Techno Proof C

Crystalline capillary waterproofing system

Uses
The Techno Proof c system is used for waterproofing concrete against positive or negative hydrostatic water pressure, foundation damproofing, repairing hairline cracks, filling holes and sealing wall-floor joints.
Techno Proof C will also stop active leaks in a wide variety of concrete structures such as sewage treatment plants, water treatment plants, water tanks, foundations, concrete pipes, tunnels, manholes, subway tunnels and in most locations where the ingress of water is not permitted.

Advantages
- Penetrates concrete, seals capillary tracts and hairline cracks
- Concrete remains waterproof even if surface damage occurs
- Cost effective in use
- Effective waterproofing treatment for concrete subject to hydrostatic pressure
- Can be used above or below ground
- Resists chemical attack by sewage, industrial waste and de-icing salts
- Can be applied to new or old concrete in both interior and exterior locations
- Highly resistant to seawater
- Recommended in harbour projects
- Chloride free

Description
Techno Proof c crystalline capillary waterproofing system is a series of products which contain a blend of Portland cements, quartz aggregates and specialized chemicals. In the presence of moisture, the active chemical additives in Techno Proof c Concentrate penetrate concrete and react chemically with free lime to produce insoluble crystals.

This crystalline growth reduces concrete porosity by blocking capillaries and filling hairline cracks up to 0.25 mm caused by shrinkage or expansion. Unlike membrane types of waterproofing which only provide a surface barrier Techno Proof c concentrate continues to produce crystals in the presence of water. Techno Proof c therefore provides long lasting impermeability to water.

Techno Proof c Concentrate is the basic formulation for waterproofing applications. Techno Proof c Concentrate is applied as a dry shake to newly poured concrete or mixed with water to produce slurry coating

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for walls and floors. Techno Proof c is mixed with water for filling deep voids and coving areas, crack repair, and sealing construction joints and tie holes.

Properties

The values given below are average figures achieved in laboratory tests. Actual values obtained on site may show minor variations from those quoted.

Chemical resistance Weight change ASTM C267

	Control Samples	Acid Exposed	Salt Exposed
3 days	0.0gm	+0.1gm	+0.3gm
7 days	0.0gm	0.2 gm	+0.8gm
28 days	+0.1gm	1.1 gm	+0.6gm
56 days	0.3gm	4.8 gm	+0.7gm

Compressive strength ASTM C109

	3 days	7 days	28 days	56 days I
Control Samples	14.7N	2 7.ON	36.3N	40.4N
Acid Exposed	15.9N	24.7N	36.0N	38.4N |
Salt Exposed	14.1N	24.4N	38.7N	40.0N

Permeability CRD-C48

Negative pressure

Virtually impermeable, no visible degradation, no water flow. Slight dampening after 420 hours @ 14 bar (140m head of water).

Positive pressure

Virtually impermeable @ 8.75 bar (87.5m head of Water).
After 300 hours @ 14 bar (140m head of Water) flow measured 0.075 cm3/hr over final 120 hours.

Application instructions

Surface preparation

Old concrete surfaces must be clean. sound and free from oil, dirt, laitance and any other such contaminants which may interfere with the application process.

Cleaning can be achieved by high pressure water jetting or by treating the surface with M.T.C. Acid Etch (see separate data Sheet). High pressure water jetting is the preferred method of surface preparation because mechanical cleaning, surface saturation and substrate roughening are simultaneously achieved.

All surfaces to receive Techno Proof c products must be pre-dampened.

New concrete Following the stripping of formwork, water jet or acid etch as above to remove all traces of form oil and surface laitance.

Construction joint, cold joints and non-leaking joints greater than 0.25 mm wide must be routed out to a minimum 25mm wide by 25mm in depth to reach sound concrete, the profile of the routed joint should form a(U) shape.

Leaking cracks should be prepared as above to form a chase of 25mm wide to approximately 35 to 50 mm deep. Remove all debris from the work area before proceeding with thorough saturation of the area prior to the next st age of the works.

Mixing

For best results always add clean,

Potable water to The Techno Proof c Concentrate or Mortar, do not add powder to water.

Techno Proof c Concentrate slurry coat Add 8.9 liters of water to 25 kg of Techno Proof c concentrate.

Mix thoroughly with a slow speed drill fitted with an approved spiral paddle attachment. Note the preferred drill speed is between 280 to 640 rpm

For larger batches use in 20 minutes at 25 C. If the mixture thickens, re-stir to reduce the consistency, do not add additional water.

Dry shake method for newly poured concrete

Use Techno Proof c Concentrate directly from the container.

Wearing rubber gloves distribute the powder evenly by hand over the freshly poured concrete at 1.2 to 1.3 kg/m2 before the final trowel-ling works.

It is recommended to distribute approximately 50% of the powder in one direction with the remaining 505 at right angles to the first application.

Release the powder as close to the wet concrete as is possible this will minimize powder loss during windy conditions. For large areas a rotary type spreader may prove to be beneficial. Two applications are recommended to achieve the stated physical properties.

A roughened finish is recommended on the first coat to ensure adequate adhesion of the second, finally trowel finish the concrete

to the required finish.

Slurry coat for existing concrete

Techno Proof c Concentrate slurry coat may be applied with a soft brush, broom or plaster sprayer at an application rate of 1.1 kg/m2. Ensure that the slurry is worked well into openings, rough surfaces, and joints and routed out areas. Make the
Second application when the first coat has reached initial set (usually within one hour-dependent upon Temperature)
If the first coat has dried out moisten the surface prior to applying the second coat. Techno Proof c should always be applied following the prior application of Techno Proof c Concentrate slurry.

Curing and protection

All Techno Proof c Concentrate applications must be kept moist for a minimum period of 48 hours. After initial set has taken place, moist curing using a water spray is recommended.
The treated surface shall be (fog) sprayed 3 to 4 times daily for the 48 hours period. In hot Middle-East conditions it is recommended to spray more frequently whereby the treated surface is kept constantly moist It is extremely important to keep the Techno Proof c Concentrate moist to allow the crystal formation to occur Protect surfaces from foot traffic for 48 hours or heavy traffic for 7 days.
Freshly applied Techno Proof c
Concentrate must be protected from extreme weather conditions such as rain, strong winds, high temperatures and freezing for a period of not less than 48 hours following application.

Limitations

Techno Proof c products should not be used when the temperature is below 5°C and falling Techno Proof c products are not recommended for use on concrete substrates containing less than 13% Portland cement.
Full activation and effectiveness of the Techno Proof c system may require 2 to 3 weeks following application.

Cleaning

Immediately following the application of Techno Proof c products, clean ail tools and equipment with clean water Cured material can only be removed mechanically.

Supply

Techno Proof c Concentrate 25 kg bags

Coverage

Techno Proof c Concentrate 1 .2 to 1.3 kg/m^2

Precautions

Techno Proof c products contain chemicals that may cause irritation to the eyes, respiratory system and skin. Avoid inhalation of dust, wear suitable respiratory protective equipment

Disposal

In case of spillage, clean up waste material preferably utilizing a dust free method and dispose of in accordance with local health and safety regulations.

Storage

Shelf life of Techno Proof c products is one year if stored in original unopened packs below 35°C in a shaded, dry environment.

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