

BOND MICRO CONCRETE

High Performance Non-Shrink Cementitious Micro Concrete for Concrete Repair



PRODUCT DESCRIPTION

Bond Micro Concrete is factory designed pourable, shrinkage compensated, high performance micro concrete with selected cement, aggregate and other chemicals. Recommended water and coarse aggregate to be added at site as per requirement.

ADVANTAGES

- No vibration needed
- Easily pumpable
- Easy to mix and apply
- Excellent flow characteristics
- Rapid strength development
- High ultimate strengths
- Impact resistant
- Non-corrosive
- Non-toxic
- Iron and chloride free
- Dense and non-shrink concrete created by dual stage expansion
- Good bonding with existing concrete
- Adjustable consistency by controlling the water within the recommended limit.

APPLICATION

Bond Micro Concrete is suitable for producing high performance micro-concrete for deep repairs to all concrete structures such as:

- Highway bridges and culverts
- Wharf and jetties
- Tunnels and mines
- Dams and reservoirs
- Car parks and basements
- Power stations

- Sewerage and water treatment structures
- Anywhere where localized deep repair is required Anywhere additional thickness is required (column and beam jacketing, etc.)
- Structural strengthening of structure by section enlargement.

TECHNICAL INFORMATION

Chemical Base	Portland cement, selected fillers and Aggregates, special additives
Compressive strength (7 Days)	≥ 45 N/mm ²
Flexural strength (7 Days)	≥ 8 N/mm ²
Splitting tensile strength	≥ 3.5 N/mm ² (water: powder = 0.15, 28 days, +30 °C)
Shrinkage	No shrinkage after initial setting
Expansion	Up to 4 %

APPLICATION INFORMATION

Mixing ratio	Water: Powder = 0.14 to 0.16
Fresh mortar density	(2.15 ± 0.15) kg/L (water: powder = 0.15)
Consumption	1900 kg of powder per m ³ of concrete (water: powder = 0.15)
Ambient air temperature	+5 °C min. / +40 °C max
Substrate temperature	+5 °C min. / +40 °C max
Pot life	20 minutes

APPLICATION METHOD

SURFACE PREPARATION

- The substrate should be prepared by suitable mechanical preparation techniques such as high-pressure water, breakers, grit blasting, scabblers, etc.
- Concrete surfaces must be sound, clean, free from frost, oils, grease, all loosely adhering particles and other surface contaminants. All absorbent surfaces must be well saturated with clean water, but be free of any surface water or puddles immediately prior to the application of produced micro-concrete.
- Metal surfaces (iron and steel) should be clean, free from scale, rust, oil and grease.

MIXING

- Place about 80–90 % of the premeasured clean water into a clean mixer and gradually add the whole bag of Bond Micro Concrete into it while continuously mixing.
- Add the remaining water and additional clean 5–10 mm aggregates (if needed as per design) until the desired consistency is obtained.
- Mixing time should be minimum 3 minutes.

APPLICATION

Strictly follow installation procedures as defined in method statements, application manuals and working instructions which must always be adjusted to the actual site conditions.

FORMWORK

Ensure formwork is secure and watertight to prevent movement and leaking during placing and curing.

WORKING IN THICK SECTIONS

Do not pour more than 100 mm of layer thickness without addition of aggregates.

SMALL LOCALISED REPAIRS

Small volume mixing may be carried out with a suitable low-speed (500 rpm) drill and mixing paddle. After mixing, stir lightly with a spatula for a few seconds to release any entrapped air. The micro concrete is then poured immediately into the prepared formwork.

LARGE REPAIRS

When carrying out large scale repairs or column/Beam jacketing, ensure sufficient pressure head is maintained for uninterrupted concrete flow. Formwork must be firmly placed and kept watertight. When placing micro concrete over large area, it is important to maintain a continuous flow throughout the process. Work sequence and equipment must be properly organized to ensure an uninterrupted flow of micro concrete. Ensure proper air displacement when pouring. In large areas, micro concrete may be mixed and pumped using heavy duty screw feed and piston pumps. Equipment suitability should be tested and checked prior to actual grouting works.

COLD WEATHER WORKING

Consider storing bags in a warm environment and using warm water to assist with achieving strength gain and maintaining physical properties.

HOT WEATHER WORKING

Consider storing bags in a cool environment and using cold water to assist with controlling the exothermic reaction to reduce cracking and maintaining physical properties.

STORAGE

Store in a cool, dry place away from sunlight at temperatures below 30°C.

PACKING

25 KG Bag Packing.

SHELF LIFE

Shelf life of Bond Micro Concrete is 6-8 months in unopened container.

HEALTH AND SAFETY

Please refer to Safety Data Sheet

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