Cempatch LS

Single component light weight cementitious repair mortar, containing migrating corrosion inhibitors

DESCRIPTION

Cempatch LS is a single component, light weight, high build, polymer modified, cementitious repair mortar ideally designed for use in concrete repair works where lightweight and high build repair mortar is required.

Cempatch LS is mixed with water to produce a thixotropic mortar suitable for vertical and overhead applications.

Cempatch LS incorporates proven Migrating Corrosion Inhibitor technology to provide high durability repairs, which minimise further corrosion to steel reinforcement. Longterm protection is provided by the migration of corrosion inhibitor molecules from the mortar into the structure.

These are adsorbed onto the reinforcement to form a protective film which inhibits both anodic and cathodic sites, effectively reducing corrosion activity to a negligible level. Adjacent concrete is also protected from incipient anode corrosion in chloride-contaminated concrete.

APPLICATIONS

Cempatch LS is specially formulated to repair vertical and overhead elements requiring low permeability and where high compressive strength is not critical.

Cempatch LS can be applied in a single application of up to 100 mm thickness in vertical applications and up to 60 mm thickness in overhead applications without the need for formwork. Where higher thicknesses are required, sections can be achieved by the use of formwork or can be built up in layers.

ADVANTAGES

- Thixotropic properties allowing for extra high build for vertical and overhead applications.
- Incorporates migrating corrosion inhibitor technology, providing extra protection of steel reinforcement.
- Low permeability to water, providing excellent protection to steel reinforcement and host concrete.
- Compatible with non-structural concrete of compressive strength 15 - 25 N/mm²
- High bond strength, ensuring monolithic performance of the repair.
- Excellent low sag properties.
- Can be spray applied efficiently by the wet spray technique.
- Contains no chlorides.

TECHNICAL PROPERTIES. W/P = 0.18	
Colour:	Grey
Fresh wet density:	1.5 ± 0.1 g/cm³
Mixing ratio:	3.25 litre of water for 18 kg bag of Cempatch LS
Flexural strength: BS EN12190	> 3.5 N/mm² @ 28 days
Minimum application temperature:	3°C

Performance Characteristics	EN 1504-3 Requirement for Class R2	Measured Value
Compressive strength: BS EN 12190	≥ 15 N/mm² @ 28 days	≥ 10 N/mm² @ 1 day ≥ 20 N/mm² @ 28 days
Adhesion bond: BS EN 1542	≥ 0.8 N/mm²	≥ 1.5 N/mm²
Thermal compatibility: freeze-thaw cycling BS EN 13687-1	≥ 0.8 N/mm²	≥ 0.8 N/mm²
Chloride ion content: BS EN 1015-17	≤ 0.05%	≤ 0.04%
Dangerous substance:		Complies with 5.4

STANDARDS

Cempatch LS complies with the requirements of BS EN 1504-3 Class R2 for repair principles 3.1, 3.3, 7.1, and 7.2.

METHOD OF USE

SUBSTRATE PREPARATION

The perimeters of the repair area should be saw cut to a minimum depth of 10 mm to avoid feather-edging and to provide a square edge. All damaged and weak concrete should be cut back to reach sound concrete and/or to a minimum depth of at least 10 mm.

Corroded steel reinforcement should be grit blasted to remove all rust traces; in all cases, the steel should be clean and bright after cleaning.

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Exposed reinforcement that is contaminated with chloride or other material which may cause corrosion should be water blasted with high pressure to provide a clean surface and remove the corrosion products.

Where saw cutting is not required, roughen the surface and remove any laitance by light scabbling or abrasive blasting.

In case of any oil and grease deposits, surfaces must be degreased using degreasing products, steam cleaning, or any other suitable method which assures the surface is free from any oil traces.

All surfaces must be clean and free from dust, oil, grease, paints, or any loose material, and the prepared area should be cleaned thoroughly by brush and/or compressed air.

PRIMING

Reinforcing Steel Priming
If steel reinforcement is corroded, all corroded steel should be grit blasted and then primed within 2 - 4 hours with one or two coats of zinc rich epoxy coating Repcoat ZR.

Substrate Priming
Areas to be repaired with Cempatch LS should be soaked with clean water before applying Cempatch Primer and repair mortar.

All excess water should be removed prior to applying Cempatch Primer. Use a stiff brush or spray gun to apply a thick coat of Cempatch Primer (As a bonding agent slurry) to presoaked surfaces. Application of Cempatch LS repair mortar should take place while the bond coat is still wet (tacky).

MIXING

To ensure proper mixing, a mechanically powered mixer or drill fitted with a suitable paddle should be used.

3.25 litre of clean water should be added to a clean container. The 18 kg powder bag of Cempatch LS is then added slowly to the water while mixing continuously with low speed mixer/drill (400 - 600 rpm). Mixing time should be continued for 3 minutes until a uniform consistency is obtained.

In cold conditions and at ambient temperatures below 3°C, it is recommended to use warm water (up to 30°C) for mixing to accelerate strength development. The material should not be applied when the substrate or ambient temperature is around 3°C and falling.

At ambient temperatures above 35°C, the material should be stored in the shade and cool water used for mixing.

PLACING AND FINISHING

Ensure all exposed steel reinforcement bars are firmly secured to prevent any movement during application.

Cempatch LS can be applied by trowel, hand. The mixed mortar should be applied with firm pressure to fully compact the mortar and ensure good adhesion with the steel reinforcement and substrate.

Finishing and leveling should be carried out initially by a straight edge or a steel float. Final finishing should be carried out using wooden or plastic float followed by a damp sponge. However, the completed surface should not be overworked.

For spray application, where large areas of repair are required, Cempatch LS can be efficiently applied by wet spray technique. This will provide rapid placement, higher build of the product, and enhanced bond compared to troweling application.

After spray application, Cempatch LS may need to be finished and [cut back] to the required profile using a steel float and then finished with damp sponges as described before.

Notes:
- *Cempatch LS should not be applied at a thickness less than 10 mm.*
- *If any sagging or slumping occurs, Cempatch LS should be completely removed and reapplied at a lower thickness.*

CURING

As Cempatch LS is a cementitious based material, it should be cured in a similar method to concrete. Curing can be conducted by using appropriate curing methods such as Setseal 6 curing membrane or polythene sheeting.

CLEANING

All tools should be cleaned immediately after application using fresh water. Hardened materials must be cleaned mechanically.

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Cempatch LS

PACKAGING

Cempatch LS is available in 18 kg bags.

THICKNESSES AND SIZE LIMITATIONS

Cempatch LS can be applied in a single application for sections up to 60 mm thick in overhead applications and 100 mm thick in vertical applications. Thickness should not be less than 10 mm deep in all applications.

Cempatch LS repair area should not exceed 2.5 m² in one single application. Thickness more than 60 mm overhead or more than 100 mm vertical can be built up in layers.

YIELD

Approximately 14 – 14.5 litre per 18 kg bag.

STORAGE

Cempatch LS has a shelf life of 12 months from the date of manufacture if stored at temperatures between 2°C and 50°C in original unopened bags.

If these conditions are exceeded, DCP Technical Department should be contacted for advice.

CAUTIONS

HEALTH AND SAFETY

Cempatch LS may cause irritation to skin or eyes.
In case of accidental contact with eyes, immediately flush with plenty of water for at least 10 minutes and seek medical advice if necessary.

For further information, refer to the Material Safety Data Sheet.

FIRE

Cempatch LS is nonflammable.

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