

FLUIDCRETE R4

Flowable mortar for structural concrete repairs and anchoring

EN 1504-3
R4

EN 1504-6

DESCRIPTION

Single component, cementitious, high strength, shrinkage compensated, flowable mortar. Ideal for structural concrete repairs, precision grouting and anchoring of reinforcement.

The product is also accompanied by an Environmental Product Declaration (EPD) regarding the environmental impact during its life cycle (EPD registration number: S-P-09972).

CHARACTERISTICS/ADVANTAGES

- High strength (class R4)
- It contains pure quartz aggregates
- Shrinkage compensated
- Impermeable
- No bleeding or segregation
- High flow (EN 13395-2) for full compaction even in areas with congested steelwork

FIELDS OF APPLICATION

- repairs of structural elements of concrete (beams, columns) using formworks
- concrete jackets with dense reinforcement
- precision grouting of machinery and steel columns
- horizontal anchoring of steel reinforcing bars

PRODUCT INFORMATION

Composition	Cement modified with polymers, specially selected aggregates.
Appearance/Colour	Grey powder
Packaging	25 kg bags (1500 kg pallets)
Storage conditions	In sealed packaging and dry environment
Shelf life	12 months from date of manufacture

TECHNICAL CHARACTERISTICS

Compressive strength:	> 45 MPa (Class R4)
Chloride content:	≤0.05%
Adhesive bond:	≥2 MPa
Restrained shrinkage /expansion:	≥2 MPa
Carbonation resistance:	Passes
Elastic modulus:	≥ 20 GPa
Capillary absorption:	≤0.5 kg/m ² h ^{0,5}
Pull off strength:	Shift < 0,6mm for a load of 75 kN
Reaction to fire:	Euroclass A1

APPLICATION INFORMATION

Mixing ratio	3.5 – 4.2 lt of water per bag of 25 kg
Maximum application thickness	Up to 50 mm
Consumption	Approx. 20 kg of powder, per m ² , per 10 mm layer thickness

DIRECTIONS OF USE

SUBSTRATE PREPARATION

Concrete repair:

- The concrete substrate must be completely clean and structurally sound.
- The edges of the surface to be repaired should be cut vertically to a depth of at least 10 mm. The cavity of the surface to be repaired should be at least 10 mm thick.
- Remove deteriorated concrete or mortar by hand or mechanical methods (chisel or high pressure water blasting) ensuring also the appropriate surface roughness.
- Reinforcement should be cleaned from rust and any other loose and deleterious materials or add new bars if the existing are no longer appropriate
- Before applying FLUIDCRETE the substrate should be saturated with water
- Remove excess water, if any.

Anchoring :

- Before placing the machine, remove defective concrete ensuring also the appropriate roughness of the concrete surface
- Clean all in contact, with the mortar surfaces, from oil, grease, dust or any foreign material.
- Ensure that air-relief holes have been made on the bedplate and place the equipment.
- After machine is set and aligned and before applying FLUIDCRETE, saturate the concrete surface with water and remove excess water if any

MIXING

- In a clean bucket, initially pour the minimum amount of water indicated, start the mixer and add FLUIDCRETE continuously. Mix (in low speed) until a homogeneous, without lumps, mixture is achieved

- Then leave the mixture to settle for 2 – 3 min and if necessary add water (according to the amount indicated), until the required consistency is achieved and mix for a further 2 to 3 minutes
- Hand mixing of the product is not recommended.

APPLICATION

Concrete repair: FLUIDCRETE is casted in situ continuously, placing it inside the formwork from one side only to allow air to escape

Anchoring : Cast in situ continuously, placing it inside the formwork from one side only to allow air to escape

TOOLS CLEANING

Fresh material should be removed from the equipment with water immediately after application. Hardened/mature material can only be removed by mechanical means.

IMPORTANT NOTICE

- After application all free surfaces of the mortar should be properly cured for at least 2 days. During the summer period with wet burlaps, spraying water or curing agents and during winter period should be protected from low temperatures with plastic sheets.
- The above application guidelines are indicative, for the correct use of the product. For more technical details please contact the company's technical department.
- For thickness application > 50mm contact the technical department of NORDIA

COMPLIANCE WITH STANDARDS

CE marking and Declaration of Performance based on standards EN 1504-3 (for structural repairs) and EN 1504-6 (for anchoring). TÜV AUSTRIA HELLAS (0906) - 0906-CPR-02413045

HEALTH, SAFETY & ENVIRONMENTAL PROTECTION

Detailed information and instructions regarding the safe management of the product and in matters of Health & Safety, are provided in the most recent Safety Data Sheet (SDS), copies of which are available on the company's website <https://marmoline.gr/> or upon request.

LEGAL NOTICE

We guarantee the quality of all our products, based on their technical specifications, as described in the Declaration of Performance (CE) and this Technical Data Sheet. Such guarantee refers only to the products that we deliver for use and never to its application or final result, which largely depends on the experience and quality of work of each user and on the application conditions. The user is advised to test the product on a small scale, and if he is satisfied with the result, then to use the product on large scale in his project. All data stated in this Technical Data Sheet are based on laboratory tests. The really measurable data might differentiate due to conditions that are not subject to our control. The recommendations and implementation instructions must be considered by the user as indicative, and always with given that the product has been traded and traded and stored according to its instructions. As it is not possible to control the parameters/conditions of its application product in practice, no guarantee is provided for the final result of each application. Consequently, no legal liability of the Company can be established based on the information and instruction given in this Technical Data Sheet. The Company reserves the right to modify data listed in this Product Data Sheet, with no previous warning. Users must refer to the latest version of the product Technical Data Sheet.

 14 DoP:207 MAR-CPR 0906
NORDIA S.A. 364 Kifissias Av., 15233 Chalandri, Athens/ Greece
EN 1504-3 FLUIDCRETE R4 Highly flowable repair mortar (CC mortar) for structural concrete repairs
Compressive strength: <i>class R4</i> Chloride ion content: $\leq 0.05\%$ Adhesive bond: $\geq 2 \text{ MPa}$ Restrained shrinkage/expansion: $\geq 2 \text{ MPa}$ Carbonation resistance: <i>pass</i> Elastic modulus: $\geq 20 \text{ GPa}$ Capillary absorption: $\leq 0.5 \text{ kg m}^{-2} \text{ h}^{-0.5}$ Dangerous substances: <i>comply with §5.4</i> Reaction to fire: <i>class A1</i>

 14 210 MAR-CPR 0906
NORDIA S.A. 364 Kifissias Av., 15233 Chalandri, Athens/ Greece
EN 1504-6 FLUIDCRETE R4 Highly flowable repair mortar (CC mortar) for precision grouting and anchoring of reinforcement
Pull-out strength: $\leq 0,6\text{mm}$ (for a load of 75KN) Chloride ion content: $\leq 0.05\%$ Dangerous substances: <i>comply with §5.3</i> Reaction to fire: <i>class A1</i>