

Mapelastic WRB

Liquid-Applied, Vapor-Permeable, Water-Resistive Barrier



DESCRIPTION

Mapelastic® WRB is a single-component, liquid-applied air- and water-resistive barrier for vertical, above-grade exterior walls. *Mapelastic WRB* minimizes risk of condensation in wall from water vapor diffusion, thus increasing wall durability and the comfort of the building occupants. The rapid-drying formula is rain-resistant within 30 minutes of application under ideal conditions defined as 50°F (10°C) and rising in direct sunlight. *Mapelastic WRB* is ICC-AC AC212 approved, is NFPA 285 compliant in various assemblies and has been evaluated by ABAA for common wall assemblies. Adhered manufactured stone veneer and thin-brick units may be direct-bonded to the membrane when using a polymer-modified mortar meeting ANSI A118.15 over suitable substrates such as concrete masonry units, poured concrete walls, stucco basecoat and cement backerboard.

FEATURES AND BENEFITS

- Sheds water while allowing vapor passage
- Highly flexible: Bridges cracks up to 1/8" (3 mm) that may form in the substrate
- Rain-ready in 30 minutes under ideal conditions
- Freeze/thaw-resistant after cured
- One-coat application
- Excellent adhesion, remaining firmly bonded to the substrate
- Can be rolled, sprayed or trowel-applied
- NFPA 285 compliant in most wall assemblies

- Is an Air Barrier Association of America (ABAA) Evaluated Material and is part of an ABAA Evaluated Assembly
- SCS Global Services Indoor Advantage Gold certification

INDUSTRY STANDARDS AND APPROVALS

- ICC ES AC212: Acceptance Criteria for “Water-Resistive Coatings Used as Water-Resistive Barriers over Exterior Sheathing”
- NFPA 285: “Standard Fire Test Method for Evaluation of Fire Propagation Characteristics of Exterior Wall Assemblies Containing Combustible Components”
- ABAA-evaluated
- ASTM E2357: “Standard Test Method for Determining Air Leakage Rate of Air Barrier Assemblies”
- ASTM D1970: Nail sealability requirements
- ASTM E96: “Standard Test Methods for Gravimetric Determination of Water Vapor Transmission Rate of Materials”

WHERE TO USE

- Above-grade exterior walls when applied over suitable substrates

LIMITATIONS

- Do not expose membrane directly to sun or weather for more than 6 months. *Mapelastic WRB* has a maximum in-service temperature of 180°F (82°C).
- Always consult with a design professional to determine proper placement in a wall assembly. Follow all local building codes.
- Do not use below grade.
- Not for water immersion
- Do not apply on wet substrates.
- Do not apply to cement masonry units (CMUs) that contain dry block or any water-repellant additive.
- Not all wall assemblies are suitable for direct bonding of veneer units to *Mapelastic WRB* (such as gypsum sheathing, plywood and OSB).

SUITABLE SUBSTRATES

- Cement backerboard units (CBUs)
- CMUs
- Poured concrete walls
- Stucco basecoat
- Exterior-rated mortar render coats
- Exterior-grade glass mat gypsum sheathing*
- Exterior-grade plywood*
- OSB*

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

* Consult the panel manufacturer for specific installation recommendations and to verify compatibility for intended use.

SURFACE PREPARATION

- Ensure that all wall assemblies are dried and that the top of walls are protected from water intrusion before installing *Mapelastick WRB*. All substrates must be clean, dry and free of frost.

Concrete masonry units

- CMU joints should be struck full and flush, and mortar must be allowed to cure for at least 3 days before application of the *Mapelastick WRB* system. The maximum moisture content of a CMU wall must be 5.5% or lower. Use test method ASTM D4263 (Standard Test Method for Indicating Moisture in Concrete by the Plastic Sheet Method) or confirm with the general contractor that the wall is adequately dry to accept *Mapelastick WRB*.

Concrete

- Remove any loose aggregate and repair spalled areas or other deficiencies in the concrete with a suitable MAPEI repair mortar, such as *Planitop 330 Fast*. Allow concrete to cure for at least 7 days. Concrete substrates should have a concrete surface profile (CSP) of #2 per the International Concrete Repair Institute (ICRI).

Cement backerboard

- Remove laitance and dust following the manufacturer's recommendations before applying *Mapelastick WRB*.

Exterior-grade glass mat gypsum sheathing, plywood and OSB

- Panel joints should be securely fastened, flush and spaced according to all of the manufacturer's requirements and industry guidelines. All sheathing joints must be filled with a flashing sealant such as MAPEI's *Mapecflex® MS 40 NA*, extending approximately 1/2" (12 mm) on each side of the joint at a minimum thickness of 15 mils. *Mapelastick WRB* can be installed over the flashing sealant once the sealant is tack-free. These sheathings will require a 1/2" (12-mm) scratch coat and metal lath to create a suitable surface to direct bond veneer units to. You cannot bond veneer units directly to these substrates. All damaged sheathing must be repaired according to the manufacturer's requirements before application.

MIXING

Before product use, take appropriate safety precautions. Refer to the Safety Data Sheet for details.

- *Mapelastick WRB* is ready to use and requires no mixing unless separation is observed.

PRODUCT APPLICATION

Read all installation instructions thoroughly before installation.

- MAPEI's optional *Reinforcing Fabric* may be used with *Mapelastick WRB* in any of the areas shown below (see the "Optional Use of MAPEI's *Reinforcing Fabric*" section below).
 - All penetrations in the *Mapelastick WRB* system must be fully addressed. *Mapectex MS 40 NA* sealant or another suitable flashing sealant must be applied around all penetrations through the *Mapelastick WRB* membrane. The sealant may also be applied to all post-applied fasteners at the discretion of the installer or as part of the project design requirements.
1. *Mapelastick WRB* must be applied when the air and surface temperatures are a minimum of 40°F (4°C) and rising, and a maximum of 92°F (32°C). At temperatures of 50°F (10°C) and rising in direct sunlight, *Mapelastick WRB* can accept moderate rain 30 minutes after application with no adverse effects. At colder temperatures and or damp conditions, curing will be extended and installation prior to expected rainfall should be avoided. *Mapelastick WRB* will fully cure in 24 hours at 70°F (21°C) with 50% relative humidity.
 2. Apply with a standard roller, power roller, brush or airless sprayer.
 3. Substrate defects or other voids in sheathing surface must be treated with a flashing sealant such as MAPEI's *Mapelastick MS 40 NA*. For manufactured-stone veneer applications, substrates must be structurally sound, stable and rigid enough to support the intended finish. Substrate deflection under all live, dead and impact loads – including concentrated loads – must not exceed L/600 where L equals the span length.
 4. The system should be inspected for damage.
 5. Repairs to damaged areas should be made by first removing any unbonded membrane and then installing *Mapelastick WRB* for a minimum of 6" (15 cm) past the damaged area.
 6. After installation of the membrane to the vertical substrate, more material should be added if pinholes or blisters form.
 7. Apply at a wet film thickness (WFT) of 50 mils to get a dry film thickness (DFT) of 25 mils.
 8. *Mapelastick WRB* can be used as flashing at the jambs and the head after pre-treating the interface between the sheathing and framing with *Mapectex MS 40 NA*.
 9. For spray applications: Use a pneumatic or airless sprayer with a working pressure of 3,500 psi and a 45:1 lower unit capable of delivering about 3 U.S. gals. (11.4 L) per minute. Typical spray equipment would be a Graco 733/833 (or similar) with a hose combination of 1/2" and 3/8" (12 mm and 10 mm) and tip sizes ranging from 0.035 to 0.039. Consult MAPEI's Technical Services Department for additional details on spray equipment.

OPTIONAL USE OF MAPEI'S REINFORCING FABRIC

- Select the fabric size from the packaging chart on the Technical Data Sheet (TDS) of *Reinforcing Fabric*.
- For wall penetrations, use 6" (15-cm) wide, 38" (97-cm) wide or a combination of both.
- For large areas, the 38" (97-cm) wide roll is recommended. Cut fabric to size.

Installing over cracks, corners and wall penetrations

1. Cut all required pieces. Set aside. Pretreat cracks, corners and wall penetrations.
2. Apply *Mapelastick WRB* to the area to be covered with fabric.
3. Lay pre-cut pieces of fabric into wet *Mapelastick WRB*. Use a brush to press fabric into corners until liquid comes through the fabric. Work out any wrinkles or bubbles.

4. While the fabric is wet, apply additional *Mapelastick WRB* over it until it is completely covered to create void-free surface. Let it dry completely.
5. Apply a second coat and let it dry.

Installing treated fabric on the main wall area

1. Apply the first coat of *Mapelastick WRB* (including areas previously coated) using a 3/8" (10-mm) nap roller or airless spray equipment.
2. Place the fabric into wet liquid. Using a roller, apply pressure to the fabric, working out wrinkles or bubbles while forcing *Mapelastick WRB* to come through the fabric. Overlap the seams and ends of the fabric by 2" (5 cm). While the fabric is still wet, apply additional *Mapelastick WRB* over the fabric until it is completely covered, creating a void-free surface. Let it dry completely.
3. Apply a second coat of *Mapelastick WRB* to the entire area. Let it dry.
4. Give a final inspection, looking for pinholes as well as areas not completely covered and other defects.
5. Recoat with *Mapelastick WRB* as needed. Let it dry completely.

CLEANUP

- Use mild detergent and water to clean tools and equipment while the product is still wet.

Product Performance Properties

Laboratory Tests	Results
Crack resistance – ANSI A118.12, Sec 5.4	Pass up to 1/8" (3 mm)
Pull-off adhesion – ASTM D7234	
7 days to ISO block	323 psi (2.23 MPa)
14 days to ISO block	432 psi (2.98 MPa)
Mold growth – ASTM D5590	Pass
Freeze/thaw resistance – ASTM D2243-20	Pass
Freeze/thaw resistance – ICC AC212, Sec 4.2	Pass
Water resistance – ICC AC212, Sec 4.3	Pass
Water penetration – ICC AC212, Sec 4.5; ASTM E331	Pass
Tensile strength – ICC AC212, Sec 4.1; ASTM C297 for PVC, CMUs and aluminum	Pass
Shear test – ASTM 482	
7 days	> 70 psi (0.48 MPa)
28 days	> 380 psi (2.62 MPa)
Water vapor permeance (ASTM E96 at 73°F [23°C], 50% relative humidity)	
Procedure A Desiccant Method	0.97 perms
Procedure B Water Method	17.0 perms
Air leakage (membrane) – ASTM E217	< 0.02 L/s.m. ²

Air leakage through assembly – ASTM E2357	Pass
Elongation – ASTM D412, Die C	> 250%
Tensile strength – ASTM D412, Die C	100 psi (0.69 MPa)
Nail sealability – ASTM D1970, Sec 8.9	Pass
Flame spread – ASTM E84	Class A
Smoke developed – ASTM E84	Class A
VOC content (SCAQMD Rule 1113)	<100 g per L
Typical VOC content per SCAQMD Rule 1113 testing methods	42 g per L

Shelf Life and Product Characteristics

Shelf life	1 year when stored in original, unopened packaging in a dry environment at between 40°F and 90°F (4°C and 32°C)
Physical state	Liquid
Color	Green
Storage	Store off the ground and protected from moisture, freezing and extreme heat
Thickness, nominal	50 mils WFT or 25 mils DFT
Application temperature	A minimum of 40°F (4°C) and rising, to a maximum of 92°F (32°C)
Curing time** at 70°F (21°C) with 50% relative humidity	24 hours

*** At colder temperatures and/or in damp conditions, the curing time will be longer.*

Packaging and Approximate Coverage***

Size	Coverage
Pail: 5 U.S. gals. (18.9 L)	160 sq. ft. (14.9 m ²) at 25 mils DFT

**** 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.*

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_USA@mapei.com (USA) or sustainability-durabilite@mapei.com (Canada).

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. **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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Customer Service

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For the most current product data and BEST-BACKEDSM warranty information,
visit www.mapei.com.
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