



TECHNICAL DATA SHEET

OLY GROUT R4

Thixotropic mortar class R4

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OLY GROUT R4 is a special thixotropic fiber-reinforced one-component mortar with pozzolanic reactivity and controlled shrinkage, designed for the restoration of concrete structures. This powder product consists of special binders, selected aggregates, additives, and synthetic fibers, which, when mixed with water alone, provide excellent workability and high thixotropy. Once hardened, the product exhibits high mechanical strengths, water impermeability, and excellent adhesion to both new or restored concrete (not smooth and previously moistened) and to reinforcement bars (previously treated with OLY FER-K). Its fields of application include the recovery of the concrete cover of deteriorated concrete due to the oxidation of the reinforcement bars, repair of prefabricated structures, and filling of rigid joints.



Characteristics

Technical data	Typical value	Technical standard
Appearance	Grey powder	
Composition	Special cement, select aggregates, synthetic fibres, additives	
Grain size	≤ 3,0 mm	
Application temperature	+ 5°C / +35°C	
Mixing water	≈ 19%	
Apparent density of fresh mortar	≈ 2000 Kg/m ³	EN 1015-6
Apparent density of dried mortar	≈ 2150 Kg/m ³	EN 1015-10
Pot life	< 2h	
Setting time (start/end) with vicat needle	3h / 4h	
Thickness per layer	1,0 – 3,0	
Minimum achievable thickness	> 1 ,0	
Max. achievable thickness without reinforcement	≤ 2 cm per coat	
Waiting time between layers	≈ 2h	
Waiting time for smoothing	> 48 h (completely dry substrate)	

Technical data	Typical value	Technical standard
Chloride ion content	≤ 0,05%	EN 1015-17
Compressive strength (1days / 7days / 28days)	>20,0 / >45,0 / >60,0 N/mm ² Class R4	EN 12190
Flexural strength (1day / 7days / 28days)	>3,0 / >5,0 / >6,0 N/mm ²	EN 12190
Elastic modulus (28 days)	>20GPa	EN 13412
Adhesion to substrate (28days)	≥ 2,0 N/mm ²	EN 1542
Thermal compatibility to freeze-thaw cycles	≥ 2,0 N/mm ²	EN 13687-1
Capillary absorption	≤ 0,3 kgm ⁻² h ^{-0,5}	EN 13057
Reaction to fire	Class A1	
Contribution to smoke	None	
Hazard classification	None	CE 99/45

Consumption

18,0 – 19,0 kg/m² for each cm of thickness

Packaging

25 kg carton sacks on 1500 kg pallets.

Preparation of the substrate and mortar

Remove deteriorated and detached parts of the concrete until the layer is intact, compact and rough.

- Clean the concrete and reinforcement rods by sandblasting, removing dust, rust, oil, grease, efflorescence, paint, etc.

- Wet the substrate with water until it is dry, then remove excess water or wait for it to evaporate.

- Apply a first coat of OLY FER-K iron passivating agent by brush on the exposed metal reinforcement and a second coat also on the concrete to be restored.

- **In the concrete mixer:** Pour 4.5 to 5 litres of water per bag into the concrete mixer, depending on the desired consistency (trowel or spray application) and add OLY GROUT R4 slowly and continuously. Allow to mix for 1-2 minutes until the mixture is homogeneous, remove the undispersed powder from the walls of the concrete mixer and mix for a further 2-3 minutes.

- **By hand:** It is advisable to mix small quantities at a time, pouring the necessary amount of water into a bucket, about 19% of the powder; add OLY GROUT R4 slowly and continuously. Mix for 5-6 minutes, until a homogeneous mixture is obtained. Kneading by hand may require more water, which would alter the mechanical characteristics of the product.

Application

Apply the product by hand (pressing it down well on the substrate) or with a suitable plastering machine in a thickness of approximately 2 cm, taking care that the substrate has been thoroughly roughened. For greater thicknesses, use contrasting irons (making an iron covering of at least 2 cm) or proceed with a subsequent coat to be applied fresh on fresh.

- If the 1st coat is already dry, make sure it is roughened and moisten it before applying the 2nd coat.
- On a dry and clean substrate, apply alternatively: the special skim coat for concrete (OLY GROUT R4 MX) or the cementitious sheath (OLY ELASTIC).

Warnings

Do not add other products to the mix of OLY GROUT R4 and do not stir or add more water to the product while it is setting. Do not apply on gypsum surfaces, painted surfaces, crumbling, smooth and non-absorbent substrates. Avoid outdoor application on very hot or windy days, on frozen substrates, during thawing or with risk of frost in the following 24 h and in any case with temperatures below +5 °C or above +35 °C. Protect OLY GROUT R4 from too rapid initial evaporation, which can cause cracking, by moistening the treated surfaces.

Wash tools thoroughly after use. The indications given above represent the best of our current experience, which however must be confirmed by practical applications. Anyone intending to apply the product must establish its compatibility with the intended use and assume all responsibility for its use. The values given in the technical data originate from laboratory tests in a conditioned environment and may be significantly altered by application conditions.

Storage

Store in a cool, dry place, possibly on wooden pallets.

Storage period: 12 months

Packaging date: see bag stamp.

Safety information

The product is an article as defined in Regulation (CE) n. 1907/2006 and therefore no Safety Data Sheet is required. When using, it is recommended to wear protective gloves and goggles and to comply with the safety instructions in the workplace.

General Warnings

This data sheet replaces and cancels previous versions.

The information in this data sheet corresponds to our current knowledge and experience. The data have been compiled with the utmost care and conscientiousness, without, however, any guarantee of accuracy or completeness and without any liability for the user's further decisions. The data in themselves do not entail any legal commitments or other secondary obligations. The data do not in principle exempt the customer from independently checking the product with regard to its suitability for the intended use. Our products are subject to continuous quality controls on both the raw materials and the finished product to ensure consistent quality. Our technicians and consultants are at your disposal for information, clarification and questions regarding the use and processing of our products, as well as for on-site inspections. The latest technical data sheets can be found on the internet at www.olympus-italia.com or can be requested from our offices.

Marking obligations are not related to the intrinsic nature of a given product, but to the purpose for which a specific material is used: before placing the order, it will be the customer's responsibility to submit all available documentation to the Works Department so that it can establish the suitability of the materials (in terms of certification and performance) in relation to the intended use.

To check the latest version of this technical data sheet, for information, technical assistance, and other structural reinforcement systems, contact the Olympus Technical Office:

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