



PATCHING AND RESURFACING - CONCRETE REHABILITATION

- Excellent adhesion and bond to concrete substrates
- Low shrinkage, fiber reinforced
- Low chloride penetration
- Ready to use – just add water
- Vertical and overhead concrete repair; sprayable
- VOC compliant
- High early Strength

PRODUCT DESCRIPTION

Supershield CRYSTALMIX is a high strength, fibre reinforced, thick repair mortar for the patching and resurfacing of deteriorated concrete. Supershield Crystalmix has been specifically formulated to produce superior bond, low shrinkage, chemical durability and high strength. It is a one component mortar and can be either sprayed or trowel applied at a thickness of 3/8 in. to 2 in. (10 mm to 50 mm). The high performance characteristics of Supershield Crystalmix are enhanced by Supershield's unique crystalline waterproofing and protection technology.

RECOMMENDED FOR THE REHABILITATION OF

- Water Tanks and Reservoir
- Sewage Treatment Plants
- Concrete Water and Sewer Pipes
- Manholes and Vaults
- Marine Structures
- Bridge Structures
- Tunnels and Parking Garages



TECHNICAL DATA

Product Code	SCR101
Colour and Appearance	Grey Powder

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

Test type	Standards	Performance
Compressive Strength	EN 12190	≥ 25 MP a
Chloride ion Content	EN 1015-17	$\leq 0.05\%$
Adhesive bond	EN 1542	≥ 1.5 MPa
Modulus of elasticity	EN 13412	≥ 20 GPa
Thermal compatibility Part 4: Dry thermal cycling	EN 13687- 4	≥ 1.5 MPa
Carbonation resistance	EN 13295	dk \leq control concrete
Skid Resistance	EN 13036-4	NPD
Capillary Absorption	EN 13057	≤ 0.5 Kgm ⁻² h ^{0.5}
Reaction to fire		Class A1
Dangerous substances		Complies with 5.4



APPLICATION GUIDELINES

CONSUMPTION

Calculated quantity (dry mortar) per m² 1600kg or approximately 16 kg/m² per cm of thickness.

SURFACE PREPARATION

Remove loose, delaminated or unsound concrete by high pressure water blast, chipping, or other means. Complete structural or reinforcing steel corrosion repairs as necessary. Saw cut perimeter of repair area to 3/8 in. (10 mm) depth. Remove dust, micro fractured particles and foreign material from the repair area by pressure washing or other suitable means necessary to clean surface and obtain desired bond.

MIXING

For repairs to concrete and to make waterstop profiles, add water to SUPERSHIELD CRYSTALMIX (1 parts water to 4 parts powder by volume). To prepare stiff putty consistency patching compound use the following procedure. Begin by mixing 3 parts powder with 1 part water by volume until smooth (Mix for min two minutes) .Then add an additional one part of powder (Total of 4 powder one water)and continue mixing to obtain a workable mortar consistency and trowel on as required.

APPLYING SUPERSHIELD CRYSTALMIX

Saturate the repair area with clean water and allow the surface to come to a “saturated, surface dry” (SSD) condition. Apply CRYSTALMIX by low pressure spray equipment with sufficient velocity to compact and build thickness of the mortar. The spray nozzle should have a minimum 0.5 in. (12.5 mm) orifice to prevent clogging. Spray apply CRYSTALMIX, at a right angle to surface, at a distance of 18 to 24 in. (450 mm to 600 mm). Complete finishing operations as quickly as possible. CRYSTALMIX can be finished to varying surface textures, including a rough finish directly

from spraying nozzle, to semi-smooth using a wood or rubber float or smooth using a steel trowel.

Note:

- i. An application of Supershield Crystalspray/ Supershield Crystalguard Ultima may be specified by an engineer or design authority to provide enhanced waterproofing and chemical protection in extremely harsh conditions.
- ii. In case of overcoat with Crystalguard Ultima is specified over CRYSTALMIX then Supershield Crystalguard Ultima can be applied onto the CRYSTALMIX surface immediately following moist curing (i.e. 3 days). Ensure that the CRYSTALMIX surface is rough or scored and saturated to provide “tooth and suction” for the Supershield coating.
- iii. Supershield Crystalspray can be spray applied before applying CRYSTALMIX. CRYSTALMIX can be applied after 10 minutes of applying Supershield Crystalspray. When Crystalspray is specified as a top coat over Crystalmix, it can be applied after 12 hours.

APPLICATION THICKNESS

The thickness of the CRYSTALMIX application will depend on specific job site conditions and requirements. As a general guide, application thickness should be between 10 mm and 50 mm. Single layer thickness for spray application will depend on equipment and applicator skill, but may be up to 50 mm vertical and 40 mm overhead. Roughen or score the surface before applying successive layers and apply immediately following initial set.

CURING

Curing is essential for optimum quality and durability of the repair mortar. Cure CRYSTALMIX by moist curing methods. For moist curing, apply



APPLICATION GUIDELINES

continuous source of moisture by spray, or wet burlap and polyethylene sheet or other suitable means for a minimum of 3 days. Containment structures (i.e. reservoirs, tanks, etc.) can be filled with water following 3 days moist curing of the CRYSTALMIX coating.

Note:

- i. In hot, dry, windy weather, special curing procedures may be required prior to final set. This may involve use of fog spray, or suitable curing compounds following finishing.
- ii. CRYSTALMIX should not be mixed and placed at temperatures below 38°F (3°C) or above 86°F (30°C). Protect from rapid evaporation (hot and/or cold and windy conditions).

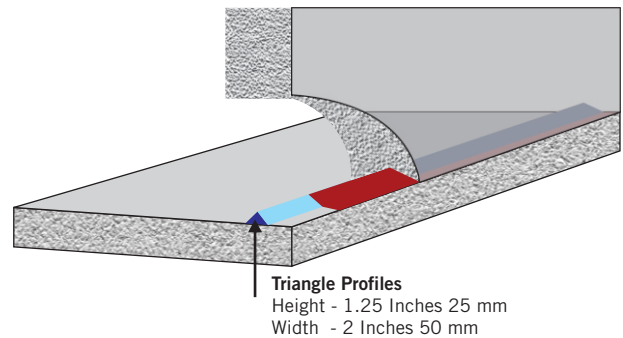
TRIANGULAR CRYSYALLINE WATERSTOPS

1) SURFACE PREPARATION: Remove all loose materials from the area and saturate with clean water. Allow water to be absorbed into the concrete, and then remove excess water.

2) MIXING: To make triangular shaped waterstops, add water to SUPERSHIELD CRYSTALMIX (1 parts water to 4 parts powder by volume). To prepare stiff putty consistency mortars use the following procedure. Begin by mixing 3 parts powder with 1 part water by volume until smooth (Mix for min two minutes). Then add an additional one part of powder (Total of 4 powder one water) and continue mixing to obtain a workable mortar consistency and trowel on as required.

3) INSTALLING: Apply a line of CRYSTALMIX down the center of the joint using a margin trowel and then mold it into a triangle. The grout should form a continuous triangular strip that measures 50 mm (2 inches) wide by at least 30 mm (1.25 inches) high. If reinforcing bars are present, apply

CRYSTALMIX as close to the center of the joint as possible ensuring a minimum 20 mm (1 inch) of cover remains between the grout and the edge of the pour.

**HEALTH AND SAFETY**

SUPERSHIELD CRYSTALMIX 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.