

Technical Datasheet

Hardwood Flooring Installation Systems Product Information



Ultra-Set® SingleStep™

Hardwood Adhesive, Moisture Vapor Retarder & Sound Reduction Membrane

- Thickness Control™ spacer technology
- Easy spread
- Easy clean-up
- Bostik's Blockade™ antimicrobial protection
- Prevents damage caused by subfloor moisture
- Reduces sound transmission
- Exceeds IRC requirements for vapor retarder
- 0 VOC formulation



Bostik's Ultra-Set® SingleStep™ is a one-part, trowel applied, tacking, moisture-cure urethane adhesive, moisture vapor and sound reduction membrane. This scientifically formulated adhesive and membrane is very tenacious, has extremely low moisture permeability, and is formulated with Bostik's patent pending Thickness-Control™ Spacer Technology to ensure proper membrane thickness between hardwood flooring and the substrate. Bostik's Ultra-Set SingleStep does NOT contain any water, and has zero VOC's as per SCAQMD 1168.

Once cured, Ultra-Set SingleStep will create a tough, flexible, tenacious, waterproof bond to a variety of substrates for glue-down installations of engineered, solid, and bamboo wood flooring that is designed and recommended in writing by the wood flooring manufacturer for glue-down applications. The elastomeric, urethane membrane is designed to reduce moisture vapor transmission from the subfloor; create a noise reduction barrier over the substrate; and establish an anti-fracture membrane which can bridge cracks that can occur in

the substrate prior to or after installation (up to 1/8"). The elastomeric characteristics also allow the adhesive/membrane to move with the wood as it expands and contracts over the life of the floor.

Ultra-Set SingleStep contains Bostik's BLOCKADE™ antimicrobial protection, which inhibits the growth of bacteria, mold or mildew on the surface of the dried membrane; the dried membrane resists stains caused by mold.

Ultra-Set SingleStep's zero VOC formulation contains 1% recycled rubber material and therefore may contribute to the qualification of a project for LEED NC V3 certification under the following Indoor Environmental Quality credits for low emitting materials; EQ 4.1 Adhesives & Sealants, as well as USGBC LEED credits MR 4.1 & 4.2 for recycled content.

Ultra-Set SingleStep may be used over all properly prepared substrates common to hardwood flooring installations, including: concrete, plywood, particle or chipboard (underlayment grade), well-bonded vinyl/VCT (vinyl ceramic tile), cement backer board, gypsum underlayments (dry, above grade), cement patch/underlayments, radiant-heat flooring, and properly prepared terrazzo and ceramic tile.

Ultra-Set SingleStep may also be used to install plywood as described, as well as ceramic tile, marble, and stone inlays for light commercial and/or residential applications.

Ultra-Set SingleStep was independently tested in a controlled laboratory environment per ASTM E492-04 to measure IIC (Impact Insulation Class).

Subfloor Type	Flooring Type	Ceiling Type	IIC Achieved
6" Concrete	3/8" Engineered	5/8" Suspended Gypsum	71
6" Concrete	3/8" Engineered	No suspended ceiling	52

* An increase in Δ IIC 21 dB was realized with the use of Ultra-Set SingleStep (ASTM E2179)

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Stronger Bonds, Better Life

Directions for Use

Read and understand data sheet and material safety data sheet completely before beginning installation. Follow NWFA industry standards and wood flooring manufacturer's recommendations for acclimation, design, layout and application of wood flooring material. If jobsite conditions are outside of wood flooring manufacturer's recommendations, take necessary corrective actions.

To address current or possible future subfloor moisture, sound, and cracks (up to 1/8"), apply Ultra-Set SingleStep as directed.

Surface Preparation

Surfaces must be absorptive, clean, free from loose materials, oil, grease, sealers, curing compounds, waxes, silicates, laitance, and all other surface contaminants that may inhibit proper bond. Completely remove cutback adhesive residue or other surface contaminants by diamond grinding to open the pores of the concrete. All surfaces to be treated must have a concrete surface profile of CSP 2-3 (similar to a light broom finish), as defined by ICRI (International Concrete Repair Institute, Guideline No. 03732). While there is no upper limit on the moisture vapor emission rate (and therefore anhydrous calcium chloride testing is not necessary) it is critical that the concrete be dry to the touch to properly bond. Maximum acceptable floor variation is 3/16" in 10 feet. Areas requiring patching or leveling must be done using a Portland cement-based material (e.g., Bostik UltraFinish™, Bostik Webcrete® 95 or Bostik SL-150™ Self-Leveling Underlayment).

PLEASE NOTE: Concrete substrate should NOT be smooth and reflective; it must have a concrete surface profile of CSP 2-3 (similar to a light broom finish), as defined by ICRI (International Concrete Repair Institute, Guideline No. 03732). It is advisable to test for adequate substrate texture

in several areas throughout the jobsite by sprinkling droplets of water onto the slab. The drops of water should show signs of penetrating the substrate within one minute. This is evidenced by a water stain on the concrete without a "domed" droplet. If no signs of water penetration are shown within one minute and "domed" droplets remain (similar to drops on a car hood) the substrate will need to be mechanically textured.

Installation

The installation begins with a starter row secured to the subfloor; the starter row provides a stationary point to push against so flooring doesn't move during installation. Once the starter row is secured, apply adhesive/membrane to substrate using the appropriate V-notch trowel. See the chart on the side panel for proper trowel selection. Flooring may be installed using a "Wet-Lay" or "Walk-On-Work" method of installation. For "Wet-Lay" installations, spread the adhesive and begin to install the flooring immediately. For "Walk-On-Work" installations, spread the adhesive and allow the adhesive to develop "tack" and then begin to install the flooring material. As you work, immediately clean any adhesive from prefinished flooring with Bostik's Ultimate Adhesive Remover™ or mineral spirits (be careful not to harm finish), then dry buff with a non-abrasive paper towel. After a few rows have been installed and as you move across the room, tape the boards together using removable 3M #2080 Blue tape to prevent boards from sliding and to secure close-fitting joints. Rolling is recommended for all installations. Flooring that is not flat should be tacked, weighted, or rolled to ensure proper contact between the flooring and substrate.

PLYWOOD OVER CONCRETE: Score 4' x 4' or 2' x 8' sheets of 3/4" exterior-grade plywood on the backside every 8" to 10" by using a circular saw and cutting one-half the thickness of the plywood; "scoring or kerfing" takes the tension out of the plywood and helps to prevent possible warping or curling. Using a 1/4" x 1/4" V-notch trowel, apply adhesive/membrane to substrate and then set plywood into the wet adhesive/membrane. Allow the adhesive/membrane to fully cure before nailing or using Bostik's Ultra-Set SingleStep adhesive/membrane to install flooring. If nailing to the plywood, nails must not protrude through to the adhesive/membrane.

Clean up

As you work, immediately clean any adhesive from prefinished flooring with Bostik's Ultimate Adhesive Remover™ or mineral spirits (be careful not to harm finish), then dry buff with a non-abrasive paper towel.

Immediately clean all tools and equipment with Bostik's Ultimate Adhesive Remover™ or mineral spirits before material cures.

TROWEL CLEAN-UP TIP: Before use, cover areas of the trowel that are not used to spread the adhesive with blue tape. After use, simply tear off tape before material cures, and clean the remainder of the trowel with adhesive remover.



Open/Tack Time

Refer to the "Open/Tack Time Chart"

Storage/Shelf Life

Store at temperatures between 50°F and 100°F. Shelf life is one year from date of manufacturing in closed, original packaging.

Re-Seal Partially Used Container: With pail upright, place a sheet of plastic (e.g., trash bag) over the top of the pail.

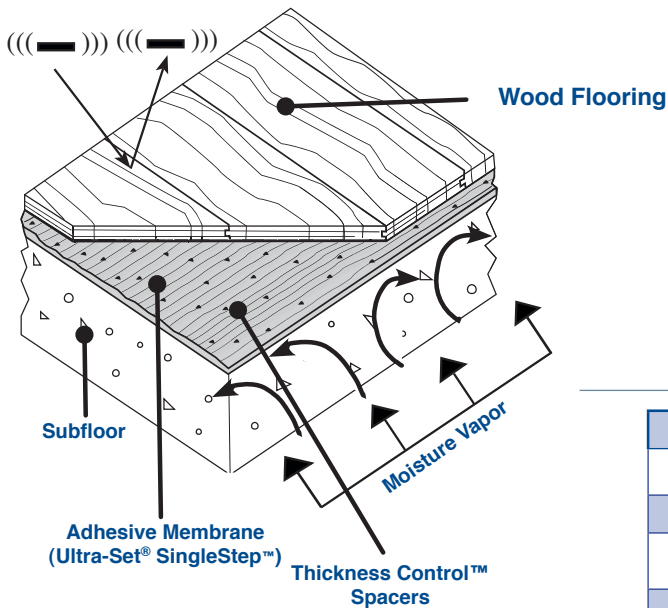
Secure lid tightly over the plastic on top of pail. Carefully turn pail upside down. Plastic will help prevent the material from bonding the lid closed.

Re-Open Partially Used Container: Carefully turn pail right side up. Remove lid. Carefully cut and discard cured material and plastic from top of pail. Any uncured material may be used.

Limitations

- Periodically check coverage of adhesive during installation; **100% substrate coverage and adhesive transfer is required** to protect against damage from subfloor moisture.
- Due to limitations with solid and bamboo wood flooring (e.g., lack of dimensional stability), "below-grade" installations are limited to engineered hardwood flooring.
- Do not install solid wood flooring over VCT/vinyl.
- Bamboo installations should follow solid hardwood flooring installation recommendations.
- Slab temperature should be between 50°F and 95°F during installation.
- Do not use on visibly wet, dusty, contaminated, glassy smooth or friable substrates; do not use over substrates/slabs treated with sealers or curing compounds; do not use in areas subject to hydrostatic head.
- Completely remove all adhesive residue and other surface contaminants by diamond grinding, shot blasting, or scarifying.
- Do not use over perimeter bonded flooring material.
- Use over gypsum-based underlayments is limited to dry, "above-grade" installations where the gypsum has dried hard (not dusty/powdery), with a minimum compressive strength > 2,000 psi for engineered hardwood installations, or minimum compressive strength > 2,500 psi for solid hardwood installations.
- Please follow the wood flooring manufacturer's recommendations and National Wood Flooring Association's specifications for proper acclimation and expansion relief around perimeter or throughout installation.
- Do not use with cork flooring or foamed backed parquet.

Reduces Sound Transmission



Membrane Reduces Moisture Vapor Emissions and Sound Transmission

(see chart for proper trowel selection)

- This membrane is designed to reduce moisture vapor emissions that originate/emanate from below the membrane only.
- This membrane does NOT reduce/affect issues originating from the sides, ends, or top of flooring (ie. puddles, water, leaks, hydrostatic-head, etc.).
- This membrane does NOT eliminate all possible moisture related or install related issues (i.e. improper acclimation of flooring, jobsite temperature/relative humidity, etc.).
- This membrane is designed to prevent excessive variance of moisture between the top, middle and bottom of flooring that originates from the substrate.

Open/Tack Time Chart

		Humidity		
Temp.		40%	60%	80%
60° F	Open Tack	2.5 Hours 1 Hour	2.5 Hours 1 Hour	2 Hours 45 Minutes
70° F	Open Tack	2 Hours 45 Minutes	2 Hours 45 Minutes	1.5 Hours 30 Minutes
80° F	Open Tack	1.5 Hours 30 Minutes	1.5 Hours 30 Minutes	1 Hour 15 Minutes

Note: This chart is for reference only: actual jobsite times may vary.

Chemical & Physical Properties

Percentage of Water ^{*1}	0.0%
Water Vapor Permeability ^{*2}	0.4
Percentage of Adhesive Coverage and Transfer Required: - Engineered - Solid/bamboo	100% 100%
Elongation	>180%
Open/Working Time in Minutes ^{*3}	90 minutes
Application Temperature	50°F to 100°F
Service Temperature	-40°F to 150°F
ASTM E 2179 Increased Impact Insulation	ΔIIC 23 dB
ASTM E492-04 IIC (6" concrete slab with no ceiling) IIC (6" concrete slab with 1 layer 5/8" gypsum board ceiling)	52 dB 71 dB
Flash Point	≥ 200°F, closed cup
VOC Compliant (SCAQMD Rule 1168)	Yes (0 g/L)
Odor	Mild
Color	White with black specs
Weight	14.7 lbs./gallon
Cure Time ^{*4} Light foot traffic Normal foot traffic	6 to 8 hours 12 to 16 hours
Concrete Moisture Vapor Limits for subfloor moisture vapor protection ASTM 1869 Calcium Chloride Method ASTM 2179 Relative Humidity Test	No Limit / Dry-to-the-touch
Concrete Moisture Vapor Limits for bond	No Limit / Dry-to-the-touch

^{*1} Per ASTM E203-01 Standard Test Method for water using Volumetric Karl Fischer Titration Method. Results rounded to the nearest tenth. Test Method has error range of +/- 0.2%
^{*2} Per ASTM E-96 Standard Test Methods for Water Vapor Transmission of materials. Ratings are g/m²-24 hour-mmHG
^{*3} Please refer to the Open/Working Time Chart
^{*4} Humidity affects cure to a greater degree than temperature; the higher the humidity, the faster the cure. Under normal conditions, light foot traffic is acceptable after 6 to 8 hours; normal traffic after 12-16 hours.



Packaging

Ultra-Set® SingleStep™ is available in
 4 gallon pails, 36 pails/pallet
 2 gallon pails, 54 pails/pallet (Not sold in Canada)

Warning: Harmful if swallowed. May cause allergic skin reaction. May cause eye, skin and respiratory tract irritation. Inhaling vapors harmful.

Precautions: Wear appropriate protective equipment to avoid contact with skin and eyes. Use with adequate ventilation. Wash hands after handling and before eating. Store in cool (60-80°F / 15-30°C), dry, well-ventilated area. Water contamination should be avoided. Follow all warnings and precautions with empty container as residues may remain. Do not reuse container.

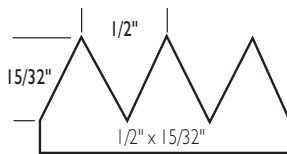
First Aid: Immediately flush eyes with plenty of water for at least 15 minutes. Get medical attention or advice. For skin contact flush with large amounts of water while removing contaminated clothing. If skin irritation persists, call a physician. If inhaled, immediately remove the affected person to fresh air. Call a physician if symptoms develop or persist. If ingested, get immediate medical attention.

Keep Out of the Reach of Children.

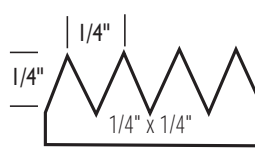
LIMITED WARRANTY

The Limited Warranty for this product can be found at www.Bostik-US.com/resource-center/warranties or by calling 1-800-726-7845 (choose option 2, then option 2 again). TO THE MAXIMUM EXTENT ALLOWED BY LAW, BOSTIK DISCLAIMS ALL OTHER EXPRESS OR IMPLIED WARRANTIES, INCLUDING WITHOUT LIMITATION WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. UNLESS OTHERWISE STATED IN THE LIMITED WARRANTY, THE SOLE REMEDY FOR BREACH OF WARRANTY IS REPLACEMENT OF THE PRODUCT OR REFUND OF THE BUYER'S PURCHASE PRICE. BOSTIK DISCLAIMS ANY LIABILITY FOR DIRECT, INCIDENTAL, CONSEQUENTIAL, OR SPECIAL DAMAGES TO THE MAXIMUM EXTENT ALLOWED BY LAW. DISCLAIMERS OF IMPLIED WARRANTIES MAY NOT BE APPLICABLE TO CERTAIN CLASSES OF BUYERS AND SOME STATES DO NOT ALLOW THE EXCLUSION OR LIMITATION OF INCIDENTAL OR CONSEQUENTIAL DAMAGES, SO THE ABOVE LIMITATIONS MAY NOT APPLY TO YOU. It is the buyer's obligation to test the suitability of the product for an intended use prior to using it. The Limited Warranty extends only to the original purchaser and is not transferable or assignable. Any claim for a defective product must be filed within 30 days of discovery of a problem, and must be submitted with written proof of purchase.

Required Notched Trowel for Maximum Performance



1/2" x 15/32" V Notch
 Solid, engineered and bamboo wood flooring
 greater than 5/8" thick, or plywood
 Coverage: 20 sq.ft. per gallon



1/4" x 1/4" V Notch
 Solid, engineered and bamboo wood flooring
 up to 5/8" thick
 Coverage: 30 sq.ft. per gallon

Trowel size is suggested to maximize coverage of adhesive. Periodically check coverage of adhesive during installation; 100% substrate coverage and adhesive transfer is required to protect against damage from subfloor moisture. Uneven subflooring may require the use of either a leveling/patching material or a larger V-notched trowel for proper coverage of adhesive. These trowels are available from leading tool manufacturers such as Marshalltown (www.marshalltown.com) and your Bostik Distributor.