

Ultrabond ECO 983

Modified-Silane, Moisture-Control Wood-Flooring Adhesive



DESCRIPTION

Ultrabond ECO® 983 is a single-component, 100%-solids, modified-silane wood-flooring adhesive that is formulated without water, solvents, amines, isocyanates, phthalate plasticizers or epoxy resins. With an extremely low emission level of volatile organic compounds (VOCs), the unique formulation of *Ultrabond ECO 983* provides excellent bond strength and moisture control up to 15 lbs. (6.80 kg) MVER and 90% relative humidity (RH). Special trowel clips are provided to apply the adhesive in a monolithic layer for subfloor moisture control. It can also be used with traditional trowel-applied methods where subfloor moisture problems do not exist.

FEATURES AND BENEFITS

- 100%-solids, with no water or solvents added
- Moisture control up to 15 lbs. (6.80 kg) MVER and 90% RH
- Easy to clean up

Green certifications

- Living Building Challenge (LBC) Red List Free: This product has been verified per the most current Red List on the LBC's Website.

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

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 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 if the MVER exceeds 15 lbs. per 1,000 sq. ft. (6.80 kg per 92.9 m²) per 24 hours, when using the anhydrous calcium chloride test (ASTM F1869).
- Do not install when the RH of the concrete slab exceeds 90% (ASTM F2170).
- Do not install in areas with known hydrostatic moisture problems.
- Do not install if the pH of the concrete slab exceeds 11.
- Do not install over epoxy moisture barriers.
- 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%.
- Patch and level with exterior-rated, cement-based products only.

SUITABLE SUBSTRATES

- Concrete at least 14 days old, installed per ASTM F710 guidelines
- 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)
- Exterior-rated, cement-based self-leveling underlayments and patching compounds
- 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.
- Properly installed radiant-heat systems. Note: Moisture-barrier properties do not apply to installations over radiant-heat systems. Install using the Traditional Installation Method detailed in the "Product Application" section below.

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 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, diamond grinding, sandblasting, water jetting, scarifying or other engineer-approved methods to an International Concrete Repair Institute (ICRI) concrete surface profile (CSP) of #2 to #3.
- Concrete and exterior-rated, 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 (SDS) 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.

Moisture-Control Method:

For use on concrete substrates with MVER less than or equal to 15 lbs. per 1,000 sq. ft. (6.80 kg per 92.9 m²) per 24 hours, when using the anhydrous calcium chloride test (ASTM F1869) or when the RH of the concrete slab is less than or equal to 90% (ASTM F2170).

1. Remove the two clip-on trowel attachments found inside the *Ultrabond ECO 983* pail and select the appropriate one for the flooring to be installed. For wood flooring less than or equal to 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 an angle of 60 to 90 degrees 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 983* used. Do not reuse clip-on trowel attachments. Proper coverage is paramount for warranty coverage.

Traditional Installation Method:

For use over wood, gypsum, radiant-heat floors and other moisture-sensitive substrates. Also for use on concrete substrates with MVER less than or equal to 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) or when the RH of the concrete slab is less than or equal to 80% (ASTM F2170).

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.

CLEANUP

- *Ultrabond ECO 983* can be difficult to remove when cured. Immediately clean any adhesive smudges from tools and the flooring material's surface with *Ultrabond® Urethane Cleaner* or mineral spirits while the adhesive is still fresh/wet.
- Dried *Ultrabond ECO 983* residue may be removed with gentle rubbing with a white cloth to remove excess, followed by a light wipe.

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	Modified silane polymer
Solids content	100%
VOCs (Rule #1168 of California's SCAQMD)	< 15 g per L
VOCs (California DPH, Section 01350)	Passed
Density	9.6 lbs. per U.S. gal. (1.15 g per mL)
Flash point (Tag)	> 200°F (93°C)
Perm rate (ASTM E96)	< 0.4 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.

Application Properties

Wood Flooring	Flash Time*	Working Time**	Adjustability Time***
At 50°F (10°C) and 80% RH	0 minutes	45 to 60 minutes	2 to 3 hours
At 73°F (23°C) and 50% RH	0 minutes	45 to 60 minutes	2 to 3 hours
At 90°F (32°C) and 20% RH	0 minutes	45 to 60 minutes	4 to 5 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 ≤ 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	Coverage
Cork underlayments 1/16" x 1/16" x 1/16" (1.5 x 1.5 x 1.5 mm), square-notch	100 to 125 sq. ft. per U.S. gal. (2.45 to 3.06 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) thickness 3/16" x 5/32" (4.5 x 4 mm), sawtooth	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)

† 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.

RELATED DOCUMENTS

Reference Guide: "Surface preparation requirements: Wood adhesives" for floor-covering installation systems^{††}

^{††} At 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

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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