



# Fosroc Renderoc RSXtra

(Formerly Renderoc RS)

## Rapid setting, polymer modified, repair concrete

### Uses

For the emergency reinstatement of damaged or deteriorated concrete. The material can be used internally or externally and is particularly suitable for repairs to:

- Airport runways and aprons
- Areas where wheeled traffic requires fast return to service

### Advantages

- **Cost Effective** - pioneering 'DS Technology' ensures shrinkage control, and enables repairs to be completed 'right first time'
- **Rapid strength gain** - accepts vehicular traffic in 2 hrs
- **Good durability** - high strength, abrasion and weather resistance
- **Economical** - can be 'bulked-out' with graded aggregate in some locations
- **Self compacting** - eliminates honeycombing voids

### Description

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

### Design criteria

Renderoc RSXtra is designed for horizontal use but can also be used vertically with the aid of form work. Horizontal surface areas should be restricted to bay sizes not exceeding 4m<sup>2</sup>. Renderoc RSXtra should be applied at thicknesses in the range 20 to 100 mm. Thicker sections may be completed by the addition of suitable aggregates - consult the local Fosroc office.

### Specification

Where shown on the contract documents, the fast setting repair concrete shall be Renderoc RSXtra; a single component, cement-based blend of powders and graded aggregates, to which only the site-addition of water shall be permitted. The cured repair shall achieve compressive strengths of 15 N/mm<sup>2</sup> after 3 hours, 30 N/mm<sup>2</sup> after 1 day and 45 N/mm<sup>2</sup> after 28 days (at 25°C). The material shall thus be capable of supporting pedestrian and vehicular traffic after 4 hours, at an ambient temperature of 25°C.

### Properties

The physical properties given are typical of those obtained in practice.

Test Method	Typical result
<b>Compressive strength w/p ratio 0.15 - 100 mm cubes dry cured @ 25°C (BS1881 Part 116)</b>	15 N/mm <sup>2</sup> @ 3 hours 30 N/mm <sup>2</sup> @ 1 day 40 N/mm <sup>2</sup> @ 7 days 45 N/mm <sup>2</sup> @ 28 days
<b>Working Life</b>	20 mins @ 20°C 10 mins @ 35°C
<b>Setting time (BS4550 Part 3) w/p ratio 0.15 @ 25°C</b>	
initial set	30 minutes
final set	60 minutes
<b>Traffic time (@ 25°C)</b>	
pedestrian	2 hour
vehicular	4 hours
<b>Coefficient of thermal expansion</b>	
	5.8 X 10 <sup>-6</sup> /°C
<b>Fresh wet density</b>	approx. 2170 kg/m <sup>3</sup>
<b>Drying shrinkage to ASTM C157</b>	
28 days	< 500 microstrain

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Instructions for use

## Preparation

Saw or cut back the extremities of the repair locations to a depth of at least 20mm to avoid feather-edging and to provide a square edge. Break out the complete repair area to a minimum depth of 20mm up to the sawn edge.

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, roughen the surface and remove any laitance by light scabbling or grit-blasting.

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.

The prepared area should be blown clean with oil-free compressed air. Temporary formwork should be fitted tightly into all existing pavement and floor joints which abut the repair zone in order to prevent grout loss during the repair process.

## Priming

Prior to placing, the prepared concrete substrate should be saturated by flooding with clean water. Immediately prior to the application of Renderoc RSXtra, 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.

## Mixing

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) + Fosroc mixing paddle attachment. Under no circumstances should part mixing be considered.

It is essential that machine mixing capacity, material quantities and labour availability is adequate to enable the placing operation to be carried out continuously. Measure 3.75 litres of drinking quality cool water and pour three quarters into the mixer. With the machine in operation, add one full 25 kg bag of Renderoc RSXtra and mix for one minute before adding the rest of the water. Mix for a further 3 to 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 the drill and paddle mixing method is used, the complete measured volume of water should be placed in the mixing drum. With the paddle rotating, add one full 25 kg bag of Renderoc RSXtra and mix for 5 minutes until a smooth even consistency is obtained.

## Placing

The mixed material should be placed within 10 minutes of mixing in order to gain the full benefit of fluidity. Each repair should be poured or pumped in a single continuous operation. Repairs may be surface finished using a trowel or wood float. If a textured surface is required, this can be achieved using a suitable roller or brush as the material begins to stiffen. The completed surface should not be overworked. Renderoc RSXtra can be applied up to 100 mm thickness in a single application.

Note the minimum applied thickness of Renderoc RSXtra is 20mm. Aggregate should not be added at applied thicknesses between 20mm and 100mm 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 minimise temperature rise. Contact the local Fosroc for further details.

## High temperature working

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

- (i) Store unmixed material in a cool (preferably temperature controlled) environment, avoiding exposure to direct sunlight.
- (ii) 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.
- (iii) Try to eliminate application during the hottest times of the day, and in direct sunlight.
- (iv) Make sufficient material, plant and labour available to ensure that application is a continuous process.
- (v) Water (below 20°C) should be used for mixing the grout prior to placement.



# Fosroc Renderoc RSXtra

## Curing

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. The use of Concure RB90 Clear<sup>\*\*†</sup>, or Rendercure<sup>†</sup> sprayed on to the surface of the finished mortar 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, the finished repair must be protected from freezing.

## Cleaning

Renderoc RSXtra should be removed from tools, equipment and 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.

## Limitations

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

## Technical support

Fosroc offers a comprehensive range of high performance, high quality concrete repair and construction products. In addition, Fosroc offers a technical support service to specifiers, end-users and contractors, as well as on-site technical assistance in locations all over the world.

## Estimating

### Supply

<b>Renderoc RSXtra</b>	:	25 kg bags
<b>Concure RB90 Clear</b>	:	200 litre drums
<b>Fosroc Solvent 102</b>	:	5 litre packs
<b>Rendercure</b>	:	1 & 5 litre packs

### Yield and Coverage

<b>Renderoc RSXtra</b>	:	approx. 13.2 litre /25kg bag
<b>Concure RB90 Clear</b>	:	3.5 to 5.0 m <sup>2</sup> /litre
<b>Rendercure</b>	:	5.0 to 8.0 m <sup>2</sup> /litre

## Storage

### Shelf life

All products have a shelf life of 12 months if kept in a dry store in the original, unopened bags or packs.

### Storage conditions

Store in dry conditions in the original, unopened bags or packs. If stored at high temperatures and/or high humidity conditions the shelf life may be reduced.

# Fosroc Renderoc RSXtra

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## Precautions

### Health and safety

Renderoc RSXtra contains cement powders which, when mixed or become damp, release alkalis which can be harmful to the skin. During use, avoid inhalation of dust and contact with skin and eyes. Wear suitable protective equipment. The use of barrier creams provide additional skin protection. In case of contact with skin, rinse with plenty of clean water, then cleanse with soap and water. In case of contact with eyes, rinse immediately with plenty of clean water and seek medical advice. If swallowed, seek medical attention immediately - do not induce vomiting.

Concure RB90 clear and Fosroc Solvent 102 should not come in contact with the skin and eyes, or be swallowed. Ensure adequate ventilation and avoid inhalation of vapours. Some people are sensitive to resins, hardeners and solvents. Wear suitable protective clothing, gloves and eye protection. If working in confined areas, suitable respiratory protective equipment must be used. The use of barrier creams provide additional skin protection. In case of contact with skin, rinse with plenty of clean water, then cleanse with soap and water. In case of contact with eyes, rinse immediately with plenty of clean water and seek medical advice. If swallowed, seek medical attention immediately - do not induce vomiting.

### Fire

Renderoc RSXtra, Rencure and 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 CO<sub>2</sub> or foam. Do not use a water jet.

### Flash points

**Fosroc Solvent 102** : 33°C

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

## Additional Information

Fosroc manufactures a wide range of complementary products which include :

- waterproofing membranes & waterstops
- joint sealants & filler boards
- cementitious & epoxy grouts
- specialised flooring materials

Fosroc additionally offers a comprehensive package of products specifically designed for the repair and refurbishment of damaged concrete. Fosroc's 'Systematic Approach' to concrete repair features the following :

- hand-placed repair mortars
- spray grade repair mortars
- fluid micro-concretes
- chemically resistant epoxy mortars
- anti-carbonation/anti-chloride protective coatings
- chemical and abrasion resistant coatings

For further information on any of the above, please consult your local Fosroc office - as below.

† See separate data sheet



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## 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. **All Fosroc datasheets are updated on a regular basis. It is the user's responsibility to obtain the latest version.**

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