

PS Shortcrete 40

high-strength, shrinkage-compensated, Micro-silica enhanced, dry process shotcrete



Product Description

PS Shortcrete 40 is a ready to use cement based single component shotcrete mortar modified with microsilica. The formulation is designed to achieve a durable, structural grade, dry process shotcrete applied mortar. It gives high early strength, reduced rebound and allows for maximum application thickness, coupled with resistivity values commensurate with accepted criteria for cathodic protection (CP) overlays. The ingredients are carefully selected to give minimum dust during the spraying.

Uses

- PS Shortcrete 40 is recommended for Large areas of concrete repairs.
- Repair of structural members subjected to repetitive loading.
- Repair of fire damaged structures, marine structures, piers, quays, off shore platforms, etc.
- Rock and embankment stabilization, swimming pool construction.
- Cathodic protection overlays.
- Repairs to industrial structures.

Characteristics / Advantages

- Single component – Requires only addition of water to form mortar
- Dual shrinkage compensated.
- Quality controlled – Uniform, predictable results.
- Low rebound - grading and formulation allow for excellent penetration and compaction with minimum loss of aggregate through rebound.
- Impermeable to aggressive elements. Sprayable, virtually no rebound.

Product Information

Packaging

25 kg bags

Coverage

A 25 kg bag of PS Shortcrete 40 after mixing with 2.0 or 2.25 Ltrs will yield approximately 11.3 litres and shall cover 0.25 m² at 40mm thickness depending upon the water/powder ratio used. Site trials are advisable to obtain accurate wastage factors due to variations in surface preparation, equipment and nozzlemen.

Storage Conditions

Store under cover, out of direct sunlight and protect from extremes of temperature. In tropical climates, the product must be stored in an air-conditioned environment. Shelf life is 6 months when stored as above.

Mechanical / Physical Properties

Typical Properties

Appearance	Grey Granular powder
W/P ratio by weight	0.085
Fresh wet density	2.4 Kg/litre
1 day	15 MPa
28 days	40 MPa

Compressive Strength

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Application Instructions

Surface preparation

All surfaces to be treated should be sound and clean saw cut the edges of the repair locations to a depth of at least 15mm to avoid featheredging and to provide a square edge. Break out the complete repair area by mechanical means or by high pressure water jetting to a minimum depth of 15 mm up to the sawn edge.

Clean the surfaces by removing any dust, unsound or contaminated material, oil, paint, grease, or corrosion deposits. Where breaking out is not required, roughen the surface and remove any laitance by mechanical means or high-pressure water jetting to provide a minimum of 5mm profile.

All surface-preparation procedures used should ensure that adequate mechanical key is achieved. Remove oil and grease deposits by steam cleaning, detergent scrubbing, or degreasing. To ensure optimum repair results, assess the effectiveness of decontamination with a pull-off test. Traces of rust and corrosion products should be removed by wet or dry sand blasting of exposed reinforcing steel.

Priming

The prepared substrate should be thoroughly soaked with clean water and all standing water removed before the application of PS Shortcrete. The concrete substrate should be in a saturated surface-dry (SSD) condition immediately before the application of PS Shortcrete. In chloride laden environment apply PS Zinc Rich Primer on prepared steel reinforcement.

Application

Empty the bags of PS Shortcrete 40 directly into the hopper of the dry process shotcrete pump. PS Shortcrete 40 may be introduced dry directly to the gun or pre-dampened first. Use a maximum of 1 Litre of water per bag of 25 Kg for pre-dampening. Once the surface is properly cleaned and placement has started, the nozzle operator is responsible for adding the correct amount of water at the nozzle to achieve proper hydration of the sprayed material. This water/powder ratio is critical and will affect the physical properties and performance of sprayed material. Consider total water addition (pre-dampening & added at the nozzle) in the range of 2 ~ 2.25 Litre/ Bag of 25 kg as a guideline.

The proper placement of PS Shortcrete 40 depends primarily on the ability of the nozzleman. The nozzleman must perform the spray application using recognized procedures for nozzle angle, material build-up, coverage of reinforcement, consideration of rebound, and surface finishing.

Finishing

Any necessary trowelling or profiling should be done immediately after spraying has finished. If overcoating is to follow, finish with a wooden float or damp sponge. Over finishing should be avoided to prevent excessive laitance and surface hairline cracking.

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Curing

Good curing practice is essential. Particular care is required in hot and windy condition. Curing can be by the application of PS Curing Compound curing compound which compatible with most subsequent protective coatings, or by covering the work with properly secured plastic sheeting. Apply the curing compound when the surface can not be marred by the application process.

Health & Safety Information

For Information and advice on the safe handling, storage and disposal of chemical products, users shall refer to the most recent Material Safety Data Sheet containing physical, ecological, toxicological and other safety-related data.

Legal Notes

The information and in particular the recommendations relating to the application and end use of products are given in good faith based on current knowledge and experience of the products when properly stored, handled and applied under normal conditions in accordance with recommendations. In practice the difference in materials, substrates and actual site conditions are such that no warranty in respect of merchantability or of fitness for a particular purpose nor any liability arising out of any legal relationship whatsoever, can be inferred either from this information or from any written recommendations or from any other advice offered. The user of the product must test the product's suitability for the intended application and purpose reserves the right to change the properties of its products. The Proprietary rights of third Parties must be observed. All orders are accepted subject to our current terms of sale and delivery.

Users must always refer to the most recent issue of the local product Data sheet for the product concerned copies of which will be supplied on request.

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