

Torggler

Concrete Restoration

UMATIXO

One-component, pre-mixed thixotropic cement mortar. Fast setting and hardening times fibre-reinforced with high mechanical strength, type CC and class R4 according to EN 1504-3, for fixing manhole covers, localised repair of interior and exterior industrial floors and repair of reinforced concrete.



- Rapid hardening and development of mechanical strength
- Excellent water impermeability
- Resistant to the penetration of CO₂
- Withstands freezing/thawing cycles
- Resistant to thawing salts



APPLICATION AREAS

- Fast fixing of manhole covers, wells and drains, even at a significant slope.
- Fast fixing of poles, road signs and street furniture.
- Fast repair of interior and exterior concrete flooring.

TYPES OF SUBSTRATE

Reinforced concrete in general.

MAXIMUM ATTAINABLE THICKNESSES

10 cm. For greater thicknesses, add washed gravel (3 – 7 mm).

FEATURES

Umatixo is a one-component cement mortar, pre-mixed, with fast setting and hardening, available in anthracite colour, based on a mix of special cements, selected aggregates, fibres and specific additives. A thixotropic and cohesive mix is obtained after mixing with water. A slight expansion during both the plastic and the post-hardening phases compensates for hydraulic shrinkage, with a considerable improvement of the final adhesion characteristics, and at the same time preventing fracturing. The optimum water retention reduces the risk of "burning" when applied in small thicknesses (which, in any case, must not be less than 2 cm) and, if suitable care is taken, even during critical weather conditions (summer temperatures and wind); however, in this case it is necessary to adopt suitable precautions (do not expose to direct sunlight, mix with cold water, apply the product preferably at coolest times of the day and in the shade, etc). Specific additives make the hardened mortar impermeable to water and resistant to the penetration of CO₂. Umatixo is a product for the structural repair of concrete structures using hydraulic mortar type CC and class R4 in accordance with EN 1504-3

WARNINGS

- Do not mix with other binders such as cement, hydraulic lime, gypsum etc.
- Do not add water once the mix has started to set.
- Do not use the mixed product when it has already started to set. Therefore, always prepare quantities of mix which can be used within the workability time.
- Do not use in temperatures which are too high or when it is very windy. Protect from direct sunlight. During the summer months wait for the coolest hours of the day before application, mix with cool water and protect the surface against strong winds, spraying the surface with water or covering it with polyethylene sheets.
- Do not apply Umatixo when the temperature is less than +5 °C or more than +30 °C.

INSTRUCTIONS FOR USE

Preparation

Remove all crumbling and loose parts from the substrate by careful hammering and chiselling, until a good and strong substrate is reached. Scrape down to a depth of at least 2 cm. The scraped substrate must also be carefully roughened, with bumps of at least 5 mm, and then cleaned, so as to be free of dust, loose material and dirt of any kind. Any oil or grease residue must be carefully removed. In the case of repairs to flooring and other reinforced concrete elements, fully expose the reinforcement bars which can be seen and remove completely any concrete, cleaning them by wet or dry sandblasting. In order to provide an effective anti-corrosion protection, apply two coats of ACS Ferri 1K on the reinforcing bars and leave to harden to prevent damage by subsequent applications (see technical data sheet for further details). Wet the substrate well with pressurised water and leave the excess water to evaporate or remove with a sponge. It is necessary to roughen the substrate and saturate it with water to guarantee the adhesion and contrast the expansion of the expansive action of Umatixo.

Mixing the product

Mix Umatixo with approx. 13 -15 % of water (which is equal to approx. 3,25 – 3,75 litres for a 25 kg bag), mixing it with a mechanical mixer (lowspeed drill with mixer attachment or mortar mixing plant) until the mix is homogeneous and free from lumps. In the cases of small quantities of mixes, do not mix manually with a trowel, as the amount of water needed to prepare the mix would be greater, with consequent worsening of the mechanical performance and reduction of the resistance to carbonation (if the mixing water is much greater than that specified there can be the risk of cracking caused by excessive hydraulic shrinkage). The mix prepared in this way is workable for approx. 20 minutes under normal conditions (20 °C). The workability time is shortened at higher temperatures and increased at lower ones.

Application

Put the Umatixo mix into the space to be filled. Smooth the surface using a trowel or palette knife. The minimum application thickness is approx. 2 cm, so do not smooth "flush". The maximum total thickness which can be applied is approx. 10 cm. For thicknesses greater than 10 cm, dilute Umatixo with up to a maximum of 30 % by weight of washed gravel (3 – 7 mm), that is, approx. 3 parts by weight of Umatixo and 1 part by weight of gravel; in practical terms, this corresponds to approx. 2 builder's buckets of 3 – 7 mm gravel for every 100 kg (four 25 kg bags) of Umatixo. This addition results in a modification of the mixing water, which changes from 13 – 15 % to 11 – 13 %, and a reduction by approx. 10 % in the mechanical strength, guaranteeing a compressive strength after 28 days of more than 60 MPa. Carry out any finishing with a plastering trowel when the mortar starts to set, that is, when it is only possible to make a slight impression when pressing with a finger. The inserts and repairs carried out with Umatixo must be suitably protected during the summer months and in the presence of strong winds by

spraying the surface with water or covering with polyethylene sheets, in order to avoid the formation of cracks in the mortar when it is still in the plastic state due to too fast an evaporation of the mixing water.

Cleaning

The tools used can be cleaned with water before the mortar hardens. Once hardened, the mortar must be scraped off.

WAITING TIMES

At 20 °C, Umatixo can be walked on 1 hour after placing. If the product is used at approx. 20 °C the road may be re-opened for traffic after 2 hours in the case of lightweight traffic (motorcycles and cars), but it is necessary to wait at least 4 hours from its application in the case of heavy traffic (lorries, HGV and industrial vehicles).

TECHNICAL SPECIFICATIONS

PARAMETER AND METHOD	VALUE	EN 1504-3 REQUIREMENT
MEASURED ON POWDER PRODUCT		
Consistency	powder	
Apparent density (MIT 13 *)	1,3 kg/l	
Grain size (EN 12192-1)	0 – 2,5 mm	
Content of chlorine ions (EN 1015-17)	< 0,01 %	≤ 0,05 %
Hazardous substances (EN 1504-3)	Compliant with point 5.4	
MEASURED ON FRESH MIX		
Mixing water	13 – 15 % (3,25 – 3,75 litres per 25 kg bag)	
Mix consistency (visual)	thixotropic	
Mix pH	> 12	
Mix density (EN 1015-6)	2,250 kg/l	Range of declared value
Mix pot life (EN 13395)	approx. 30 minutes	
Setting times: start of setting (EN 196-3)	30 minutes	
Setting times: end of setting (EN 196-3)	35 minutes	
Application temperature	from + 5 °C to + 30 °C	
Coverage	approx. 20 kg/m ² per cm of thickness	
MEASURED ON HARDENED PRODUCT		
Operating temperature	from -20 °C to +90 °C	
Bending strength: after 1 day (EN 12190)	4,0 MPa	
Bending strength: after 3 days (EN 12190)	6,0 MPa	
Bending strength: after 7 days (EN 12190)	8,0 MPa	
Bending strength: after 28 days (EN 12190)	10,0 MPa	
Compressive strength: after 2 hours (EN 12190)	10,0 MPa	

Compressive strength: after 8 hours (EN 12190)	15,0 MPa	
Compressive strength: after 18 hours (EN 12190)	20,0 MPa	
Compressive strength: after 1 day (EN 12190)	25,0 MPa	
Compressive strength: after 3 days (EN 12190)	45,0 MPa	
Compressive strength: after 7 days (EN 12190)	50,0 MPa	
Compressive strength: after 28 days (EN 12190)	60,0 MPa	≥ 45,0 MPa (after 28 days)
Compression modulus of elasticity (EN 13412)	27,0 GPa	≥ 20,0 GPa (after 28 days)
Adherence on concrete (EN 1542)	≥ 2,0 MPa	≥ 2,0 MPa
Capillary absorption (EN 13057)	0,15 kg/(m ² ·h ^{0,5})	≤ 0,5 kg/(m ² ·h ^{0,5})
Resistance to carbonation (EN 13295)	test passed	d _k ≤ control concrete
Thermal compatibility (freezing/thawing cycles with de-icing salts) (EN 13687-1)	≥ 2,0 MPa (after 50 cycles)	≥ 2,0 MPa
Fire reaction (EN 13501-1)	Class A1	Value declared by manufacturer
Product classification (EN 1504-3)	R4 CC	

* Torggler Internal Methods (MIT) are available on request.

Color	Anthracite
Packaging	bag
Packaging size	25 kg
Pallet	50 bags

CONSUMPTION

The coverage of Umatixo is approx. 20 kg/m² per cm of thickness.

STORAGE

Store Umatixo in a dry, protected place. Unopened in its original bags, the product can be stored for at least 9 months.

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 08.07.2021.