

# EXOCEM ONE

Thixotropic mortar with compensated shrinkage and fast-setting for concrete restoration and finishing



## The Material

EXOCEM ONE is a premixed cement-based product, selected aggregates, super-fluidifying admixtures, and agents for shrinkage control both in the plastic phase and in the hardened phase, and polypropylene fibers.

After the addition of water, a thixotropic mortar is obtained, which is strongly adhesive, with fast hardening and high durability, to be applied to thicknesses between 3 and 40 mm.

This special formulation allows using the product for repairs in thickness and millimeter-thick coatings (trimming).

## The properties

EXOCEM ONE ensures a surface finish of high aesthetic quality.

The use of EXOCEM ONE determines:

- Accelerated hardening with beginning of adhesion within 40 minutes.
- High compressive and bending strength.
- Adhesion to concrete greater than 1.5 MPa at 28 days (the support breaks).
- Ease and speed of laying and finishing.
- Elastic modulus similar to that of concrete.
- Resistance to chemical agents such as chlorides (de-icing salts, sea water, etc.), sulphate, acid rain, carbon dioxide.
- Resistance to repeated freezing and thawing.

## Physical-mechanical behavior

Compressive and flexotraction strength.

Curing (days)	Compressive strength (MPa)	Flexural strength (MPa)
1	5.0	1.2
7	23.0	1.8
28	27.0	3.7

The performances shown above are obtained by mixing the content of an entire bag of product (25 kg) with 26.5 % of water, equal to 6.62 liters.

## Fields of application

- Repair of damaged concrete elements.
- Repair of damaged edges of pillars, beam fronts and moldings.
- As a final smoothing and homogenizing product in the case of located reinstatements.



## Complies with EN standard

EXOCEM ONE meets the requirements defined in the UNI EN 1504/9 standard ("Products and systems for the protection and repair of concrete structures - Definitions, requirements, quality control and evaluation of conformity. General principles for the use of products and systems") and the minimum requirements of the EN 1504-2 ("Concrete surface protection systems") and the minimum requirements EN 1504-3 standard ("Structural and non-structural repair") for R3-class mortars.

EXOCEM ONE meets the requirements defined in the UNI EN 1504/7 standard (Protection against corrosion of reinforcement).

### Method of application

#### Preparation of the substrate

The substrate must be thoroughly cleaned from dust as well as any traces of rust, oil and grease. It is necessary to mechanically remove the rust on the whole of the surface of the steel reinforcement, which must be cleaned by brushing (manual or mechanical) or sanding. In such conditions, it is not possible to use a passivating cement. It is advisable, however, for secure corrosion prevention of reinforcing bars in all the various operating conditions that cannot be foreseen, or in the cases in which full cleaning is not possible, to use the passivating cement Rurecoat 3. Roughen the surface by removing the deteriorated concrete. This operation is necessary to ensure perfect adhesion to the substrate by EXOCEM ONE.

#### Water saturation

Wet the substrate saturating it with water, taking care to remove any excess water.

#### Preparation of the mortar

It is recommended to prepare the mortar with mechanical mixer, avoiding mixing by hand. Being a quick-setting mortar, it is recommended to mix a quantity of product that can be used within about 30 minutes. After this time, do not add more water as the product, once it has started setting, is no longer suitable for the application. Pour in the mixer about 90% of the water required, then operate the mixer by adding EXOCEM ONE without interruption in order to avoid the formation of lumps. Mix for 2-3 minutes; add the remaining water, if necessary, to reach the desired consistency and stir for another 3-4 minutes. In hot climates, small increases in water content can be tolerated, compared to the values in the table, while the opposite occurs in cold and damp conditions. In hot weather conditions, it is recommended to store the product in a cool place and use cold water to prepare the mix.

#### Mortar laying

Apply EXOCEM ONE with a trowel for thicknesses greater than 3 mm. As a finishing coat, it can be applied by metal trowel. It is advisable to apply the product at temperatures between +5 °C and +40 °C; low temperatures (<5 °C) considerably slow down mortar setting; high temperatures (> 40 °C) quickly reduce mortar workability.

### Specifications

Workability of thixotropic mortar: (UNI EN 13395-1)	flow =180 mm
Liters of H <sub>2</sub> O per 100 kg EXOCEM ONE	26,0 - 27,0
Liters of fresh mortar per 100 kg EXOCEM ONE	68
Kg EXOCEM ONE per 1 m <sup>3</sup> of fresh mortar	1425 - 1495
Yield of fresh mortar	1.42 – 1.49 kg/m <sup>2</sup> /mm
Relative density of fresh mortar	1.85 ± 0.05 (g/cc)

### CATALOGUE SPECIFICATIONS

#### Chemical/physical specifications:

Relative density: 1.85 +/- 0.05 (fresh mortar)  
Consistency: 180 +/- 10 mm (fresh mortar)



#### Composition:

Cement-based product, sand, polypropylene fibers, fillers, and technological additives.

#### Definition of performance:

Thixotropic mortar with compensated shrinkage and fast-setting for concrete restoration and finishing.

Our company is certified according to UNI EN ISO 9001:2008 standard by ICMQ and Certiquality for the "Design, production and trade of chemical and special products for the building sector." Our quality system is based on the sale through catalog, a contractual tool between our Company and Customers. Ruredil, with this tool, guarantees to its Customers that the product to be delivered complies with the specific chemical and physical properties specified in this catalog sheet. This sale relieves us from the issuance of the certificate of analysis which, by its nature, only guarantees the performance of a specific supply.

#### Packaging

25 kg bags

#### Yield:

Around 1.42 to 1.49 kg/m<sup>2</sup>/mm of fresh mortar

#### Code

0105020020

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### Storage

EXOCEM ONE should be stored in original unopened packaging at temperatures between +5 °C and +40 °C in a roofed and dry place.

Once the package has been opened, use all the content because, being cement-based, it is sensitive to moisture.

### Safety indications

Please consult the technical documentation and the health and safety sheet before proceeding to use. EXOCEM ONE is a cement-based product. It may cause irritation to skin and eyes. It is recommended to always wear protective clothing, gloves and suitable protective eyewear.

### Curing

The presence in the mixture of polypropylene fibers and specific anti-shrinkage additives prevents the formation of cracks.

However, especially in hot weather, in environments with strong ventilation or exposure to sunlight, it may be necessary to provide a damp curing or alternatively, you can use anti-evaporation product CURING ECO.

### Note

Do not use EXOCEM ONE for

- Applications with spray
- Formwork elements
- In contact with liquid with pH below 6.