

Ultrabond ECO 977

Fast-Set Urethane Adhesive for Hardwood Flooring



DESCRIPTION

Ultrabond ECO® 977 is a fast-setting, 100%-solids, one-component, moisture-cured urethane adhesive specifically designed for the installation of domestic solid and engineered wood flooring. *Ultrabond ECO* 977 can also be used in elevated subfloor moisture conditions of up to 12 lbs. (5.44 kg) MVER and 95% relative humidity when a specific installation method and trowel notch configurations are used.

FEATURES AND BENEFITS

- Sets quickly to control wood placement
- 100%-solids formulation; moisture-cured and with no solvent added
- Low-odor formula with negligible volatile organic compound (VOC) content

WHERE TO USE

- Approved for use with domestic solid and engineered wood flooring of any width and length; finger block parquet; acrylic impregnated wood and laminated plank; reground rubber underlayments; and cork underlayments

LIMITATIONS

- Do not install over any substrates containing asbestos.

- For interior installations only
- Not recommended for flooring designed for nail-down installations only
- Not recommended for bamboo flooring (use MAPEI's *Ultrabond ECO 980*, *Ultrabond ECO 985* or *Ultrabond ECO 995*)
- Not recommended for exotic hardwood flooring
- Not recommended for prefinished cork flooring
- Install flooring only in areas recommended by the wood-flooring manufacturer.
- Do not apply over any adhesive residues, including cutback adhesive.
- Do not install when the moisture vapor emission rate (MVER) exceeds 5 lbs. per 1,000 sq. ft. (2.27 kg per 92.9 m²) per 24 hours, when using the anhydrous calcium chloride test (ASTM F1869), unless installed using the moisture-control method and trowel recommendations explained in the "Product Application" section below. Do not use this method if the MVER exceeds 12 lbs. per 1,000 sq. ft. (5.44 kg per 92.9 m²) per 24 hours.
- Do not install when the relative humidity (RH) of the concrete slab exceeds 80% (ASTM F2170), unless installed using the moisture-control method and trowel recommendations explained in the "Product Application" section below. Do not use this method when the relative humidity exceeds 95% RH.
- Do not install in areas with known hydrostatic moisture problems.
- Use only when the substrate temperature is between 50°F and 90°F (10°C and 32°C), and when the ambient relative humidity is between 20% and 80%.
- Do not install unless the surface temperature of the substrate is at least 5 degrees Fahrenheit (2.8 degrees Celsius) above the dew point.

SUITABLE SUBSTRATES

- Concrete at least 28 days old, installed per ASTM F710 guidelines
- Cement terrazzo
- Exterior-grade plywood and other approved wood substrates (per the wood-flooring manufacturer's recommendations)
- Existing ceramic tile
- Cement-based self-leveling underlayments and patching compounds. For installations using the moisture-control method, use subfloor preparation products resistant to high moisture.
- MAPEI acrylic, epoxy or polyurethane moisture-reducing or moisture-barrier membranes
- Primed gypsum underlayments that meet the requirements for compressive strength according to ASTM F2419
- Properly installed radiant-heating systems

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

SURFACE PREPARATION

- All substrates must be structurally sound, dry, solid and stable.
- The substrate should be clean and free of dust, dirt, oil, grease, paint, curing agents, concrete sealers, loosely bonded toppings, loose particles, and any other substance or condition that may prevent or reduce adhesion.
- Substrates must be flat to 3/16" in a 10-ft. span (4.5 mm in a 3.05-m span).
- Concrete and cement-based underlayments/patches must be cured and free of any hydrostatic and/or moisture problems.



- See the “Surface Preparation Requirements: Wood adhesives” reference guide in the Floor Covering Installation Systems section of MAPEI’s Website.

MIXING

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

- Ready to use; no mixing is necessary.

PRODUCT APPLICATION

Read all installation instructions thoroughly before installation. Refer to the wood-flooring manufacturer’s guidelines for acclimation requirements and complete installation instructions.

Direct Bonding Method

1. Select the appropriately notched trowel (see the “Approximate Coverage” chart below) and spread the adhesive evenly over the subfloor. Keep the trowel at a 45-degree angle to the subfloor and keep trowel ridges perpendicular to the direction of the board or plank.
2. Only apply as much adhesive as can be installed over within 15 to 30 minutes.
3. Install wood flooring in strict accordance with the wood-flooring manufacturer’s written instructions.

Moisture-Control Method

1. Select the appropriately notched trowel identified as suitable for use for high-moisture conditions (see the “Approximate Coverage” chart below).
2. Using the flat side of the trowel, key in the adhesive over the entire surface of the subfloor to ensure 100% coverage.
3. Using the notched side of the trowel, spread the adhesive consistently and evenly over the subfloor. Keep the trowel at a 45-degree angle to the subfloor and keep trowel ridges perpendicular to the direction of the board or plank.
4. Periodically check for monolithic adhesive layer to ensure 100% coverage over the subfloor and transfer to the back of the wood flooring. The 100% coverage is mandatory for applicability of the moisture-control warranty.
5. Only apply as much adhesive as can be installed within 15 to 30 minutes.
6. Install wood flooring in strict accordance with the wood-flooring manufacturer’s written instructions.

CLEANUP

- *Ultrabond ECO 977* is extremely difficult to remove when cured. Immediately clean any adhesive smudges from tools and the flooring material’s surface with *Ultrabond® Urethane Cleaner* while the adhesive is still fresh/wet.

PROTECTION

- Protect the installation from light traffic for at least 6 hours, and from heavy traffic for at least 12 hours.
- Building owners should be aware of the wood-flooring manufacturer’s guidelines for climate-control settings (temperature and humidity). These conditions must be monitored and kept constant to ensure the overall performance and long-term success of the installation.

Product Performance Properties

Laboratory Tests	Results
Solids content	100%
Density	10.5 lbs. per U.S. gal. (1.25 g per mL)
Flash point (Tag)	> 200°F (93°C)
VOC content (SCAQMD Rule 1168)	< 50 g per L
Typical VOC content per SCAQMD Rule 1168 testing methods	13 g per L

Shelf Life and Product Characteristics

Shelf life	1 year when stored in original, unopened packaging at 73°F (23°C)
Adhesive type	Moisture-cured polyurethane
Consistency	Smooth paste
Color	Tan
Storage conditions	50°F to 90°F (10°C to 32°C)

Protect containers from freezing in transit and storage. If frozen, material should not be stirred until it has completely thawed. 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% RH

Flash Time*	Working Time**	Adjustability Time***
0 minutes	30 to 50 minutes	1.5 to 2 hours

* Flash time is the recommended amount of time for a freshly applied adhesive to remain exposed to the air before the installation of floor covering.

** Working time is the maximum amount of time that an adhesive can remain exposed to the air and still effectively bond to the floor covering.

*** Adjustability time is the window of time during which the floor covering can be repositioned without compromising the bond of the adhesive.

Note: These time periods may vary based on temperature, humidity, substrate porosity, trowel size and jobsite conditions.

Packaging

Size
Metal pail, 4 U.S. gals. (15.1 L)

Approximate Coverage – Direct Bonding Method [†]

Flooring Type	Typical Trowel	Coverage
Reground rubber and cork underlayments	1/16" x 1/16" x 1/16" (1.5 x 1.5 x 1.5 mm), square-notch	75 to 95 sq. ft. per U.S. gal. (1.84 to 2.33 m ² per L)
Finger block parquet	1/8" x 1/8" x 1/8" (3 x 3 x 3 mm), square-notch	50 to 60 sq. ft. per U.S. gal. (1.22 to 1.47 m ² per L)
Wood flooring, < 1/2" (12 mm) thickness	3/16" x 5/32" (4.5 x 4 mm), V-notch	45 to 55 sq. ft. per U.S. gal. (1.10 to 1.35 m ² per L)
Wood flooring, 1/2" to 5/8" (12 to 16 mm) thickness	1/8" x 1/4" x 1/4" (3 x 6 x 6 mm), square-notch	40 to 50 sq. ft. per U.S. gal. (0.98 to 1.22 m ² per L)
Wood flooring, > 5/8" (16 mm) thickness	1/4" x 1/4" x 1/4" (6 x 6 x 6 mm), square-notch	30 to 40 sq. ft. per U.S. gal. (0.73 to 0.98 m ² per L)

Approximate Coverage – Moisture-Control Method [†]

Flooring Type	Typical Trowel	Coverage
Wood flooring ≤ 5/8" (16 mm) in thickness	1/4" x 1/4" (6 x 6 mm), V-notch	30 to 40 sq. ft. per U.S. gal. (0.73 to 0.98 m ² per L)
Wood flooring > 5/8" (16 mm) in thickness	1/4" x 1/4" x 1/4" (6 x 6 x 6 mm), square-notch	30 to 40 sq. ft. per U.S. gal. (0.73 to 0.98 m ² per L)

[†] Trowel dimensions are depth/width/space. Coverage shown is for estimating purposes only. Actual jobsite coverage may vary according to substrate conditions, type of trowel used and setting practices.

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