Fosroc®
Renderoc® Rapid

constructive solutions

Extremely fast setting, reinstatement mortar, trafficable within 1 to 2 hours; 25mm to 250mm thick

Uses

For emergency reinstatement of bridge joint edges, roadway slabs, or where the placement of localised areas is required urgently. Renderoc Rapid is designed to accept traffic one hour after placement, enabling fast repairs and concrete replacements to take place, whilst minimising any traffic interruptions. The product is alkaline in nature and will protect embedded steel reinforcement. It may be used in both internal and external applications.

When reinstating floor and pavement areas having a repair area greater than 10m², the use of Paveroc is recommended.

Advantages

- Rapid strength gain - will accept traffic in 1 to 2 hours
- High strength, abrasion and weather resistance
- Single component product eliminates site batching and requires only the site addition of clean water
- Excellent bond to the concrete substrate
- Shrinkage compensated
- Contains no chloride admixtures
- RCS (Respirable Crystalline Silica) Hazard Free*

Description

Renderoc Rapid is supplied as a ready to use blend of dry powders which require only the site addition of clean water to produce a highly consistent, pourable, high strength reinstatement mortar which virtually self-compacts. The material is based on a blend of cements, graded aggregates, special fillers and chemical additives to provide a mortar with good handling characteristics, while minimising water demand. Renderoc Rapid exhibits excellent thermal compatibility with concrete and good water repellent properties. The low water requirement ensures fast strength gain and long-term durability.

*Renderoc Rapid is classified not hazardous for RCS in accordance with Australian Inventory of Industrial Chemicals; contains <0.1% RCS.

Design Criteria

Renderoc Rapid is designed for horizontal use. The material should not be applied at less than 25mm thickness. Renderoc Rapid may be applied up to a maximum thickness of 250mm.

Properties

The following results were obtained from material mixed at w/p 0.125 (2.5 L / 20 kg) and cured at 23°C.

Cure time	Compressive strength (AS1478.2 - 2005)
1 hour:	20 MPa
2 hours:	25 MPa
4 hours:	30 MPa
1 day:	35 MPa
7 days:	45 MPa
28 days:	55 MPa
Working Life:	10 minutes
Initial Set:	20 - 25 minutes
Final Set:	25 - 35 minutes
Time to Pedestrian Vehicular Traffic:	1 - 2 hours
Fresh Wet Density (AS1012.5 - 1999):	2200 kg / m³
Shrinkage (AS1012.13 - 1992):	< 600 microstrain @ 28 days

Note: Compressive strengths stated above were measured using cube samples. Test results obtained will vary if testing is carried out to an alternative standard or sample dimensions are used.

Applications Instructions

Preparation

Saw cut or cut back the extremities of the repair locations to a depth of at least 25mm to avoid feather-edging and to provide a square edge. Break out the complete repair area to a minimum depth of 25mm 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.

Expose fully any corroded steel in the repair area and remove all loose scale and corrosion deposits paying particular attention to the back of exposed steel bars. Grit-blasting or high pressure water 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 grit-blasting to remove corrosion products from pits and imperfections within its surface.

The prepared area should be blown clean with oil-free compressed air.

Reinforcing steel priming

Apply one full coat of Nitoprime Zincrich to all exposed reinforcing steel and allow 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

For 2 to 3 hours prior to application the prepared concrete substrates should be saturated by filling the prepared area with clean water. Immediately prior to application of Renderoc Rapid any excess water should be removed to leave the concrete substrate in an SSD (saturated surface dry) condition.

Mixing

Care should be taken to ensure that Renderoc Rapid is thoroughly mixed. A forced-action mixer is essential. Mixing at a slow speed (400/500rpm) in a suitably sized drum using appropriate equipment such as a 120/140mm helical mixing paddle fitted to a heavy-duty 1600W mixer.

Free fall mixers must not be used. Mixing of part bags should never be attempted.

It is recommended that only one bag of Renderoc Rapid is mixed at any one time to ensure that all the mortar can be placed within its working life. Place 2.5 litres of drinking quality water into the mixer and, with the machine in operation, add one full 20kg bag of Renderoc Rapid and mix for 3 minutes until fully homogeneous. Do not mix for longer than this time to ensure that the available working life is not reduced. Note that powder must always be added to water.

Consistency	Water Addition (Litres)	Yield (Litres)
Pourable	2.5	10.23

Mixing part bags

It is recommended that full bags be mixed, however for applications where smaller quantities of product are required, experienced applicators may elect to mix half bags by weighing out (the correct quantity of product) and mixing with half the recommended quantity of water. In doing so the contractor accepts the risk of any off-ratio mixing. Agitate the dry product before weighing out to minimise any segregation. Reliable scales should be used to weigh out individual components.

Application

Apply the mixed Renderoc Rapid on to the SSD substrate as soon as possible after mixing. The mortar should be applied evenly by trowel and tamped in place with a wood float to ensure full compaction. Thoroughly compact the mortar around any exposed steel reinforcement. Renderoc Rapid can be applied up to 250mm thickness in single applications.

Note: the minimum applied thickness of Renderoc Rapid is 25mm.

Build Up

Repair sections greater than 250mm thickness can be achieved by application of multiple layers. In this instance, the surface of the intermediate layers should be scratch-keyed and allowed to set for a minimum of 2 hours before continuing. The initial layer should be pre-soaked with water for 30 minutes, excess water removed then a further application of Renderoc Rapid may proceed.

Note: Repairs greater than 0.15m³ (150 litres) may exhibit significant exotherm. Contact Fosroc for specific application advice in these situations.

Finishing

Renderoc Rapid should be struck off to the correct level and finished with a steel trowel to fully close the surface. If a textured surface is required, this can be achieved using a suitable roller or brush. The completed surface should not be overworked.

Low temperature working

In cold conditions down to 5°C, the use of warm water (up to 30°C) is advisable to accelerate strength development. 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 not be used as premature setting may occur.

Curing

Renderoc Rapid is a cement-based repair mortar. In common with all cementitious materials, Renderoc Rapid must be cured immediately after finishing in accordance with good concrete practice. The use of one of Fosroc's Concure curing compounds, 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.

Overcoating with protective finishes

Renderoc Rapid is extremely durable and will provide an excellent hard wearing surface to the repaired locations. Surrounding floor areas may benefit from the application of an abrasion or chemical-resistant protective coating. For internal locations, Fosroc recommends the use of the Nitoflor range of floor coatings. These products provide a decorative and uniform appearance as well as protecting areas of the floor which might otherwise be at risk. Nitoflor products may be applied over the repair area after prior removal of the curing membrane generally after 3 days. Fosroc should be contacted for advice about external protective overlayments.

Cleaning

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

Equipment used with Nitoprime Zincrich should be cleaned with Fosroc Solvent 10.

Limitations

Renderoc Rapid should not be used when the temperature is below 5°C and falling. Renderoc Rapid should not be used when temperature is above 35°C. 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, contact Fosroc.

Supply

Renderoc Rapid 20kg:	FC300200-20KG
Nitoprime Zincrich 1 litre:	FC322100-1L
Fosroc Solvent 10 4 litre:	FC600800-4L

Coverage and yield

Renderoc Rapid:	Approx. 10.2 litres / 20kg bag (0.4m² at 25mm thick)
Nitoprime Zincrich:	7m²/litre

Notes: the actual yield per bag of Renderoc Rapid will depend on the consistency used. 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.

Storage

Renderoc Rapid has a shelf life of 24 months from date of manufacture if kept in the original, unopened bags. Do not use if there are lumps in the product, or a loss of workability (requiring more water to be added) is experienced.

If stored at high temperatures and/or high humidity conditions the shelf life may be reduced.

Important notice

A Safety Data Sheet (SDS) is available from the Fosroc website. Read the SDS and TDS carefully prior to use as application or performance data may change from time to time. In emergency, contact any Poisons Information Centre (phone 13 11 26 within Australia) or a doctor for advice.

Product disclaimer

This Technical Data Sheet (TDS) summarises our best knowledge of the product, including how to use and apply the product based on the information available at the time. You should read this TDS carefully and consider the information in the context of how the product will be used, including in conjunction with any other product and the type of surfaces to, and the manner in which, the product will be applied. Our responsibility for products sold is subject to our standard terms and conditions of sale. Parchem does not accept any liability either directly or indirectly for any losses suffered in connection with the use or application of the product whether or not in accordance with any advice, specification, recommendation or information given by it.

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