

# X-Roc MicroCrete

General purpose non-shrink grout.

## Product Description

X-Roc MicroCrete is a single component, shrinkage compensated, fluid micro concrete manufactured from selected cements, aggregates and additives. It can be used at a wide range of workabilities. When used as a fluid micro concrete it is self-compacting. It has exceptional resistance to carbonation, chloride ingress, sulfate attack and freeze thaw attack.

## Advantages

- No primer required
- Shrinkage compensated
- High early strength
- Low permeability
- Excellent freeze/thaw resistance
- Self-compacting
- Single component

## Uses

- Large volume structural repairs
- As a concrete for use where reinforcement is congested
- Partial or full-depth placement of structural concrete elements
- Repair or replacement of spandrel beams, columns, balcony edges
- Restoration of:
  - Parking garages
  - Water and wastewater tanks
  - Tunnels, dams, bridges
  - Marine structures

## Laboratory Test Data

Property	Typical Results
<b>Nature</b>	Powder
<b>Color</b>	Grey
<b>Specific gravity of paste</b>	2.3 ± 0.05 g/cm <sup>3</sup>
<b>Chloride content (IHM)</b>	< 0.5% by weight
<b>Compressive strength (BS EN 12190) W/P 0.135</b>	55-65 MPa at 28 days
<b>Flexural strength (ASTM C580) W/P 0.135</b>	>8 MPa
<b>Expansion (3 to 28 days)</b>	<0.4%
<b>Setting W/P 0.14</b>	4 Hrs. 10 Hrs.
<b>Initial</b> <b>Final</b>	

\* Tests carried out on 50mm cubes, using 3 -3.5 L water per bag. Curing regime, plastic wrap and in air. Actual results in the field will vary as a result of different factors such as how long the product has been stored, storage conditions, temperature, actual water content, curing regime, quality of samples, compaction method and the type of equipment used for sample preparation & testing.

## Water Content

25kg bag; 3 to 3.5 liters dependent as workability required.

## Yield

Approximately 12 to 12.5 liters per 25kg bag.  
Yield will vary with water content.

## Shelf Life

24 months when stored below 35°C under shade in a dry environment.

## Installation Guidelines

NCC X-Calibur provides detailed method statements on all its products for use in various applications. These must be referred to prior to starting work. The information below is a summary intended for guidance only.

## Surface Preparation

Concrete substrate must be structurally sound. Loose or unsound concrete should be removed. Surfaces must be entirely free of oil, grease, paint, corrosion deposits, dust, laitance or other surface deposits. Saw cut around the edge of the repair to a minimum depth of 10mm. Reinforcing steel should be fully exposed with enough room behind the steel for the micro concrete to be able to flow around.

## Protection of reinforcement steel

Remove all corrosion from the exposed steel in accordance with ICRI Technical Guideline No 03730. For additional protection against corrosion and to protect the adjacent edges of the repair, coat the steel with X-Roc GalZinc. The steel may also be protected using X-Roc EpoxyBond or X-Roc Latex mixed with cement. Prior to using either of these products, please consult with an NCC X-Calibur Authorized Technical Specialist.

## Packaging

25kg bags.

## Substrate Priming

After surface preparation has been completed, the substrate should be soaked with water and not allowed to dry out. This is normally the only priming required.

## Priming with X-Roc EpoxyBond

In immersed conditions or where the maximum possible bond strength is required; where a saturated surface dry substrate is not possible or a chloride barrier is required, X-Roc EpoxyBond should be used. Mix the entire contents of Part A with the entire contents of Part B until a uniform color is achieved. Brush the mixed material into the surface of the substrate, taking care to avoid ponding or excessive application. X-Roc MicroCrete must be applied while X-Roc EpoxyBond is still tacky.

## Mixing

Add X-Roc MicroCrete to water and mix for at least five minutes using an NCC X-Calibur approved forced action mechanical mixer.

## Application

Keep the unrestrained surface area of the repair to a minimum. The formwork should be rigid and sealed tight to prevent loss of material. The formwork should include drainage outlets for pre-soaking and, if beneath a soffit, provision for air release. Provide suitable openings to pour or pump the mixed X-Roc MicroCrete into place. Allow for a minimum of 20 mm or cover to steel reinforcement. Apply X-Form WB or X-Form GP or other approved release agent to facilitate easy removal of the formwork after casting.

Several hours before placing X-Roc MicroCrete, saturate the substrate by filling the formwork with clean water. Immediately before the placement of X-Roc MicroCrete, completely drain water and seal the drainage outlets, leaving the substrate in a saturated surface dry (SSD) condition.

If the formwork cannot be filled with water, the substrate must be thoroughly hosed down with clean water to achieve an equal level of saturation. Again, the substrate must be in a saturated surface dry (SSD) condition immediately before placement.

Immediately after mixing, pump or pour the X-Roc MicroCrete into the formwork. No vibration is required when X-Roc MicroCrete is used in a fluid condition. For cold weather application, refer to ACI 306R Cold Weather Concreting.

For hot weather application refer to ACI 305R Hot Weather Concreting.

## Curing

Leave formwork in place until the compressive strength has reached 20 MPa. Cure immediately after finishing using X-Roc BondCure, X-Cure WB or water soak/ polythene wrap.

## Limitations

Do not mix by hand.

Do not part mix; use only full bags.

Do not apply in rain or wet conditions or at temperatures below 5C.

Do not expose to running water until product is cured fully.

## Health and Safety

**This product is for industrial use only by trained operatives. It is potentially hazardous if not used correctly. Please refer to the Material Safety Data Sheet (MSDS) prior to the purchase and use of this product. The MSDS can be obtained via our website [www.ncc.com](http://www.ncc.com).**

## Authorized Technical Specialist

Please note that only X-Calibur Authorized Technical Specialists ('ATs') are permitted to change any of the information in this data sheet or to provide written recommendations concerning the use of this product. Visit [www.ncc.com.eg](http://www.ncc.com.eg) for a full list of X-Calibur ATs.

## Datasheet Validity

NCC X-Calibur makes modifications to its product datasheets on a continuous basis. Please check the datasheet update section on [www.ncc.com.eg](http://www.ncc.com.eg) to ensure you have the latest version.

## Warranties

NCC X-Calibur supplies products that comply with the properties shown on the current datasheets. In the unlikely event that products supplied are proved not to comply with these properties, then we will replace the non-compliant product or refund the purchase price.

NCC X-Calibur does not warrant or guarantee the installation of the products as it does not have control over the installation or end use of the products. Any suspected defects must be reported to X-Calibur in writing within five working days of being detected. NCC X-Calibur Construction Chemistry Inc. **makes no warranty as to merchantability or fitness for a particular purpose and this warranty is in lieu of all other warranties express or implied.** NCC X-Calibur Construction Chemistry Inc. shall not be liable for damages of any sort including remote or consequential damages, down time, or delay.