

Renderoc TG

Trowel Grade Cementitious concrete and masonry Reinstatement Mortar

Uses

Fosroc Renderoc TG is recommended for wide range of concrete and masonry repairs, particularly in vertical and overhead locations without the use of formwork.

It is suitable for rapid repairing, rendering, patching bedding and pointing of:

- Concrete
- Blockwork
- Brickwork & Masonry

Advantages

- High build thicknesses achievable without formwork – saving time and cost.
- Convenient, one pack product, simply add water
- Shrinkage compensated, can be applied over large areas without cracking or debonding
- Low permeability provides good protection against carbon dioxides and chlorides
- Excellent bond to concrete substrate
- Contains no chloride admixtures

Standards Compliance

Renderoc TG cementitious repair compound is tested in accordance with BS 4550.

Technical Support

Fosroc offers a comprehensive range of high performance high quality, construction products. In addition to the wide range of quality products, Fosroc offers technical support packages to specifiers and contractors which include assistance with product selection and technical advice from staff with unrivalled experience in the industry.

Description

Renderoc TG is a single-component shrinkage compensated pre-packed repair mortar to which clean water is simply added on site. It consists of specially blended non-shrink cement, graded sand, fillers and chemical polymers to provide durable repair to concrete.

Design Criteria

Renderoc TG is designed for vertical, overhead or horizontal use without the use of formwork. Recommended limits for a single application are

Minimum applied thickness	: 10mm
Large overhead sections	: up to 20mm
Vertical Sections	: up to 50mm
Small pockets or horizontal	: up to 100mm
Maximum Length	: up to 3m

Thicker sections can be built up in layers using a wet-on-wet technique. The material should not be applied at less than 10 mm thickness. Thicknesses greater than 20 mm overhead and 50 mm vertically in large areas can be achieved by spray application. Consult the local Fosroc office for further information.

Properties

The following typical results were obtained at a water: powder ratio of 0.18 and temperature of 20°C.

Test Method	Typical Result
Compressive Strength (BS4552)	20 N/mm ² at 24 Hours 30 N/mm ² at 7 days 40 N/mm ² at 28 days
Flexural Strength (BS4551)	5.5 N/mm ² at 28 days
Tensile Strength (BS6319 Part 7 1985)	1.7 N/mm ² at 28 days
Water absorption ISAT (BS1881 Pt5: 1970)	10 mins: 0.225ml/m ² /sec
Coefficient of thermal expansion:	7.3 x 10 ⁻⁶ /°C
Setting Time	Dependent on temperature and water content typically 2 to 4 hours
Chemical resistance	Substantially reduced resistance absorption; slows-down chemical attack in aggressive environments.

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Application instructions

Surface Preparation

Successful repairs to concrete depend totally on correct surface preparation. Particular care should be taken to ensure all surfaces are completely free of laitance, oil, dust, grease, plaster, paint, corrosion and any other deleterious substances. All reinforcing steel must be grit blasted to a profile of SA 2 1/2 prior to the application of the recommended primer.

Edges of the repair area must be saw cut to at least 10 mm thickness to avoid feather edging. Break out the entire area of the repair to a minimum of 10mm thickness up to the sawn edge. Where breaking out is not required i.e. where concrete is sound and of good quality but cover is to be increased, roughen the surface and remove any laitance by light scabbling or grit-blasting. It will still be necessary to cut back the perimeter to a dept of 10 mm so that the repair patch may be 'toed-in' and finished flush with the surrounding concrete.

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. Grit-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.

Priming

Steel Reinforcement

Apply one full coat of Nitoprime Zinc Rich 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

Concrete must be primed with Nitobond AR. Nitobond AR is an acrylic emulsion which is scrubbed onto the surface of the concrete. Renderoc TG can be applied as soon as the primer becomes tacky. If the Nitobond primer is too wet, vertical and overhead build-up of the Renderoc TG mortar may be difficult.

In exceptional circumstances e.g. where a substrate/repair barrier is required or where the substrate is wet or likely to remain permanently damp, Nitobond EP epoxy bonding aid should be used. Contact the local Fosroc office for further information.

Mixing

Care should be taken to ensure that Renderoc TG is thoroughly mixed. A forced-action mixer is essential. Mixing in a suitably sized drum using an approved spiral paddle in a slow speed (400/500 rpm) heavy-duty drill is acceptable for single bag mixes. Free-fall mixers must not be used. Mixing of part bags should never be attempted.

For normal applications use from 4 to 5 Litres of water per 25 Kg bag, or from 3 to 4 L of water per 20 Kg bag, depending on desired consistence. Mix for 3 to 5 minutes until fully homogeneous. Note that powder should always be added to the water and that the temperature of the mixed mortars should not exceed 30°C.

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.

Apply the mixed Renderoc TG to the prepared substrate by gloved hand or trowel. Thoroughly compact the mortar on to the primed substrate and around the exposed reinforcement. Finishing can be wood float, steel trowel or sponge, depending on which type of finish is required. Renderoc TG should be applied within the recommended thicknesses under design criteria. If formwork is used, it should have properly sealed faces to ensure that no water is absorbed from the repair material.

If sagging occurs at any time due to excessive build-up of Renderoc TG, the material should be completely removed and reapplied in thinner layers. Where a high build is required in an overhead or vertical situation Renderoc HB Range should be considered.

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Build-up

Additional build-up can be achieved by a wet-on-wet application technique or by the application of multiple layers. The final thickness is dependent on the material consistency and substrate profile.

Where multiple layers will be applied by hand or trowel, the surface of the intermediate layers should be scratch-keyed and cured with Nitobond AR. Re-priming with Nitobond AR and a further application of Renderoc TG may proceed as soon as this layer has set.

Finishing

Renderoc TG is finished 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 over-worked.

Low temperature working

Although formulated for use in hot climates, Renderoc TG can be used in more moderate locations. 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 temperature above 35°C, the material should be stored in the shade and cool water used for mixing. Note that the temperature of the mixed mortar should not exceed 30°C.

Curing

Renderoc TG is a cementitious repair mortar. In common with all cementitious materials. Renderoc TG must be cured immediately after finishing in accordance with good concrete practice. When over-coating with Nitocote Dekguard the use of Nitobond AR sprayed onto the surface as a continuous film is recommended. In harsh drying conditions supplementary curing such as wet hessian or polythene sheeting must be used.

Over-coating with protective decorative finishes

Renderoc TG is extremely durable and will provide excellent protection to the embedded steel reinforcement within the repaired locations. The surrounding parts of the structure will generally benefit from the application of a barrier/decorative coating to limit the advance of chlorides and carbon dioxide, thus bringing them up to the same protective standard as the repair itself. Fosroc recommend the use of the Dekguard range of protective, anti-chloride and anti-carbonation coatings. These products provide a decorative and uniform appearance as well as protecting areas of the structure which might otherwise be at risk from the environment. Dekguard products may be applied over the repair area without prior removal of the Nitobond AR curing membrane. Other curing membranes must be removed prior to the application of Dekguard products.

Cleaning

Nitobond AR and Renderoc TG 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 Zinc Rich and Nitobond EP should be cleaned with Fosroc Solvent 102.

Estimating

Supply

Renderoc TG	: 20 & 25 kg bags
Nitobond AR	: 5 & 20L Pails; 190 & 210L Drums
Nitobond EP	: 15 kg per set
Fosroc Solvent 102	: 5,18 and 20L Pails

Coverage

Renderoc TG	: 10.7 litres/20kg 13.4 litres/25kg
Nitoprime Zincrich	: 7.4 m ² per Litre
Nitobond AR	: 6 – 8 m ² /L as primer 4 – 5 m ² /L as curing gent
Nitobond EP	: 12 m ² per set

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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.

Precautions

Health and safety

Renderoc TG 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 clothing, gloves, eye protection and respiratory protective equipment. 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 TG is non-flammable. Nitoprime Zinc Rich and Fosroc Solvent 102 are 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:

Nitoprime Zincrich : 16°C

Fosroc Solvent 102 : 33°C

For further information, refer to the Product Material Safety Data sheet



Important note

Fosroc products are guaranteed against defective materials and manufacture and are sold subject to its standard terms and conditions for the Supply of Goods and Services, copies of which may be obtained on request. Whilst Fosroc endeavours to ensure that any advice, recommendation, specification of information it may give is accurate and correct, it cannot, because it has no direct or continuous control over where or how its products are applied, accept any liability either directly or indirectly arising from the use of its products, whether or not in accordance with any advice, specification, recommendation of information given by it.

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