Bona QUANTUM® R851

Silane-based Wood Floor Adhesive

One-Component, silane-based wood floor adhesive

Bona QUANTUM® - R851 is a silane-based wood flooring adhesive that provides exceptional "green grab strength. Its elastomeric characteristics allow the adhesive to move with the wood as it expands and contracts over the life of the floor.

- Easy to apply – no arm fatigue
- Unsurpassed ridge stability provides maximum adhesive transfer
- Excellent "Green Grab" means the floor stays place
- Easy to clean – will not harm or etch the finish on pre-finished floors; will not stain hands
- VOC Free – for better indoor air quality
- GREENGUARD Gold Certified

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PHYSICAL CHARACTERISTICS

Ingredients – Calcium carbonate, silane modified prepolymer, plasticizers, amorphous silica
Base – Silane Modified-Prepolymer
Color – Cream
Viscosity – 100 +/-10 Pa*s at a shear rate of 5^-1 sec
Density – 13.93 lbs./gallon
VOC Content – ZERO VOC
Max Shear Strength – 340psi (at final cure; lap shear test, 1mm gap) ISO 17178
Max Elongation – 200% (ISO 17178)
Water Vapor Permeability - < 0.7 g/m2-24 hour-mmHG @ 2000g/m2
Sound Reduction Rating – Meets ASTM E90-09 (2016)/ E413-16 STC and ASTM E492-09 (2016) e1/ASTM E989-21 IIC, with ceiling; 63 STC and 69 IIC on 6" slab.
Moisture Levels – Moisture protection up to 18lbs or 95% RH, 6% Tramex. For maximum moisture protection ensure 100% coverage of adhesive to substrate. Maximum 6lbs/80% RH over radiant heat.
Odor – Non-offending
Flash Point – >100° C (212°F) (Pensky-Martens)
Stability – 12 months from date of manufacture in unopened, original packaging
Packaging – 3-gallon containers

APPLICATION CHARACTERISTICS

Spread Rating – Easy to spread, maintains excellent ridge stability
Open Time- Up to 60 minutes @70°F and 50% RH*
Coverage – See "Trowel Notch Requirements" for spread rate
Curing – Light foot traffic - 8-10 hours
Furniture, fixtures - 12-24 hours
Unfinished floor sanding - after 24 hours
*Dependent of temperature and humidity. Higher humidity decreases open time while lower humidity increases open time.

RECOMMENDED USE

Commercial and residential. Use with solid or engineered prefinished and unfinished flooring; on, above or below grade[1]. May be used on both wood and concrete substrates[2].
[1]Read and follow flooring manufacturer instructions, recommendations, and limitations as to the suitability of a particular flooring product to certain jobsite conditions and installation methods.
[2]After proper site conditions, moisture testing results and substrate preparation have been met.
See "Directions for Use" for acceptable jobsite conditions.

RESPONSE

BEFORE USING, READ ALL DIRECTIONS AND MATERIAL SAFETY DATA SHEETS. KEEP OUT OF REACH OF CHILDREN. FOR TECHNICAL ADVICE: Call Bona US at 800-872-5515. In case of eye contact, flush immediately with water. Get medical attention if irritation occurs. For skin, wash thoroughly with soap and water. If affected by inhalation, remove to fresh air. If swallowed, do not induce vomiting. Get medical attention.

ACCLIMATION AND SITE CONDITIONS

Building climate control system must be functioning with a temperature of 65°F–80°F and maximum relative humidity of 65% for 72 hours before flooring is installed, during installation, and for 72 hours after installation. Ideal conditions are 65-70°F and 45-55% RH. Acclimate Bona QUANTUM R851 adhesive to room temperature of the installation, usually overnight.

MOISTURE TESTING

For concrete slabs, using standard application, conduct moisture testing per ASTM test methods F 1869. Test for Measuring Moisture Vapor Emission

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Rate (MVER) of Concrete Subfloor using Anhydrous Calcium Chloride, and/or F 2170 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. MVER using ASTM F 1869 (Calcium chloride test) shall not exceed 12 lbs/24 hours/1000 square feet. Relative Humidity using ASTM F 2170 (RH Probe test) shall not exceed 85%. If MVER readings exceed 12 lbs. or 85% but are less than 18 lbs. or 95%, use Bona RollGuard™ or Bona® R540 Moisture Barrier/Primer (See label for detailed instructions) or use a ¼" x ¼" v-notch, or a moisture barrier plus (MBP) trowel, and spread the adhesive at a coverage rate of up to 35 square feet per gallon. For maximum moisture protection ensure 100% transfer and coverage of adhesive to concrete subfloor creating an uninterrupted and continuous membrane of adhesive. 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. As a general guideline for floors with no in-floor heating system, if the Tramex reading is below 4%, a ¼" x ¼" V-notch trowel, the Bona Moisture Barrier Trowel (MBP) clip-on trowel, Bona RollGuard™ or the Bona R540 Moisture Barrier/Primer will not be necessary. If the reading is between 4% and 6%, either use a ¼" x ¼" V-notch trowel, or the MBP Trowel at a coverage rate of up to 35 square feet per gallon. Alternatively, Apply Bona RollGuard™ or Bona R540 Moisture Barrier/Primer prior to adhesive application. For wood substrates, follow flooring manufacturer's guidelines including moisture content and required moisture measuring methods. When used over radiant heat. the maximum moisture protection is 6 lbs. / 80% RH.

SUBSTRATE PREPARATION

Substrate must be clean, smooth, dry, free of loose material and structurally sound, with the surface slightly textured (similar to a light broom finished concrete) for best adhesion. Remove adhesive residue, paint, concrete curing compounds or other contaminants that may affect adhesive bonds. Sandblasting, shotblasting 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 patching and leveling compound. Substrate must be level to 3/16" in a 10 foot span. To achieve moisture protection when a patch or leveling compound is used, first apply one coat of Bona RollGuard™ at 200-250 SF/5L or two coats of Bona R540 at 400 SF/ 5L. Dry sand should be broadcast into the final coat of moisture barrier (while wet, until rejection) prior to the application of leveling compounds. Apply leveling compound following manufacturer's instruction. Do not install wood flooring before the compound has fully cured. Do not install over expansion joints or other moving joints in a concrete slab. Slab temperature must be between 55°F and 95°F. Suitable substrates include concrete, plywood, Warmboard®, cork, particle or chip board, stone, ceramic, terrazzo, radiant heat flooring (refer to manufacturer's recommended installation instructions), and dry above-grade gypsum underlayment, recycled-rubber underlayment.

PRODUCT LIMITATIONS

Bona QUANTUM® R851 will not prevent moisture-related damages to wood flooring 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 QUANTUM® R851

- 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

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- On cutback residue, or over vinyl/VCT
- On chemically treated woods (stain, preservatives, etc.)
- As a leveling compound
- As a moisture barrier over leveling compounds or patches.

SPREADING ADHESIVE AND LAYING FLOORING

Spread adhesive on the substrate while holding the Bona trowel at a 90° angle, using a smooth semicircular motion. Do not leave any puddles of adhesive. Set the flooring into the adhesive while the adhesive is still wet. At the start of the job, pull a freshly laid board to ensure 100% transfer. This can be repeated a second time, mid-installation, to ensure consistency. Do not allow more than 60 minutes of open time before setting flooring into the adhesive. (At 70° F and 50% RH; higher humidity can decrease open time, lower humidity can increase open time). DO NOT SET FLOORING INTO ADHESIVE THAT HAS SKINNED OVER. REMOVE ADHESIVE AND REAPPLY.

BACK TROWEL METHOD

Utilizing the flat side of the Bona® 1500g trowel or the Bona® 1250g trowel, skim coat Bona QUANTUM® R851 onto subfloor creating a smooth surface free of voids. While the skim coat of adhesive is still wet, apply Bona QUANTUM R851 with either trowel.

CLEAN-UP

Clean adhesive from the surface of the floor while wet. Use mineral spirits on a clean white cloth.

STORAGE

Store in a climate controlled environment. Do not store for extended periods in excess of 90ºF (32°C). Freeze thaw stable.

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TROWEL SELECTION • SÉLECTION DE LA TRUELLE

Description La Description	Use Utilisation	Coverage Rate** Taux de couverture**	Moisture Protection† Protection contre l'humidité†
 1/4"x1/4" V-notch  7/16" V-notch with MBP spacer	Bona 1/4" x 1/4" v-notch Trowel Bona Moisture Barrier Plus (MBP) Trowel	Solids up to 9" wide and 3/4" thick Engineered up to 16" wide and 3/4" thick	up to 35 sq. ft./gallon	≤ 18 lbs. / 95% RH
Truelle dentelée en V de 6,35 mm x 6,35 mm Truelle dentelée en V de 11,11 mm avec entretoise MBP	Bona Truelle dentelée en V de 6,35 mm x 6,35 mm Truelle Bona Moisture Barrier Plus (MBP)	Plancher d'ingénierie jusqu'à 40 cm (16 po) de largeur et 2 cm (3/4 po) d'épaisseur Planche en bois massif jusqu'à 23 cm (9 po) de largeur et 2 cm (3/4 po) d'épaisseur	jusqu'à 3,25 m² / 4 litres	≤ 8,16 kg (18 lb)/95 % HR
 5/16"x5/16"x7/16" V-notch	Bona 1500G Trowel	Solids up to 9" wide and 3/4" thick Engineered up to 16" wide and 3/4" thick	up to 50 sq. ft./gallon	≤ 12 lbs. / 85% RH trowel only ≤ 15 lbs. / 87% RH with back-trowel method‡ ≤ 18 lbs. / 95% RH over Bona RollGuard™ or Bona R540*
Truelle dentelée en V de 7,93 mm x 7,93 mm x 11,11 mm	Truelle Bona 1500G	Planche en bois massif jusqu'à 23 cm (9 po) de largeur et 2 cm (3/4 po) d'épaisseur Plancher d'ingénierie jusqu'à 40 cm (16 po) de largeur et 2 cm (3/4 po) d'épaisseur	jusqu'à 4,65 m² / 4 litres	≤ 5,44 kg (12 lb)/85 % HR truelle seulement ≤ 6,80 kg (15 lb)/87 % HR sur le côté plat de la truelle‡ ≤ 8,16 kg (18 lb)/95 % HR sur Bona RollGuard™ ou Bona R540*
 1/4"x1/4"x7/16" V-notch	Bona 1250G Trowel	Solids up to 5" wide and 3/4" thick Engineered up to 8" wide and 3/4" thick	up to 60 sq. ft./gallon	≤ 12 lbs. / 85% RH trowel only ≤ 15 lbs. / 87% RH with back-trowel method‡ ≤ 18 lbs. / 95% RH over Bona RollGuard™ or Bona R540*
Truelle dentelée en V de 6,35 mm x 6,35 mm x 11,11 mm	Truelle Bona 1250G	Planche en bois massif jusqu'à 13 cm (5 po) de largeur et 2 cm (3/4 po) d'épaisseur Plancher d'ingénierie jusqu'à 20 cm (8 po) de largeur et 2 cm (3/4 po) d'épaisseur	jusqu'à 5,57 m² / 4 litres	≤ 5,44 kg (12 lb)/85 % HR truelle seulement ≤ 6,80 kg (15 lb)/87 % HR sur le côté plat de la truelle‡ ≤ 8,16 kg (18 lb)/95 % HR sur Bona RollGuard™ ou Bona R540*
 3/16"x7/32"x25/64" V-notch	Bona Engineered Flooring Trowel (EF)	Engineered flooring only up to 7" wide and 3/4" thick	up to 75 sq. ft./gallon	≤ 6 lbs. / 80% RH trowel only***
Truelle dentelée en V de 4,76 mm x 5,55 mm x 9,92 mm	Plancher d'ingénierie Truelle Bona (EF)	Plancher d'ingénierie jusqu'à 18 cm (7 po) de largeur 2 cm (3/4 po) d'épaisseur	jusqu'à 6,97 m² / 4 litres	≤ 2,72 kg (6 lb)/80 % HR truelle seulement***
 5/32"x5/32"x5/32" V-notch	Bona 1000F Trowel	Parquet up to 12" x 12" over smooth substrates; Acoustical Underlayment Pad	up to 85 sq. ft./gallon	≤ 6 lbs. / 80% RH trowel only***
Truelle dentelée en V de 6,25 mm x 6,25 mm x 6,25 mm	Truelle Bona 1000F	Parquet 30,5 x 30,5 cm (12 po x 12 po) sur des supports lisses Coussin de recouvrement acoustique	jusqu'à 7,89 m² / 4 litres	≤ 2,72 kg (6 lb)/80 % HR truelle seulement***
 5/16"x5/16"x3/4" V-notch	Bona Engineered Flooring Plus Trowel (EFP)	Engineered flooring only up to 7 1/2" wide and 5/8" thick	up to 70 sq. ft./gallon	≤ 3 lbs. / 75% RH trowel only***
Truelle dentelée en V de 7,93 mm x 7,93 mm x 19,05 mm	Plancher d'ingénierie plus Truelle Bona (EFP)	Plancher d'ingénierie jusqu'à 19 cm (7 1/2 po) de largeur 1.5 cm (5/8 po) d'épaisseur	jusqu'à 6,87 m² / 4 litres	≤ 1,36 kg (3 lb)/75 % HR truelle seulement***

Back Trowel Method: Utilizing the flat side of the Bona® 1500G or the Bona® 1250G trowel, skim coat Bona Quantum® R851 onto subfloor creating a smooth surface free of voids. While the skim coat of adhesives is still wet, apply Bona Quantum® R851 with either trowel. *Refer to Individual Product Technical Data Sheets for detailed information. **Coverage rates are dependent of board width and subfloor flatness (must be flat within 3/16" over 10 foot radius), substrate porosity (recommended CSP 3), pressure and angle of trowel during application. ***Two coats of a dedicated moisture barrier will provide additional protection; see individual product Technical Data Sheets for detailed information. †When used over radiant heat. the maximum moisture protection is 6 lbs. / 80% RH.

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ORDER INFORMATION

Item #	Description	Size	No. Case	Lbs./Case
BR85106100USBO	Bona QUANTUM® - R851	3 gal	1	44.4 lbs.