

Technical DataSheet

Hardwood Flooring Installation Systems Product Information



Vapor-Lock™

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



Vapor-Lock™ is a one-part, trowel-applied, rapid tacking, low permeability, moisture-cure, urethane adhesive and vapor retarding membrane. This scientifically formulated adhesive/membrane does NOT contain any water, is virtually odorless, and has zero VOC's per SCAQMD 1168. When applied as designed and cured, Vapor-Lock offers a tenacious waterproof bond to a variety of substrates and is not adversely affected by exposure to moisture, water or alkalinity; it can also create a vapor-retarding membrane designed to reduce moderate amounts of moisture vapor transmission from the subfloor and bridge cracks that can occur in the substrate prior to or after installation (up to 1/8"). Vapor-Lock contains Bostik's patent pending Thickness Control™ Spacer Technology to ensure proper membrane thickness between hardwood flooring and the substrate.

Vapor-Lock may be used to adhere all engineered, parquet, solid and bamboo flooring that is designed and

recommended in writing by the hardwood flooring manufacturer for glue-down applications.

This product 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.

Vapor-Lock'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.

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

Bostik Vapor-Lock 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.

Vapor-Lock 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	69
6" Concrete	3/8" Engineered	No suspended ceiling	50

• An increase in Δ IIC 21 dB was realized with the use of Vapor-Lock (ASTM E2179)



Visit us on the Web at:
www.bostik-us.com



Directions for Use

Read and understand data sheet and material safety datasheet completely before beginning installation. Follow NWFA industry standards, as well as hardwood and bamboo flooring manufacturer's recommendations for acclimation, design, layout and application of wood flooring material. If jobsite conditions are outside of flooring manufacturer's recommendations, take necessary corrective actions. To address current or possible future subfloor moisture, sound and cracks (up to 1/8"), apply Vapor-Lock 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 define by ICRI (International Concrete Repair Institute, Guideline No. 03732). Vapor-Lock may be used for concrete slabs as an adhesive and vapor retarder with elevated moisture levels up to 15 lbs. per 1,000 square feet per 24 hours (using an anhydrous calcium chloride test kit according to ASTM F-1869 test method), and up to 85% RH (tested in accordance with ASTM F-2170). For substrates that have an MVER of greater than 15 lbs or $\geq 85\%$ RH, use Bostik Ultra-Set® SingleStep™ or Bostik's MVP4/Bostik Adhesive System. 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 define 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 penetratation 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 trowel. See the chart on last page 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 or square-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 Vapor-Lock 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

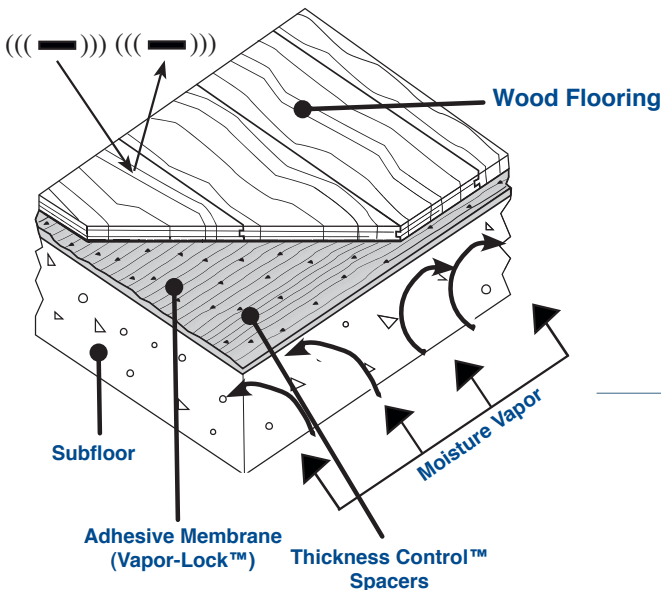
- Periodically check coverage of adhesive during installation; **100% substrate coverage and adhesive transfer is required** to protect against damage from subfloor moisture.
- Due to limitations with solid and bamboo wood flooring (e.g., lack of dimensional stability), "below-grade" installations are limited to engineered hardwood flooring.
- For substrates with any history of moisture problems, or for concrete slabs exceeding 15 lb MVER or 85% RH, use a high performance moisture vapor reduction product such as Bostik's Ultra-Set® SingleStep™ or Bostik's MVP4/Bostik Adhesive System.
- Do not install solid wood or bamboo 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 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 underlayment 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.

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.

Reduces Sound Transmission



Open/Tack Time Chart

		Humidity		
Temp.		40%	60%	80%
60°F	Open	2.5 Hours	2.5 Hours	2 Hours
	Tack	1 Hour	1 Hour	45 Minutes
70°F	Open	2 Hours	2 Hours	1.5 Hours
	Tack	45 Minutes	45 Minutes	30 Minutes
80°F	Open	1.5 Hours	1.5 Hours	1 Hour
	Tack	30 Minutes	30 Minutes	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}	< 0.6	
Percentage of Adhesive Coverage and Transfer Required: - Engineered - Solid/bamboo	Membrane	Adhesive only
	100%	> 85%
	100%	> 95%
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	△IIC 21 dB	
ASTM E492-04 IIC (6" concrete slab with no ceiling) IIC (6" concrete slab with 1 layer 5/8" gypsum board ceiling)	50 dB 69 dB	
Flash Point	≥ 200°F, closed cup	
VOC Compliant (SCAQMD Rule 1168)	Yes (0 g/L)	
Odor	Mild	
Color	Brown with black specks	
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	≤ 15 lbs/1000 ft ² /24 hrs ≤ 85% RH	
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

Vapor-Lock™ is available in
4 gallon pails, 36 pails/pallet

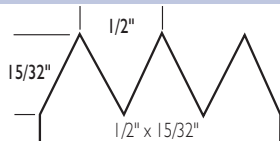
Warning: Harmful if swallowed. May cause allergic skin reaction. May cause eye, skin and respiratory tract irritation. Inhaling vapors harmful.

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.

Required Trowel Guide As Moisture Barrier / Adhesive



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

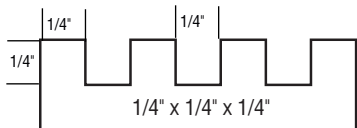


1/4" x 1/4" V Notch

Solid and bamboo wood flooring,
up to 5/8" thick
Coverage: 30 sq.ft. per gallon

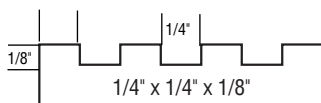
Trowel size is suggested to maximize coverage of adhesive. Periodically check coverage of adhesive during installation; 100% substrate coverage and adhesive transfer is required to protect against damage from subfloor moisture. Uneven subflooring may require the use of either a leveling/patching material, 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.

Required Trowel Guide As Adhesive Only



1/4" x 1/4" x 1/4" Square Notch

> 1/2" Solid wood and bamboo flooring, or
plywood
Coverage: 35 sq.ft./gallon



1/4" x 1/4" x 1/8" Square Notch

1/2" Engineered hardwood flooring
1/2" Solid wood and bamboo flooring, and 3/4"
parquet
Coverage: 40 sq.ft./gallon



3/16" x 5/16" x 1/4" Notch

< 1/2" Engineered wood flooring
Coverage: 50 sq.ft./gallon

Trowel size is suggested to maximize coverage of adhesive. It is important to periodically check coverage of adhesive during installation; > 95% coverage is required for all solid wood flooring and all types of bamboo flooring; >85% coverage is required for other types of hardwood flooring (engineered). Uneven subflooring may require the use of either a leveling/patching material, or a larger notched trowel for proper coverage of the adhesive. These trowels are available from leading tool manufacturers such as Marshalltown (www.marshalltown.com) and your Bostik distributor.

This document supersedes all previously published literature.

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.

DUAL PURPOSE

ADHESIVE ONLY