

BONDGUARD CRYSTAL

Single component, ready-mixed, penetrating cementitious crystalline waterproofing system



PRODUCT DESCRIPTION

BondGuard Crystal is a unique state-of-the-art single component, penetrating cementitious material which waterproof and protect new or old structurally sound concrete or concrete masonry in-depth from water or water born chemicals penetration. BondGuard Crystal works within the concrete substrate to react with unhydrated cement particles and water to form crystals within the concrete mass. In doing so, it will make the concrete permanently waterproof.

ADVANTAGES

- Environment friendly.
- Permanently active.
- Easy to use- Needs only water for mixing.
- Can be applied to green concrete as soon as forms are stripped.
- Protects concrete against fresh water, salt water, waste water and aggressive ground water.
- Brush, dry-sprinkle or spray applied.
- Seal and post seals shrinkage cracks, up to 0.4 mm.
- Contains no chlorides.
- Protects concrete in-depth, concrete remains waterproofed even if coating is damaged.
- Applied to positive or negative water pressure side.
- No odor - No fumes.
- Cost effective.

USES

- All below grade concrete
- Marine structures
- Bridge decks, tunnels
- Sewage and water treatment plants
- Reservoirs and storage tanks
- Swimming pools, marine aquariums
- Parking slabs and driveways
- Concrete walls, floors, patios and roofs

- Elevator and maintenance pits
- Hydroelectric and power generation stations

APPLICATION METHOD

SURFACE PREPARATION

The substrate to be treated must be sound and even, open pored, roughened and its surface free from voids, large cracks or ridges. Any adhesion reducing substances like bitumen, oil, grease, remains of paint or laitance have to be removed by suitable means. Water leaks must be stopped. Thoroughly moisten the substrate, it must be damp but not wet at the time of application. Any surface water on horizontal surfaces must be removed.

MIXING

Mix by volume 5 parts of BondGuard Crystal with approx. 2 parts of tap water (25 kg + approx. 7–8.5 litres) in a clean container for at least 3 minutes to a lump-free, homogeneous consistency of thick oil paint. Use a mechanical mixer.

APPLICATION

BondGuard Crystal is applied with brush, suitable spray equipment or by dry sprinkling.

BRUSH APPLICATION

Ensure that all cavities in the substrate are filled. Crosswise application: vertically bottom-up, then horizontally.

SPRAY APPLICATION

BondGuard Crystal can be applied with a suitable fine mortar spraying device. For maximum spray pattern it should be possible to adjust volume of product as well as air pressure and volume. The nozzle diameter is approx. 4 mm. The first layer of BondGuard Crystal is applied in circular motion with the spray nozzle held at a 90° angle to the substrate. The final layer can be left as a spray finish or treated to a specified finish.

Apply subsequent coat whilst previous coat is still damp at the surface. The waiting time before applying the following coat depends on local climate conditions such as humidity, temperature, etc. The previous coat must not be damaged during application of the following coat. To maintain workability of the material do not add water, simply re-stir the mixture.

DRY SPRINKLE AND POWER TROWEL APPLICATION

The concrete is poured, vibrated and screeded as usual. When the concrete to be treated starts to reach initial set, the specified amount of BondGuard Crystal is dry-distributed by hand using a sieve (mesh size of 1 mm) or suitable spreader on to the concrete surface. The powder is then trowelled into the substrate until coverage is uniform and the specific finish is achieved. Do not apply at temperatures below +5 °C or to a frozen substrate.

CURING

Keep damp for at least 5 days and provide suitable protection against extreme weather conditions (e.g., sun, wind, frost) while setting. The freshly treated surface should be protected

from rain for a minimum period of 24 h. In closed spaces and deep pits, suitable air circulation should be provided for 24 hours following the BondGuard Crystal treatment.

COVERAGE

1-2.2 kg/m²

PACKING

25 kg bag

TECHNICAL DATA

PARAMETERS	RESULTS
Appearance	Grey powder BondGuard Crystal is not a decorative material.
Workability at 20 °C	approx. 30 min.
Setting time at 20 °C	1-2 hrs.
Compressive strength	≥ 25 MPa
Chloride ion content	≤ 0.05%
Adhesive bond	≥ 0.8 MPa
Carbonation resistance	No Performance Determined
Modulus of elasticity	≥ 20 GPa
Thermal compatibility: Part 4: Dry thermal cycling	≥ 0.8 MPa
Capillary absorption	≤ 0.5 kg/m ²
Reaction to fire	Class A1
Dangerous substances	Complies with 5.4

STORAGE & SHELF LIFE

When stored in a dry place in unopened, undamaged original packaging, shelf life is 12 months.

HEALTH & SAFETY

Please refer to Safety Data Sheet

CAUTION

- Keep away from children.
- Wear suitable protective clothing, gloves and eyes/face protection.
- After contact with skin, wash immediately with plenty of clean water.
- In case of contact with eyes rinse immediately with plenty of clean water and seek medical advice.
- Limited to professional use only.

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