Renderoc DS40

constructive solutions

Dry spray repair mortar

Uses

Renderoc DS40 is designed for large area repairs such as bridges, tunnels, retaining walls, dams, refurbishment of columns etc.

The aggregates are chosen so as to be classified as 'non reactive', and the product has an alkali content (expressed as Na2O) of less than 3.0 kg/m³.

Advantages

- Non-reactive aggregates.
- Controlled alkali level.
- Low rebound.
- Rapid strength gain.
- Low water absorption and chloride ion diffusion.
- High resistance to carbon dioxide penetration.
- Excellent bond to the concrete substrate.
- Single component — ready to use.
- No added caustic accelerators.
- Contains no chloride admixtures.

Description

Renderoc DS40 is supplied as a ready to use blend of dry powders which is formulated for application using the dry spray process.

The material is based on Portland cements, graded aggregates, silica fume, chemical additives and polymer modifiers, providing a spray mortar with low rebound and good handling characteristics. The low water requirement ensures good strength gain and long term durability.

Builds of up to 150 mm vertically and 90 mm overhead can be achieved in a single application.

Specification Clause

The repair mortar shall be Renderoc DS40 a one component cementitious dry spray mortar

The cured mortar shall achieve a compressive strength of 40 MPa at 28 days

The repair mortar shall not require polymer bonding agent as primer.

Typical Properties

Appearance	: Grey granular powder
Water / Powder ratio	: 0.10 (By weight)
Density	
Dry Bulk	1700kg/m^3
Applied	2300kg/m^3
Compressive strength (ASTM C109)	
1 Day	10Mpa
28 Days	40Mpa

Application instructions

Preparation

Clean the surface and remove any dust, unsound or contaminated material, plaster, oil, paint, grease, corrosion deposits or algae. Where breaking out is not required, i.e. concrete is sound and of good quality, but cover is to be increased, roughen the surface and remove any laitance by light scabbling or abrasive-blasting. It will still be necessary to cut back the perimeter to a depth of 10 mm so that the repair patch may be 'toed-in' and finished flush with the surrounding concrete.

Oil and grease deposits should be removed by steam cleaning, detergent scrubbing or the use of a proprietary degreaser. The effectiveness of decontamination should then be assessed by a pull-off test.

Expose fully any corroded steel in the repair area and remove all loose scale and corrosion deposits. Steel should be cleaned to a bright condition paying particular attention to the back of exposed steel bars. Abrasive-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 abrasive-blasting to remove corrosion products from pits and imperfections within its surface.

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Reinforcing steel priming

Extra protection to the reinforcing steel can be achieved by application of one full coat of Nitozinc primer and allowing to dry before continuing. If any doubt exists about having achieved an unbroken coating, a second application should be made, and again, allowed to dry before continuing.

Substrate priming

Soak the prepared concrete surface thoroughly, allowing surplus water to drain off.

Application

Exposed steel reinforcing bars should be firmly secured to avoid movement during the application process as this will affect mortar compaction, build and bond.

Renderoc DS40 should be emptied from the bags directly into the hopper of the dry spray process machine. The amount of water added should be controlled by the nozzleman. Too little water will increase rebound and dust emission; too wet a mix will slump.

If sagging occurs during application to vertical or overhead surfaces, the Renderoc DS40 should be completely removed and re-applied at a reduced thickness on to the correctly prepared substrate.

Finishing

Renderoc DS40 is finished immediately after spraying by striking off with a straight edge and closing with a steel float. Wooden or plastic floats or damp sponges may be used to achieve the desired surface texture. The completed surface should not be overworked.

Low temperature working

Normal precautions for winter working with cementitious materials should then be adopted. The material should not be applied when the substrate and/or air temperature is 5°C and falling. At 5°C static temperature or at 5°C and rising, the application may proceed.

High temperature working

At ambient temperatures above 35°C, the material should be stored in the shade.

Curing

Renderoc DS40 is a cement-based mortar. In common with all cementitious materials, Renderoc DS40 must be cured immediately after finishing in accordance with good concrete practice, i.e. using wet hessian or polythene. In cold conditions, the finished repair must be protected from freezing.

Cleaning

Renderoc DS40 should be removed from tools, equipment and mixers with clean water immediately after use. Cured material can only be removed mechanically.

Equipment used with Nitozinc primer should be cleaned with Nitoflor Sol.

Estimating

Supply

Renderoc DS40	: 25 kg bags
Nitozinc Primer	:1ltr and 5ltr pack
Nitoflor Sol	:5 and 20 litre tins

Coverage and yield

Renderoc DS40:	Approx. 12.5 litres / 25 kg bag (approx. 80 bags/m³)
Nitozinc Primer	:4-5 m2/ litre

Notes: The actual yield per bag of Renderoc DS40 will depend on the water addition during application. The coverage figures are theoretical — due to wastage factors and the variety and nature of possible substrates, practical coverage figures will be reduced.

Limitations

Renderoc DS40 should not be used when the temperature is below 5°C and falling. The product should not be exposed to moving water during application. Exposure to heavy rainfall prior to the final set may result in surface scour. If any doubts arise concerning temperature or substrate conditions, consult the Technical Services Department.

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Storage

The product has a shelf life of 6 months from the date of manufacture if kept in a dry storage in the original, unopened bags.

Store unopened bags in cool dry internal conditions. If stored at high temperatures and/or high humidity conditions the shelf life may be reduced to less than 6 months.

Precautions

Health and safety

For further information refer to the appropriate Safety Data Sheets available at www.fosroc.com.

Fire

Renderoc DS40 is non-flammable.

Fosroc Chemicals (India) Pvt. Ltd.

Head Office
Embassy Point, No. 150,
2nd Floor, Infantry Road,
Bangalore 560 001,
Karnataka

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telephone	fax	e-mail
+91 80-42521900	+91 80-22281510	enquiry.india@fosroc.com

Regional Offices

Chennai
Hills Centre,Old No 5,
New No 9, 3rd Cross Street,
Jeth Nagar, Raja Annamalaipuram,
Chennai 600 028.
Ph: 9500064795

Mumbai
MBC Park, 12th floor, Office No.12B,
'D' Block, Near G Corp/Hyper City
Kasarwadawali, Ghodbunder Road,
Thane (West) 400 615
Ph: +91 22 6229 6800

Noida
Unit No. 601, Highway Tower-II
A-13/2, 6th Floor, Sector– 62
Gautam Buddha Nagar,
Noida 201 309, Uttar Pradesh
Ph: +91 120 6121900
Fax: 0120-4270622

Kolkata
304, Jodhpur Park
Kolkata 700 068
Ph:+91 33-65343188
Fax: 033-2499-0278

www.fosroc.com