

Cicorepair®CR

Capillary Crystalline Waterproofing Cementitious Repair Mortar

DESCRIPTION

Cicorepair®CR is a one component waterproofing repair mortar for concrete or any cementitious substrates. Cicorepair®CR contains portland cement, specially treated quartz sand, reactive silica, and active chemicals. It only needs the addition of mixing water prior to application. When applied on the concrete surface it forms insoluble crystals in concrete pores to prevent any further water ingress and allow concrete to breathe. Cicorepair®CR is designed to be used as a water barrier mortar in the critical sections of water structures, especially those that are subjected to retaining large amounts of water under great pressure. Cicorepair®CR can be applied by hand or by other plastering tools. In vertical application, it can be used in the range of 2 to 10 mm thickness in one go, while in horizontal application, it can be applied up to 40 mm thickness. It is non-toxic; therefore, it can be used in contact with potable water.

USES

- Vertical and overhead water barrier screed.
- Drinking and wastewater projects.
- Negative pressure waterproofing repair works.
- Exterior and interior repair.
- Water tanks coving filling.
- Tie rod holes filling.

ADVANTAGES

- Negative and positive pressure waterproofing application.
- Obtains high durability for water structures.
- Non-Toxic.
- Non-calcareous material (it does not contain free lime or separate calcium carbonate).
- Minimizes carbonation and chloride attack on steel reinforcement.
- No primer needed.

- Excellent adhesion to concrete substrates
- Economic & easy to apply, just add water.
- Minimizes chemical attack over concrete.
- High mechanical characteristics.

PACKAGING

25 kg bags

SHELF LIFE & STORAGE

9 months storage life if stored in its original unopened containers under a dry and shaded place in a temperature from 2°C to 55°C.

TECHNICAL PROPERTIES

Form	Grey Powder
Wet Density @ 25°C	2190±20 kg/m³
Pot Life @ 25°C	20±2 min.
Initial setting time @ 25°C	3 hrs.±15 min.
Final setting time @ 25°C	7 hrs.±15 min.
Yield (25 kg bag) @ 19% W/P ratio	13.75 liters

MECHANICAL CHARACTERISTICS

Compressive Strength @ 19% W/P [ASTM C109]	
1 day	29±2 N/mm²
7 days	43±2 N/mm²
28 days	57±2 N/mm²
Flexural Strength @ 19% W/P [ASTM C348] @28 days	8.5±0.25 N/mm²
Tensile Strength @ 19% W/P @28 days	5±0.25 N/mm²
Shear bond to concrete @ 19% W/P [BS 6319] @28 days	26±1 N/mm²

APPLICATION INSTRUCTIONS

Surface Preparation

Concrete and mortar surfaces must be sound, clean, and free from all contaminants such as grease, oil, cement laitance, and all other loosely adhering particles. The surface should be free from all treatment agents such as curing or release materials. All surfaces must be as true and flat as possible. A carefully prepared substrate is of most importance, especially in continuously immersed structures. Saturate all concrete surfaces thoroughly to a saturated surface dry condition (SSD) prior to the application. Because Cicorepair®CR should be applied without any bonding agent, it is preferable to roughen the concrete surface which will be in contact with it to achieve a good mechanical key.

Priming

Do not use any primer before applying Cicorepair®CR. This can stop the crystallization action of the product. Only make sure that the surface is thoroughly damped.

Mixing

Put Cicorepair®CR powder into a suitable container. Add 4.5–5.0 liters of cold water for each 25 kg bag while mixing with a low-speed drill type mixer and a suitable spiral mixing paddle. The mortar consistency can be adjusted by controlling the amount of water. Mix for at least 60 seconds until a homogenous mixture has been formed. Mixing time will affect the mortar workability, more time for more workability, and vice versa. Do not mix more material than the application team can apply within the pot life. Do not add more water after finishing mixing and during application under any circumstances. If the mortar starts to dry, mix it again with a gloved hand, so it will be workable once more.

Application

Apply Cicorepair®CR by gloved hand or steel trowel directly over the damp concrete surface to form the desired section:

- As a thin layer paste over any surface facing high water pressure (negatively or positively).
- As a triangular section mortar in corners (vertical and horizontal)
- Around all inserted objects like pipes, dowels, etc.

Warning: Do not apply any kind of bonding agent prior to applying Cicorepair®CR as it will stop crystals from forming inside concrete pores.

Curing

Cicorepair®CR is a hydro mechanism material, i.e. it needs the continuous presence of water to form the effective crystals which are responsible for tightening the concrete. Its main application field is waterproofing; hence we recommend curing the coated concrete with Cicorepair®CR for at least 3 days by keeping the substrates most of the time wet either by continuous spraying or by covering with wet textiles (especially in vertical applications). Water curing is considered an essential and important step of application and means getting more waterproofing over time.

CLEANING

Tools contaminated with Cicorepair®CR may be cleaned using clean water. Hardened material can only be removed by hand tools or light mechanical means.

For more details, please review our Technical Guide for Cementitious Repair

PRECAUTIONS

Health And Safety

Cicorepair®CR is an alkaline, non-hazardous. It should not be swallowed or allowed to come into contact with skin or eyes. Suitable protective goggles and gloves should be worn. In the case of contact with eyes, rinse immediately with plenty of water and seek medical advice. When contact with the skin is made, wash off immediately with soap and water. If swallowed, seek medical attention immediately, do not induce vomiting.

TECHNICAL SUPPORT

CIC provides on-site assistance and consulting services on projects when requested. Technical data sheets on other CIC products and guidance on their use are available on request.



Warranty

CIC products are guaranteed against defective materials and manufacture and sold subject to CIC's standard terms and conditions of sale. Whilst CIC endeavors to ensure that any advice, information or recommendation given is correct, the company cannot accept any liability either directly or indirectly arising from the use of its products. User of the product must test the product's suitability for the intended application and purpose, since the company has no control over the application of its products. Information contained in this document is given on the best current knowledge. Our Products are in continuous development and CIC reserves the right to change the product without prior notice.

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