

CIKOcrete Micro



Free flowing micro concrete for structural concrete repair

Description

CIKOcrete Micro is a single component, free-flowing micro concrete used extensively in areas where reinforcement is heavily congested or access to trowel application is limited. It is ideally suited for bridge repairs. Being highly fluid in nature, it can be pumped into the formwork whereby the need for compaction and vibration can be eliminated.

Properties

- Single component system and only addition of water required at site.
- Product can be pumped or poured in to the formwork
- Self-compacting; no need for compaction and vibration
- High strength and low permeability make the product suitable for application in areas where chloride resistance is required
- Chloride-free product
- Contains low alkali minimizing the risk of alkali-silica reactions

Application Areas

- Columns, walls and beams
- Bridge structures
- Dams
- Retaining walls
- Large volume concrete repairs

Applicable Standards

Complies with Qatar Construction Specifications QCS.

Physical properties

Form	Powder
Density	≈2250±50 kg/m ³ [fresh]
W/P ratio	0.14-0.16
Compressive strength ASTM C109 (W/P=0.14)	1 day ≥14 N/mm ²
	3 days ≥35 N/mm ²
	7 days ≥50 N/mm ²
	28 days ≥65 N/mm ²
Flexural Strength BS 4551(W/P=0.14)	28 days >11MPa

Water Penetration DIN 1048	<10mm
Flow properties ASTM C1473-15 (W/P=0.15)	250mm (150%)
Application Thickness*	From 10mm up to 200mm

*Note: higher thickness may be achieved by adding 10mm aggregate with a ratio up to 40% by weight to the bag. Ex: 25kg CIKOcrete Micro will require 10kg aggregate.

Coverage / Yield

25 kg bag of CIKOcrete Micro mixed with 3.5 litres of water, yields approximately 12.5 litres of material.

Application instructions

Surface preparation

Clean the concrete surface to remove loose and unsound materials by means of water blasting or suitable means to attain a sound concrete surface. Any traces of oil, grease, dirt, paint etc shall be completely removed from the surface. The concrete surface should be scrubbed and roughened to achieve a good bonding. All residues should be completely removed by vacuuming or by pressure water jet. Edges should be saw-cut to a depth of at least 10mm to avoid featheredging and to provide a square edge.

Exposed Reinforcement treatment

The exposed reinforcement must be cleaned and treated to remove rust by sandblasting and priming using zinc rich based epoxy primer or alternative suitable primer.

In case a good surface preparation is hard to achieve, it is recommended to treat the rusty or poorly prepared steel with the suitable type of rust chelating product or rust converter.

Formwork

In accordance to the orientation of the surface that to be repaired and method of placing CIKOcrete Micro, prepare a rigid and water tight formwork. The surface absorption of formwork should be properly sealed to ensure that there is no water absorption from the repair material. CIKOcrete Micro made to stiff mortar consistency can be used to seal the gaps between formwork and concrete to make it watertight. The

unrestrained surface of repair should be kept to a minimum and care should be taken to ensure at least 20mm build up is there over reinforcement. Access to pour or pump the mixed material should be made in the formwork.

Priming

The prepared concrete substrates must be dampened and soaked with clean water several hours prior to application of CIKOcrete Micro to assist the free flow of material. Prior application, ensure that the concrete is uniformly damp and free from any standing water. In case of presence of deleterious salts in the concrete, CIKObond EPL may be used to bond the parent concrete with CIKOcrete Micro. If CIKObond EPL is being used, pre-soaking should be avoided and the surface should be dry. Care should be taken to ensure that CIKOcrete Micro is applied over the parent concrete within the tack-free time of CIKObond EPL. Alternatively, CIKObond AC can be used to prime the damp substrate.

Mixing

CIKOcrete Micro is a ready to use material and only 3.5 - 4 litres of potable grade water is be added to each 25kg pack. Mix for 2 to 3 minutes until a smooth and lump-free consistency is attained. Powder must always be added to water and not vice-versa.

Note: Chilled water must be used to attain best results.

Placing

Mixed material has to be placed within 30 minutes of mixing in order to gain full benefits of fluidity and expansion properties.

Curing

The repaired area must be cured as per the standard curing practices. Apply membrane curing agent CIKOcure AC, to prevent surface cracking.

Packaging

CIKOcrete Micro is available in 25 kg moisture resistant bags.

Shelf life

CIKOcrete Micro has a shelf life of 12 months if stored in accordance with CIKO instructions.

Legal Notice and Warranty

CIKO warrants this product to be free from manufacturing defects and to meet the technical properties stated in the current Technical Data Sheet, if used as directed within its shelf life. Satisfactory results depend not only on quality of product but also on many factors beyond our control. CIKO makes no other warranty or guarantee, express or implied, including warranties of merchantability or fitness for a particular purpose with respect to its product. The sole and exclusive remedy of purchaser for any claim concerning this product, including but not limited to, claims alleging breach of warranty, negligence, strict liability or otherwise, is the replacement of product or refund of the purchase price, at the sole option of CIKO. Any claims concerning this product must be received in writing within one (1) year from the date of shipment and any claims not presented within that period are waived by purchaser. CIKO will not be responsible for any special incidental, consequential including lost profits or punitive damages of any kind. Purchaser must determine the suitability of the products for the intended use and assumes all risks and liabilities in connection therewith. This information and all further technical advice are based on CIKO's present knowledge and experience. However, CIKO assumes no liability for providing such information and advice including the extent to which such information and advice may relate to existing third-party intellectual property rights, especially patent rights, nor shall any legal relationship be created by or arise from the provision of such information and advice. CIKO reserves the right to make any changes according to technological progress or further developments. The Purchaser of the Product(s) must test the product(s) for suitability for the intended application and purpose before proceeding with a full application of the product(s). Performance of the product described herein should be verified by testing and carried out by qualified experts.

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All CIKO products are manufactured under a strict management system conforming to and in compliance with requirements of international standards of Quality, Environmental, occupational Health and Safety ISO 9001, ISO14001 and ISO45001.

Storage

CIKOcrete Micro should be stored under cool enclosed shaded area between 10°C and 35°C.

Precautions

- Application temperature must be between 5°C and 35°C.
- The temperature of both CIKOcrete Micro and elements coming into contact with the grout should be in the range of 10°C to 35°C.
- Do not overwork and avoid using mechanical vibration.
- Under no circumstances should CIKOcrete Micro be re-tempered by the later addition of water.

Health & safety

Use standard mask to avoid inhalation of dust. Powder when wet or moist can cause burns to skin and eyes which should be protected during use. If comes in contact with skin/eyes, flush with plenty of fresh water and seek medical advice. Refer Material Safety Data Sheet for further detail.

Technical Support

For any technical support, do not hesitate to contact CIKO team at any time as CIKO offers on and off-site services to end users, specifier and contractors.

More from CIKO Middle East

A wide range of construction chemical products are manufactured by CIKO Middle East which includes:

- Concrete admixtures and additives
- Waterproofing and damp-proof coatings
- Surface treatments
- Flooring and toppings
- Grouts and anchors
- Tile adhesives and grout
- Concrete repair materials
- Adhesives and bonding agent
- Protective coating
- Joint Sealants and Moulding compounds
- Ancillaries