months, stacked maximum 10 packages on a pallet.



Form No: 5.01 TDS Aquafix
Rev: 02 – 05/2018

Technical Data Sheet (TDS)

Date
30 November 2020

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HEALTH AND SAFETY

As with all chemical products, contact with food, skin, eyes and mouth should be avoided during usage and storage. During the application, work wears, protective gloves, goggles and mask should be used according to the work place health regulations. If swallowed by accident, consult a doctor. In case of contact with skin, rinse with water. Do not leave the package open. Keep out of reach of children.

* The application instructions and technical values given for the products have been obtained in our tests in accordance with international standards and our experience, at $23 \pm 2^{\circ}\text{C}$ temperature and $50 \pm 5\%$ relative humidity. These values may vary depending on ambient conditions. High temperatures shorten the durations, low temperatures extend them. Before starting the application, whether the product is suitable for the application and purpose should be tested by the user. FIXA Construction Chemicals is not responsible for application errors that may occur if the product is used outside of its intended purpose or if the application conditions and recommendations mentioned above are not followed. This Technical Data Sheet is valid until the next revision is published. FIXA reserves the right to change the values specified in this Technical Data Sheet, provided that a new version is published. It is the user's responsibility to check the currency of the document. For more information, please contact our sales department.