

## Tiles and Natural Stone Installation

# TILE 350

**Improved, single-component, cementitious tile adhesive, type C2 TE according to EN 12004. Anti-slip, flexible, high resistance. Can be used indoors and outdoors, for walls and floors, even over old tiles. Suitable for porcelain and glazed stoneware and all ceramic tiles. Frost resistant.**



- Ideal for medium- and large-size tiles
- Extended open time
- Suitable for heating floors
- Suitable for laying over old tiles
- Suitable for mosaic tiles when mixed with one part Antol Flex



### TYPES OF SUBSTRATE

- Cured cement screeds
- Concrete walls
- Cement or cement-lime plasters
- Indoor walls made from cellular concrete blocks
- Substrates, plasters and panels on gypsum base if pre-treated with Piastrellite Primer
- OSB panels or other kind of panels and/or substrate with difficult adhesion, if pre-treated with Multigrip
- Medium-sized substrates waterproofed with flexibilized cement systems such as Antol Flexistar, Antol Flex 1K and Antol Flex 2K
- On heating floors

### TYPE OF MATERIAL TO BE LAID

- Single-fired
- Double-fired

- Clinker
- Porcelain and glazed stoneware
- Vitreous ceramic mosaic\*
- Natural stone, resin and composite tiles (provided that these are not sensitive to water or subject to staining or deformation).

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

## MAXIMUM ATTAINABLE THICKNESSES

10 mm

## FEATURES

Tile 350 is a cementitious tile adhesive, available in white and grey, consisting of a mixture of high resistance cements, selected aggregates and a high percentage of synthetic resins and special additives. Specially formulated for gluing glazed and porcelain stoneware tiles of all sizes. After mixing with water, you have an adhesive which is easy to use, highly thixotropic, very flexible and highly adhesive for all types of surface including old floors and ceramic tiled surfaces. When applied on walls, it does not run and prevents wall tiles from slipping. Thanks to its extended open time, laying tiles is easy even in warm and windy weather conditions. The hardened adhesive is deformable and will absorb movements of the substrate. It is suitable therefore for gluing flooring subject to high mechanical stress. It resists freezing/thawing cycles. Classified as a cementitious adhesive of class C2 TE in the standard EN 12004.

## WARNINGS

Do not use on the following:

- wood and wood conglomerates, metal surfaces, rubber, PVC, linoleum and the similar materials
- unstable substrates subject to deformation and high mechanical stress

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, contact our Technical Office. Do not apply the product at temperatures below +5 °C or above +35 °C. 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.

## INSTRUCTIONS FOR USE

### Preparation

The surfaces to be covered must be suitably dry, resistant, solid and regular, clean and 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, gravel pockets and eroded or deteriorated points must be repaired in advance and filled out with a self-levelling smoothing product such as Livellina 0-10 or Livellina 5-30, or with a suitable mortar such as Restauero, Rinnova or Monorasante. Very porous, flaking or dusting surfaces with poor mechanical strength must be consolidated in advance with Piastrellite Primer.

### Mixing the product

Mix Tile 250 with 28-30 % clean water (7.0-7.5 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 semifluid 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 5-6 hours under normal conditions (at 20 °C). Higher temperatures reduce the pot life, lower temperatures

increase it. 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.

### Application

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 bigger than 33x33 cm with marked relief pattern on the back, for outdoor applications, especially in areas subject to major heat changes or freezing/thawing cycles, follow the "butteringfloating" 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 and ceramic 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 350 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 surfaces, pre-treatment with Piastrellite Primer is required.

### 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 of Torggler. Laid floor tiles can be walked on after about 24 hours. Final hardening takes approximately 14 days. Wait 14 days before using floor and wall coverings glued with Tile 350. Wait at least 21 days before filling swimming pools and tanks. 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.

### TECHNICAL SPECIFICATIONS

MEASURED ON POWDR PRODUCT		
Colour	white	grey
Consistency	powder	powder
Apparent density	1,30 kg/litre	1,30 kg/litre
Grain size	0 – 0,5 mm	0 – 0,5 mm
MEASURED ON FRESH MIX		
Mixing water	28 – 30 % equivalent to 7,0 – 7,5 litres per 25 kg bag	28 – 30 % equivalent to 7,0 – 7,5 litres per 25 kg bag
Mix density	1,55 kg/litre	1,55 kg/litre
Mix consistency	pastry – can be trowelled	pastry – can be trowelled
Slip (to EN 1308)	0,2 mm	0,2 mm
Mix pot life (at +20 °C)	approx. 6 hours	approx. 5 hours

Open time (to EN 1346)	> 30 minutes	> 30 minutes
Adjustment time (to DIN 18156 Part 2)	30 minutes	30 minutes
Application temperature	from +5 °C to +35 °C	from +5 °C to +35 °C
<b>MEASURED ON HARDENED PRODUCT</b>		
Adhesion by traction (according to EN 1348): initial adhesion	> 1,4 N/mm <sup>2</sup>	> 1,4 N/mm <sup>2</sup>
Adhesion by traction (according to EN 1348): adhesive strength after immersion in water	> 1,0 N/mm <sup>2</sup>	> 1,0 N/mm <sup>2</sup>
Adhesion by traction (according to EN 1348): adhesive strength after action of heat	> 1,4 N/mm <sup>2</sup>	> 1,4 N/mm <sup>2</sup>
Adhesion by traction (according to EN 1348): adhesive strength after freezing/thawing cycles	> 1,0 N/mm <sup>2</sup>	> 1,0 N/mm <sup>2</sup>
Filling the joints: walls	after approx. 8 hours	after approx. 8 hours
Filling the joints: 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 as per EN 12004	C2 TE	C2 TE
Classification according to EN 12002 (Tile 350 + one part Antol Flex and three parts water)	S1 (deformable adhesive)	S1 (deformable adhesive)
Classification according to EN 12002 (Tile 350 + one part Antol Flex and one part water)	S2 (highly deformable adhesive)	S2 (highly deformable adhesive)

  

Color	Grey, White
Packaging	bag
Packaging size	4x5 kg, 25 kg
Pallet	40 cardboards, 50 bags

## CONSUMPTION

Consumption varies from 2 to 5 kg/m<sup>2</sup>. Actual consumption depends on the type of tile, the characteristics of the substrate and the laying method used. As a general rule consumption on well prepared, levelled surfaces is as follows: small tiles approximately 2 kg/m<sup>2</sup>, for medium sized tiles up to 33 x 33 cm the consumption is approximately 3 kg/m<sup>2</sup>. Large tiles with high-profile back and tiles for outdoor applications (using buttering-floating) the consumption is approximately 5 kg/m<sup>2</sup>.

## STORAGE

Tile 350 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

The EC Declaration of Conformity is available on request.



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Torggler S.r.l., Via Prati Nuovi 9, I – 39020 Marlengo (BZ)  
DoP n° 0100/18  
EN 12004-1:2017  
NB n° 1599

Adhesive for tiles in the form of cementitious adhesive for all internal and external tiling (C2-T-E)

Reaction to fire: E  
Initial tensile adhesion strength:  $\geq 1 \text{ N/mm}^2$   
Tensile adhesion strength after heat ageing:  $\geq 1 \text{ N/mm}^2$   
Tensile adhesion strength after water immersion:  $\geq 1 \text{ N/mm}^2$   
Tensile adhesion strength after freeze-thaw-cycles:  $\geq 1 \text{ N/mm}^2$



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#### 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 25.06.2021.