

MONNELI CEMCOAT FX1

Polymer Modified Elastomeric Cementitious Waterproofing Coating

Product Description

A two component acrylic modified cementitious coating. It is composed of special types of cement, fillers (powder), and a copolymeric acrylic blend with chemical additives (liquid). Once mixed, CEMCOAT FX1 produces a tough flexible waterproofing membrane which bonds to most concrete or masonry substrates and protects against possible ingress of water and waterborne chemicals.

Uses

CEMCOAT FX1 can be used in the following:

- Waterproofing walls made of concrete, limestone, porous concrete and brickwork
- Waterproofing of monolithic water tanks and rain water retention basins, pools canals
- Waterproofing coating for roofs, domes, tunnels, spillways, precast slabs and other wet areas.
- Waterproofing bathrooms, showers, balconies, terraces, swimming pools etc. before laying ceramic tiles
- Reducing carbonization where the reinforced concrete parts are not sufficiently covered.
- Protection of concrete structures in marine environments.

Advantages

- Polymer modified, therefore reduces permeability while increasing bond, flexure and tensile strength
- Withstands negative and positive water pressure
- Elastomeric, can bridge cracks up to 1.5 mm
- Resistant against Chloride and Sulphate ion attack
- Breathable, whilst repelling water it allows substrate to breath
- Good adhesion, bonds to porous and non-porous substrate

- Non-toxic, can be used for potable water tanks
- For interior or exterior use, old and new surfaces
- Can be applied to 24 hours old concrete, thereby giving immediate protection to concrete

Instructions for Use

Surface Preparation

The surface of the concrete shall be sound, clean and uncontaminated.

This preparation shall be such as to leave a sound exposed concrete surface free from dust, loose particles and any deleterious matter. If the concrete surface is defective or has laitance, it must be cut back to a sound base.

Moss and lichen must be removed physically followed by treatment with fungicidal wash. After treatment, it must be washed down thoroughly with clean water.

In addition, make sure that all surfaces must be damp but not totally wet before progressing the work.

Crack Treatment

Shrinkages and non-moving structural cracks less than 0.3mm shall be filled with a pre-treatment strip of CEMCOAT FX1 directly bridging over the crack.

Static cracks that are greater than 0.3mm shall be repaired by chiselling the crack into a V-shape, to a depth and width of 25mm and priming it with PRIMER A18 followed by the application of Colmef cementitious repair material.

Voids and honeycombs shall be patched with BETOFINISH C, a single component polymer modified fairing coat, allowing the area to cure before applying the membrane.

Right Angle Bends

All right angle bends must have a coving detail installed. In areas where parapet walls, columns, pipe

penetrations are present, a 45° coving fillet shall be made at all corners using BETOCEM FIBER, a Fiber reinforced shrinkage controlled mortar for concrete repair to the water saturated cured surface.

All other angles, joints, protrusions and stress joints should be pre-treated with a heavy application of CEMCOAT FX1.

Movement Joints

Expansion and movement joints should be sealed with ELASTOSEAL PU25, a polyurethane sealant. Allow to cure before the application of CEMCOAT FX1.

Priming

Highly porous concrete or concrete containing micro-silica will require priming with PRIMER A18, from Colmef, a synthetic, high penetrating primer.

The primer shall be applied at a rate of 5-6 m²/L and left to achieve a tack-free condition before applying the top coat. A second coat of primer may be required if the substrate is excessively porous.

Application

CEMCOAT FX1 shall be mixed with liquid at a low speed drill and will be allowed to set for 5 minutes after mixing. Remix the product again shortly before application.

It is recommended that the waterproofing slurry shall be applied onto the dampened surface by a brush at a rate of 1.8Kg/m² to achieve a minimum dry film thickness of 1.0 mm (usually achieved in two coats). Coating must be applied at right angles to one another with a 6-8 hour intervals between each application at 25°C.

The powder should always be added to the liquid. Remixing and re-tempering shall not be permitted.

On substrates that are exposed to movements and deformation or where cracks are expected, reinforcing glass fibre mesh shall be spread into the first coat of CEMCOAT FX1 before applying adhesives. Tiling or finished floor installations should be carried out as soon as possible after full cure of membrane is established.

Curing and Protection

Surfaces treated with CEMCOAT FX1 must be kept damp and must be protected from the drying action of direct sunlight for a minimum period of 3 days after application. Protect all treated surfaces from wind and frost, by covering with plastic sheeting, damp hessian or equivalent.

Cleaning

All tools should be cleaned with water. Cured material can only be removed mechanically.

Recommendations

- Store the components of CEMCOAT FX1 out of direct sunlight before mixing during hot weather
- After application, use sheets to protect the drying surface from the rapid evaporation during dry, hot or windy condition.

Technical Data

Properties	Results
Mix density at 25°C	1.5 kg/L
Elongation (ASTM D412)	150%
Tensile strength (ASTM D412)	> 1.0 N / mm ²
Crack bridging ability	1.5 mm
Resistance to hydrostatic pressure at 1.5 bar (BS EN 14891)	Passed
CO ₂ Diffusion resistance	R > 357 m Sc > 89 cm (1 mm dft) Sc – equivalent concrete thickness
Chloride Ion diffusivity	Zero penetration at 90 days
Chloride Ion diffusion Coefficient	1.04 x 10 ⁻⁷ cm ² /s
Water vapour transmission	<25 gm / m ² / 24 hrs
Resistance to following chemicals	Waste water, diesel, kerosene, engine oil, hydraulic oil, methyl alcohol, ethyl alcohol
Pot life at 25°C	45 minutes
Initial curing	4-5 hours
Curing period	96 hours

All values are subject to 5-10 % tolerance

Applicable Standards

- ASTM D 412
- ASTM C 836:95
- ASTM D 4541
- DIN 1048
- BS EN 12390
- ASTM D 543

Consumption

1.8 kg/m² per 1 mm thick coat depending on surface conditions

Packaging

CEMCOAT FX1 is supplied in 20kg Pack (Part A – 10 kg powder, Part B – 10 liter liquid)

Storage

Keep the product in dry place and its original containers. Shelf life is 12 months from the date of production if stored properly.

Health & Safety

While CEMCOAT FX1 is non-toxic, skin and eye contact should be avoided.

Use gloves, protective creams and goggles to avoid the contact with eyes and skin.

In case of skin contact clean immediately with a resin removing cream, followed by soap and water. In case of contact with eyes, use clean water to wash the eyes and seek doctor medical attention immediately.

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CEMCOAT FX1
Technical Data Sheet
Edition: January 2020
Revision: 02

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