

Rendercem® S₂F

Single component, fiber reinforced dual shrinkage compensated cementitious structural repair mortar



The Construction Alchemists

Description

Rendercem® S₂F is a fibre re-inforced rheoplastic mortar for structural repairs with dual shrinkage compensation an normal setting time. It is a ready to use cementitious product, that after mixing with water can be applied by spraying or trowelling at varying thicknesses. The product when hardens will have excellent adhesion, durability, waterproofing properties and exceptional mechanical strength. Rendercem® S₂F does not contain any expansive metallic elements.

Features & Benefits

- The thixotropic features of Rendercem® S₂F results in excellent adhesion, making it easy to spread on vertical surfaces beneath beams, shelves and on ceilings etc.
- **Enhanced durability** - The hardened material will have an extremely permeability and durability.
- **Compatibility** - Aligns performance closer to that of host concrete.
- **User friendly** - Specifically developed as a single component, easy to apply product with trowelable consistency.
- Crack resistant as it contains fiber.

Primary Application

Rendercem® S₂F is suitable for hand application where impermeable, crack free repair is required. Applications would include, but not be limited to the vertical and overhead repairs to restore covercrete up to 75mm thick.

Technical Properties

Following typical results were obtained for a mixture at a Water/Powder ratio of 0.15.

Compressive Strength

Age (days)	24hrs	3 days	28 days
Compressive Strength (MPa)	16	28	45

Flexural Strength

Age (days)	24hrs	3 days	28 days
Flexural Strength (MPa)	5	6.5	8.2

Adhesion Bond Strength

Age (days)	3 days	28 days
Adhesion Bond Strength (MPa)	2.5	3.5

Modulus of Elasticity: 23kMPa

Pullout resistance: >10MPa

Permeability: <5mm

Drying Shrinkage: <300micro strains @ 28 days

Dimensional stability : No shrinkage both in fresh and hardened state.

Design Criteria

The repair mortar product shall have a formulation based on dual dimensional stability technology. Compatibility of repair mortar systems with the host concrete and the control of shrinkage in particular is essential.

Recommended limits per layer for a single application are:

Minimum applied thickness - 10mm

Overhead sections - Up to 40mm thick

Vertical Sections - Up to 50mm thick

Small pockets or horizontal - Up to 75mm thick

Maximum area in single application - 3X3 meters

Specification Clause

The reinstatement mortar for spalled cover concrete shall be pre-batched, pre-packed polymer modified cementitious, structural grade repair mortar Rendercem® S₂F which can be applied by trowel to the required thickness at single/multiple layers as per manufacturers specification.

Application Instructions

Surface Preparation

Any corroded steel shall be fully exposed and all loose scale and corrosion deposits shall be removed. Steel should be cleaned to a bright condition paying particular attention to the back of exposed steel bars. Grit-blasting is recommended for this process. Where corrosion has occurred due to the presence of chlorides, the steel should be high-pressure washed with clean water immediately after grit-blasting to remove corrosion products from pits and imperfections within its surface. Talrakote® ZE should be applied to the cleaned area before patch-up.

Application

- Wet the contact surfaces until thoroughly soaked starting some hours before application to eliminate the substrate absorption.
- Excess water, either on the surface or in cavities, must be removed by compressed air or sponges immediately prior to application.
- Average amount of water needed for plastic mixes: 3.75litre for 25Kg of dry mix powder.
- Mix for 3-5 minutes (or depending on the mixing efficiency for the time necessary to achieve a smooth and lump free mix) in cement mixer which will already contain slightly less than the right amount of water.

- In the case that additional re-inforcement is applied, it is essential that the product is applied also in the shadow side of the re-bars in order to avoid hollow areas. In case of spraying spray always in an angle to the substrate to fill all the voids. Use suitable spraying machine and nozzle combination through trials.
- Once applied and as soon as the layer has set keep the surface of the mortar damp or atleast prevent evaporation of the water content for atleast 24 hours. This is especially most important in hot dry and windy areas. Use of Talrakcure[®] WB is recommended as curing compound.
- In the case of vertical layers, or applications at higher thickness, build up the complete thickness in different stages in order to create any stresses in the mortar in the plastic phase, before sufficient hardening.

Estimating Packaging

Rendercem[®] S₂F is supplied in 25kg bag.

Coverage

1 bag of Rendercem[®] S₂F will yield 13.5 liters of mixed material

Note - This coverage figure is theoretical, due to wastage factors, variety and nature of possible steel substrates, the rough surface texture practical coverage figures may be reduced.

Storage

Rendercem[®] S₂F has a shelf life of 6 months if kept in dry store in original, unopened containers. If stored at high temperature and/or high humidity conditions the shelf life may be reduced.

Precautions

Health & Safety Instructions

Contact with the skin should be avoided. In cases of contact with the skin, should be washed immediately with soap and water-not solvent. Gloves and goggles should be used when handling these products. Eye contamination must be immediately washed with plenty of water and medical treatment sought.



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An ISO 9001:2015 Certified Company

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