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Structures

# SUPERSHIELD

## CRYSTALSPRAY

Liquid Crystalline Waterproofing Coating for Concrete



### PRODUCT DESCRIPTION

SUPERSHIELD CRYSTALSPRAY is a single-compound, water-based, hygroscopic crystalline waterproofing coating used by itself or in combination with Supershield Crystalguard Ultima for a high degree of chemical resistance. CRYSTALSPRAY is applied using simple low-pressure sprayers. SUPERSHIELD CRYSTALSPRAY can be used as a hygroscopic crystalline enhancer in the Supershield Multiseal H System with Supershield Multiseal for substrates that need more resistance to high hydrostatic pressure. SUPERSHIELD CRYSTALSPRAY can also be top-coated with Supershield Clearseal to provide a repellent barrier.

SUPERSHIELD CRYSTALSPRAY, when spray applied, would take advantage of its low viscosity and seep into the pores and capillaries of the concrete by capillary action, and the active components in the product would move further deep into the concrete using the moisture presence and the pressure of osmosis. Once the active components are made available for the byproducts of the cement inside the concrete matrix, they form non-soluble crystals. These crystals block the capillaries and minor shrinkage cracks in the concrete to prevent any further water ingress (even under pressure). However, the SUPERSHIELD CRYSTALSPRAY 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 CRYSTALSPRAY protects concrete against seawater, wastewater, aggressive groundwater, and certain chemical solutions. SUPERSHIELD CRYSTALSPRAY is approved for use in contact with potable water and is therefore suitable for the treatment of water storage tanks, reservoirs, water towers, etc.

### RECOMMENDED USES

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

### FEATURES AND BENEFITS

- In-depth waterproofing and protection
- Permanent active
- Applied to both the positive & negative sides of concrete
- Approved for potable water contact
- High chemical resistance
- Self-sealing capability
- Water-based and environmentally friendly
- A single coat is sufficient in most applications
- Easy and quick spray application
- Eliminates bonding problems
- Eliminates waiting time for repair work
- Reduces labor time and costs
- Prevents dust and associated problems
- No appearance change



## TECHNICAL DATA

General Characteristics		
PROPERTY	VALUE	
Color and Appearance	Colourless Liquid	
Density	1.14 g/cm³	
pH Value	9.2	
Performance Characteristics		
TEST NAME	TEST METHOD	PERFORMANCE
Water Permeability	DIN 1048	Treated samples showed 113% better performance than untreated
Resistance to Chloride Ion	ASTM C1202-3	Treated samples showed 112% better performance than untreated
Water Absorption and Resistance to Alkali	EN 13580	Absorption ratio <7.5 % compared with untreated specimen <10% after immersion in alkali solution
Loss of mass after freeze-thaw test	EN 13581	Loss of mass 20 cycles later than in non- impregnated samples
Drying Rate Co-efficient	EN 13579	Class I > 30%
Chloride Ion Content	EN 480-10	≤ 0.10% by mass
Dangerous substances	EN 12350-7	Complies with EN 1504-2, 5, 3
Potable Water Test	D.Lgs. 31/2001	Complies with the parameters



## APPLICATION GUIDELINES

### Surface Preparation

SUPERSHIELD CRYSTALSPRAY can be applied on a damp surface, but the surface should be predominantly dry, as absorption of the material from the surface would be better on a dry substrate. Concrete surfaces must be clean and sound before the application of SUPERSHIELD CRYSTALSPRAY.

Flushing the concrete substrate with water is recommended in areas where there is no negative side moisture and for concrete that is above ground level. Such areas are to be saturated with water, and the excess standing water has to be removed 24 hours before the SUPERSHIELD CRYSTALSPRAY application. This process would facilitate the hygroscopic crystal growth deep inside the concrete.

### Mixing

Agitate SUPERSHIELD CRYSTALSPRAY in a drum or pail to assure proper dispersion of solids. SUPERSHIELD CRYSTALSPRAY is supplied in ready-to-apply form and should not be diluted by any means.

### Application

SUPERSHIELD CRYSTALSPRAY should be applied in a single coat only by means of spraying or brushing. For large-scale applications, it is recommended to spray the product using a heavy-duty commercial sprayer. Do not apply SUPERSHIELD CRYSTALSPRAY on exterior substrates if precipitation is forecast within two hours of coating completion. If precipitation occurs during application, discontinue the application process immediately; however, areas already treated do not require any protection or re-application. After the first coat of SUPERSHIELD CRYSTALSPRAY the treated surface should be allowed to cure for a period of 24 hours before it could take the topcoat, if specified, but can be allowed for traffic in four hours at 23.9 °C (75°F). Supershield Multiseal - H system is a combination of

a single coat of SUPERSHIELD CRYSTALSPRAY with a top coat of Supershield Multiseal. Intervals between SUPERSHIELD CRYSTALSPRAY and Supershield Multiseal should be a minimum of 18 hours, i.e., the surface should be predominantly dry for Supershield Multiseal treatment.

### Coverage

It is recommended to apply SUPERSHIELD CRYSTALSPRAY at a dosage rate of 4.9 m<sup>2</sup>/ltr (200 ft<sup>2</sup>/gal) in one coat. The coatings should be applied evenly, and the substrate should be covered completely with the coating.

### Appearance After Application

The concrete treated with SUPERSHIELD CRYSTALSPRAY may turn dark for an initial period but will restore to its original color once dried out completely. Excess spraying of the material may form white powder on the surface after drying, and if necessary, this can be washed off. Special measures are not required for the disposal of the wash water as the product is non-toxic.

### Curing

SUPERSHIELD CRYSTALSPRAY should be allowed to cure at 23.9 °C (75 °F) for 4 hours before opening for traffic and seven days before it is subjected to water pressure.

### LIMITATIONS

SUPERSHIELD CRYSTALSPRAY must not be applied if the temperature falls below 5 °C or if it is raining. As with all impregnation materials and processes, the surface to be treated must be free from any contamination that might reduce uptake of the impregnate. The concrete substrate that is to be treated with SUPERSHIELD CRYSTALSPRAY should be a minimum of 7 days old.



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## HEALTH AND SAFETY

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

## STORAGE

SUPERSHIELD CRYSTALSPRAY must be stored at room temperature. Cold temperatures may cause the product to crystallize. When stored in a dry place in unopened, undamaged original packaging, the shelf life is 12 months. Do not allow the product to freeze. Repeated freezing and thawing might cause damage to the product.

## PACKAGING

Available in 25-Litre carboys, 200-Litre drums, and 1000-Litre IBC.

## WARRANTY

Supershield warrants that the products manufactured by it shall be free from material defects and comply with the specifications given in their respective technical data sheets. Should any of the products be proven defective, the liability of Supershield shall be limited to the replacement of the product, and Supershield shall in no case be liable otherwise or for incidental or consequential damages. No other warranties, express or implied, shall apply, including any warranty of merchantability or fitness for a particular purpose. The user shall determine the suitability of the product for his intended use and assume all risks and liabilities in connection therewith. Supershield reserves the right to change the properties of its products without notice.