

RonaBond Flowable Micro Concrete

Prepacked flowable repair concrete for pumping or pouring



FEATURES

- flowable structural repair concrete for large volume repairs
- high ultimate strength
- high cement replacement content reduces curing temperature and carbon footprint
- free flowing through congested reinforcement arrays
- shrinkage compensated
- pumped or poured

Description

RonaBond Flowable Micro Concrete is a repair concrete used for reinstatement of structural elements such as columns and beams. RonaBond Flowable Micro Concrete is designed for pumped or poured application to watertight shutters when hand application of mortars is impractical or undesirable. RonaBond Flowable Micro Concrete is shrinkage compensated and provides high ultimate strengths.

Test Data

Compressive Strength @ 20°C (Flowable)

1 day	10N/mm ²
3 days	30N/mm ²
7 days	50N/mm ²
28 days	70N/mm ²

Compressive Strength @ 20°C (Fluid)

1 day	5N/mm ²
3 days	25N/mm ²
7 days	40N/mm ²
28 days	60N/mm ²

Compressive Strength @ 5°C (Flowable)

1 day	N/A
3 days	5N/mm ²
7 days	20N/mm ²
28 days	40N/mm ²

Tensile Strength

3 days	2.5N/mm ²
7 days	3.5N/mm ²
28 days	4.0N/mm ²

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Test Data (continued)

Bond Strength	
3 days	2.0N/mm ²
7 days	2.5N/mm ²
28 days	3.0N/mm ²

Note that all quoted data is based on laboratory tests conducted at 20°C. Cubes are cured under polythene for 24 hours and then air cured. Results shown are typical laboratory strengths achieved by casting and curing cubes in ideal working conditions; site strengths may be lower.

Mixing Instructions

RonaBond Flowable Micro Concrete must be mixed in a forced action mixer eg. Baron or CreteAngle pan mixer, a suitable Putzmeister mixer/ pump such as Putzmeister SP 11 LMR or for smaller volumes, a 1kW slow speed [≤ 500 rpm] drill fitted with an MR4 spiral paddle). Place the minimum quantity (2.5 litres) of water for each pack of material in the mixer and gradually add the powder, mixing continuously. Add more water as required up to the maximum total content of 3.5 litres per pack. Mix for up to 5 minutes to achieve a lump free consistency.

Instructions for Use

Preparation and Priming

1. All concrete identified for removal must be cut out by approved means to expose a suitable substrate which is sound, stable and strong enough to accept RonaBond Flowable Micro Concrete.
2. Concrete around steel reinforcement must be fully removed, to provide a gap of 15mm between concrete and steel, until clean uncorroded steel is exposed. Loose rust and scale must be removed. Heavily corroded steel should be assessed by the engineer and replaced as necessary. When repairing chloride contaminated concrete, exposed steel must be grit blasted to expose bright, uncorroded steel before washing to remove residues.
3. Saw cut around repair perimeters to a minimum depth of 10mm at 90°, to avoid feathered edges and remove all concrete within saw cuts which is ≤ 15 mm from the repair surface.
4. Exposed concrete surfaces must be suitably textured, scabbling or needle gunning may be required, depending on the method of concrete removal.
5. All surfaces must be thoroughly cleaned to remove all loose materials and surface contamination which may prevent inhibit adhesion.
6. Brush apply two coats of Ronacrete Standard Primer to the steel and cast 0.8-1.7kg (or similar) kiln-dried sand into the second coat.

Pumped application to sealed shutter

1. When repairing soffits, flat horizontal concrete surfaces should be avoided to avoid entrapment of entrained air.
2. Construct a watertight shutter with a single port for pumping, positioned at the lowest point of the shutter. Position bleed pipes at the top and bottom corners of the shutter to allow residual water, trapped and entrained air to be released. The shutter must be sufficiently strong to prevent displacement or deflection during the pour.
3. Fill the shutter with clean water at least two hours before the pour commences, longer if the concrete is very porous and drain when ready to

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Instructions for Use (continued)

4. start the repair process.
Mix RonaBond Flowable Micro Concrete using a suitable forced action mixer/pump, such as Putzmeister SP 11 LMR and pump into the shutter from one position only, to avoid air entrapment. Pumping should be continuous and material waiting to be placed should continue to be agitated. When undiluted grout seeps from the bleed pipes the pipes must be capped. The material must not be vibrated but the shutter may be tapped to displace air bubbles.
5. The shutter may be removed after 48 hours @ 20°C, longer at lower temperatures, but the exposed material must then be protected from drying winds and frost by application of Ronacrete Curing Membrane spray applied curing agent.

Poured application to bird's beak or open topped shutter

1. Construct a watertight shutter with bleed pipes at the bottom corners of the shutter. The shutter must be sufficiently strong to prevent displacement or deflection during the pour.
2. Fill the shutter with clean water at least two hours before the pour commences, longer if the concrete is very porous and drain when ready to start the repair process.
3. Mix RonaBond Flowable Micro Concrete using a forced action mixer such as Baron or CreteAngle and pour continuously into the shutter from one position only. When undiluted grout seeps from the bleed pipes the pipes must be capped. Pouring need not be continuous if rodding access is available, but poured material must remain flowable. The material **must not** be vibrated but the shutter may be tapped to displace air bubbles and may be rodded if the top of the shutter is open.
4. The shutter may be removed after 48 hours @ 20°C, longer at lower temperatures, but the exposed material must then be protected from drying winds and frost by application of Ronacrete Curing Membrane spray applied curing agent.

Working Temperatures

RonaBond Flowable Micro Concrete can be used in most weather conditions and in a wide temperature range, typically from +3°C on a rising thermometer to 30°C; at low temperature the flow of the material will be affected and at 25°C + the working time of the mix will be reduced. Warm weather working techniques are required above 25°C. Ideally store materials between 10°C and 20°C before use.

Packaging

RonaBond Flowable Micro Concrete is supplied in 25kg bags.

Health and Safety

Refer to Safety Data Sheet.

Storage

RonaBond materials should be stored unopened between 5°C and 25°C in dry warehouse conditions and out of direct sunlight. In these conditions shelf life is approximately 6 months.




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Site Attendance

When on site Ronacrete representatives are able, if asked, to give a general indication of the correct method of installing a Ronacrete product. It is important to bear in mind that Ronacrete Ltd is a manufacturer and not an application contractor and it is therefore the responsibility of the contractor and his employer to ensure he is aware of and implements the correct practices and procedures to ensure the correct installation of the product and that liability for its correct installation lies with the contractor and not with Ronacrete Ltd.

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Ronacrete Ltd, Flex Meadow, Harlow Essex, CM19 5TD, UK 13 0836-CPR-13/F046
BS EN 1504-3 Concrete Repair
Product: RonaBond Flowable Micro Concrete Compressive Strength: ≥ 55 MPa Chloride ion Content: $\leq 0.05\%$ Bond Strength Test: ≥ 1.5 MPa Rest. Shrinkage/Expansion: ≥ 1.5 MPa Carbonation Resistance: $dk \leq$ control concrete (MC (0.45)) Reaction to Fire: A2-s1,d0 Dangerous Substances: Refer to Safety Data Sheet

The information detailed in this leaflet is liable to modification from time to time in the light of experience and of normal product application, and before using, customers are advised to check with Ronacrete Ltd, quoting the reference number, that they possess the latest issue. Any person or company using the product without first making further enquiries as to the suitability of the product for the intended use does so at his own risk, and Ronacrete Ltd can accept no responsibility for the performance of the product, or for any loss or damage arising out of such use.