

ECMACRYSTAL 203

Surface Applied, Crystalline Waterproofing System

Description

ECMACRYSTAL 203 is surface applied, crystalline capillary waterproofing system that contains proprietary blend of Portland cement, quartz aggregate and special chemicals. It is a dry powder, that when mixed with water becomes a slurry coating that is applied to the inner or outer sides of a concrete structure. In the presence of moisture, the active chemicals in ECMACRYSTAL 203 crystalline waterproofing system penetrates in concrete and react chemically with free lime to produce insoluble crystals. This crystalline growth reduces porosity by blocking capillaries and filling hairline non-structural cracks (up to 0.5mm wide) caused by shrinkage or expansion. Unlike liquid applied or sheet membrane types of waterproofing which only form a surface barrier, ECMACRYSTAL 203 crystalline waterproofing system, in the presence of water, continues producing crystals and lasting imperviousness to water.

Uses

ECMACRYSTAL 203 is based on hydrophilic crystalline waterproofing technology which can be applied against the positive or negative sides of hydrostatic pressure, for waterproofing, damp-proofing, sealing cracks/ joints, stopping active leaks in a wide variety of conditions including:

- Sewage treatment and water treatment plants, tanks, foundations, tunnels and manholes.
- Basement retaining walls/ flat slabs
- Industrial and office buildings
- Reservoirs, water holding structures etc.
- Permeability reducing system along with other membrane waterproofing systems

Advantages

- Easy application by brush/ spray
- Highly resistant to aggressive chemicals, protect steel reinforcements
- Self-sealing of hairline cracks up to 0.5 mm in the treated concrete
- Resists chemical attack of sewage and industrial wastes
- Non-toxic and VOC Free
- Contains no chloride
- Suitable for external and internal applications.

Technical Specifications

Appearance & Physical State	Grey Powder
Bulk Density g/cm ³	1.20±0.10
Pot Life @ 27°C	25-30 Minutes
Application Temperature	5°C to 35°C
Coefficient of Water Permeability DIN 1048 Part V @16bar Pressure	Reduces > 90% as per control

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Application Instructions

Surface Preparation:

Old Concrete: Surfaces must be clean and structurally sound. Remove all loosely adhered particles/ deposits, oil, laitance and contaminants by steel wire brushing, grinding or water blasting. Water blasting is preferred for surface preparation because it mechanically cleans and roughens the surface, is environmentally safer and leaves the surface saturated with water. Surface must be damp for application of ECMACRYSTAL 203 crystalline waterproofing system, concentrate.

New Concrete: Concrete should be cured for at least 28 days before treatment. After forms are stripped, remove all loosely adhered particles/ deposits, form oil, curing compounds, laitance and contaminants by acid etching, steel wire brushing, grinding or water blasting. Water blasting is preferred for surface preparation because it mechanically cleans and roughens the surface, is environmentally safer and leaves the surface saturated with water. Surface must be left damp for application of ECMACRYSTAL 203 crystalline waterproofing system.

Construction Joints/ Cracks:

1. All construction joints, cold joints/ cracks must be cut in U shape groove (of size 25 mm wide x 35 mm deep).
2. Clean the groove, saturate it with water and apply a thick coat of ECMACRYSTAL 203 and allow it to dry for 15 minutes.
3. Seal the groove with ECMACRYSTAL 206 crystalline waterproofing mortar
4. All damaged/ honeycomb areas should be repaired with Polymer mortar ECMAREP 502 or Crystalline mortar ECMACRYSTAL 206 and injection grouted.

Mixing: Add the powder to the clean potable water and mix for 4-5 minutes till a lump free and homogenous mix is obtained. The average water demand for a fluid consistency is from 25% to 30 % (5.5 Liter to 7.5 Liter for one bag of 25 Kg). Mix the quantities which can be applied in 15-20 minutes.

Application: ECMACRYSTAL 203, a crystalline waterproofing system requires water as a diffusion medium and to initiate the crystal formation process, all concrete, whether fresh or old, must be in a saturated surface dry (SSD) condition prior to coating application. Apply first coat of ECMACRYSTAL 203 on saturated concrete surfaces uniformly using a stiff brush in circular motion taking care to fill the substrates porosity and eventual cracks. Second coat should be applied in cross direction after the first coat has reached an initial set but while it is still green i.e. within 12-24 hours.

Coverage: For general positive side surface conditions, the coverage rate for ECMACRYSTAL 203 coating is 1.1-1.2 Kg/ m² in 2 coats. If concrete grade is \leq M 25 or when applied from negative side, coverage rate 1.3-1.5 Kg/m² in 2 coats.

Curing: ECMACRYSTAL 203 treated surfaces shall be fog sprayed 3 to 4 times daily for at least 3 days. For warmer climates, more frequent spraying may be required. Curing should begin as soon as the coating has sufficiently set to the point where it will not be damaged by a light spray of water. It is important to keep the ECMACRYSTAL 203 crystalline waterproofing system moist to allow the crystal formation to occur. The surfaces shall be protected from foot traffic for 72 hours or heavy traffic for 7 days.

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Packaging

ECMACRYSTAL 203 is supplied in 25Kg HDPE moisture resistance bag.

Shelf Life

12 Months in original unopened sealed condition.

Storage & Handling

Material should be stored in moisture free, cool and dry shade. Please do not use hook and handle carefully during transport.

Safety Precautions

Wear all PPE's at the time of application like Safety boot, Safety Goggle, Hand Gloves, Mask and avoided with contact with Skin and Eyes. Avoid breathing dust at the time of mixing.

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