

Ultrabond ECO 987

Modified-Silane-Based, Moisture-Control and Sound-Reduction Wood-Flooring Adhesive



DESCRIPTION

Ultrabond ECO[®] 987 is a thixotropic, modified-silane-based, moisture-control and sound-reduction wood-flooring adhesive. Its unique formulation provides superior trowel-ridge holdout for better transfer to flooring during installation.

FEATURES AND BENEFITS

- Moisture control, sound reduction and bonding system in a single product
- 100%-solids formulation; moisture-cured and with no solvent added
- Excellent trowel-ridge holdout for proper adhesive bonding
- No moisture testing required

WHERE TO USE

- Approved for use with solid and engineered exotic and domestic wood flooring of any width and length; finger block parquet; acrylic impregnated wood and laminated plank; bamboo; and cork underlayments
- Approved for bonding plywood panels to concrete subfloors as required for nail-down or double-glue installation methods of the final flooring

LIMITATIONS

- Do not install over any substrates containing asbestos.
- For interior installations only
- Not recommended for flooring designed for nail-down installations only
- Do not use to install solid hardwood or bamboo flooring below grade.
- Do not install over existing perimeter-bonded, loose-lay vinyl flooring or any other dimensionally unstable 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 25 lbs. per 1,000 sq. ft. (11.3 kg per 92.9 m²) per 24 hours, when using the anhydrous calcium chloride test (ASTM F1869).
- Do not install when the relative humidity (RH) of the concrete slab exceeds 100% (ASTM F2170).
- Do not install if standing water is observed on the surface of any substrate.
- Do not install in areas with known hydrostatic moisture problems.
- Do not install if the substrate has a glass-like surface.
- Do not install over epoxy moisture barriers.
- Do not use to install reground rubber underlayment or flooring.
- Use only when the substrate temperature is between 50°F and 90°F (10°C and 32°C), and when the ambient RH is between 20% and 80%.

SUITABLE SUBSTRATES

- Concrete (at least 14 days old) with an appropriate moisture vapor barrier properly installed beneath the slab
- Cement terrazzo
- Exterior-grade plywood and other approved wood substrates (per wood-flooring manufacturer recommendations). Note: Moisture-barrier properties do not apply to installations over wood underlayments. Install using the Traditional Installation Method detailed in the “Product Application” section below.
- Existing ceramic tile as long as glazed surfaces are abraded
- Cement-based self-leveling underlayments and patching compounds
- Properly primed gypsum underlayments that meet the requirements for compressive strength according to ASTM F2419. Note: Moisture-barrier properties do not apply to installations over gypsum underlayments. Install using the Traditional Installation Method detailed in the “Product Application” section below.
- Radiant-heat systems that have been properly installed

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 with no visible standing water and dry to the touch.
- 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 surfaces must be porous and have a light broom finish. Do not install over extremely smooth, nonporous or glass-like concrete surfaces. If the substrate is glass-like or nonporous, it must be mechanically profiled and prepared by shotblasting, sandblasting, water jetting, scarifying or other engineer-approved methods to an International Concrete Repair Institute (ICRI) concrete surface profile (CSP) of #2 to #3. Note: Diamond grinding is an approved method for subfloor preparation in small areas that are not accessible by the methods mentioned above.
- 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, with no mixing necessary

PRODUCT APPLICATION – MOISTURE-CONTROL METHOD (for use over concrete substrates)

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

1. Remove the two clip-on trowel attachments found inside the *Ultrabond ECO 987* pail and select the appropriate one for the flooring to be installed. For wood flooring less than 3/8" (10 mm) thick, use the clip-on trowel measuring 1/8" x 1/8" x 1/8" x 1/16" (3 x 3 x 3 x 1.5 mm). For wood flooring between 3/8" and 3/4" (10 and 19 mm) in thickness, use the clip-on trowel measuring 3/8" x 3/16" x 3/8" x 1/16" (10 x 4.5 x 10 x 1.5 mm).
2. Using the trowel's flat side, key the adhesive into the subfloor, creating a smooth, void-free surface.
3. Once the adhesive has been keyed in, immediately spread the adhesive using the provided clip-on trowel. Trowel ridge lines should be perpendicular to the wood-flooring installation direction. Hold the trowel at a 60-degree to 90-degree angle to the subfloor, making sure that the subfloor is covered 100% with adhesive and that no void spots appear other than the "valley bottoms" created by the trowel. These areas will fill in as the wood is installed.
4. Only apply as much as can be installed within 45 to 60 minutes.
5. Install wood flooring in strict accordance with the wood-flooring manufacturer's written instructions.
6. Install flooring immediately, pressing firmly into the adhesive bed to ensure that all ridges are compressed into a monolithic layer. Periodically check for 100% coverage over the subfloor and transfer to the back of the flooring.

Note: Use fresh clip-on trowel attachments for each pail of *Ultrabond ECO 987* used. Do not reuse clip-on trowel attachments. Proper coverage is paramount for warranty coverage.

PRODUCT APPLICATION – TRADITIONAL INSTALLATION METHOD (for use over wood, gypsum, radiant-heat floors and other moisture-sensitive substrates)

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

1. Select the appropriately notched trowel (see the "Approximate Coverage – Traditional Installation Method" chart below) and spread the adhesive evenly over the subfloor, keeping the trowel at a 45-degree angle to the subfloor.
2. Only apply as much as can be installed within 45 to 60 minutes.
3. Install wood flooring in strict accordance with the wood-flooring manufacturer's written instructions.

PRODUCT APPLICATION – MOISTURE-CONTROL METHOD (for plywood sheets over concrete substrates)

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

1. Score 3/8" (10 mm) deep kerf cuts every 8" to 10" (20 to 25 cm) on the underside of 4' x 4' (1.2 x 1.2 m) or 2' x 8' (0.6 x 2.4 m) sheets of 3/4" (19 mm) exterior-grade plywood, using a circular saw per NWFA installation guidelines.
2. Using the 1/8" x 1/8" x 1/8" x 1/16" (3 x 3 x 3 x 1.5 mm) clip-on trowel attachment, apply the adhesive to the substrate in a smooth, uniform, void-free layer.
3. Set the plywood sheets into the wet adhesive. Ensure 100% coverage and transfer for moisture control.
4. Allow the adhesive to cure for 12 hours before sanding or preparing the plywood sheets to receive flooring.
5. Install flooring to the surface of the prepared plywood by nailing, stapling or bonding using *Ultrabond ECO 987*. Do not allow nails or staples to penetrate through the plywood and enter the membrane, as this will void the moisture-control warranty.

CLEANUP

- Dried *Ultrabond ECO 987* residue may be removed by gently rubbing with a white cloth to remove excess, followed by light wiping.

PROTECTION

- Protect from light traffic for at least 12 hours. Protect from heavy traffic for at least 24 hours.
- Building owners should become 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
Adhesive type	Moisture-cured hybrid polymer
Solids content	100%

VOCs (Rule #1168 of California's SCAQMD)	< 20 g per L
Typical VOC content per SCAQMD Rule 1168 testing methods	15 g per L
Density	13.6 lbs. per U.S. gal. (1.62 g per mL)
Flash point (Tag)	> 200°F (93°C)
Perm rate – ASTM E96	< 0.15 perms

Shelf Life and Product Characteristics

Shelf life	1 year when stored in original, unopened packaging at 73°F (23°C)
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. Provide for heated storage on site and deliver all materials at least 24 hours before work begins.

ASTM Standards for Sound Reduction; MAPEI Corporation and MAPEI Inc. certify that the following sound tests (for tile and wood flooring) were conducted, and results supplied by NGC Testing Services, Buffalo, NY.

Sound-Reduction Ratings – Engineered Wood ¹ 5/8" (16 mm) Thick Over 6" (15-cm) Concrete Slab ²		
Flooring Type	No Suspended Ceiling	With Suspended Ceiling
ASTM E90-09/E413-04 (STC) – Airborne sound	50	61
ASTM E492-09/E989-09 (IIC) – Impact sound	48	65
ASTM E2179-03 (Delta IIC) – Impact sound	19	

Assembly details:

MAPEI's Ultrabond ECO 987 wood-flooring adhesive applied with clip-on trowel attachment

¹ 1 layer of 5/8" thick x 5" wide (16 mm x 12.7 cm) random-length, engineered oak, prefinished hardwood flooring

² 6" (15 cm) thick reinforced concrete slab; weight is 70 psf (366.1 kg per m²)

Application Properties

Wood Flooring	Flash Time*	Working Time**	Adjustability Time***
At 50°F (10°C) and 80% RH	0 minutes	75 to 140 minutes	3 to 4 hours
At 73°F (23°C) and 50% RH	0 minutes	60 to 120 minutes	2 to 3 hours
At 90°F (32°C) and 20% RH	0 minutes	45 to 90 minutes	1 to 3 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: Flash time, working time and adjustability time may vary based on temperature, humidity, substrate porosity, trowel size and jobsite conditions.

Packaging

Size
Plastic pail: 4 U.S. gals. (15.1 L)

Approximate Coverage – Moisture-Control Method†

Typical Trowel	Coverage
For wood flooring > 3/8" (10 mm) and ≤ 3/4" (19 mm) in thickness:	
V-notch with lift spacers (included in packaging) – 3/8" x 3/16" x 3/8" x 1/16" (10 x 4.5 x 10 x 1.5 mm)	30 to 40 sq. ft. per U.S. gal. (0.73 to 0.98 m ² per L)
For wood flooring less than ≤ 3/8" (10 mm) in thickness:	
V-notch with lift spacers (included in packaging) – 1/8" x 1/8" x 1/8" x 1/16" (3 x 3 x 3 x 1.5 mm)	30 to 40 sq. ft. per U.S. gal. (0.73 to 0.98 m ² per L)

Approximate Coverage – Traditional Installation Method†

Flooring Type	Typical Trowel	Coverage
Cork underlayments	1/16" x 1/16" x 1/16" (1.5 x 1.5 x 1.5 mm), square-notch	125 to 185 sq. ft. per U.S. gal. (3.06 to 4.53 m ² per L)
Finger-block parquet	1/8" x 1/8" x 1/8" (3 x 3 x 3 mm), square-notch	70 to 80 sq. ft. per U.S. gal. (1.71 to 1.96 m ² per L)

Wood flooring, < 1/2" (12 mm) in 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) in 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) 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-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. **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.**

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

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