

Cicorepair®SF

Fiber Modified Structural Cementitious Repair Mortar

DESCRIPTION

Cicorepair®SF is a polymer and fiber-modified cementitious repair mortar that contains silica fume complying with ASTM C1240 and has been designed to provide excellent shrinkage control and flexural strength. It also prevents crack propagation. It obtains low permeability and good abrasion resistance. Cicorepair®SF can be applied by hand or by other plastering tools. Cicorepair®SF is applicable to be used in the range of 6 mm to 25 mm thickness in one vertical go. Cicorepair®SF is ideal to be used for filling horizontal tie rod holes and culverts because of its formable consistency which enables it to go deep inside the tubes without sagging.

USES

- Vertical and horizontal structural repair (overhead repair for not more than 30 mm thickness per layer).
- GRC repair
- Reinstating column edges.
- Filling tie rod holes.
- Exterior and interior repair.
- New and old structures repair.

ADVANTAGES

- Obtains high durability for structures.
- Good adhesion to prepared concrete.
- Non-Toxic.
- Non-shrink
- Non-calcareous material (it does not contain free lime or separate calcium carbonate).
- Minimizes carbonation and chloride attack on steel reinforcement.
- Easy to apply, just add water.
- Minimizes chemical attack over concrete.
- Chloride free.

PACKAGING

25 Kg bag

SHELF LIFE & STORAGE

12 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	2110±50 kg/m ³
Pot Life @ 25°C	30±3 min.
Initial setting time @ 25°C	3 hrs.±15 min.
Final setting time @ 25°C	7 hrs.±15 min.
Yield (25 Kg bag @ 21% W/P)	14 liters

MECHANICAL CHARACTERISTICS

Compressive Strength @ 18% W/P [ASTM C109]	
1 day	20±1 N/mm ²
7 days	29±1 N/mm ²
28 days	47±1 N/mm ²
Flexural Strength @ 18% W/P [ASTM C348]	
1 day	3±0.25 N/mm ²
7 days	5.5±0.25 N/mm ²
28 days	8±0.25 N/mm ²
Tensile Strength @ 18% W/P	
1 day	1.75±0.25 N/mm ²
7 days	2.25±0.25 N/mm ²
28 days	4.75±0.25 N/mm ²
Shear bond to concrete @ 18% W/P [BS 6319] @28 days	25±1 N/mm ²

APPLICATION INSTRUCTIONS

Surface Preparation

All Concrete Substrates should be sound, clean, and free from oil, grease, and all curing or release agents (in case a fair coat is needed). Any loose or weak concrete should be removed using hand tools or light mechanical tools (heavy tools are not recommended), and all steel reinforcement should be reached to the extent to be coated from all around by hand, then cleaned either by sandblasting if possible or by using hard steel brush. Just after cleaning, the steel should be coated with protective material (Cicorust®EP or Cicoprime®Zincrich). It's recommended to keep the minimum repair section thickness more than 10 mm, especially at the edges. Then all concrete surfaces should be wetted by water reaching SSD condition (Saturated Surface Dry) prior to applying the bonding layer or the repair mortar directly.

Bonding Layer

Brush a slurry consisting of a mix of either Cicobond®ACR or Cicobond®SBR with cement as a bonding agent on the wet concrete surface (please review the TDS of the chosen product before use). In small repair batches, using Cicobond®ACR, or Cicobond®SBR as they are is possible but high attention should be paid to the short open time of using them singly. No bonding layer is required if Cicorepair®SF is used for filing tie rod holes.

Mixing

Use a clean suitable container (not less than 20 liters volume) for one bag mixing, using a high torque medium speed mixer and suitable pedal for about 90 seconds. (Mixing more than one bag at once is not recommended) Always add the powder to clean water. The advisable quantity of water is 4.25–4.75 liter/bag. In case of more than one set mixing, using a drum mixer of 150–200 liters volume is recommended but mix for about 2–3 minutes. Please ask for CIC technical support to state the right number of sets for each product.

It is recommended to keep the mixed grout temperature in the range of 10–30°C, by storing it in cold conditioned air for at least 24 hours before using it in hot weather, and by using a hot water bath mixing in cold weather, while storing, mixing, and placing should be under shade all the time.

Application

Apply Cicorepair®SF by gloved hand or steel trowel directly over the live bonding agent, more than one layer can be achieved to build a thicker section, but it should be wet on wet application. If any layer will be left to harden for any reason, the surface should be scratched to achieve a mechanical key, and it should be primed with a bonding agent in between each hard layer and another. For GRC repair works, it is recommended to replace 1.5 liters of mixing water with the same volume of Cicobond®SBR to enhance the bonding strength and to be more compatible with the GRC mixes properties. In this case, no bonding layer is required.

Curing

Just after finishing Cicorepair®SF surface (within 45 minutes after applying), it's highly recommended to spray the same used bonding agent after diluting with an equal volume of water as a curing compound, otherwise, any of Cicocure® products could be sprayed

CLEANING

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

PRECAUTIONS

Health And Safety

Cicorepair®SF 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 as well as 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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