

# MAPELASTIC TURBO

Two-component, rapid-drying elastic cementitious mortar for waterproofing terraces and balconies, including at low temperatures and on substrates not completely dry



## WHERE TO USE

Rapid waterproofing product for concrete structures, cementitious screeds and old floor and wall coverings, including at low temperatures.

### Some application examples

- Waterproofing balconies, terraces, flat roofs, swimming pools before bonding ceramic, mosaic or natural stone floor and wall coverings.
- Waterproofing terraces and balconies by overlaying on existing floor coverings before bonding new flooring.

## ADVANTAGES

- Suitable for tiling after around 4 hours in normal weather conditions and within 24 hours at temperatures down to +5°C.
- Also suitable for substrates not completely dry as long as they are well cured.
- Rain-fast after just a few hours, including at low temperatures and in high levels of R.H. (relative humidity).
- CE marking according to EN 14891 and EN 1504-2 standards.
- Resistant to UV rays.
- Also suitable for overlaying existing ceramic, all types of mosaic and natural stone floor and wall coverings.
- Product certified ECI R Plus by the GEV Institute (Gemeinschaft Emissions-kontrollierte Verlegewerkstoffe, e.V.) as a product with very low emission of volatile organic compounds.

## TECHNICAL CHARACTERISTICS

**Mapelastic Turbo** is a two-component, cementitious binder-based mortar with fine-grained selected aggregates, special admixtures and synthetic polymers in water dispersion.

**Mapelastic Turbo** is the result of MAPEI's research laboratories that have developed a special polymer with the capacity to accelerate the drying time of **Mapelastic**. This special formulation allows work to be carried out more quickly than with any other product at low temperatures and on substrates that are not completely dry.

The **Turbo** version has the same resistance to chemical attack from de-icing salts, sulphates, chlorides and carbon dioxide that guarantees the durability of **Mapelastic** over the years.

When the two components are mixed together they form a fluid mix with good workability. It is applied in two layers, with alkali-resistant reinforcement embedded between the layers (such as **Mapenet 150** or **Mapetex Sel**), to form a total thickness of at least 2 mm.

**Mapelastic Turbo** also has excellent adhesion on all concrete surfaces and cementitious screeds, as well as ceramic, mosaics, natural stone and terrazzo, as long as they are well bonded to the substrate and prepared as specified.

The setting time of **Mapelastich Turbo** allows surfaces to be waterproofed and floor and wall coverings to be bonded within 24 hours when used in conjunction with a rapid adhesive from the MAPEI range, even if the surrounding conditions are not ideal. **Mapelastich Turbo** complies with the principles defined in EN 1504-9 (*"Products and systems for protecting and repairing concrete structures: definitions, requirements, quality control and conformity assessment. General principles for the use of products and systems"*) and the requirements of EN 1504-2 coating (C) according to principles PI, MC and IR (*"Concrete surface protection systems"*).

**Mapelastich Turbo** meets the requirements of EN 14891 (*"Liquid-applied water impermeable products for use beneath ceramic tiling bonded with adhesives"*).

## RECOMMENDATIONS

- Do not use **Mapelastich Turbo** for thick layers (more than 2 mm per layer).
- Only apply **Mapelastich Turbo** if the temperature is above +5°C.
- Do not add cement, aggregates or water to **Mapelastich Turbo**.
- Do not apply **Mapelastich Turbo** on lightweight substrates.
- In hot weather, do not expose the product to direct sunlight before use (powder and liquid).
- Do not apply **Mapelastich Turbo** on substrates that have not been cured as specified.
- Place the reinforcement on the first layer of product while it is still wet.

## APPLICATION PROCEDURE

### Preparation of the substrate

- CEMENTITIOUS SCREEDS:
  - seal cracks caused by settling of the screed or hygrometric shrinkage with **Eporip** before applying the product;
  - to integrate layers up to 3 cm thick (such as to create slopes or fill hollows, etc.) use **Planitop Fast 330** or **Adesilex P4**;
  - substrates with a dusty surface must be consolidated with **Primer 3296** diluted 1:1 with water before applying the product.
- LIGHTWEIGHT SCREEDS: lay a sheet of polyethylene over lightweight screeds and then install a reinforced cementitious screed more than 3.5 cm thick (made from **Topcem** or **Topcem Pronto** for example).
- EXISTING FLOOR AND WALL COVERINGS: existing ceramic, stone, terracotta etc. floor and wall coverings must be well bonded to the substrate and must be completely free of substances that could affect adhesion, such as grease, oil, wax, varnish, etc. To remove traces of material that may affect the adhesion of **Mapelastich Turbo**, clean the surface with a mixture of water and 30% caustic soda, and then thoroughly rinse with clean water to eliminate all traces of the cleaning solution. Alternatively, roughen the surface with suitable power tools and remove all traces of dust.

### Waterproofing construction features

In the waterproofing sector, more than in any other sector, it is essential that particular attention is paid to construction features. For this reason it is important to use products from the **Mapeband** and **Drain** ranges together with **Mapelastich Turbo** when waterproofing such features.

**Mapeband TPE** is used to seal structural joints and all other breaks in the covering that are subjected to repeated movements, while **Mapeband**, **Mapeband Easy** and **Mapeband SA** are used to waterproof fillet joints between horizontal and vertical elements and check joints. Special kits are also available from the **Drain** range to seal drainage points. It is absolutely imperative that special care is taken in these critical areas after levelling off and cleaning the substrate and before applying the cementitious waterproofing mortar.

### Preparation of the mortar

Pour component B (liquid) into a suitable clean container and slowly add component A (powder) while stirring with a mixer. Carefully mix the blend for several minutes then remove any powder which has stuck to the sides and bottom of the container. Keep mixing until completely blended (minimum 3 minutes).

A mechanical mixer at low speed is recommended for this operation to prevent entraining too much air into the mix. Avoid mixing the product manually.

### Application of the mortar

**Mapelastich Turbo** remains workable in the tub for more than 45 minutes.

After preparing the surface, apply a skim coat of **Mapelastich Turbo** using the smooth side of a trowel. Apply a layer of product over the skim coat while it is still wet with the edge of a notched trowel and lay **Mapenet 150** alkali-resistant, glass fibre reinforcing mesh over this layer. After positioning the mesh, go over the surface with the smooth side of the trowel. When the first layer of **Mapelastich Turbo** has hardened (around one hour in good weather conditions), apply a second layer using the smooth side of the trowel so that it completely covers the reinforcing mesh.

To further improve the extension at failure and crack-bridging properties of **Mapelastich Turbo**, we recommend using **Mapetex Sel** non-woven, perforated polypropylene fabric instead of **Mapenet 150**. Apply a first layer of **Mapelastich Turbo** at least 1 mm thick with the smooth side of a trowel and embed **Mapetex Sel** in this layer, pressing down on it with the smooth side of the trowel so that it is completely embedded. Once the first layer has completely hardened apply the second layer so that it completely covers the fabric, then go over the surface with the smooth side of the trowel. After applying the second layer of **Mapelastich Turbo**, the waiting time before bonding the covering varies from 3 to 16 hours, depending on the surrounding conditions.

### Bonding coverings on Mapelastich Turbo

BALCONIES AND TERRACES:





- use a C2 class cementitious adhesive such as **Keraflex**, **Keraflex Maxi S1** or **Ultralite S1**, or alternatively a C2F class adhesive such as **Granirapid**, **Elastorapid** or **Ultralite S1 Quick** for rapid bonding work and at low temperatures;
- grout the joints with a CG2 class cementitious product such as **Keracolor FF** or **Keracolor GG** mixed with **Fugolastic** or alternatively **Ultracolor Plus**;
- seal joints with a specific MAPEI flexible sealant (such as **Mapeflex PU45 FT**, **Mapeflex AC** or **Mapesil LM**. Other types of sealant may be required, depending on specific service conditions. please contact MAPEI Technical Services Department).

#### SWIMMING POOLS:

- bond ceramic tiles using a C2 class cementitious adhesive (**Keraflex**, **Keraflex Maxi S1** or **Ultralite S1**) or a C2F class rapid adhesive (**Granirapid**, **Elastorapid** or **Ultralite S1 Quick**). For mosaic on the other hand, use **Adesilex P10** + **Isolastic** mixed with 50% water (class C2ES1);
- grout the joints with a CG2 class cementitious product (**Keracolor FF/Keracolor GG** mixed with **Fugolastic** or **Ultracolor Plus**) or with an RG class epoxy product from the **Kerapoxy** range;
- seal the joints with **Mapesil AC** silicone sealant.



Application of the first layer of Mapelastastic Turbo



Placing Mapenet 150 on the first layer of Mapelastastic Turbo while wet



Placing Mapenet Sel on the first layer of Mapelastastic Turbo while wet



The second layer of Mapelastastic Turbo over the first layer reinforced with Mapetex Sel



Bonding tiles with Elastorapid



Grouting tiles with Ultracolor Plus

## CLEANING

Because of the high adhesion of **Mapelastastic Turbo**, including on metals, we recommend cleaning tools with water before the mortar starts to set. Once hardened, cleaning must be carried out mechanically.

## CONSUMPTION

Approximately 2.4 kg/m<sup>2</sup> (for two coats of product with reinforcement embedded between the two layers).

**N.B.:** the consumption figures indicated are for a seamless layer on a flat surface and are higher if applied on uneven substrates.

## PACKAGING

36 kg Kit (A+B):

- component A: 20 kg bag;
- component B: 16 kg canister.

18 kg Kit (A+B):

- component A: 10 kg bag;
- component B: 8 kg canister.

## STORAGE

**Mapelastico Turbo** component A may be stored for 12 months in its original packaging in a dry place. This product complies with the prescriptions of Reg. (EC) N. 1907/2006 (REACH) - Annex XVII, article 47.

**Mapelastico Turbo** component B may be stored for 24 months.  
Store **Mapelastico Turbo** in a dry place at a temperature of at least +5°C.

## SAFETY INSTRUCTIONS FOR PREPARATION AND APPLICATION

**Mapelastico Turbo** component A is not considered as dangerous according to the current regulation regarding the classification of mixtures. Contains special hydraulic binders that when in contact with sweat or other body fluids causes slightly irritant alkaline reactions.

**Mapelastico Turbo** component B is not considered as dangerous according to the current regulation regarding the classification of mixtures. It is recommended during use to wear protective gloves and goggles and to take the usual precautions for handling chemical products. In case of contact with eyes or skin wash immediately with plenty of water and seek medical attention.

For further and complete information about the safe use of our product please refer to the latest version of our Material Safety Data Sheet.

PRODUCT FOR PROFESSIONAL USE.

**Mapelastico Turbo: two-component elastic cementitious membrane for waterproofing balconies and terraces in compliance with the requirements of EN 14891 and EN 1504-2 coating (C), principles PI, MC and IR**

### TECHNICAL DATA (typical values)

#### PRODUCT IDENTITY

	comp. A	comp. B
Consistency:	powder	liquid
Colour:	light brown	white
Bulk density (g/cm <sup>3</sup> ):	1.3	–
Density (g/cm <sup>3</sup> ):	–	1.04
Dry solids content (%):	100	54

#### APPLICATION DATA (at +20°C and 50% R.H.)

Colour of mix:	brown
Mixing ratio:	component A : component B = 1 : 0.8
Consistency of mix:	fluid
Density of mix (kg/m <sup>3</sup> ):	1400
Application temperature range:	from +5°C to +35°C
Pot life of mix:	approx. 45 mins.
EMICODE:	EC1 R Plus - very low emission

FINAL PERFORMANCE (thickness 2.0 mm)			
Performance characteristics	Test method	Requirements according to EN 1504-2 coating (C) principles PI, MC and IR	Performance figures Mapelastic Turbo with reinforcement
Adhesion to concrete – after 24 hours at +5°C and 50% R.H. (N/mm <sup>2</sup> ):	EN 1542	not required	≥ 0.7
Adhesion to concrete – after 28 days at +20°C and 50% R.H. (N/mm <sup>2</sup> ):		For flexible systems: with no traffic: ≥ 0.8 with traffic: ≥ 1.5	≥ 1.5
Thermal compatibility to freeze-thaw cycles with de-icing salts, measured as adhesion (N/mm <sup>2</sup> ):			≥ 1.0
Adhesion to concrete – after 7 days at +20°C and 50% R.H. + 21 days in water (N/mm <sup>2</sup> ):		not required	≥ 0.7
Static crack-bridging expressed as maximum crack width – after 28 days at +20°C and 50% R.H. (mm):	EN 1062-7	class A1 (0.1 mm) to class A5 (2.5 mm)	Class A4 (+20°C) (>1.25 mm)
Permeability to water vapour expressed as capillary absorption (kg/m <sup>2</sup> ·h <sup>0.5</sup> ):	EN 1062-3	< 0.1	< 0.05
Reaction to fire:	EN 13501-1	Euroclass	E
		<b>Requirements according to EN 14891</b>	<b>Performance figures Mapelastic Turbo with reinforcement</b>
Impermeability to water under pressure (1.5 bar for 7 days of positive lift):	EN 14891-A.7	no penetration	no penetration
Crack-bridging ability at +23°C (mm):	EN 14891-A.8.2	≥ 0.75	1.25
Crack-bridging ability at -5°C (mm):	EN 14891-A.8.3	≥ 0.75	0.80
Initial adhesion (N/mm <sup>2</sup> ):	EN 14891-A.6.2	≥ 0.5	0.90
Adhesion after immersion in water (N/mm <sup>2</sup> ):	EN 14891-A.6.3	≥ 0.5	0.60
Adhesion after application of heat source (N/mm <sup>2</sup> ):	EN 14891-A.6.5	≥ 0.5	1.40
Adhesion after freeze-thaw cycles (N/mm <sup>2</sup> ):	EN 14891-A.6.6	≥ 0.5	0.80
Adhesion after immersion in basic water (N/mm <sup>2</sup> ):	EN 14891-A.6.9	≥ 0.5	0.70
Adhesion after immersion in chlorine water (N/mm <sup>2</sup> ):	EN 14891-A.6.8	≥ 0.5	0.65

Adhesion values according to EN 14891 measured on **Mapelastic Turbo** and C2-type cementitious adhesive in compliance with EN 12004

## WARNING

Although the technical details and recommendations contained in this product data sheet correspond to the best of our knowledge and experience, all the above information must, in every case, be taken as merely indicative and subject to confirmation after long-term practical application; for this reason, anyone who intends to use the product must ensure beforehand that it is suitable for the envisaged application. In every case, the user alone is fully responsible for any consequences deriving from the use of the product.

Please refer to the current version of the Technical Data Sheet, available from our website [www.mapei.com](http://www.mapei.com)

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