WATERPROOF LOCKING HARDWOOD WITH ANGLE/ANGLE TECHNOLOGY INSTALLATION INSTRUCTIONS

FOR FLOATING AND GLUE DOWN APPLICATIONS

RECOMMENDED ADHESIVES: See chart below

RECOMMENDED ADHESIVE REMOVER: Low Odor mineral spirits

RECOMMENDED CLEANER: Bruce® Hardwood & Laminate Floor Cleaner

RECOMMENDED UNDERLAYMENT: See chart below

RECOMMENDED WOOD GLUE (modifying the lock and joint gluing): Bruce® EverSeal® Adhesive

ATTENTION INSTALLERS

CAUTION: WOOD DUST

SAWING, SANDING AND MACHINING WOOD PRODUCTS CAN PRODUCE WOOD DUST. AIRBORNE WOOD DUST CAN CAUSE RESPIRATORY, EYE AND SKIN IRRITATION. THE INTERNATIONAL AGENCY FOR RESEARCH ON CANCER (IARC) HAS CLASSIFIED WOOD DUST AS A NASAL CARCINOGEN IN HUMANS.

Precautionary Measures: If power tools are used, they should be equipped with a dust collector. If high dust levels are encountered, use an appropriate NIOSH-designated dust mask. Avoid dust contact with eye and skin.

First Aid Measures in Case of Ingestion: In case of ingestion, flush eyes or skin with water for at least 15 minutes. If you have any technical or installation questions, or to request a Safety Data Sheet, please call 1-866-243-2726 or visit www.hardwoodexpert.com our technical website.

IMPORTANT HEALTH NOTICE FOR MINNESOTA RESIDENTS ONLY:

THESE BUILDINGS MATERIALS EMIT FORMALDEHYDE, EYE, NOSE, AND THROAT IRRITATION, HEADACHE, NAUSEA AND A VARIETY OF ASTHMA-LIKE SYMPTOMS, INCLUDING SHORTNESS OF BREATH, HAVE BEEN REPORTED AS A RESULT OF FORMALDEHYDE EXPOSURE. ELDERLY PERSONS AND YOUNG CHILDREN, AS WELL AS ANYONE WITH A HISTORY OF ASTHMA, ALLERGIES, OR LUNG PROBLEMS, MAY BE AT GREATER RISK. RESEARCH IS CONTINUING ON THE POSSIBLE LONG-TERM EFFECTS OF EXPOSURE TO FORMALDEHYDE. REDUCED VENTILATION MAY ALLOW FORMALDEHYDE AND OTHER CONTAMINANTS TO ACCUMULATE IN THE INDOOR AIR. HIGH INDOOR TEMPERATURES AND HUMIDITY RAISE FORMALDEHYDE LEVELS. WHEN A HOME IS LOCATED IN AREAS SUBJECT TO EXTREME SUMMER TEMPERATURES, AN AIR-CONDITIONING SYSTEM CAN BE USED TO CONTROL INDOOR AIR QUALITY LEVELS. OTHER MEANS OF CONTROLLED MECHANICAL VENTILATION CAN BE USED TO REDUCE LEVELS OF FORMALDEHYDE AND OTHER INDOOR AIR CONTAMINANTS.

IF YOU HAVE ANY QUESTIONS REGARDING THE HEALTH EFFECTS OF FORMALDEHYDE, CONSULT YOUR DOCTOR OR LOCAL HEALTH DEPARTMENT.
Concrete

Concrete (All installation methods)

The flooring can be glued directly to concrete with a minimum compressive strength of 3000 PSI. Do not install over a concrete sealer or painted concrete. If present, remove by grinding or sanding. Do not install over slick, heavily troweled or burnished concrete. Roughen the surface as necessary by sanding or grinding. Use an appropriate NOSIGN- designated dust mask. Floating floors can be installed over any structurally sound concrete.

Concrete Moisture

All concrete subfloors should be tested, and results documented, for moisture content. Visual checks may not be reliable. Test several areas, especially near exterior walls and walls containing plumbing. Acceptable test methods for subfloors include:

- Tramex Concrete Moisture Encounter Meter (Figure 3): Moisture readings should not exceed 4.5 on the upper scale. (Figure 3 shows an unacceptable reading of over 4.5) Concrete Moisture Meters give qualitative reading results—not quantitative ones. These results are a quick way to determine if further testing is required.

NOTE: The following tests are required in residential/commercial applications. Either both tests are acceptable.

- Calcium Chloride Test (ASTM F 1869): The maximum moisture transfer must not exceed 3 lbs./1000 ft.2 in 24 hrs. with this test.
- RH Levels in Concrete Using in-situ Probes (ASTM F 2718) should not exceed 75%.

"DRY" CONCRETE, AS DEFINED BY THESE TESTS CAN BE WET AT OTHER TIMES OF THE YEAR. THESE TESTS DO NOT GUARANTEE A DRY SLAB.

Moisture Retardant Systems

If excessive moisture is present or anticipated, use Bruce® Summit Seal adhesive or Bruce® ProConnect Plus adhesive or inexpensive sheet vinyl must be used to reduce vapor intrusion.

- Bruce® Summit Seal® All In One adhesive: Apply the adhesive using the trowel that is attached on every package. Flooring can be installed immediately after applying the adhesive.
- Bruce® Summit Seal® adhesive: Apply the adhesive using the Summit trowel that is listed on every package. Flooring can be installed immediately after applying the adhesive. (Only when installing Bruce Hydrotred)

Sheet vinyl: An inexpensive sheet vinyl or "slip-sheet" (felt-backed with vinyl wear layer) may be installed. Use a minimum grade of "D" quality. Nail, staple, or staple and cover with a commercial surface hardener. Test the concrete by spinning the water mix without a nail or other sharp object. If the concrete powders or crumbles, it is not sound and suitable for direct application of hardwood flooring and may require the use of a floating sub-floor system. Always check for adequate adhesive bond. The concrete must have a minimum compressive strength of 2000 PSI.

Ceramic, Terrazzo, Slate & Marble

All installation methods

All grout lines and broken corners that exceed 3/16” (5 mm) must be filled with a cementitious leveling compound and underlayment. The surface should be cleaned and abraded to create a good bonding surface for the adhesive. Loose tiles must be re-adhered to the subfloor or tiles as above. Remove all sealers and surface treatments. Always check for adequate adhesive bond.

Acoustic Cork Underlayment

(All installation methods)

Acoustic cork underlayment contains large quantities of gypsium that may inhibit the adhesive’s capability to properly bond. Acoustic cork must be primed with a primer such as Taylor 2005 or the concrete manufacturer's recommended primer/surface hardener. Test the concrete by spinning the water mix without a nail or other sharp object. If the concrete powders or crumbles, it is not sound and suitable for direct application of hardwood flooring and may require the use of a floating sub-floor system.

Acoustic underlayment is a quick and affordable alternative to other underlayment used in floating installations. Always check for adequate adhesive bond. When floating floors over cork DO NOT use foam underlayment.

Wood Structural Panel Subfloors and Underlayment

(All Installation Methods)

General: The wood subflooring materials must not exceed 13% moisture content. Using a reliable wood moisture meter, measure moisture content of both the subfloor and the hardwood flooring to determine proper moisture content. Moisture content of wood flooring should be 12% or less as indicated by a wood moisture meter, and be within 3% moisture content of the product being installed. When installing parallel to the floor joists it may be necessary to stiffen the subfloor system by installing an additional minimum of 3/8” (9.5 mm) approved underlayment. As applicable standards and recommendations of the construction and materials industries must be met or exceeded.

NOTE: As flooring manufacturers, we are unable to evaluate each engineered system. Spacing and spans, as well as their engineering methods, are the responsibility of the builder, engineer, architect or consumer who is better able to evaluate the expected result based on site-related conditions and performance. The general information provided below describes common, non-engineered joist/subfloor systems. Engineered flooring systems may allow for wider joist spacing and thinner subflooring materials.

Wood Structural Panel Subfloors and Underlayment

(All Installation Methods)

Structural panels/underlayment must be installed sealed side down. When used as a subfloor, allow 1/8” (3 mm) expansion space between each panel. If spacing is inadequate, cut in with a circular saw. Do not cut in expansion zones or grooves.

- Plywood: Must be minimum CDX grade (exposure 1) and meet US Voluntary Product Standard PS1 performance standard or Canadian performance standard CAN/CSA 0325-95. The preferred thickness is 3/4” (19 mm) as a subfloor (minimum 3/8” (9.5 mm)) or 3/8” (9.5 mm) as underlayment.

- Oriented Strand Board (OSB): Conforming to US Voluntary Product Standard PS2 or Canadian performance standard CAN/CSA-0325-95-OSB Subfloor Construction Sheathing. Check underside of panel for cores. When used as a subfloor, the panels must be tongue and groove and installed sealed side down. Minimum thickness to be 23/32” (18 mm) thick when used as a subfloor or 3/8” (9.5 mm) as underlayment.

- Particleboard: Must be minimum 40-lb density, untreated underlayment grade and 3/4” (19 mm) thick.

Solid Wood Subfloors

(All Installation Methods)

- Minimum 3/4” (19 mm) thick with a maximum width of 6” (15 cm) installed at a 45° angle to the floor joists. Group I, Dense softwood (Pine, Larch, Douglas Fir, etc.). No. 2 Common, kiln dried with all board ends bearing on the concrete powders or crumbles, it is not sound and suitable for direct application of hardwood flooring and may need to be preselected and set aside boards that blend best with all horizontally mounted moldings (reducer/step nose etc.) This will assure a uniform final appearance. Install these boards adjoining the moldings.

- Floor must be installed from several cartons at the same time to ensure good color and shade matching.

- Be attentive to staggering the ends of the boards at least 4-6” (10-15 cm) when possible, in adjacent rows. This will help ensure a more uniform final appearance. Install these boards adjoining the moldings.

- Floor must have 1/16” clearance under the door casing to be able to float freely without vertical restriction.

STEP 1: Doorway and Wall Preparation

(Floating Installations)

- Undercut door casings and jambs. Remove any existing base, shoe mold or doorway thresholds. These items can be replaced after installation. When undercutting door casings the installer should confirm there is the recommended expansion space. The floor must have 1/16” clearance under the door casing to be able to float freely without vertical restriction.

STEP 2: Plan Your Layout Using the Following Steps

(Floating Installations)

- Decide the direction of the floor installation in the room. Planks installed parallel to windows accent the floor the best. Floors should be installed perpendicular to the floor joists. If the floor is being installed parallel to the joists based on installation needs, it may be necessary to add an additional underlayment; at least 3/8” thickness to ensure the subfloor is controlled for this application. Sufficient subfloors as necessary to prevent vertical movement.

NOTE: If your room exceeds a maximum room width of 30’ (9 m) or a maximum room length of 90’ (27 m) additional expansion space is required. T-Moldings may be used at doorways or intersections to increase the expansion space.

STEP 3: Laying the Underlayment

(Floating Installations) (Only when installing Bruce Hydrotred)

- Install the underlayment in the same direction that the hardwood flooring will be installed.

- Extend the underlayment a few inches up the wall.

- Trim excess prior to installing trim or moldings.

- The floating floor underlayment may already have double-sided tape for ease of laying the prefinished wood floors. If there is no non-adhesive underlayment is used, tape all seams with the recommended tape.

STEP 4: Installing First Row

(Floating Installations)

- Begin on the left side of the room and work right.

- Lay the first full piece with the small, tongue side facing the wall (Fig. 4).

- Install second and subsequent full pieces in the first row by aligning short ends of boards and locking into place (Fig. 5).

- Use spacers along all sides that butt up against walls to maintain a 1/2” (12.7 mm) expansion zone (Figs. 5 & 6).

- Continue laying boards in the first row until you need to cut the last piece.

- Measure the distance between the wall and the face surface of the last board. Subtract 1/2” (6.35 mm) and cut the board. (See cutting instructions above.)

- If this dimension is less than 8” (20.32 cm) go back to the first full plank and cut approximately 8” (20.32 cm) from the end closest to the starting wall. This will leave a longer piece at the end of the first row.

Installing Remaining Rows

- Begin the second row of planks with the piece cut from the last piece in the first row. If the piece is shorter than 8” (20.32 cm), cut a new plank in half and use it to begin the second row. Whenever possible, use the piece cut from the preceding row to start the new row. End joints of all boards should be staggered 8” (20.32 cm) or more.

- Install the long end of the first board at an angle to the board in the previous row. Keep this board at its natural angle slightly raised off the subfloor (Fig. 7). Use a scrap piece of hardwood to support the row if needed.

- Continue installing full boards in the second row by angling the short end of the board to the row to lock into the previous board (Fig. 8). Position the board so that the long side of the board is close to boards in the previous row and overlapping the groove of the board in the previous row.

- Angle up and push forward until the boards lock together (Fig. 9).

- Continue installing full boards in the second and subsequent rows until you reach the wall on your right.

- Mark the last piece, cut and install. After all boards in the row are installed, press or walk all boards flat to the subfloor to begin the next row (Fig. 10).

- Use a pull bar when necessary to ensure joints are tight (Fig. 11).

Installing the Last Row

- The last row in the installation may need to be cut lengthwise.

- Place the row of planks to be cut on top of the last row of installed planks. Use a divider or a piece of the plank as a scribe to trace the contour of the wall (Fig. 12).
STEP 3: Spread the Adhesive

• Spread sufficient amounts of the recommended adhesive with the recommended trowel (Figure 2) in an area that can be covered in 60 minutes (see adhesive information).

• If necessary, nail a sacrificial row with 1” (2.5 cm) nails on the dry side of your chalk line to help hold the first row in place.

NOTE: Avoid installing on the surface of the flooring. If necessary, distribute weight using a kneeler board.

STEP 4: Installing the Floor

• Use the longest, straightest boards available for the first two rows. For random and alternate installations of the subfloor, use the widest plate for the first row. The first row of planks should be installed with the edge of the groove lined up on the chalk line. The tongue should be facing the starting wall. The first row must be aligned and seated in the subfloor, as all additional rows will be pushed back to this original row. Remove tongue to allow for expansion space, if necessary, on the row adjoining the wall.

• When installing pieces, engage the end-joint first, as close to the side (long) tongue and groove as possible, then move slightly to engage the side (long) joint along the groove. To avoid adhesive bleed-through and memory pull-back, avoid sliding pieces through the joint as much as possible when placing them in position.

• During the installation occasionally remove a piece of flooring from the subfloor and inspect the back for proper adhesive transfer. Adequate adhesive transfer is necessary to ensure sufficient joint strength.

• If the adhesive wears off and fails to transfer, remove and spread new adhesive to achieve proper bonding.

NOTE: Clean adhesive from the surface of the floor frequently, using the recommended adhesive cleaner. Urethane adhesives become extremely difficult to remove when cured. Do not use 3M Scotch-Blue® 2080 Tape before adhesive is removed from the surface. Use a clean towel, clean lowers, changed frequently, to prevent haze and adhesive residue.

• Check for a tight fit between all edges and ends of each plank. End-joints of adjacent rows should be staggered 4-6” (10-15 cm) when possible, to ensure a more favorable overall appearance (Figure 17).

• It may be necessary to align the product with a cut-off piece of scrap as shown (Figure 19 - Keep scrap angle low to avoid edge damage).

• To eliminate minor shifting or gapping of product during installation, use 3M Scotch-Blue® 2080 Tape to hold the planks together. After installation is complete, remove the tape, save half of the Scotch-Blue® Tape from the surface of the newly installed flooring. Do not let the tape remain on the flooring for longer than 24 hours. Avoid adhesive residue or mask of dust tape, which leaves an adhesive residue and may damage the finish.

• If necessary, use weights to flatten boards with bows until adhesive cures, in order to prevent hollow spots. Boards that cannot be flattened should be cut in length to reduce the bow, or not used.

• Roll and cross roll the floor with a 75-100lb. roller within one hour of the installation and again two hours to ensure proper transfer of the adhesive.

• Be sure not to spread adhesive too far ahead of your work area (Figure 18).

• Complete the installation using this same technique for the remainder of the floor.

• Avoid heavy foot traffic on the floor for at least 24 hours. Lift the furniture or fixtures back into place after 24 hours.

Installing Under a Door Jam ( anytime)

• Installations of locked engineered floors under moldings, such as a door jamb, may require that the top lip of the groove on the edge be reinforced in some areas.

• Using a small plane or knife plane, shave off the ledge of the groove. After the edge groove has been trimmed, place the board into place and tighten with a pull bar to test for fit. The installer must ensure that the proper expansion space is maintained and the flooring is not pinched.

• If fit is correct, trim as necessary. Remove any wax from the end joint so you will get good adhesion.

• Place a bead of recommended glue on the bottom lip of the groove and adhere.

• Reinsert the tongue into the groove and tighten the board with a pull bar. Hold the board in place with painter’s tape (3M Scotch-Blue® 2080 Tape) until the glue is dry. Do not use masking tape or duct tape, as the finish may be damaged.

STEP 5: Finishing the Installation

• Installation exposure (greater than 36 hours) to water could damage the hardwood flooring. Installation and maintenance recommendations can be closely followed to prevent water from contacting the core material of the flooring.

• Full bathroom installations require folding the underlayment up the wall 2” (5 cm). Cut the underlayment even with the top of flooring after installation.

• Joint integrity is integral to moisture resistance. Avoid excessive joint moving during installation.

• All perimeter expansion zones must be completely filled with 100% silicone caulk following the manufacturer’s recommendations. When applying caulk, it is helpful to first apply a strip of painter’s tape (3M Scotch-Blue® 2080 Tape) parallel to and approximately 1/32” (.79 mm) from the edge of the hardwood (Figure 20). Then fill the expansion zone with caulk, remove the excess with a plastic scraper or putty knife and remove the tape.

• Molding may be used along a straight tub or shower base (Figure 21). The expansion zone should be filled with 100% silicone caulk and the molding seated in the caulk while it is still wet. The joint between the molding and the tub or shower base should also be caulked.

• If molding is not an option, a normal 1/4” (.635 mm) expansion zone may be used at the tub and then completely filled with 100% silicone caulk.

• The toilet should be removed before installing the flooring. Allow a 1/2” (.635 mm) expansion zone between the flooring edge and the toilet flange. Completely seal the zone with 100% silicone caulk.

Completing the Installation

• Remove all wedges and tape if used.

• Clean floor with the recommended hardwood flooring cleaner.

• If drywall dust is present, thoroughly vacuum prior to using the recommended cleaner.

• Trim all underlayment and install, or re-install, all base and/or quarter round moldings. Nail moldings into the wall, not the floor. Inspect the floor, filling all minor gaps with the appropriate blended filler.

• If the floor is to be covered, use a breathable material such as carpet. Do not cover with plastic.

• Leave warranty and floor care information with the owner. Advise them of the product name and code number of the flooring they purchased.

• To prevent surface damage, avoid rolling heavy furniture and appliances on the floor. Use plywood, hardboard or appliance lifts if necessary. Use protective casters/caster cups or felt pads on the legs of furniture to prevent damage to the flooring.

TRANSITION AND WALL MOLDINGS

Reducer Strip

• Reducer Strip: A beaded shaped molding used around fireplaces, doorways, as a room divider, or as a transition between hardwood flooring and adjacent thinner floor coverings. Fasten down with adhesive, small nails or double-faced tape.

• Three-Way: A molding undercut for use against sliding door tracks, fireplaces, carpet, ceramic tile, or existing reducer strip. Reduced height thresholds should not be installed over a finished floor. There are several available sizes. These moldings are common in high traffic areas. Fasten down firmly with adhesive and nails or screws. Predrill nail holes to prevent splitting.

• Quarter Round: A molding used to cover expansion space next to baseboards, case goods, and stair steps. Predrill and nail to the vertical surface, not into the floor.

• Combination Base and Shoe: A molding used when a base is desired. Used to cover expansion space between the floor and the wall. Predrill and nail into the wall, not the floor. This molding is recommended for high traffic areas or other Surfaces that require a more finished appearance.

T-Molding

• T-Molding: A molding used as a transition piece from one rigid flooring to another of similar height or to gain expansion spaces. Fasten at the heel in the center of the molding. Additional rigid support may need to be added to the heel of the molding dependent upon the thickness of the goods covered. Do not use this molding as a transition to carpet.

INSTALLERS – ADVISE YOUR CUSTOMER OF THE FOLLOWING

Seasons: Heating and Non-heating

Recognizing that hardwood floor dimensions will be slightly affected by varying levels of humidity within your building, care should be taken to control humidity levels within the 30-50% range. To protect your investment and to assure that your floors provide lasting satisfaction, we have provided our recommendations below.

Heating Season: (Humidity level reduced) A humidifier is recommended to prevent excessive shrinkage in hardwood floors due to low humidity levels. Wood stoves and electric heat tend to create very dry conditions.

Non-Heating Season (Humid, Wet): Proper humidity levels can be maintained by use of an air conditioner, dehumidifier, or by turning on your heating system periodically during the summer months. Avoid excessive exposure to water from tracking during periods of inclement weather. Do not obstruct in any way the expansion joint around the perimeter of your floor.

Damage caused by failing to maintain the proper humidity levels is not manufacturing related and will void the floor’s warranty.

NOTE: Final inspection by the end-user should occur from a standing position.

FLOOR REPAIR

• Minor damage can be repaired with a Bruce® touch-up kit or acrylic wood filler. Major damage will require board replacement, which can be done by a professional floor installer.

• Instructions for the board replacement can be found at www.hardwoodexpert.com, our technical website.

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