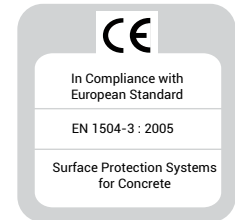




CRYSTALLIZATION WATERPROOFING AND PROTECTIVE BARRIER SYSTEM

- In-depth waterproofing and protection
- Permanent active
- Applied to pressure or non-pressure concrete face
- Approved for potable water contact
- High chemical resistance
- Self-sealing capability



PRODUCT DESCRIPTION

SUPERSHIELD CRYSTALGUARD is a single compound grey powder. This is mixed with water and applied as a slurry coat to the positive or negative side of the concrete either as a two-coat or as the first coat of a two-coat application. CRYSTALGUARD waterproofs chemically by forming insoluble crystals in the pores and capillaries of old and new concrete and prevents the penetration of water or liquid from any direction.

PROPERTIES

When SUPERSHIELD CRYSTALGUARD is applied to a concrete surface, the active chemicals combine with the free lime and moisture present in the capillary tract, to form insoluble crystalline complexes. These crystals block the capillaries and minor shrinkage cracks in the concrete to prevent any further water ingress (even under pressure). However, the CRYSTALGUARD layer will still allow the passage of water vapor through the structure (i.e. the concrete will still be able to “breathe”). In addition to waterproofing the structure, SUPERSHIELD CRYSTALGUARD protects concrete against sea water, waste water, aggressive ground water and certain chemical solutions. SUPERSHIELD CRYSTALGUARD is approved for use in contact with potable water, and is therefore suitable for the treatment of water storage tanks, reservoirs, water towers, etc.

AREAS OF APPLICATION

SUPERSHIELD CRYSTALGUARD can be applied to all structurally sound concrete, new or old. It may be applied to either the pressure or non-pressure concrete face (i.e. with or against water pressure). The minimum concrete requirement for effective waterproofing is a concrete of high strength grade with minimum 3 inches thickness.

RECOMMENDED FOR

- Basements
- Concrete Water tanks
- Tunnels and Subway Systems
- Roof Slab
- Sewage and Water Treatment Plants
- Reservoirs
- Concrete Gutter
- Sunken Portion
- Foundations

**MIXING RATIO**

Consumption	No of Coats	Water	Powder
1.25 - 1.5 lb./sq.yd (0.65 - 0.8 kg/m ²)	One Coat	2 Parts	5 Parts
2.0 lb./sq.yd (1.0 kg/m ²)	One Coat	1 Part	3 Parts

TECHNICAL DATA

Product Code	SCC101	
Colour & Appearance	Grey Powder	
Bulk Density	1.25 Kg/ L	
Setting Time	60 min	
Water Permeability	EN 12390 - 8	Passed
Chemical Resistance	ASTM C-267-77	Can withstand acid and alkaline of range between pH 3-11 constant contact
Freeze Thaw Resistance	ASTM C666 - 97	300 cycles show less length change - 0.09% in untreated and 0.039% in treated
Resistance to Chloride Ion Penetration	ASTM C1202	No increase in the internal chloride content

Proposed use of chemical: Waterproofing and protective barrier system for concrete with or without reinforcement.

Performance characteristics for CE certification according to EN 1504-3:2005, 2+

Test type	Standards	Performance
Compressive Strength	EN 12190	Class R3 \geq 25 MP a
Chloride Ion Content	EN 1015-17	\leq 0.05%
Adhesive Bond	EN 1542	\geq 0.8 Mpa
Modulus of Elasticity	EN 13412	\geq 20 Gpa
Thermal Compatibility - Part 4	EN 13687-4	NPD
Capillary Absorption	EN 13057	\leq 0.5 kg/m ² h ^{0.5}
Reaction to Fire		Class A1
Dangerous Substances		Complies with 5.4

The information contained herein is based on our long-term experience and the best of our knowledge. We can, however, make no guarantee since for a successful outcome, all circumstances in an individual case must be taken into consideration. Indications of quantities required are only averages which in certain cases might be greater.



APPLICATION GUIDELINES

SURFACE PREPARATION

Substrate to be applied with SUPERSHIELD CRYSTALGUARD must be clean and free from laitance, loose particles, curing agents, dirt, oil, grease, asphalt and paint. Substrate must be thoroughly saturated with water and allow it dry to a damp surface, prior to the application of SUPERSHIELD CRYSTALGUARD. Caution: No standing water or excessive water should remain on the substrate that is to be applied with SUPERSHIELD CRYSTALGUARD.

STRUCTURAL REPAIR

Rout out cracks, faulty construction joints and other structural defects to a depth of 1.5 inches (37 mm) and a width of one inch (25 mm). Apply a brush coat of SUPERSHIELD CRYSTALGUARD and allow it to dry for 10 minutes. Fill cavity by tightly compressing SUPERSHIELD CRYSTALMIX ULTRA in putty consistency into the groove with pneumatic packing tool or with hammer and wood block. SUPERSHIELD CRYSTALGROUT is prepared by mixing four parts SUPERSHIELD CRYSTALMIX ULTRA powder with one part water to a thick putty consistency.

Note:

- 1) Against a direct flow of water (leakage) or where there is excess moisture due to seepage, use SUPERSHIELD CRYSTALPATCH then SUPERSHIELD CRYSTALGROUT followed by a brush coat of SUPERSHIELD CRYSTALGUARD (Refer to SUPERSHIELD Specifications and Applications Manual for full details.)
- 2) For expansion joints or chronic moving cracks, flexible materials such as expansion joint sealants should be used.

WETTING CONCRETE

SUPERSHIELD CRYSTALGUARD requires a saturated substrate and a damp surface. Concrete

surfaces must be thoroughly saturated with clean water prior to the application so as to aid the proper curing of the treatment and to ensure the growth of the crystalline formation deep within the pores of the concrete. Remove excess surface water before the application. If concrete surface dries out before application, it must be re-wetted.

MIXING FOR SLURRY COAT

Mix Supershield CRYSTALGUARD powder with clean water to a slurry consistency in the following proportions:

For Brush Application:

0.65 - 0.8 kg/m² (1.25 - 1.5 lb./sq. yd.)

5 parts powder to 2 parts water

1.0 kg/m² (2.0 lb./sq. yd.)

3 parts powder to 1 part water

For Spray Application:

0.65 - 0.8 kg/m² (1.25 - 1.5 lb./sq. yd.)

5 parts powder to 3 parts water (ratio may vary with equipment type)

Do not mix more Supershield Crystalguard material than can be applied in 20 minutes. Do not add water once mix starts to harden. Protect hands with rubber gloves.

APPLYING SUPERSHIELD

Apply SUPERSHIELD CRYSTALGUARD with a semi-stiff nylon bristle brush, push broom (for large horizontal surfaces) or specialized spray equipment. The coating must be uniformly applied and should be just under 1/16 in. (1.25 mm). When a second coat (SUPERSHIELD CRYSTALGUARD or SUPERSHIELD CRYSTALGUARD ULTIMA) is required, it should be applied after the first coat has reached an initial set but while it is still "green" (less than 48 hours). Light pre-watering between coats may be required due to drying. The Supershield Crystalguard treatment must not be applied under



APPLICATION GUIDELINES

rainy conditions or when ambient temperature is below 40°F (4°C). For recommended equipment, contact SUPERSHIELD or your nearest SUPERSHIELD distributor.

CURING

A misty fog spray of clean water must be used for curing as soon as the SUPERSHIELD CRYSTALGUARD treatment has set to the point where it will not be damaged by a fine spray of water. On normal conditions curing can be started after 24 hours of application. Cure the treated surface for three days (twice a day) and allow to set for minimum of 18 days before filling the structure with liquid. Frequent curing is required for hot climates. The freshly applied SUPERSHIELD CRYSTALGUARD must be protected from direct rain for at least 48 hours after application.

HEALTH AND SAFETY

SUPERSHIELD CRYSTALGUARD contains chemicals, which may cause skin irritation. For personal precaution, protective gloves and goggles are recommended to be worn during handling of this product. If product gets in contact with the eyes, flush immediately with clean water and seek medical assistance if symptoms prolong.

STORAGE

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

PACKAGING

Available in 25 kg (55.1 lb) Pails and 25 kg (55.1 lb) PE-lined paper bags.