



Renderoc RSXtra*

Rapid setting repair concrete

Uses

For emergency reinstatement of damaged or deteriorated concrete. The material can be used internally/externally & is particularly suitable for repairs to: airport runways & aprons & areas where wheeled traffic requires fast return to service.

Advantages

- Cost Effective: Pioneering 'DS Tech.' ensures shrinkage control & enables repairs to be completed 'right first time'
- Rapid strength gain: Accepts vehicular traffic in 2 hours
- Good durability: High strength, abrasion & weather resistance
- Economical: Can be 'bulked-out' with graded aggregate in some locations
- Self compacting: Eliminates honeycombing voids

Specification

It is a single component, cement-based blend of powders & graded aggregates, to which only the site-addition of water shall be permitted. The cured repair shall achieve compressive strengths of 15 N/mm² after 3 hours, 30 N/mm² after 1 day & 45 N/mm² after 28 days (at 25°C). The material shall thus be capable of supporting pedestrian & vehicular traffic after 4 hours, at an ambient temp. of 25°C.

Description

It is a blend of dry powders & graded aggregates which requires only site addition of clean water to produce a highly consistent, high strength, free flowing repair concrete which self-compacts. It exhibits excellent thermal compatibility with concrete & good water repellent properties.

Properties

Compressive strength (w/p ratio 0.15 - 100 mm) cubes dry cured @ 25°C (BS1881, Part 116)	: 15 N/mm ² @ 3 hours : 30 N/mm ² @ 1 day : 40 N/mm ² @ 7 days : 45 N/mm ² @ 28 days
Working Life:	20 minutes @ 20°C & 10 minutes @ 35°C
Setting time (BS 4550, Part 3) (w/p ratio 0.15 @ 25°C)	Initial set: 60 minutes & Final set: 90 minutes
Traffic time (Pedestrian)	: 2 hour (@ 25°C)
Traffic time (Vehicular)	: 4 hours (@ 25°C)
Coefficient of thermal expan.	: 11 x 10 ⁻⁵ /°C
Fresh wet density	: Approx. 2170 kg/m ³
Drying shrinkage:	<500 microstrain @ 28 days (ASTM C157)

Design criteria

It is designed for horizontal use but can also be used vertically with the aid of formwork. Horizontal surface areas should be restricted to bay sizes not exceeding 4 m². Renderoc RSXtra should be applied at thicknesses in range 20-100 mm. Thicker sections may be completed by addition of suitable aggregates; consult local Fosroc office.

Instructions for use

Preparation

Saw or cut back the extremities of repair locations to a depth of at least 20 mm to avoid feather-edging and to provide a square edge. Break out the complete repair area to a minimum depth of 20 mm upto the sawn edge. Clean surface & remove any dust, unsound or contaminated material, plaster, oil, paint, corrosion deposits/algae & grease. Where breaking out is not required, roughen the surface & remove any laitance by light scabbling or grit-blasting. Oil & grease deposits should be removed by steam cleaning, detergent scrubbing or the use of a proprietary degreaser. Effectiveness of decontamination should then be assessed by a pull-off test. The prepared area should be blown clean with oil-free compressed air. Temporary formwork should be fitted tightly into all existing pavement & floor joints which abut the repair zone in order to prevent grout loss during the repair process.

Priming & mixing & placing

Prior to placing, the prepared concrete substrate should be saturated by flooding with clean water. Immediately prior to Renderoc RSXtra application, free standing water should be removed leaving the substrate 'saturated surface dry'. Providing the substrate has been properly soaked, further priming is not normally necessary. Care should be taken to ensure that Renderoc RSXtra is thoroughly mixed. A forced action mixer, suitable for fluid mixes, is essential (free fall mixers are not suitable). Hand mixing of single bags should be carried out in a suitably sized mixing vessel, using a slow speed drill (400/500 rpm) plus Fosroc mixing paddle attachment. Under no circumstances should part mixing be considered. It is essential that machine mixing capacity, material quantities & labour availability is adequate to enable the placing operation to be carried out continuously. Measure 3 litres of drinking quality cool water & pour 3 quarters into the mixer. With the machine in operation, add 1 full 20 kg bag of Renderoc RSXtra & mix for 1 minute before adding rest of water. Mix for a further 3-4 minutes until a smooth even consistency is obtained. Note that powder must always be added to water. The quantities mixed may be scaled up as required. When drill & paddle mixing method is used, the complete measured volume of water should be placed in the mixing drum. With paddle rotating, add 1 full 20 kg bag of Renderoc RSXtra & mix for 5 minutes until a smooth even consistency is obtained. Mixed material should be placed within 10 minutes of mixing in order to gain full fluidity benefit. Each repair should be poured or pumped in a single continuous operation. Repairs may be surface finished using a trowel/wood float. If a textured surface is required, this can be achieved using a suitable roller/brush as the material begins to stiffen. Do not overwork on completed surface. Renderoc RSXtra can be applied up to 100mm thickness in single application (Minimum applied thickness: 20 mm) Aggregate should not be added at applied thicknesses between 20&100 mm without specific advice from Fosroc. For repair sections deeper than 100 mm, it will be necessary to 'fill-out' Renderoc RSXtra with Fosroc Bulking Aggregate in order to minimize temperature rise. Contact local Fosroc for further details.

Renderoc RSXtra*

Curing & cleaning & storage

Renderoc RSXtra is a cement-based product. In common with all cementitious materials, Renderoc RSXtra must be cured immediately after finishing in accordance with good concrete practice. Concure RB90 Clear*† or Rendercure*† spray usage on the finished mortar surface in a continuous film, is recommended. In fast drying conditions, supplementary curing with polythene sheeting taped down at the edges must be used. In cold conditions, finished repair must be protected from freezing. Renderoc RSXtra should be removed from tools, equipment & mixers with clean water immediately after use. Cured material can only be removed mechanically. Equipment used with Concure RB90 Clear should be cleaned with Fosroc Solvent 102. All products have 12 months shelf life, if kept in a dry store in original, unopened bags/packs. If stored at high temp and/or high humidity conditions shelf life may be reduced.

Galvanic Protection of repairs

It is likely that, steel reinforcement in the area around a patch repair, particularly in a chloride contaminated environment, will typically corrode after the repairs are carried out, referred to as the incipient anode or Halo effect. Galvashield XP*† (eXtra Protection) anodes can be incorporated into patch repairs to galvanically protect steel reinforcement against corrosion in the adjacent concrete & may also be used in new construction to provide Cathodic Prevention. Galvashield XP is zinc based anodes encased in a highly alkaline mortar which maintains the surface of zinc in an active state. Galvanic systems are self regulating & demand based & will start working only when steel corrosion begins. Refer to product datasheet for details.

High temperature working

It is suggested that, for temperatures above 30°C, the following guidelines are adopted as good working practice:

- Store unmixed material in a cool environment (preferably temperature controlled), avoiding exposure to direct sunlight
- Keep equipment cool, arranging shade protection if necessary. It is especially important to keep cool those surfaces of the equipment which will come into direct contact with the material itself
- Try to eliminate application during the hottest times of the day, and in direct sunlight
- Make sufficient material, plant and labour available to ensure that application is a continuous process
- Water (below 20°C) should be used for mixing the grout prior to placement



Important note

Fosroc products are guaranteed against defective materials and manufacture and are sold subject to its standard Conditions for the Supply of Goods and Service.

Fars Iran Limited

No. 9, 25 th St., Khaled Eslamboli
(Vozara) Ave., Tehran 15139 - Iran

telephone:
+98 (21) 88719021

fax:
+98 (21) 88721664

email:
iran@fosroc.com

www.fosroc.com



Cert No. THR2004006

Limitations

Renderoc RSXtra should not be used when temperature is below 5°C and falling. Do not mix part bags. It 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 local Fosroc office.

Estimating

Supply

Renderoc RSXtra	: 20 kg bags
Concure RB90 Clear	: 200 litre drums
Fosroc Solvent 102	: 4 & 20 litre cans
Rendercure	: 1 & 5 litre packs

Yield and Coverage

Renderoc RSXtra	: Approx. 10 litre/20kg bag
Concure RB90 Clear	: 3.5 - 5.0 m ² /litre
Rendercure	: 5.0 - 8.0 m ² /litre

Precautions

Health & safety & fire

Renderoc RSXtra contains cement powders which, when mixed or become damp, release alkalis which can be harmful to skin. During use, avoid inhalation of dust & contact with skin & eyes. The use of barrier creams provides additional skin protection. In case of contact with eyes, rinse immediately with plenty of clean water & seek medical advice. If swallowed, seek medical attention immediately - do not induce vomiting. Concure RB90 clear & Fosroc Solvent 102 should not come in contact with skin & eyes, or be swallowed. Ensure adequate ventilation & avoid inhalation of vapours. Some people are sensitive to resins, hardeners & solvents. Wear suitable protective clothing, gloves & eye protection. If working in confined areas, suitable respiratory protective equipment must be used. For further information, refer to Product MSDS. Renderoc RSXtra, Rendercure & Concure RB90 clear are non-flammable. Fosroc Solvent 102 is flammable. Keep away from sources of ignition. No smoking. In the event of fire, extinguish with CO₂ or foam. Do not use a water jet.

Flash point

Fosroc Solvent 102	: 33°C
---------------------------	--------

* Denotes the trademark of Fosroc International Ltd.

† See separate data sheet