

# Renderoc RG

## General purpose non-shrink Cementitious Repair Mortar

### Uses

Renderoc RG is General Purpose repair cementitious used for repairs to damaged reinforced concrete elements.

### Advantages

- Gaseous expansion system compensates for shrinkage and settlement in the plastic state.
- No metallic iron content to cause staining.
- Prepack material overcomes potential on-site batching variations.
- Develops high early strength without the use of chlorides.
- High ultimate strength and low permeability ensure the durability of the hardened mortar.

### Description

Renderoc RG is supplied as a ready to use dry powder. The addition of a controlled amount of clean water produces a flowing non-shrink mortar.

Renderoc RG is a blend of Portland cement, graded fillers and chemical additives which impart controlled expansion in the plastic state whilst minimising water demand. The low water demand ensures high early strength. The graded filler is designed to assist uniform mixing and produce a consistent mortar.

### Properties

The following results were obtained at a water : powder ratio of 0.18 and temperature of 25+/-2°C.

#### Compressive strength (ASTM C109/C109M)

: 26 N/mm<sup>2</sup> @ 1 day

#### With tolerance 10%

55 N/mm<sup>2</sup> @ 7 days

65 N/mm<sup>2</sup> @ 28 days

#### Flexural strength

10 N/mm<sup>2</sup> @ 28 days

#### (EN 196), tolerance min.

15%

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<b>Fresh wet density</b>	: Approx. 2150 kg/m <sup>3</sup>
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#### Expansion characteristics

<b>ASTM C940</b>	: Up to 2% @ 24 hours
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### Specification

#### Performance specification

All product where shown on the drawing must be carried out with a pre-packaged cement based product which is chloride-free.

It shall be mixed with clean water to the required consistency.

The plastic condition must not bleed or segregate.

A positive volumetric expansion shall occur while the mortar is plastic by means of a gaseous system.

The storage, handling and placement of the product must be in strict accordance with the manufacturer's instructions.

#### Supplier specification

All repair mortar where shown on the drawing must be carried out using Renderoc RG manufactured by Fosroc and used in accordance with the manufacturer's data sheet.

### Instructions for use

#### Preparation

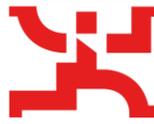
The unrestrained surface area of the repair must be kept to a minimum. The formwork should include drainage outlets for pre-soaking and, if beneath a soffit, provision for air venting.

Provision must also be made for suitable access points to pour or pump the mixed mortar in place.

Defective concrete surfaces must be cut back to a sound base.

Smooth surfaces should be mechanically roughened.

Corroded reinforcing steel should be exposed around its full circumference and cleaned to remove all loose scale



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and corrosion deposits. It is important to clean the steel to a bright condition. Grit-blasting is recommended.

One coat of Nitoprime Zincrich should be applied on the reinforcing steel. If any discontinuity in the applied film is noticed, one more coat has to be applied.

Several hours prior to placing, the concrete substrates should be saturated with clean water. Immediately prior to placing, any free water should be removed.

Alternatively, all prepared concrete substrates should be primed using Nitobond EP, a slow - setting epoxy bond aid. Nitobond EP shall be applied only on dry substrate.

Note : For repair sections generally deeper than 100mm it may be necessary to mix the Renderoc RG with properly graded 5mm to 12mm silt-free aggregate to minimise temperature rise. The quantity of aggregate required may vary depending on the nature and configuration of the repair location. For ready used repair mortar deeper than 100mm, Fosroc has product called Renderoc RG Premix.

## Mixing

For quantity up to 50 kg are used, a slow speed drill mixing paddle should be used. Larger quantities will require a high shear vane mixer. Do not use a colloidal impeller mixer

To enable the operation to be carried out continuously, it is essential that sufficient mixing capacity and labour are available. The use of a holding tank with provision to gently agitate the mortar may be required.

### *Consistency of mortar mix*

The quantity of clean water required to be added to a 25 kg bag to achieve the desired consistency is given below.

<b>Trowellable</b>	: 3.4 - 3.6 litres per 25kg bag
<b>Flowable</b>	: 4 - 4.5 litres per 25kg bag

The selected water content should be accurately measured into the mixer. The total contents of the Renderoc RG bag should be slowly added and continuous mixing should take place for 5 minutes. This will ensure that the mortar has a smooth even consistency.

## Placing

At 25°C place the mortar within 15 minutes of mixing to gain full benefit of the expansion process.

Renderoc RG can be placed in a minimum thickness of 10mm up to a maximum thickness of 100mm in a single pour.

Where large volumes have to be placed Renderoc RG may be pumped. A heavy duty diaphragm pump is recommended for this purpose. Screw feed and piston pumps may also be suitable.

## Curing

On completion of the operation, exposed areas should be thoroughly cured. Suggest curing with Concure series. If using wet Hessian and plastic sheeting then leave for at least seven days – especially if exposed to sunlight.

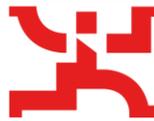
## Cleaning

Renderoc RG should be removed from tools and equipment with clean water immediately after use.

## High temperature working

It is suggested that, for temperatures above 35°C, the following guidelines are adopted as good working practice:

- Store unmixed material in a cool (preferably temperature controlled) environment, 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.



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- 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.

## Limitations

- Should not be placed in any unrestrained situation.

## Estimating

### Supply

Renderoc RG	: 25 kg bags
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### Yield

Trowellable	: 12 litres per 25kg bag
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Flowable	: 13.25 litres per 25kg bag
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**Note:** Allowance should be made for wastage when estimating quantities required.

## Storage

Renderoc RG has a shelf life of 12 months if kept in a dry store within the range of 20 - 35°C in its original packaging. If stored in high temperature and high humidity locations the shelf life will be reduced.

## Precautions Health and safety

Renderoc RG is alkaline and should not come into contact with skin and eyes. Avoid inhalation of dust during mixing.

Gloves, goggles and dust mask should be worn.

If contact with skin occurs, wash with water. Splashes to eyes should be washed immediately with plenty of clean water and medical advice sought.

## Fire

Renderoc RG is non-flammable.

## 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



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### Important note

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