Bona® R540

Technical Data Sheet

Adhesives

Bona R540 is a one-component polyurethane reactive primer, used on absorbent and non-absorbent sub floors before the use of Bona R851, R850T and R859, and R880 wood floor adhesives. Especially useful when used as a primer on sealed plywood subfloor systems such as AdvanTech® flooring. The product can also be used for damp proofing[1] concrete floors and substrates up to 18 lbs or 95% relative humidity.

- One-component – easy mixing with no limited pot life
- Easy to apply – rolls on
- Very good adhesion to all types of subfloor
- High penetration
- One coat coverage as a vapor retarder on wooden subfloors
- Suited for underfloor heating
- ZERO VOC

[1]Two coats R540 on concrete or cementitious substrates where moisture is a known or potential issue; where the moisture content is greater than 12 lbs (Calcium Chloride test) or 85% relative humidity (RH probe test) but not greater than 18 lbs or 95% relative humidity, 6% Tramex or 4% CM.

Technical data

Physical Characteristics:

Base – Polyisocyanate Prepolymer
Color – Transparent brown
Viscosity – thin
Density – 9.51 lbs / gallon
VOC Content – 0 VOC
Odor – solvent
Flash Point – Closed cup: >410°F (>210°C)
Stability – 1-year from date of manufacture in unopened, original packaging
Packaging – 5-liter jugs

Application Characteristics:
Roller– do not exceed ¼" nap mohair or other shed resistant roller
Dry Time – 1-16 hours* See application information
Cure Time – 24 hours
Coverage – Vapor Retarder – Wooden subfloors – 300-400 square feet per five liters. One coat primer – 400-600 square feet per 5 liters. For moisture barrier protection up to 18 lbs or 95% RH, apply two coats, each at 400 square feet per 5 liters.

Directions

BEFORE USING, READ ALL DIRECTIONS AND MATERIAL SAFETY DATA SHEET.

FOR TECHNICAL ADVICE: Call Bona US at 800-872-5515

MOISTURE TESTING: For concrete slabs, conduct moisture testing per ASTM test methods F1869 “Test Method for Measuring Moisture Vapor Emission Rate (MVER) of Concrete Subfloor Using Anhydrous Calcium Chloride”, and/or F2170 “Test Method for Determining Relative Humidity in Concrete Floor Slabs Using in Situ Probes”. Contact ASTM International to obtain copies of the test methods before proceeding. Use two coats of Bona R540 Moisture Barrier Sealer at a coverage rate of 400 square feet per 5-liter jug prior to installation of hardwood flooring with a Bona adhesive when MVER using ASTM F1869 (Calcium Chloride test) exceeds 12 lbs/24 hours/1000 square feet or when using ASTM F2170 (RH probe test) exceeds 85% relative humidity. The maximum moisture content should not exceed 18 lbs/24 hours/1000 square feet or 95% relative humidity. When using a Tramex measuring device to identify moisture levels in cementitious based substrates, use the Tramex measuring device to find the highest reading in the area to be installed and then run the CM testing method where you have recorded the highest reading. As a general guideline for floors with no in-floor heating system, if the Tramex is below 4%, the Bona R540 will not be necessary and between 4% and 6%, Bona R540 will be required. However, the CM method must be used to make final determination of concrete moisture levels. For moisture content and quality of substrates, the guidelines of the wood floor manufacturer must be observed. Wood subfloor MC not to exceed 20%.
ACCLIMATION AND SITE CONDITIONS: Building climate control system must be functioning with a temperature of 65°- 80°F and maximum relative humidity of 70% for 72 hours before flooring is installed, during installation, and for 72 hours after installation. Acclimate flooring according to manufacturer's instructions. Acclimate Bona R540 Moisture Barrier Sealer and Bona R851 or R859 Adhesive to the room temperature of installation; usually overnight.

SUBSTRATE PREPARATION: Substrate must be clean, smooth, dry, free of loose material and structurally sound, with the surface slightly textured for best adhesion (similar to a light broom finished concrete). Remove adhesive residue, paint, concrete curing compounds or other contaminants that may affect adhesive bond. Sandblasting, shot blasting or scarifying may be necessary to completely remove some of these residues. Surface cracks, grooves, depressions, control joints or other non-moving joints, and other irregularities must be filled or smoothed with a Portland Cement-based

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patching and/or leveling compound. Substrate must be level to 3/16" in a 10-foot span. Slab temperatures must be between 55° and 95°F. NOTE: If a concrete slab needs to be leveled, Bona R540 Moisture Barrier Sealer should be applied to the slab prior to application of the leveling compound. Sand should be broadcast into the second application of R540 (while wet) prior to the application of leveling compounds. Other suitable substrates include wood and radiant heat flooring (refer to manufacturer's recommended installation instructions).

PRODUCT LIMITATIONS: Bona R540 is designed to reduce moisture vapor emissions that originate from below the membrane only. It does not affect other issues originating from the top, sides or ends of flooring (water leaks, puddles, hydrostatic head, etc.) nor does it eliminate other moisture or installation related issues such as improper acclimation of flooring or the effects of jobsite temperature and humidity.

DO NOT USE BONA R540:

- On wet, contaminated or friable surfaces
- Over concrete curing compounds, sealers or other surface treatments that could affect adhesion
- On areas subject to hydrostatic head
- On cutback residue, or over vinyl/VCT/LVT
- On chemically treated woods (stain, preservatives, etc.)
- As a leveling compound
- As an adhesive

APPLICATION: As a primer, roll R540 evenly to the substrate using a roller not exceeding ¼" nap at the rate indicated in the chart below. Avoid the formation of puddles, or heavy spots. Allow to dry to a transparent film. If used as a moisture barrier over Cementitious substrates, a second coat should be applied within 24 hours.

When used as a vapor retarder for nail down installations only, allow R540 to dry 1-2 hours or when dry to the touch. When using R540 in conjunction with Bona R850T, R851, or R859 adhesives, whether as a nail-glue assist or full trowel, dry time of R540 is a minimum 16 hours and a maximum of 48 hours.(For R880, dry time of R540 is a minimum 4 hours and a maximum of 48 hours.) Higher temperatures and higher relative humidity may decrease dry times while lower temperatures and lower relative humidity will increase dry times.

Usage	Substrate / Installation Method	Installation Method	Coverage Rate	Dry Time (prior to installation)
Vapor Retarder	Plywood / wooden subfloor / cementitious*(floating only)	Nail down, floating	300-400 square feet per five liters	1-2 hours* (surface dry to the touch)
Vapor Retarder	Plywood / wooden subfloor / cementitious	Nail - Glue Assist with Bona R880	300-400 square feet per five liters	4 hours
Vapor Retarder	Plywood / wooden subfloor / cementitious	Nail - Glue Assist with - R850T, R851, R859	300-400 square feet per five liters	16 hours
Primer	Advantech Subfloor Systems	Nail - Glue Assist with Bona R880	400-600 square feet per five liters	4 hours
Primer	Advantech Subfloor Systems	Nail - Glue Assist with - R850T, R851, R859	400-600 square feet per five liters	16 hours
Moisture Barrier - up to 18 lbs / 95% RH*	Cementitious subfloors only	Full Trowel - R851, R859	Two coats, each at 400 square feet per five liters	16 hours

*Radiant heat systems will have a maximum moisture protection of 6 lbs. or 80% RH.

Maintenance

CLEAN-UP: R540 Can be mechanically removed once dried.

STORAGE: Store in a climate controlled environment. Keep from freezing. Do not store for extended periods above 90°F (32°C).

Order Information

Item#	Size	#/Case	Lbs./Case
BR54002200USBO	5-Liter jugs	3	40 lbs.