

Fosroc®

Renderoc RP252



constructive solutions

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Two component fibre and polymer modified cementitious mortar for re-profiling and protection conforming to the requirements of BS EN 1504-3 Class R3

Uses

Renderoc RP252 is designed for application from 3 mm to 20 mm to produce a smooth render finish to concrete or masonry surfaces. It can be used either to produce a surface in readiness for a protective coating or as a protective mortar layer.

Renderoc RP252 can be used independently to infill surface imperfections and voids or to render large sections of concrete.

Renderoc RP252 is suitable for repair methods 3.1, 7.1 and 7.2 as defined by BS EN1504-3.

Advantages

- Easy to use
- Wide range of application thicknesses
- Low permeability provides protection against carbon dioxide and water-borne chlorides
- Excellent bond to the concrete substrate
- Pre-blended to overcome site-batched variation
- Shrinkage compensated

Description

Renderoc RP252 is supplied as a ready to use blend of dry powders and polymer emulsion which when mixed produce a highly consistent cementitious re-profiling and protection mortar. The product exhibits excellent thermal compatibility with concrete and is compatible with other Renderoc mortars and Dekguard coatings.

Renderoc RP252 is designed for vertical or horizontal use. It can be applied as a render from 3 mm to a practical maximum depth of 15 to 20 mm on verticals and 10 mm on soffits. On horizontal surfaces greater thicknesses e.g. 25 mm can be applied, however other grades of Renderoc may be more appropriate.

Prior to the application of Renderoc RP252 any necessary repairs to the concrete should be undertaken using the Fosroc Systematic Approach. Consult the local Fosroc office for further information.

Specification clauses

Re-profiling mortar

The re-profiling mortar shall be Renderoc RP252, a two component, monofilament fibre reinforced modified cement-based blend of powders and liquid polymer conforming to the requirements of BS EN 1504-3 Class R3.

The cured re-profiling mortar shall achieve a compressive strength of 42 MPa and a shrinkage of less than 300 microstrain at 7 days.

Protection mortar

The protection mortar shall be Renderoc RP252, a two component monofilament fibre reinforced modified cement-based blend of powders and liquid polymer conforming to the requirements of BS EN 1504-3 Class R3.

The cured mortar shall achieve a compressive strength of 42 MPa and a shrinkage of less than 300 microstrain at 7 days.

Standards Compliance

Conforms to the requirements of BS EN 1504-3 Class R3 repair methods 3.1, 7.1, and 7.2.

Renderoc RP252 complies with LU Standard 1-085 'Fire Safety Performance of Materials'.

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EN 1504-3 Concrete repair products for non-structural repair PCC mortar (based on polymer modified hydraulic cement)	
Compressive strength	Class R3 (≥ 25 MPa)
Chloride ion content	$\leq 0.05\%$
Adhesive bond	≥ 1.5 MPa
Carbonation resistance	$d_k \geq$ control concrete
Thermal compatibility / freeze thaw	≥ 1.5 MPa
Reaction to fire	Class A2 s1 d0
Dangerous substances	Complies with 5.4

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Properties

The following results were obtained at a temperature of 20°C

Test Method	Standard	EN 1504 R3 Requirement	Test Result
Compressive strength	EN 12190:1999	≥ 25 MPa	@ 1 Day 7 MPa @ 7 Days 20 MPa @ 28 Days 42 MPa
Bond strength by pull off:	EN 1542:1999	≥ 1.5 MPa	2.8 MPa
Chloride ion content:	EN 1015-17:2000	≤ 0.05 %	0.02%
Freeze thaw cycling:	EN 13687-1:2002	≥ 1.5 MPa	2.0 MPa
Resistance to carbonation d_k	EN 13295: 2005	$d_k \leq$ ref concrete	Conforms
Reaction to fire	EN 13823:2002	-	Class A2 s1 d0 Non-Combustible
Setting time	BS 4551 Pt 14:1980	-	Initial set: 5 hours Final set: 8 hours
Fresh wet density	-	-	Nominally 1900 kg/m ³
Shrinkage 25 x 25 x 285 prisms, 27 °C, 65% RH	-	-	< 300 microstrain @ 7days
Alkali reactive particles	Method TI-B 52	-	$\leq 1.0\%$ vol %
Chemical resistance	-	-	The low permeability of Renderoc RP252 severely retards chemical attack in aggressive environments. The cured mortar is impermeable to acid gases, waterborne chloride ions and oxygen.
Build Characteristics hand applied Minimum thickness: Vertical:			5mm Up to 20mm

Clarification of property values: The typical properties given above are derived from laboratory testing. Results derived from testing field applied samples may vary. Maximum build thickness is dependent on location of repair, water content and application technique.

Application instructions

Preparation

All surfaces should be free from contamination. Where breaking out is not required, roughen the surface and remove any laitance by light scabbling or abrasive-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.

Substrate conditioning

The cleaned areas should be blown clean with oil-free compressed air before continuing. All prepared areas should be saturated surface dry immediately before the application of one coat of Renderoc RP252 Surface Conditioner, i.e. they should be thoroughly saturated with clean water and any residual surface water removed. Under severe drying conditions and on highly absorbent substrates, repeated soaking will be necessary. The Renderoc RP252 Surface Conditioner should be scrubbed well into the surface and Renderoc RP252 should be applied before the conditioner dries (film forms).



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Care should be taken to ensure that water does not run over fresh areas applied for less than 12 hours.

In circumstances where a barrier is required between substrate and mortar, or where the substrate is likely to remain permanently damp, Nitobond EP bonding aid should be used. Contact the local Fosroc office for further information.

Recently executed Renderoc mortar repairs require no additional preparation prior to the application of Renderoc RP252.

Mixing

Care should be taken to ensure that Renderoc RP252 is thoroughly mixed using a forced action mixer or in a suitably sized drum using a Renderoc Mixing Paddle in a slow speed (400/500 rpm) heavy-duty drill.

Place all the Renderoc RP252 liquid polymer into the mixer and with the machine in operation, add one full bag of Renderoc RP252 powder and mix for a minimum of 3 minutes to a maximum of 5 minutes until homogeneous. Do not subsequently re-temper with extra water.

Renderoc RP252 powder must be added to Renderoc RP252 liquid. Part-bag mixing is not permitted.

Mixing warning

As with other repair mortars, Renderoc RP252 may exhibit satisfactory handling characteristics even though inadequately mixed. This will result in a significantly lower level of performance or possible failure. It is therefore essential that mixing instructions are strictly adhered to with particular emphasis on the time of the mixing operation.

Application

Apply the Renderoc RP252 to the prepared substrate by steel, wood or plastic float from 3 mm minimum to the maximum practical thickness. The initial application should be worked firmly into the prepared surface as a scrape coat to provide a key to subsequent material. Further build of material should be applied in wet on wet layers. It should be finished with a minimum of working.

If sagging occurs during application, the Renderoc RP252 should be completely removed and reapplied at a reduced thickness.

Build-up

Additional build-up can be achieved by application of multiple layers. The final thickness is dependent on the material consistency and substrate profile. The surface of the intermediate layers should be comb scratch-keyed and cured with Nitobond AR. A further application of Renderoc RP252 may proceed, without the necessity of RP252 Surface Conditioner as soon as this layer has set.

Finishing

Renderoc RP252 can be finished using several different techniques. Screed rails and guide wires can be used to advantage on large areas. Steel, wood and plastic floats can all be used to achieve the desired surface texture. The use of a damp sponge to remove trowelling marks is recommended. The completed surface should not be over worked.

Low temperature working

In cold conditions down to 5°C normal precautions for winter working with cementitious materials should be adopted. 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 materials should be stored in the shade.

Curing

Renderoc RP252 must be cured immediately after finishing in accordance with good concrete practice. The use of Nitobond AR sprayed onto the surface of the finished Renderoc in a continuous film is recommended.

A low pressure atomising sprayer is essential for applying the Nitobond AR. Any excessive run-off on verticals or drips on soffits should be removed by brush before they harden.

Large areas should be cured as trowelling progresses (0.5 m² at a time) without waiting for completion of the entire area.

In fast drying conditions, supplementary curing with polythene sheeting taped down at the edges should be used. In cold conditions, the finished repair must be protected from freezing.

Overcoating with protective decorative finishes

Renderoc RP252 may be overcoated with Fosroc's Dekguard range of protective primers/decorative coatings. The Renderoc RP252 should be primed/cured as trowelling progresses with Nitobond AR, applied as above and allowed to cure for 48 hours prior to the application of the topcoat.

Cleaning

Renderoc RP252, Nitobond AR, Renderoc RP252 Surface Conditioner should be removed from tools, equipment and mixers with clean water immediately after use. Cured material can only be removed mechanically.

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Estimating

Supply

Renderoc RP252:	20 kg bags, 3.4 litre bottles
Renderoc RP252 Surface Conditioner:	5 and 25 litre drums
Nitobond AR:	5 and 25 litre drums

Coverage and yield

Renderoc RP252:	12 litres per pack (approximately 2.4 m ² at 5 mm thickness)
Renderoc RP252 Surface Conditioner:	7 to 9 m ² /litre
Nitobond AR:	6 to 8 m ² /litre

Notes: The coverage figures for liquid products are theoretical. Due to wastage factors and the variety and nature of possible substrates, practical coverage figures will be reduced.

Limitations

Renderoc RP252 should not be used when the temperature is below 5°C and falling.

Due to the nature of Renderoc RP252, the product should not be used in areas subjected to traffic.

Renderoc RP252 should not be exposed to moving water during application. Exposure to heavy rainfall before the final set may result in surface scour.

Storage

The product has a shelf life of 12 months from the date of manufacture if kept in dry storage in the original, unopened packs.

Store in 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. Renderoc RP252 liquid, Renderoc RP252 Surface Conditioner and Nitobond AR should be protected from frost.

Precautions

Health and safety

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

Fire

Renderoc RP252, Nitobond AR and Renderoc RP252 Surface Conditioner are non-flammable.

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Important note

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