ADMIX 200

Self-healing Cementitious Crystalline Admixture for Concrete, Specifically for OPC Based Concrete Mix

PRODUCT DESCRIPTION

SUPERSHIELD ADMIX 200 is a chemical admixture for waterproofing, protecting and improving the durability of concrete. The proprietary blend of chemicals in SUPERSHIELD ADMIX 200 reacts with the moisture and the by-products of cement hydration to form a highly resistant crystalline formation that becomes an integral part of the concrete and acts as an impermeable barrier against water and other chemicals. Thus the concrete becomes permanently sealed against penetration of water and other chemicals from any direction. This crystalline structure occurs where moisture is present, so later if cracks form due to settling or shrinkage the incoming water triggers the crystallization process and additional crystals begin to grow. Supershield ADMIX 200 is specially designed for waterproofing concrete with self-healing properties. Specifically formulated for Type 1 cements (OPC-based concrete mixes) in projects where a normal to mild retarded set is required.

RECOMMENDED USES

- Basements
- Concrete Water Tanks
- Tunnels and Subway Systems
- Roof Slab
- Sewage and Water Treatment Plants
- Reservoirs
- Sunken Portion
- Foundations & Elevator pits
- Ground Parking Structures
- Bridges and Dams
- Viaducts

FEATURES AND BENEFITS

- Unique ability to become a truly integral part of the concrete matrix
- Unique crystallization process reactivates at any later stage in the presence of moisture and water
- Permanent and eco-friendly with self- healing capabilities
- Can seal hairline cracks up to 0.5 mm
- Enhances concrete durability and reduces concrete permeability
- Can be directly added to the RMC truck at the job site
- Does not have an adverse effect on mixed designs
- Non toxic and approved for potable water
- Allows concrete to breathe
- Enhances shrinkage resistance
- Cost-effective and time-saving than most other methods
- Construction friendly, enhances construction scheduling flexibility

TECHNICAL DATA

General Characteristics	
PROPERTY	**VALUE**
Color and Appearance	Grey Powder
Bulk Density	~ 1.4 g/cm^3
Chloride Ion Content	< 0.1% by weight
Specific Gravity	~ 2.8
VOC Content	None

Performance Characteristics		
TEST NAME	**TEST METHOD**	**PERFORMANCE**
Water Permeability	DIN 1048	> 85% improvement in reducing permeability compared to untreated concrete.
Depth of Water penetration	EN 12390-8	≥ 100% decrease in permeability compared to untreated concrete
Resistance to Chloride Ion	ASTM C1202	70% increase in resistance than untreated concrete
Self-healing Concrete	CRD C48 - 92	97% reduction in permeability with self-healing capability
Compressive Strength	EN 12390-3	At 28 days, increased compressive strength by 10% over untreated concrete
Capillary Absorption	EN 480-5	Tested for 28 days after 90 days curing: test mix ≤ 60% by mass of control mix
Air Content	EN 12350-7	Test mix ≤ 2% by volume above control mix
Chloride Ion Content	EN 480-10	≤0.10% by mass
Alkali Content	EN 480-12	≤10.3% by mass

Water Resisting Concrete Admixtures

CE In Compliance With European Standard EN 934-2

APPLICATION GUIDELINES

Preparation And Mixing

Dosage: SUPERSHIELD ADMIX 200 1% of cement by weight.

Note: Under certain conditions, the dosage rate may be between 2% to 3%, depending on the type of concrete required.

SUPERSHIELD ADMIX 200 must be added to the concrete at the time of batching. The sequence of procedures for addition will vary according to the type of batch plant operation and equipment.

Ready Mix Plant - Dry Batch Operation

Add SUPERSHIELD ADMIX 200 in powder form directly to the drum of the ready-mix truck. Position the truck under the batch plant and add the remaining materials following standard concrete batching practices. Mix the materials for a minimum of 5 minutes to ensure that SUPERSHIELD ADMIX 200 is thoroughly dispersed throughout the concrete.

Ready Mix Plant - Central Mix Operation

Mix SUPERSHIELD ADMIX 200 with water to create a very thin slurry (e.g., 15–20 lb./6.75–9 kg of powder mixed with 3 gallons or 13.6 litres of water). Pour the required amount of slurry into the drum of the ready-mix truck. The aggregate, cement, and remaining water should be batched and mixed in the plant according to standard practices, accounting for the water already added to the truck. Pour the concrete into the truck and mix for at least 5 minutes to ensure the SUPERSHIELD ADMIX 200 is evenly distributed throughout the concrete

Ready Mix Truck - At The Job Site

SUPERSHIELD ADMIX 200 can be added to the ready-mix truck as a final ingredient at the job site in two different forms (i.e., one as a dry powder and another as a thin slurry).

Dry Powder : Add the right amount of SUPERSHIELD ADMIX 200 to the drum of the RMC truck slowly while it is in mixing mode and mix it for at least 10 minutes to ensure even distribution of the SUPERSHIELD ADMIX 200 throughout the concrete.

Thin Slurry : Mix SUPERSHIELD ADMIX 200 with water to form a very thin slurry (e.g., 1 part of water with 2 parts of powder; approximately 1 Litre of water would be added extra for a cubic meter of concrete).

The water content in the slurry can be reduced if required. Pour the slurry into the truck while it is in mixing mode and mix it for at least 5 minutes to ensure even distribution of the SUPERSHIELD ADMIX 200 throughout the concrete.

Precast Batch Plant

Add SUPERSHIELD ADMIX 200 to the aggregates and sand, then mix thoroughly for 2–3 minutes before adding cement and water. The total concrete mass should be blended using standard practices.

Notes:

1) It is important to obtain a homogeneous mixture of SUPERSHIELD ADMIX 200 with the concrete. Therefore, do not add dry Admix powder directly to wet concrete, as this may cause clumping and ensure that thorough dispersion does not occur.

2) Concrete containing the SUPERSHIELD ADMIX 200 does not preclude the requirement for the design of crack control,construction joint detailing, measures for repairing defects in concrete (i.e., honeycombing, tie holes, and cracks beyond specified limits).

Setting Time And Strength

The setting time of the concrete is affected by the chemical and physical composition of the ingredients, the temperature of the concrete, and climatic conditions. SUPERSHIELD ADMIX 200 is designed for projects where normal to mild retardation is

required; the amount of retardation will depend upon the concrete mix design and the dosage rate of admix. Concrete containing SUPERSHIELD ADMIX 200 may develop a higher ultimate strength than plain concrete. Trial mixes should be carried out under project conditions to determine the setting time and strength of the concrete.

LIMITATIONS

When incorporating SUPERSHIELD ADMIX 200, the temperature of the concrete mix should be above 40°F (4°C).

HEALTH AND SAFETY

SUPERSHIELD ADMIX 200 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

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

PACKAGING

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

WARRANTY

Supershield warrants that its products will be free from material defects and will comply with the specifications provided in their respective technical data sheets. If any product is proven to be defective, Supershield's liability will be limited to the replacement of the product. Supershield will not be liable for any incidental or consequential damages. No other warranties, express or implied, shall apply, including warranties of merchantability or fitness for a particular purpose. It is the user's responsibility to determine the suitability of the product for their intended use and to assume all risks and liabilities associated with its application. Supershield reserves the right to alter the properties of its products without prior notice.