Shieldrep CSP30

Spray Applied Repair Mortar (Shotcrete)

TECHNICAL DATA SHEET

Description

Shieldrep CSP30 is a high-performance, fiber-reinforced, cement-based repair mortar, designed for application by dry spray process (machine application), suitable to be used for horizontal, vertical, and overhead applications at a minimum applied thickness of 10 mm up to 150 mm vertically, and 90 mm overhead in a single application with higher thicknesses (up to 150 mm) can be achieved by applying multiple layers.

Uses

- General repairing for all types of structural concrete where low shrinkage and high strength characteristics are required.
- Suitable for horizontal, vertical, and overhead repair applications.
- Suitable for repairing large areas.
- Overlays and repairs on concrete structures like dams, bridges, beams, balconies, and facades.

Characteristics / Advantages

- Factory-controlled pre-blended dry mix only requires the addition of water.
- High compressive strength and abrasion resistance.
- Low shrinkage and low permeability.
- Excellent adhesion with low rebound when spraying.
- Chloride free.

Shelf Life and Storage

Shieldrep CSP30 has a shelf life of 12 months when stored in its original unopened packing in cool and dry conditions, protected from direct sunlight, heat, and moisture. Shelf life may reduce if the recommended storage conditions are not followed.

Packaging

Shieldrep CSP30 is supplied in 25 kg packs.

Safety Instructions

Shieldrep CSP30 contains hydraulic cement and may cause irritation to skin or eyes. Refer to the most recent Material Safety Data Sheet for information and advice on the safe handling, storage, and disposal of the product.

Typical Properties

Color / Appearance	Grey powder
Application Thickness	
Overhead and vertical sections	10 – 90 mm
Horizontal section	10 – 150 mm
Fresh Wet Density (@ 23°C)	2.25 ± 0.10 g/ml
Maximum Aggregate Size	2 mm
Setting Time (@ 23°C)	Initial 1.5 – 2.5 hours Final 3.5 – 4.5 hours
Yield / 25 kg bag	12.5 Liters
Compressive Strength (EN 12190) @14% water ratio	≥ 50 MPa @7 days ≥ 60 MPa @28 days
Flexural Strength (ASTM C348)	≥ 10 MPa @28 days

Standard Compliance

EN 1504-3: Class R4, Principles 3.1, 3.3, 7.1, 7.2

Application Instructions

1. Surface Preparation

The substrate shall be free from dust, loose material, surface contamination, and materials that reduce bond or prevent adhesion of the repair mortar. Remove damaged concrete by suitable means. All substrate surfaces in the repair area shall be roughened by suitable means e.g., light scabbling or grit blasting to provide a key for the repair material.

Remove by suitable means from any exposed steel reinforcement; rust, scale, mortar, concrete, dust, and any other loose or deleterious material which reduces bond or contributes to corrosion. Metal surfaces (iron and steel) should be free from scale, rust oil, and grease.

Prior to application thoroughly saturate the concrete surface to provide a saturated surface dry condition (SSD). Poor quality concrete may require soaking for a significant time. Any surface water should be removed using an oil-free compressed air jet.

2. Mixing

Shieldrep CSP30 requires a water-to-powder ratio of 14% (or 3.5 liters of potable water per 25 kg bag) for spraying purposes and 16% (4.0 liters of potable water per 25 kg bag) for troweling purposes.

Empty the content of **Shieldrep CSP30** powder into conventional dry spray equipment and then add the water content required at the nozzle.

3. Application

Application by dry spray process must be carried out by specialist applicators. **Shieldrep CSP30** is designed to be emptied directly into the material hopper of the dry spray application machine. The trained, specialist nozzleman is required to adjust the amount of water appropriately (as recommended) to obtain a compact lining, with uniform thickness and minimal rebound.

The recommended thickness for vertical applications is 10 – 150 mm, and for overhead applications is a 10 – 90 mm thickness layer, higher thicknesses can be achieved by applying multiple layers until 150 mm thickness while making sure the first layer has dried and is rough to receive subsequent layers. Wet the previous coat with water prior to application.

4. Finishing

The applied mortar can be leveled and finished by traditional means such as by steel, wooden or synthetic float. Damp sponges may be used to give textured finishes, but no additional water must be used in the finishing process as it may lead to surface discoloration. Do not overwork the finished surface.

5. Cleaning

All mixing and application equipment should be cleaned immediately with clean water. Hardened material should be mechanically removed.

6. Curing

Treat exposed surfaces with a curing compound **(Shieldcure AB)** or use other approved curing methods such as polyethylene sheeting or wet hessian.

Limitations

- Do not apply the product if the ambient temperature is less than 5°C.
- Hot weather practices should be adopted during application and curing if the temperature is above 35°C. In hot conditions store the material in a cool environment prior to mixing.
- Protect freshly applied material from direct rain until at least the final set as surface scouring may occur.
- It is recommended to stick to the water-to-powder ratio as too high ratio leads to sagging and loss of adhesion and too low ratio leads to dust formation.

Technical Support

Refer to contacting technical information, method statement, or technical support team for any inquiry.

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