

# Mapelastic Turbo [NA]

Premium, Rapid-Drying, Waterproofing and Crack-Isolation Membrane



## DESCRIPTION

*Mapelastic® Turbo* [NA] is a two-component, rapid-drying, cementitious-binder-based membrane with fine-grained selected aggregates, special admixtures and synthetic polymers in water dispersion for interior and exterior installations under ceramic tile or stone in residential, commercial and industrial intermittent wet or submerged environments. Applied easily with a roller or brush, *Mapelastic Turbo* [NA] provides an excellent barrier to protect adjacent rooms and floors below from water damage. *Mapelastic Turbo* [NA] exceeds ANSI A118.10-LV and ANSI A118.12 standards and is compatible with polymer-modified cement-based mortars (ANSI A118.4 or better) or epoxy mortars (ANSI A118.3).

## FEATURES AND BENEFITS

- For waterproofing and crack isolation
- Rapid-setting: Tiling in as little as 90 minutes
- Flood-test after 3 to 4 hours
- Works on substrates where moisture is present up to 12 lbs. (5.44 kg)
- Easy-mixing properties
- Pot life of greater than 45 minutes
- Durable and flexible, bonding to a wide range of surfaces
- Smooth consistency and flowable

- Applied with roller or brush – easy to install over flat, curved and irregular surfaces
- Prevents in-plane floor cracks up to 1/8" (3 mm) from transmitting through tile and stone
- Compatible with MAPEI's *Reinforcing Fabric* and *Mapeband*<sup>™</sup> accessories, both of which are optional
- Low-odor formulation; great for confined spaces

## INDUSTRY STANDARDS AND APPROVALS

- ANSI: Exceeds A118.10-LV standard (Liquid Applied Waterproofing Membranes for Thin-Set Ceramic Tile) and A118.12 high-performance standard (Crack-Isolation Membranes for Thin-Set Ceramic Tile)
- ASTM: C627 (Robinson) service rating for "Extra Heavy"
- ASTM: E96, Procedure E – Desiccant Method at 100°F (38°C), at 90% relative humidity meeting requirements of < 0.5 perms
- IAPMO-listed for shower pan liners
- IAPMO File #3996
- ICC Evaluation Service Report ESR 3474

## WHERE TO USE

- Interior/exterior floors, walls, countertops and ceilings of residential (homes, apartments and condominiums), commercial (airports, malls, office buildings, restaurants, fountains and pools) and industrial (dairies, breweries and food-processing plants) applications
- Shower pans, showers, tub and shower surrounds; bathrooms; kitchens; food prep, dishwashing, hospitality, servery and cafeteria areas; countertops; and laundry rooms
- Submerged applications such as swimming pools, spas, fountains and water features (completely covered by ceramic tile)
- Ideal for multi-family or multi-story building where high-quality waterproofing is imperative to prevent water damage in rooms adjacent or below
- Cantilevered balconies and decks over unoccupied space (see the "Limitations" section below)
- Balconies, decks and terraces over occupied space when used in conjunction with a primary waterproofing membrane
- Steam rooms and steam showers (refer to TCNA Handbook's sections SR613 and SR614 or TTMAC 319SR and 321SR).
- Meets ASTM E96, Procedure E, for a low-perm waterproofing membrane
- In-plane crack isolation up to 1/8" (3 mm)
- Interior/exterior building facades
- MAPEI's *Reinforcing Fabric* is available but is optional for use on coves, corners and field applications.

## LIMITATIONS

- *Mapelastic Turbo* [NA] is not for use on in-plane cracks beyond 1/8" (3 mm) or where vertical out-of-plane movement occurs.
- Only apply *Mapelastic Turbo* [NA] if the temperature is above 40°F (4°C).
- Do not use over substrates containing asbestos, dimensionally unstable substrates such as hardwood flooring, particleboard, oriented strand board (OSB), Masonite or metal. See the "Suitable Substrates" section below.
- Do not use over plank flooring, treated plywood, Lauan, vinyl, glazed tile, laminate, fiberglass or epoxy floors.

- Do not use where excessive substrate moisture and/or where negative hydrostatic pressure exists. Maximum allowable moisture is 12 lbs. per 1,000 sq. ft. (5.44 kg per 92.9 m<sup>2</sup>) per 24 hours per ASTM F1869.
- Do not use as a single-application roof-deck membrane, wear surface or primary waterproofing membrane on balconies or decks directly over occupied space.
- When used over young (green) concrete, the concrete must have cured for at least 7 days and be suitable to support tile installation traffic as determined by the project design professional, construction manager or general contractor.
- Elevated substrate moisture can extend drying/curing times.
- Do not use when hydrostatic pressure exists.
- Do not allow direct contact with solvent-based materials.
- Do not use premixed mastics to set tile over *Mapelastic Turbo* [NA].
- Use only a MAPEI epoxy or urethane setting material when installing moisture-sensitive natural stone or agglomerates over *Mapelastic Turbo* [NA].

Consult MAPEI's Technical Services Department for installation recommendations regarding substrates and conditions not listed.

## SUITABLE SUBSTRATES

### Interior and exterior

- Concrete
- Young concrete (at least 7 days)
- Masonry walls of cement block or brick
- Cement mortar beds and leveling coats
- Cement backer units (CBUs) (see manufacturer's installation guidelines)

### Interior only

- Gypsum wallboard (walls only, in approved application areas only)
- Radiant-heated substrates
- Unglazed ceramic tile and cement terrazzo floors, and gypsum underlayments with a minimum of 2,500 psi (17.2 MPa) in compressive strength
- Note: Existing unglazed ceramic tile must be abraded, and existing cement terrazzo must be mechanically profiled. Use of a bond-promoting primer is an alternative to abrasion and profiling. Both must be skimcoated with an appropriate MAPEI patching or skimcoating compound.
- Plywood underlayments must be a Group 1 exterior-grade plywood CC-plugged or better, conforming to APA classification and U.S. Product Standard PS 1-95 or a "SELECT" or (SEL-TF) CANPLY classified exterior-grade plywood conforming to CSA-0121 standard for Douglas fir for direct-bond applications (interior, residential and light commercial floors and countertops in dry conditions only).
- Epoxy terrazzo must be mechanically profiled
- PVC, copper, brass and stainless-steel pipe penetrations (abraded by sandpaper)
- Gypsum underlayment or lightweight concrete\*

\* Follow gypsum or lightweight concrete manufacturer's recommendation regarding priming and/or special surface preparation before installing underlayment membrane. Reference MAPEI's technical bulletin "Tiling over gypsum."

### Tile Council of North America (TCNA) Statement on Maximum Allowable Deflection

"Floor systems, whether wood framed or concrete, over which the tile will be installed... shall be in conformance with the International Residential Code (IRC) for residential applications, the International Building Code (IBC) for commercial applications, or applicable building codes. The owner should communicate in writing to the project design professional and general contractor the intended use of the tile installation, including in-service loads or information. Project design professional and general contractor must make necessary allowances for the expected live load, concentrated loads, impact loads and dead loads, including maximum allowable loads during construction and maintenance. The tile contractor shall not be responsible for problems resulting from any structural subfloor installation not compliant with applicable building codes, unless structural subfloor was designed and installed by the tile contractor."

## SURFACE PREPARATION

- All substrates must be structurally sound, stable, dry, clean and free of any substance or condition that may reduce or prevent proper adhesion.
- Do not use chemicals (acid etching or stripping) to prepare approved substrates.
- Concrete substrates should have a concrete surface profile (CSP) of #2 per the International Concrete Repair Institute (ICRI). Mechanically clean and profile by diamond-cup grinding or other engineer-approved method when necessary.
- When concrete requires more mechanical preparation, the profile will typically increase. In such cases, the surface can be made smooth by applying coats of *Mapelastic Turbo* [NA] not exceeding 5/64" (2 mm) per coat.
- Substrate and room temperatures must be 40°F to 95°F (4°C to 35°C) during and at least 24 hours after application.
- See the "Surface preparation requirements" reference guide in the Tile & Stone Installation Systems section of MAPEI's Website.

## MIXING for roll/brush applications

Before starting, take appropriate safety precautions. See the Safety Data Sheet for details.

1. Mix in full units only according to the following premeasured ratios: 1 U.S. gal. (3.79 L) of latex, plus 11 lbs. (4.39 kg) of powder (components of small kit); 2 U.S. gals. (7.57 L) of latex, plus 22 lbs. (9.98 kg) of powder.
2. Pour all of the *Mapelastic Turbo* [NA] latex (Part B) into a clean mixing container. Gradually add all of the *Mapelastic Turbo* [NA] powder (Part A) while mixing with a low-speed drill (at about 300 rpm).
3. Mix for 2 to 3 minutes to a smooth, homogenous, lump-free consistency. Do not overmix, which will trap air and affect waterproofing integrity.
4. When complete units are mixed, the mortar will be somewhat fluid. If a stiffer mix is preferred for vertical applications, the latex quantity can be reduced by up to 10% by volume.
5. Mixing of entire units is recommended. If smaller mixes are desired, mix by volume at a ratio of 1 part of powder to 1 part of liquid.
6. Do not dilute with any other material.

7. Promptly wash tools with water after each mix.

## MIXING for gap-filling applications

*Mapelastic Turbo* [NA] can be mixed to a patching consistency for use in filling cracks and gaps in corners and coves by forcing the material into the crack, finishing smooth with a trowel and letting it dry.

1. To achieve a patching consistency, mix a small amount of the powder and latex by volume at a ratio of 2 parts of powder per 1 part of latex.
2. Fill gaps with a margin trowel or patching knife to maximum of 1/2" (12 mm).
3. MAPEI's *Reinforcing Fabric* may be used with *Mapelastic Turbo* [NA] in these areas. See the application instructions directly below for pre-treating cracks, corners and coves (floor/wall intersections).

## PRODUCT APPLICATION

Read all installation instructions thoroughly before installation.

- Fill all cracks, control joints and gaps in corners and coves that are greater than 1/32" (1 mm) with an appropriate filler material. Force material into cracks/joints/gaps and finish smooth with a trowel. Let dry.
- Do not use *Mapelastic Turbo* [NA] for thick layers (more than 5/64" or 2 mm per layer).
- MAPEI's optional *Reinforcing Fabric* may be used with *Mapelastic Turbo* [NA] in any of the areas shown below (see the "Optional use of MAPEI's *Reinforcing Fabric*" section below).
- MAPEI's *Mapeband* accessories (cove roll and drain flashing) also may be used with *Mapelastic Turbo* [NA] in any of the areas shown below (see the "Optional Use of *Mapeband* Accessories" section below).

### Pre-treating cracks, corners and coves (floor/wall intersections)

1. For expansion and control joints, see the "Expansion and Control Joints" section below.
2. Apply *Mapelastic Turbo* [NA] liquid 6" (15 cm) on both sides of cracks, corners and coves with a paintbrush or roller, and let dry.
3. Apply a second coat and let dry.

### Pre-treating drains

1. Review drain manufacturer's instructions for waterproof membrane installation in conjunction with these instructions.
2. Fill space between drain pipe and substrate with appropriate expansion joint materials (typically foam backer rod and sealant).
3. For drains with bolt-down collar and weep holes, loosen and remove bolts from drain flange. Abrade drain flange with sandpaper, and clean and dry thoroughly.
4. With paintbrush, apply a liberal coat over and around drain flange. Let dry.
5. Apply a second coat and let dry.

### Pre-treating openings around pipes and other penetrations

1. Pack/fill the openings/spaces between drain pipe and substrate with appropriate expansion joint materials (typically foam backer rod and sealant).
2. Apply *Mapelastic Turbo* [NA] with brush around and up onto floor or wall penetration and let dry.
3. Apply a second coat and let dry.



Completing the main area

1. Apply *Mapelastic Turbo* [NA] to entire area to be waterproofed (including previously coated areas such as cracks, drains and penetrations) using a 3/8" (10 mm) nap roller to 20 mils in wet film thickness and let it dry.
2. Apply a second coat at 10 to 15 mils in wet film thickness to the entire installation after the first coat has dried 50 to 60 minutes. Let dry 60 to 90 minutes before installing tile or stone.
3. Final dry thickness of first and second coats combined in the main area should be about 30 mils at minimum.
4. Inspect and, as needed, recoat pinholes or areas not completely covered. Let dry.
5. Apply bead of silicone or urethane sealant around drain flange at drain throat to join *Mapelastic Turbo* [NA] to the drain assembly. Leave no voids.
6. Bolt down collar to drain flange.
7. Where *Mapelastic Turbo* [NA] coating ends on any penetration, apply a bead of silicone or urethane sealant.

## CLEANUP

- Remove excess *Mapelastic Turbo* [NA] (while fresh) with damp sponge, soap and warm water. Any completely dried material may be mechanically removed.

## PROTECTION

- Provide for dry, heated storage on site and deliver materials at least 24 hours before work begins.
- Do not store *Mapelastic Turbo* [NA] powder or latex in direct sunlight.
- Do not allow latex to freeze.
- Protect installation from rain and freezing for 4 hours.
- Protect installed *Mapelastic Turbo* [NA] from contamination, excessive heat and extended sun exposure until tile or stone is installed.

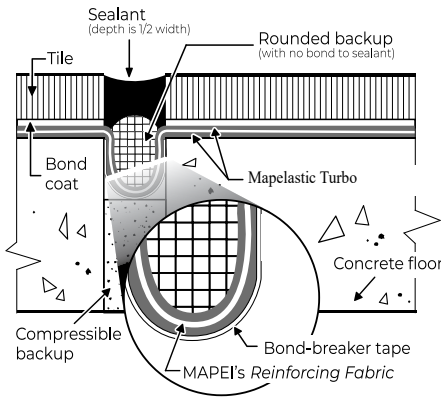
## FLOOD-TESTING per ASTM D5957

If flood-testing is required, allow last coating of *Mapelastic Turbo* [NA] to cure at least 3 to 4 hours at 73°F (23°C) and 50% relative humidity. Actual curing time depends on air and substrate temperature, substrate porosity and humidity. Expect shorter drying times in warmer conditions, and longer drying times in cooler conditions.

## INSTALLING CERAMIC TILE OR NATURAL STONE

1. *Mapelastic Turbo* [NA] is ready to receive thin-set mortars for tile or stone in as little as 90 minutes.
2. Let *Mapelastic Turbo* [NA] cure for at least 4 hours before installing large-and-heavy-tile mortars (for large tile or stone), screeds (for leveling floors) or epoxy adhesives.
3. For tile and stone installations, use a MAPEI polymer-modified mortar meeting ANSI A118.4 ANSI A118.11, or ANSI A118.15 or an epoxy mortar meeting ANSI A118.3.

## EXPANSION AND CONTROL JOINTS Installation with MAPEI's *Reinforcing Fabric*:



1. Provide for expansion and control joints as specified per TCNA Method EJ171 or TTMAC Specification Guide 09 30 00, Detail 301MJ. Do not cover expansion joints with mortar.
2. If waterproofing integrity is required in expansion and control joints, provide it per the above diagram. MAPEI's *Reinforcing Fabric* or *Mapeband* can be embedded into the wet *Mapelastic Turbo* [NA], allowed to dry and filled with appropriate joint sealant or an expansion molding system.
3. Protect tilework with metal strips (edge metal) along both edges of structural building expansion joints.

Contact MAPEI's Technical Services Department for more information.

## OPTIONAL USE OF MAPEI's *REINFORCING FABRIC*

### Selecting fabric size (see packaging chart)

- For coves (floor/wall intersections), allow for 2" (5 cm) of fabric on the floor and 4" (10 cm) up the wall. For cracks, control joints and vertical corners, allow for 3" (7.5 cm) of fabric on each side.
- For drains, cut desired fabric sizes from the 38" (0.97-m) wide roll. For floor or wall penetrations, use 6" (15-cm) wide, 38" (97-cm) wide or a combination of both.
- For large areas, the 38" (0.97-m) wide roll is recommended.

### Cutting fabric to size

- Cut all required pieces. Set aside.

### Pre-treating cracks, control joints, corners, coves, drains, and floor and wall penetrations

1. Apply *Mapelastic Turbo* [NA] as described in the "Pre-treating" sections above.
2. Lay pre-cut pieces of fabric into wet *Mapelastic Turbo* [NA]. Use a brush to press fabric into corners until the liquid comes through fabric. Work out any wrinkles or bubbles.
3. While the fabric is wet, apply additional *Mapelastic Turbo* [NA] over the fabric until it is completely covered to create void-free surface. Let it dry.
4. Apply a second coat and let it dry.

Installing fabric on the main area (optional step)

- 1. Apply the first coat of *Mapelastic Turbo* [NA] (including areas previously coated) using a 3/8" (10-mm) nap roller.
- 2. Place fabric into wet *Mapelastic Turbo* [NA] on the floor. Using a roller, apply pressure to fabric, working out wrinkles or bubbles while forcing *Mapelastic Turbo* [NA] to come through fabric. Overlap seams and ends of fabric 2" (5 cm). While the fabric is still wet, apply additional *Mapelastic Turbo* [NA] over the fabric until it is completely covered, creating a void-free surface. Let it dry completely.
- 3. Apply a second coat of *Mapelastic Turbo* [NA] to the entire area. Let it dry.
- 4. Give a final inspection, looking for pinholes, areas not completely covered and other defects.
- 5. Recoat as needed. Let it dry.
- 6. Apply a bead of commercial-grade silicone or urethane sealant between the membrane and the drain flange, about 1/2" (12 mm) in from the drain opening.
- 7. Bolt the drain collar into place while sealant is still fresh.
- 8. Install ceramic tile or natural stone per the "Installing ceramic tile or natural stone" section above.

OPTIONAL USE OF MAPEBAND ACCESSORIES

- 1. MAPEI's *Mapeband* accessories (cove roll and drain flashing) are waterproof, vapor-proof thin, elastic, deformable, rubber-coated fabric pieces that are fully compatible with *Mapelastic Turbo* [NA] and provide the ultimate in "change-of-plane" waterproofing protection for coves, corners and drains. *Mapeband* accessories are ideal for environments requiring waterproofing but also where temperature extremes, freeze/thaw conditions, vibrations, etc., can cause waterproofing problems.
- 2. *Mapeband* cove roll can be used in place of MAPEI's *Reinforcing Fabric* on coves, corners and control joints. The "felt side" should face into the corner.
- 3. *Mapeband* drain flashing can be used in place of MAPEI's *Reinforcing Fabric* on drains. The "felt side" should face down.
- 4. See *Mapeband*'s Technical Data Sheet for installation details.

Product Performance Properties

Laboratory Tests	Results
pH	10 to 11
Viscosity Pa.S	20 to 70
Density (mixed)	12.35 lbs. per U.S. gal. (5.6 kg per 3.79 L)

Shelf Life and Product Characteristics

before mixing

Shelf life, when stored in original, unopened packaging at 73°F (23°C)	Part A powder: 1 year Part B liquid: 2 years
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Physical state	Powder and liquid
Color	Powder: Light brown Liquid: White
Shelf life of optional <i>Reinforcing Fabric</i>	5 years when stored in original unopened packaging at 73°F (23°C)
Storage	Store in cool, dry place

Protect containers from freezing in transit and storage. Provide for heated storage on site and deliver all materials at least 24 hours before work begins.

### Application Properties

at 73°F (23°C) and 50% relative humidity

Flash point (Seta flash)	Nonflammable
VOC content (SCAQMD Rule 1113)	< 100 g per L
Typical VOC content per SCAQMD Rule 1113 testing methods	Powder: 0 g per L Latex: 3 g per L
Pot life	45 minutes
Drying time between first and second coats	50 to 60 minutes
Drying time after second coat (before applying ceramic tile or stone)	60 to 90 minutes
Drying time before flood-testing	After 3 to 4 hours
Final dry thickness	About 30 mils at minimum
Freeze/thaw stability of Part B latex	Do not allow to freeze.

### ANSI A118.10 (Waterproofing Membranes for Thin-Set Ceramic Tile)

4.1) Fungus and Micro-Organism Resistance	Pass
4.2) Seam Strength	Exceeds
4.3) Breaking Strength	Exceeds
4.4) Dimensional Stability	Exceeds
4.5) Waterproofness	Pass
5.3) 7-Day Shear Strength	Exceeds
5.4) 7-Day Water Immersion Shear Strength	Exceeds
5.5) 4-Week Shear Strength	Exceeds
5.6) 12-Week Shear Strength	Exceeds
5.7) 100-Day Water Immersion Shear Strength	Exceeds

## Packaging

Laboratory Tests
Kit: 20 lbs. (9.07 kg)
Part A powder: Bag, 11 lbs. (4.39 kg)
Pail B latex: Pail, 1 U.S. gal. (3.79 L)
Part A powder: Bag, 22 lbs. (9.98 kg)
Pail B latex: Jug, 2 U.S. gals. (7.57 L)

## Approximate Coverage\*

Product amount	Coverage (per 2 coats)
Small kit: 20 lbs. (9.07 kg)	70 sq. ft. (6.05 m <sup>2</sup> )
2 U.S. gals. (7.57 L) of latex, plus 22 lbs. (9.98 kg) of powder	140 sq. ft. (13.0 m <sup>2</sup> )

\*Coverage shown is for estimating purposes only. Actual jobsite coverage may vary according to substrate conditions, concrete profile and porosity, type of equipment used, thickness applied, handling and application procedures.

## RELATED DOCUMENTS

- Reference guide: "Surface preparation requirements" for tile and stone installation systems\*\*
- Technical bulletin: "Tiling over gypsum"\*\*\*

\*\*At [www.mapei.com](http://www.mapei.com)

## ADDITIONAL INFORMATION

Refer to the Safety Data Sheet (SDS) for specific data related to health and safety as well as product handling.

For information on MAPEI's commitment to sustainability and transparency, as well as how MAPEI products may contribute to green building standards and certification systems, contact [sustainability-durabilite@mapei.com](mailto:sustainability-durabilite@mapei.com).

## WARNING

The test results shown in the TECHNICAL DATA table were obtained in compliance with test methods and curing cycles, if applicable, defined in the industry standards referenced on the Technical Data Sheet. Please

note that the use of test procedures or methods other than those indicated in the table could lead to different values and that, in such cases, any liability of our company is excluded.

#### LEGAL NOTICE

The contents of this Technical Data Sheet ("TDS") may be copied into another project-related document, but the resulting document shall not supplement nor replace requirements per the TDS in effect at the time of the MAPEI product installation. For the most up-to-date TDS and warranty information, please visit our website at [www.mapei.com](http://www.mapei.com). **ANY ALTERATIONS TO THE WORDING OR REQUIREMENTS CONTAINED IN OR DERIVED FROM THIS TDS SHALL VOID ALL RELATED MAPEI WARRANTIES.**

Before using, the user must determine the suitability of our products for the intended use, and the user alone assumes all risks and liability. **ANY CLAIM SHALL BE DEEMED WAIVED UNLESS MADE IN WRITING TO US WITHIN FIFTEEN (15) DAYS FROM DATE IT WAS, OR REASONABLY SHOULD HAVE BEEN, DISCOVERED.**

## CONTACT INFORMATION

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Flooring: 1-800-992-6273

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1-800-361-9309

### Customer Service

1-800-42-MAPEI (1-800-426-2734)

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For the most current product data and BEST-BACKED<sup>SM</sup> warranty information,  
visit [www.mapei.com](http://www.mapei.com).

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