

Shrinkage controlled, polymer modified, cementitious, high specification repair mortar system

Uses

Renderoc HSXtra is suitable for hand and spray application for repairs where high load bearing is required. Typical applications would include, but not be limited to, the following:

- Vertical and overhead repairs to restore 'covercrete'
- General concrete and masonry repairs
- Voids greater than 10 mm deep
- Repairs to honeycombing
- Larger scale repairs where formwork cannot be erected

Advantages

Renderoc HSXtra features **Dimensional Stability Technology** - a new materials technology which controls the rate of drying shrinkage such that, when used correctly :

- i. the dimensions of the repair remain stable; and thus
- ii. eliminating failure, due to shrinkage cracking.

This in turn leads to a series of associated benefits :

- **Cost effective** - shrinkage control enables repairs to be completed 'right first time'
- **Enhanced durability** - works in tandem with extremely low permeability to prolong effective working life
- **Compatibility** - aligns performance closer than ever before, to that of host concrete
- **User friendly** - specifically developed to provide an easy-to-apply product, suitable for local conditions
- **Definable performance** - positive benefits are easily demonstrated via a single, simple measurement

Description

Renderoc HSXtra is supplied as a ready to use blend of dry powders, which requires only the addition of clean water to produce a highly consistent, repair mortar suitable for structural concrete and masonry repairs. Renderoc HSXtra may be hand applied or sprayed with suitable equipment, please see application method statement for details.

Properties

The following typical results were obtained at a water to powder ratio of 0.18.

Test method	Typical result
Drying shrinkage to ASTM C 157-93	
7 days	: < 300 microstrain
28 days	: < 500 microstrain
Permeability (DIN 1048 Part 5)	: < 5 mm
Flexural strength (BS 6319 Pt. 3)	: > 13 N/mm ² at 28 days
Tensile strength (BS 6319 Pt. 7)	: > 6 N/mm at 28 days
Compressive strength (BS 1881 Pt.116')	: 60 N/mm ² at 7 days 80 N/mm ² at 28 days
Water absorption (BS 1881 Pt. 121)	: < 2%
Rapid chloride permeability (AASHTO 277-93)	: < 500 coulombs

Note 1: 100 mm cubes, water cured @ 25°C

Design criteria

Dimensional Stability Technology is a major step forward in the general compatibility of repair mortar systems with the host concrete, and the control of shrinkage in particular. Attention to the basic design criteria given below should ensure that the full benefits of this technology are gained in use :

- (i) Recommended limits for a single application are:

Minimum applied thickness	: 10 mm
Overhead sections	: up to 50 mm thick
Vertical sections	: up to 75 mm thick
Small pockets or horizontal	: up to 100 mm thick
Maximum length	: up to 3 m

NOTE : If the repair area exceeds 2.5 m², consideration should be given to the use of mass fill by means of either Renderoc SPXtra** spray applied mortar or Renderoc LAXtra** microconcrete.
- (ii) In situations where a substrate/repair barrier is required, or enhanced bond strength/working time is required, or where the substrate is likely to be permanently wet or damp (e.g. seawalls, quays etc.), Nitobond EP** epoxy bonding agent should be used.
- (iii) Water addition = 4.5 litres per 25 kg bag

Under no circumstances should part bags be used or additional water be employed. Either of these two actions will adversely affect material performance.

Galvanic Protection of repairs

It is likely that, steel reinforcement in the area around a

Fosroc Renderoc® HSXtra

patch repair, particularly in a chloride contaminated environment, will typically corrode after the repairs are carried out, referred to as the incipient anode or Halo effect. Galvashield XP** (eXtra Protection) anodes can be incorporated into patch repairs to galvanically protect steel reinforcement against corrosion in the adjacent concrete and may also be used in new construction to provide Cathodic Prevention. Galvashield XP are zinc based anodes encased in a highly alkaline mortar which maintains the surface of the zinc in an active state. Galvanic systems are self regulating and demand based and will start working only when corrosion of steel begins. Refer to product datasheet for further details.

Instructions for use

Renderoc HSXtra should only be mixed and applied in strict accordance with the Product Method Statement, a copy of which may be obtained from your nearest Fosroc office.

Estimating

Supply

Renderoc HSXtra	: 25 kg bags
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Yield

Renderoc HSXtra	: 13.4 litres per 25 kg bag
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Limitations

- Renderoc HSXtra should not be used when the ambient temperature is below 5°C and falling.
- Renderoc HSXtra should not be part mixed, nor part bags used.
- Renderoc HSXtra should not be exposed to running water either during application or prior to final set.



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