



P R O D U C T I N F O R M A T I O N

EFA+

Elastomeric Flooring Adhesive

PRODUCT DESCRIPTION:

EFA+ Elastomeric Flooring Adhesive is a one-part, trowel applied, moisture-cure urethane adhesive; this advanced, scientifically-formulated adhesive does NOT contain any water. Once cured, EFA+ is waterproof and is not adversely affected by exposure to moisture or water; its superior properties provide a tough, flexible, tenacious bond to a variety of surfaces. EFA+'s elastomeric characteristics allow the adhesive to move with the wood as it expands and contracts over the life of the floor.

EFA+ may be used to adhere all dimensionally stable engineered, acrylic impregnated, solid plank-flat milled, shorts, bamboo and parquet hardwood flooring designed and recommended in writing by the hardwood flooring manufacturer for glue-down applications. This adhesive can also be used to install plywood as described, as well as ceramic tile, marble, and stone inlays for light commercial and/or residential applications.

EFA+ 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 and ceramic tile, cement backer board, gypsum patch/underlayments (dry, above-grade), cement patch/underlayments, radiant-heat flooring, and terrazzo.

DIRECTIONS FOR USE:

Read and understand data sheet completely before beginning installation. Follow industry standards and wood flooring manufacturer's recommendations for design, layout and application of wood flooring material.

CHEMICAL & PHYSICAL PROPERTIES

Percentage of Water* ¹	0.0%
Volume of Water in 5 Gallon Pail	0.0 Pints or 0.0 Quarts
Water Vapor Permeance* ²	0.54
Water Vapor Permeability* ²	8.9 x 10 ⁻⁴
Percentage of Adhesive Transfer Required for:	
-Engineered Hardwood Flooring	≥ 85%
-Solid Hardwood Flooring	≥ 95%
Elongation	> 180%
Shear Strength (Oak to Concrete)	> 165 psi
Tensile Strength (modulus at 25%)	> 150 psi
"Working Time" in Minutes* ³	Open Time: 180
(Including Flash Time)	Flash Time: n/a
	Working Time: 180
Application Temperature	50°F to 100°F
Service Temperature	-40°F to 150°F
Flash Point	≥ 145°F, closed cup
Viscosity	~550,000 cps
VOC Compliant	Yes (85 g/L)
Odor	Mild/not easily detected
Color	White
Weight	13.8 lbs./gallon
Cure Time * ⁴	8 to 10 hours

*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 +/- 2%.

*² Per ASTM E-96 Standard Test Methods for Water Vapor Transmission of Materials. Ratings are g/m 2-24 hour-mmHG.

*³ Please refer to 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 8 to 10 hours; normal traffic after 24 hours.



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Wood Flooring
Urethane Adhesives

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SURFACE PREPARATION:

Surfaces must be clean, dry and smooth; free of voids, projections, loose materials, oil, grease, sealers and all other surface contaminants. If there are any moisture-related concerns, or if solid wood is being installed, completely remove cutback adhesive residue by sandblasting, shotblasting or scarifying. When sandblasting, shotblasting or scarifying, surface texture must be similar to light broom finished concrete. Maximum acceptable floor variation is 3/16" in 10 feet. Surface areas requiring patching or leveling must be done using a Portland cement-based material (e.g., Bostik UltraFinish, Bostik Fast Patch 102™ or SL-150™).

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 to substrate with suitable trowel. Flooring may be installed using a "wet-lay" method of installation. For "wet-lay" installations, spread the adhesive and begin to install the flooring immediately. 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' 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" x 1/4" square-notch trowel, apply adhesive to substrate and then set plywood into the wet adhesive. Allow the adhesive to fully cure before nailing strips or using EFA+ to install flooring.

OPEN TIME: Refer to "Open/Working Time Chart".

CURE TIME:

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 8 to 10 hours; normal traffic after 24 hours.

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 duct tape. After use, simply tear off tape before material cures, and clean the remainder of the trowel with adhesive remover.

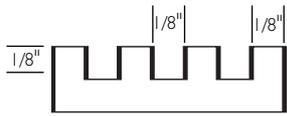
LIMITATIONS:

- Do not install flooring into adhesive that has "skinned over" (the adhesive must be "wet").
- Slab temperature should be between 50°F and 95°F during installation.
- Do not use on wet, dusty, contaminated, or friable substrates; do not use over substrates/slabs treated with sealers or curing compounds; do not use in areas subject to hydrostatic head. If there are any moisture-related concerns, completely remove cutback adhesive residue (and other surface contaminants) by sandblasting, shotblasting, or scarifying.
- Do not use over perimeter bonded flooring material.
- Due to limitations with solid wood flooring (e.g., lack of dimensional stability), "below-grade" installations are limited to engineered hardwood flooring.
- Do not install solid wood flooring over cutback residue or over VCT/vinyl.
- Use over gypsum-based patch/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 refer to wood flooring manufacturer's recommendation for proper expansion relief around perimeter or throughout installation.
- Do not use with vinyl-backed cork flooring.
- Bamboo installations should follow solid hardwood flooring installation recommendations.

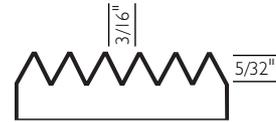
STORAGE/SHELF LIFE: Store at temperatures between 50°F and 100°F. Shelf life is one year from date of manufacturing in closed, original packaging.

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. 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.

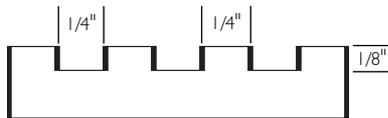
SUGGESTED NOTCHED TROWEL FOR MAXIMUM PERFORMANCE*



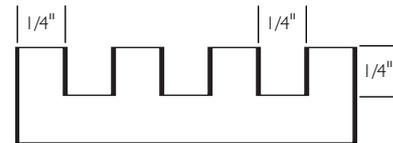
1/8" x 1/8" x 1/8" Square Notch
Finger Block Parquet
Coverage: 70-80 ft²/Gallon



3/16" x 5/32" V Notch
≤ 1/2" Engineered Hardwood Flooring
Coverage: 45- 55 ft²/Gallon



1/4" x 1/4" x 1/8" Square Notch
> 1/2" Engineered, ≤ 1/2" Solid Hardwood
Flooring & 3/4" Parquet
Coverage: 35-45 ft²/Gallon



1/4" x 1/4" x 1/4" Square Notch
> 1/2" Flat Milled Solid & Shorts or Plywood
Coverage: 30-40 ft²/Gallon

Trowel size is suggested to maximize coverage of adhesive. Periodically check coverage of adhesive during installation; ≥ 85% coverage is required for engineered hardwood flooring; ≥ 95% coverage is required for solid hardwood flooring. Uneven subflooring may require the use of either a leveling/patching material, or a larger notched trowel for proper coverage of adhesive.

OPEN/WORKING TIME CHART

TEMP.		HUMIDITY		
		40%	60%	80%
60°F	Open	≤ 230 Minutes	≤ 210 Minutes	≤ 190 Minutes
70°F	Open	≤ 170 Minutes	≤ 150 Minutes	≤ 130 Minutes
80°F	Open	≤ 140 Minutes	≤ 120 Minutes	≤ 100 Minutes

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



Middleton, MA 01949
1-800-7-BOSTIK
1-800-726-7845

www.bostik-us.com

PLANT LOCATIONS

Temecula, CA 92590
Conyers, GA 30207
Paulsboro, NJ 08066



LIMITED WARRANTY

Bostik, Inc. warrants that the product conforms with Bostik's written specifications and is free from manufacturing defects. A PURCHASER'S SOLE REMEDY FOR NONCOMPLIANCE WITH THIS WARRANTY SHALL BE THE REPLACEMENT OF THE PRODUCT OR REFUND OF THE PURCHASE PRICE. Purchasers may address their warranty claims to Bostik, Inc., 211 Boston St., Middleton, MA 01949, Attn: Customer Service, or call Bostik at 1-800-726-7845. TO THE MAXIMUM EXTENT ALLOWED BY LAW, BOSTIK DISCLAIMS ALL OTHER EXPRESS OR IMPLIED WARRANTIES, INCLUDING WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, AND LIABILITY FOR DIRECT, INCIDENTAL, CONSEQUENTIAL, OR SPECIAL DAMAGES. Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above limitations may not apply to you. This warranty gives you specific legal rights, and you may also have other rights which vary from state to state.



211 Boston Street • Middleton, MA 01949 • Customer Service or Technical Service 1-800-7/BOSTIK • www.bostik-us.com