

Torggler

Concrete Restoration

STRUTTURALE

Premixed, high-strength thixotropic mortar, fibre-reinforced, EN 1504-3 CC type and R4 class, for the reconstruction of structural components.



- High mechanical strength
- Excellent thixotropy
- Anti shrinkage
- Applicable in coats between 20 and 40 mm thick



APPLICATION AREAS

Strutturale is suitable for:

- structural plasterings;
- reconstruction of concrete cover;
- restoration of reinforced concrete components.

Using the EN 1504-9 classification, Strutturale is suitable for Repair Principle 3 (Concrete Restoration), Repair Principle 4 (Structural Strengthening) and Repair Principle 7 (Preserving or restoring passivity) applications using Method 3.1 (Applying mortar by hand), Method 4.4 (Adding mortar or concrete) and Method 7.1 (Increasing cover to reinforcement with additional cementitious mortar or concrete).

MAXIMUM ATTAINABLE THICKNESSES

- Minimum thickness: approx. 2 cm.
- Maximum total thickness: approx. 8 cm.
- Maximum thickness per coat: approx. 3 cm.

For thicknesses greater than 2 cm, the mortar must be reinforced with galvanized mesh and this must have a cover of at least 1 cm. For total thicknesses greater than 4 cm, electro-welded mesh may also be used. For corners and other surface details, general rules of good practice in the application of cementitious mortars apply. In hot weather, mix Strutturale using cold water and do not apply in direct sunlight or protect it from the sun's rays under a suitable cover. For surfaces particularly exposed to wind and sun, mix Strutturale with a solution of Neoplast Latex and water in 1:4 proportion and protect the applied mixture.

FEATURES

Strutturale is a ready-to-use, fibre-reinforced mortar for application on walls and ceilings, without formwork. It expands slightly when still soft and after hardening to counter the formation of cracks. It can be applied easily either manually or using a spray pump even in layers several centimetres thick without running. It guarantees very good mechanical properties, especially bending strength, a very important parameter for achieving workmanlike repairs of reinforced concrete structures. Strutturale is a UNI EN 1504-3 R4 class CC type hydraulic mortar designed for the non-structural repair of concrete.

WARNINGS

To prevent cracking in the mortar when still soft on account of excessively rapid evaporation of the water in the mixture and to promote expansion to compensate for mortar shrinkage, the surface of Strutturale castings and repairs must be kept moist with a fine water spray for at least 2 days.

As with all cement-based products, do not apply at temperatures below +5 °C.

INSTRUCTIONS FOR USE

The substrate must be clean and highly roughened. Remove all loose, crumbling or non-cohesive material until a clean, resistant surface is revealed. Clean rust off reinforcement bars. If the reinforcement is badly damaged and weakened, install additional bars to strengthen the reinforcement. Wash with a high-pressure water jet. Wet the substrate until the water stops soaking in. Where necessary, stop damp or infiltrations of water with fast or very fast setting mortars such as Umafix. For an effective anti corrosion treatment of the reinforcement, apply *restauro Ferri* (see specific technical data sheet). Mix Strutturale with approximately 13-15 % water. Mix for several minutes until smooth and free of lumps. Apply the mortar by hand with a trowel or paddle or spray it on with a suitable plastering pump.

TECHNICAL SPECIFICATIONS

PARAMETER AND METHOD	VALUE	REQUIREMENT
MEASURED ON POWDER PRODUCT		
Bulk density (MIT 13*)	1.250 kg/m ³	
Granulometry (EN 12192-1)	0 – 4 mm	
Water soluble chlorides(EN 1015-17)	≤ 0,01 %	≤ 0,05 %
MEASURED ON FRESH MIX		
Mixing water	13-15 %	
Density of fresh mix (EN 1015-6)	2.150 kg/m ³	
Mix consistency	thixotropic	
Setting time: start (EN 196-3)	approx. 3 hours	
Setting time: finish (EN 196-3)	approx. 5 hours	
Mix pot life (EN 13395)	> 30 minutes	
Application temperature	from +5 °C to +30 °C	
Consumption	approx. 19 kg/m ² per cm thickness	
MEASURED ON HARDENED PRODUCT		

Operating temperature	from -20 °C a +90 °C	
Flexing strength at 28 days (EN 12190)	60 MPa	≥ 45 MPa
Compressive strength at 28 days (EN 12190)	> 8 MPa	
Compression modulus of elasticity (EN 13412)	25 GPa	≥ 20 GPa
Adhesion by pull-off test (EN 1542)	2,5 MPa	≥ 2,0 MPa
Carbonation resistance (EN 13295)	Test specification passed	$d_K \leq \text{concrete}$
Impeded shrinkage/expansion (EN 12617-4)	2,5 MPa	Bond strength after test ≥ 2,0 MPa
Thermal compatibility (freezing-thawing cycles) (EN 13687-1)	2,2 MPa	Bond strength after 50 cycles: ≥ 2,0 MPa
Capillary absorption (EN 13057)	0,2 kg/(m ² *h ^{0,5})	≤ 0,5 kg/(m ² *h ^{0,5})
Reaction to fire (EN 1350 1-1)	Class A	Producer's declared value
Classification of the product (EN 1504-3)	R4 CC	

Color	Grey
Packaging	bag
Packaging size	25 kg
Pallet	50 bags

CONSUMPTION

Consumption is approx. 19 kg/m² per cm of thickness.

STORAGE

Store in a dry, protected place. Unopened in its original bags, the product can be stored for at least 12 months.

CERTIFICATIONS

Product tested and classified as R4 CC as per UNI EN 1504-3. The EC Declaration of Conformity and the related official test certificates are available on request.

The information contained in this document is reported on the basis of our experience and knowledge; therefore, any recommendations and suggestions made are without any guarantee and must be verified before using the product by those who intend to use it, who assume all responsibility that may result from its use since the conditions of use are not under our direct control. In case of doubt, it is always advisable to make preliminary tests and/or ask for the intervention of our technicians. Torggler reserves the right to modify, replace and/or delete the items, as well as to change the product data in this document without prior notice; in this case the indications given here may no longer be valid. Always refer to the latest version of the data sheet, available at www.torggler.com. Version 29.10.2021.