Renderoc RG Premix

constructive solutions

General purpose non-shrink cementitious micro concrete

Uses

Renderoc RG Premix is used for repairs to damaged reinforced concrete elements particularly where access is restricted and when vibration of the placed material is difficult or impossible.

Advantages

- Gaseous expansion system compensates for shrinkage and settlement in the plastic state.
- Can be pumped or poured into restricted locations..
- Develops high early strength without the use of chlorides.
- High ultimate strength and low permeability ensure the durability of cured repair.

Description

Renderoc RG Premix is supplied as a ready to use dry powder. The addition of a controlled amount of clean water produces a flowing non-shrink micro-concrete for gap thicknesses up to 500 mm. The material is based on Portland cement, graded fillers and additives which impart controlled expansion in the plastic state whilst minimizing water demand. The low water demand ensures high early strength.

Properties

The following results were obtained at water: powder ratio of 0.126 and temperature of 23°±3°C.

Test Method	Typical Result
Compressive strength	**:** 26 N/mm$_2$ @ 1 day
With Tolerance ± 10%	55 N/mm$_2$ @ 7 days
	64 N/mm$_2$ @ 28 days
Time for expansion	
Start	**:** 15 minutes
Finish	**:** 2 hours
Expansion characteristics	**:** Up to 2% @ 24 hours
ASTM C940	

Specification

Performance Specification
All cement-based repair compound 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 repair compound must not bleed or segregate. A positive volumetric expansion shall occur while the cement-based repair compound is plastic by means of a gaseous system.

The storage, handling and placement of the cement-based repair compound must be in strict accordance with the manufacturer's instructions.

Supplier specification
All cement-based repair compound where shown on the drawing must be carried out using **Renderoc RG Premix** 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 micro-concrete 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 and corrosion deposits. It is important to clean the steel to a bright condition. Grit-blasting is recommended.

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

Mixing

For best results a mechanically powered grout mixer should be used. When quantities up to 40 kg are used, a slow speed drill fitted with a Fosroc Mixing Paddle (MR3) should be used. Larger quantities will require a high shear vane mixer. Do not use a colloidal impeller mixer. To enable the repairing operation to be carried out continuously, it is essential that sufficient mixing capacity and labor are available. The use of a grout holding tank with provision to gently agitate the mixed may be required.

Consistency of cement-based repair compound mix
The quantity of clean water required to be added to a 30 kg bag to achieve the desired consistency is given below.

Trowellable	**:** 2.9 – 3.3 litres
Flowable	**:** 3.3 – 3.8 litres

The selected water content should be accurately measured into the mixer. The total contents of the **Renderoc RG Premix** bag should be slowly added and continuous mixing

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should take place for 5 minutes. This will ensure that the cement-based repair compound has a smooth even consistency.

Placing
At 25°C place the mixed material within 15 minutes of mixing to gain full benefit of the expansion process. **Renderoc RG Premix** can be placed in thicknesses up to 500 mm in a single pour when used as an underplated grout. Premix with well graded 10mm, already mixed with silt free aggregate to minimize exotherm. If bulking with aggregate is used the ratio shall not exceed 20%. Continuous flow is essential. Sufficient cement-based repair compound must be prepared before starting. The time taken to pour a batch must be regulated to the time taken to prepare the next one. Pouring should be from one side of the void to eliminate any air or pre-soaking water becoming trapped under the base plate. It is advisable to pour the cement-based repair compound across the shortest distance of travel. The concrete repair head must be maintained at all times so that a continuous concrete repair front is achieved.

Where large volumes have to be placed **Renderoc RG Premix** 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 cement-based repair compound operation, exposed areas should be thoroughly cured. This should be done by the use of Concure curing membrane, or continuous application of water and/or wet hessian.

Cleaning
Renderoc RG Premix should be removed from tools and equipment with clean water immediately after use. Cured material can be removed mechanically, or with Fosroc Acid Etch.

High temperature working

It is suggested that, for temperatures above 35°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 repair compound prior to placement.

Estimating

Supply	
Renderoc RG Premix	**:** 30 kg bags
Yield	
Trowellable	**:** 13 litres
Flowable	**:** 14.5 litres

Storage

Renderoc RG Premix has a shelf life of 12 months if kept in a dry store (T: 25- 35 ^{o} C, RH < 55%) in sealed bags. If stored in high temperature and high humidity locations the shelf life will be reduced.

Precautions

Health and safety
Renderoc RG Premix 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 Premix is non-flammable.

Fosroc additionally offers a comprehensive package of products specifically designed for the repair and refurbishment of damaged concrete.

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

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