

# Torggler

## Tiles and Natural Stone Installation

# TILE 480

One-component, improved, high strength, cementitious adhesive, with long open time, deformable, class C2 TE S1 in compliance with EN 12004. For indoor and outdoor use on walls and floors, even for overlaying, for porcelain and glazed stoneware and ceramic tiles of all types and sizes. Frost resistant.



- Ideal for large-sized tiles
- Very resistant
- Longer open time
- Very flexible and deformable



### APPLICATION AREAS

- Indoor and outdoor use for tiling walls and floors with all types and sizes of ceramic components.
- Gluing of large-sized ceramic tiles on substrates subject to movement such as balconies and patios.
- Indoor and outdoor gluing of ceramic and vitreous mosaic tiles in tanks and swimming pools, when mixed with one part Antol Flex and one part water.
- Application over ceramic and natural stone floors.

### TYPES OF SUBSTRATE

- Cured cement screeds and substrates subject to movement.
- Walls made from concrete, cement rendering or cement-lime plasters.
- Indoor walls made from cellular concrete blocks.
- Substrates of all sizes waterproofed using flexibilized cement systems such as Antol Flexistar, Antol Flex 1K and Antol Flex 2K or a waterproofing membrane like Sitol Aquatech.
- Heated floors and old ceramic or natural stone floors.

## TYPE OF MATERIAL TO BE LAID

- Clinker, single- and double-fired tiles
- Porcelain and glazed stoneware
- Ceramic mosaic tiles
- Vitreous mosaic tiles\*
- Natural stone, resin and composite tiles resistant to water, staining and deformation.

\* when mixed with one part Antol Flex and one part water.

## MAXIMUM ATTAINABLE THICKNESSES

10 mm

## FEATURES

Tile 480 is a grey or white cementitious adhesive highly-resistant powder adhesive, based on cement, graded aggregates, a high percentage of synthetic resins and specific additives, specially formulated for laying large-sized porcelain and glazed stoneware as well as ceramic tiles and natural stone of all types and sizes, as long as these are resistant to water, staining and deformation, even on substrates subject to movement. After mixing with water, you have an adhesive which is easy to use, highly thixotropic and highly flexible and adhesive for all types of surface and also on old floors and ceramic surfaces. When applied on walls, it does not run and prevents wall tiles from slipping. Thanks to its long open time, laying tiles is easy even in warm, windy climates. The deformability of the hardened product permits absorption of the movements of the substrate, making it ideal for flooring subject to high stress. It resists freezing/thawing cycles. Tile 480 is classified as a cementitious adhesive of class C2 TE S1 according to EN 12004.

## WARNINGS

- Mix with one part Antol Flex and one part water for vitreous mosaic tiling and applications in tanks and swimming pools.
- Do not apply Tile 480 on wood and wood conglomerates, metal surfaces, rubber, PVC, linoleum and the like.
- Do not mix the product with other binders such as cement, hydraulic lime, gypsum, etc.
- The mix cannot be diluted with water once it has started setting.
- 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 pot life.
- Do not apply the product at temperatures below +5°C or above +35°C.
- For applications on gypsum or anhydrite surfaces, pre-treatment of the surface with Piastrellite Primer is required. If you have any doubts or queries about this type of application, please do not hesitate to contact our Technical Office for further advice.

## INSTRUCTIONS FOR USE

### Preparation

The surfaces to be covered must be suitably dry, resistant, solid and regular, free of oils and greases, dust, loose material, dirt of any kind and any traces of old paint. The surfaces must also be sufficiently cured and free of significant shrinkage. As a general rule, traditional cement bedding with normal setting and hardening must be cured for at least 28 days. Cement or cement lime plasters must be dried for at least 14 days. Major surface imperfections and irregularities such as level differences, cavities and gravel pockets with a depth greater than 20 mm must be filled out with a self-levelling smoothing product such as Livellina 5-30 or special mortars for walls such as ACS Rinnova or ACS Restauro. Very porous, flaking or dusting surfaces with poor mechanical strength must be treated in advance with Piastrellite Primer.

### Mixing the product

Mix Tile 480 with 29-31% clean water (7.25-7.75 litres per 25 kg bag) as follows: pour almost all the mixing water required in a suitable container. Then add the powder product, slowly, and mix at the same time using a low speed electrical drill with mixer attachment. Once you have added all the powder product, pour in the rest of the water and mix until the product is smooth and lump-free, with a semi-fluid consistency. Make sure you remove all non-mixed lumps of material from the walls and the bottom of the container. Allow the mixture to stand for about 5 minutes and then mix again briefly. The adhesive mix prepared in this way has a pot life in the container

of about 5 hours under normal conditions (at 20°C). Higher temperatures reduce the pot life, lower temperatures increase it.

### Application

If subject to direct sunlight, that is, high temperatures, wet the surface with a sponge to cool it and then wait until all the surface water has evaporated. Apply the adhesive with an appropriate toothed trowel. The size of the trowel teeth depends on the type and size of the tile to be glued: total coverage of the back of the tiles must be guaranteed. For better adhesion, first apply a thin and uniform layer of adhesive on the surface using the smooth part of the toothed trowel and then apply, immediately, a second layer of the thickness required using the toothed part of the trowel. Apply the tiles, pressing them slightly and moving them crossways slightly. When gluing tiles with marked relief pattern on the back, for outdoor applications, especially in areas subject to major heat changes or freezing/thawing cycles, for laying on heated floors and flooring subject to high levels of stress, for tank and swimming pool applications and for laying large tiles (more than 33x33 cm), follow the "buttering-floating" technique: that is to say, apply the mixed adhesive with the toothed trowel to the surface and spread it out using a trowel on the back of the tile, smoothing off as required. Provided the quantity of adhesive spread out is sufficient, you now have adhesive-tile contact extended along the entire gluing surface (this condition is essential for laying floors and surfaces exposed to freezing cycles and considerable stress from water). Mix with one part Antol Flex and one part water for vitreous mosaic tiling and applications in tanks and swimming pools. Only lay the tiles within the time interval during which the adhesive spread out is still fresh and sticky, that is, before a surface film forms. This time interval is known as the "open time" of the adhesive and depends on the environmental conditions. The open time of Tile 480 is longer than 30 minutes at 23 °C and 50% relative humidity. High temperatures and conditions of direct sunlight and wind or very porous and absorbent surfaces may reduce the open time considerably. Low temperatures, high environmental humidity and non-absorbent surfaces may increase the open time. If the open time has passed and the adhesive spread out has formed a surface film, you must use the toothed trowel again to break the film and "freshen up" the surface. Do not wet the surface as this would create a film of anti-adhesive water which would prevent contact of the tiles with the adhesive and the entire operation would be compromised definitively. The tiles do not normally require wetting before laying. However, tiles with dusty back should be cleaned by dipping them in clean water for a few seconds. For gypsum or anhydrite surfaces, pre-treatment with Piastrellite Primer is required.

### Cleaning

The tools used for laying may be cleaned with water before the adhesive hardens. Once the adhesive has hardened, you may only clean them using mechanical instruments. Any dirt on the surface of the tiles must be cleaned before the adhesive hardens using a damp cloth.

### WAITING TIMES

After laying, protect the tiles against rain and scouring for at least 24 hours and against direct sunlight for at least 7 days. If laying in the winter, protect against frost for at least 7 days. You may grout the gaps between tiles after about 8 hours for walls and about 24 hours for floors, using Tile Grout ≤8 mm or Tile Grout 2-15 mm. Note: Expansion joints should be sealed with a silicone sealant in the Torggler Sitol Silicon range. Laid floor tiles can be walked on after about 24 hours. The final hardening and, therefore, the actual use of floor and wall coverings glued with Tile 480 requires about 14 days. Wait at least 21 days before filling swimming pools and tanks.

### TECHNICAL SPECIFICATIONS

MEASURED ON POWDER PRODUCT	WHITE	GREY
Consistency	powder	powder
Apparent density	1,23 kg/litre	1,23 kg/litre
Grain size	0 – 0,5 mm	0 – 0,5 mm
MEASURED ON FRESH MIX		
Mixing water	29-31% = 7,25-7,75 litres per 25 kg bag	29-31% = 7,25-7,75 litres per 25 kg bag
Mix density	1,45 kg/liter	1,56 kg/liter
Mix consistency	pastry – can be trowelled	pastry – can be trowelled

Slip (to EN 1308)	0,2 mm	0,1 mm
Mix pot life (at +20 °C)	approx. 6 hours	approx. 5 hours
Open time (according to EN 1346)	> 30 minutes	> 30 minutes
Setting time (according to DIN 18156 part 2)	approx. 30 minutes	approx. 30 minutes
Application temperature	from +5 °C to +35 °C	from +5 °C to +35 °C
<b>MEASURED ON HARDENED PRODUCT</b>		
Tensile adhesive strength (according to EN 1348): initial adhesion	> 1,8 N/mm <sup>2</sup>	> 2,6 N/mm <sup>2</sup>
Tensile adhesive strength (according to EN 1348): adhesive strength after action of heat	> 1,8 N/mm <sup>2</sup>	> 3,1 N/mm <sup>2</sup>
Tensile adhesive strength (according to EN 1348): adhesive strength after immersion in water	> 1,2 N/mm <sup>2</sup>	> 2,3 N/mm <sup>2</sup>
Tensile adhesive strength (according to EN 1348): adhesive strength after freezing/thawing cycles	> 1,5 N/mm <sup>2</sup>	> 2,5 N/mm <sup>2</sup>
Crossways deformation (according to EN 12002)	2,6 mm	3,6 mm
Filling the joints: on walls	after approx. 8 hours	after approx. 8 hours
Filling the joints: on floors	after approx. 24 hours	after approx. 24 hours
Can be walked on	after 24 hours	after 24 hours
Final hardening	after 14 days	after 14 days
Operating temperature	from -30 °C to +90 °C	from -30 °C to +90 °C
Consumption	from 2,0 to 5,0 kg/m <sup>2</sup>	from 2,0 to 5,0 kg/m <sup>2</sup>
Max attainable thickness	10 mm	10 mm
Classification to EN 12004	C2 TE S1	C2 TE S1

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

Packaging	bag
Pallet	50 bags
Color	Grey, White
Packaging size	25 kg

## CONSUMPTION

Consumption may vary from 2 to 5 kg/m<sup>2</sup>. It depends on the type of tile, the characteristics of the substrate and the laying method used. In general, if the surface has been well prepared and filled out, for mosaic and small tiles (up to 30×30 cm approximately) the consumption is about 2-3 kg/m<sup>2</sup> while for medium and large tiles, with considerable intrados and for external applications (using the "buttering-floating" technique), the consumption is about 5 kg/m<sup>2</sup>.

## STORAGE

Tile 480 must be stored in a dry and protected place. Unopened in its original bags, the product can be stored for at least 12 months. KEEP AWAY FROM MOISTURE.

## CERTIFICATIONS

Product certified by Elletipi S.r.l. (FE), Notified Body No. 1308. Test Certificate Nos. 17963/12, 17964/12, 17965/12, 17966/12, 17967/12, 17968/12, 17969/12 20141011/1, 20141011/2, 20141011/3, 20141011/4. The EC Declaration of Conformity, including copies of official test reports, is available on request.

LEGEND OF CLASSIFICATION ACCORDING TO EN 12004	
C1	Normal cementitious adhesive
C2	Improved cementitious adhesive
F	Fast setting
T	Reduced slip
E	Extended open time
S1	Deformable
S2	Highly deformable

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](http://www.torggler.com). Version 24.06.2021.