Fosroc®
Renderoc® BB

constructive solutions

High strength gain, low shrinkage mortar for the installation of elastomeric bridge bearings

Uses

Renderoc BB exhibits a series of performance characteristics which make it ideal for use as a bearing mortar for the installation of elastomeric bridge bearings.

Advantages

- Rapid strength gain
- Contains sufficient coarse aggregate to provide a rough finish on the surface supporting the bearing
- Uses shrinkage limited cement conforming to AS3972 and RTA 3211
- Aggregate grading in accordance with RTA B80 table B80.2
- No plastic or dry state expansive admixtures
- Aggregate classified as non-reactive when tested for AAR by accelerated mortar bar test in accordance with RTA T363
- Drying shrinkage meets requirements of RTA B80 table B80.7
- RCS (Respirable Crystalline Silica) Hazard Free*

Description

Renderoc BB concrete reinstatement mortar is supplied as a ready to use blend of dry powders which requires only the site addition of clean water to produce a mortar. It is based on Portland cements, graded aggregates and chemical additives which provide a mortar with good handling characteristics while minimising water demand. The low water requirement ensures good strength gain and long-term durability.

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

Design Criteria

Renderoc BB exhibits a series of performance characteristics which make it ideal for use as a bearing mortar for the installation of elastomeric bridge bearings.

Renderoc BB has been designed to provide rapid strength gain when mixed at consistencies ranging from dry pack to flowable. It can be applied at thicknesses of 20 - 150 mm with or without formwork (depending on mix consistency).

Renderoc BB contains sufficient aggregate to allow it to be finished to a surface roughness suitable for the support of an elastomeric bridge bearing. It also does not contain any plastic or dry state expansive admixtures and does not need to be restrained during set.

Properties

Compressive strength (AS1478.2-2005)

Cure Time (Days)	Dry Pack / Stiff	Trowelable / Plastic	Flowable
1	50	37	21
2	58	48	35
3	67	55	38
7	77	58	47
14	78	59	53
28	79	60	56

Cure Time (Days)	8°C	15°C	23°C
1	6	7	21
2	19	22	35
3	29	30	38
7	40	44	47
14	52	52	53
28	53	54	56

Compressive strength (AS1478.2-2005), when mixed at flowable consistency. Cured in a sealed plastic bag at various temperatures.

Note: results quoted where obtained at bottom end water for each consistency, eg. compressive strength result of 60 MPa at 28 days trowelable consistency was achieved using 1.86 litres mixing water per 20 kg bag of Renderoc BB.

Drying Shrinkage (AS1012.13) Mixed at a flowable consistency	< 500 microstrain @ 21 days < 600 microstrain @ 28 days
Setting time (AS1012.18) Cured at 23°C **Initial Set** **Final Set**	 3 hours 5 hours
Alkali Aggregate Reaction - Rapid mortar bar test 363.	Aggregates classified as non-reactive
Fresh Wet Density	Approximately 2200 kg/m³. Depending on actual consistency used

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.

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Application Instructions

Preparation

Mark out the mortar pad perimeter ensuring that the mortar pad extends beyond the edge of the bearing by a minimum of 50mm, as per the requirements of RTA B284 for elastomeric bearings held in place by friction alone.

Saw cut the marked out mortar pad perimeter to a depth of 5 to 10mm into the substrate and lightly scabble or needle gun the substrate within the perimeter. The prepared surface should then be cleaned by way of a high pressure water jet to remove any dust from the surface.

Substrate priming

Following the installation of water tight form work, pre-soak the substrate with clean water for as long as practical but not less than 3 hours. When ready to apply the mortar, removed excess pre-soaking water to leave a saturated surface dry substrate to which the Renderoc BB should be applied before the substrate dries substantially. No primer is required providing the above pre-wetting is carried out.

In exceptional circumstances where the substrate cannot be pre-soaked for the required time, the pre-soak stage can be replaced by priming the substrate using Nitobond EP epoxy bonding agent. In this case the substrate must be left dry prior to the application of the Nitobond EP and the Renderoc BB must be placed within 90 minutes. Refer to the Nitobond EP data sheet.

Mixing

Care should be taken to ensure that Renderoc BB is thoroughly mixed. A forced-action mixer is essential. Mixing at a slow speed (400/500 rpm) in a suitably sized drum using appropriate equipment such as a 120/140 x 600 M14 Helical mixing paddle fitted to a heavy-duty 1600W mixer is acceptable for one-bag mixes.

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

For normal applications, place drinking quality water into the mixer and, with the machine in operation, add 1 full 20kg bag of Renderoc BB and mix for 3 to 5 minutes until fully homogeneous. Never exceed the maximum water addition. Note that the powder must always be added to the water.

Mixing Water Required per 20kg bag

Dry pack:	1.6 – 1.9 litres
Trowelable:	1.9 – 2.4 litres
Flowable:	2.4 – 2.6 litres

Application

Apply the mixed Renderoc BB to the prepared substrate by gloved hand, trowel or pouring into formwork.

In the case of an elastomeric bearing held in position by friction alone, extend the mortar pad beyond the edge of the bearing a minimum of 50mm outside the edge of the bearing. In the areas outside these minimum extents, the mortar pad top surface must slope away from the bearing.

Finishing

Renderoc BB is finished by striking off with a straight edge and then finishing with a wooden float. To achieve the finished surface required by D&C B284 the surface needs to be no smoother than Grade 40 sandpaper.

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 be stored in the shade and cool water used for mixing.

Curing

Renderoc BB is a cement based mortar and as such it should be cured immediately after finishing in accordance with good concrete practice. Good curing can be achieved by applying Concure A99 to the mortar pad immediately after finishing at a rate of 5m² per litre. Concure A99 meets the curing requirements of AS3799. Note that curing compounds that could reduce the friction between the mortar pad and bearing or materials that may react with the bearing should not be used (eg., wax or hydrocarbon based curing compounds).

Cleaning

Concure A99 and Renderoc BB should be removed from tools, equipment and mixers with clean water immediately after use. Cured material can only be removed mechanically.

Equipment used with Nitobond EP should be cleaned with Fosroc Solvent 10.

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Limitations

Renderoc BB should not be used when the temperature is below 5°C and falling. Do not mix part bags. If any doubts arise concerning temperature or substrate conditions, contact Fosroc.

The size of the Renderoc BB mortar pad should be as small as practical but not less than the requirements of RTA B284 for elastomeric bearings held in place by friction alone. That is, the mortar pad should extend beyond the edge of the bearing by a minimum of 50mm. With this in mind it is recommended that individual Renderoc BB mortar pads are placed for each elastomeric bearing. The Renderoc BB should not be applied in dimensions larger than 1m². If any doubts arise concerning the size of the mortar pads, contact Fosroc.

Supply

Renderoc BB 20kg:	FC300250-20KG
Nitobond EP Base of 1.5L pack: Nitobond EP Hardener of 1.5L pack:	FC321025-1L FC321026-500ML
Nitobond EP Base of 6L pack: Nitobond EP Hardener of 6L pack	FC321025-4L FC321026-2L
Concure A99 20 litre:	FC600909-20L
Fosroc Solvent 10 4 litre:	FC600800-4L

Coverage and yield

Renderoc BB:	Approximately 10 litres / 20 kg bag
Concure A99:	5 m²/litre
Nitobond EP:	4 - 5 m²/litre

Notes: the actual yield per bag of Renderoc BB will depend on the consistency used. The yield will be reduced if the material is applied by a spray technique. 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 BB has a shelf life of 36 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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