



INSTALLATION INSTRUCTIONS GUIDE

BELOW IS A GUIDE FOR INSTALLATION INSTRUCTIONS

OWNER / INSTALLER RESPONSIBILITY

- ENGINEERED HARDWOOD floors is a product of nature, which is characterized by distinctive natural variations in grain and color and are not considered flaws. Hardwood flooring will also experience a change in color over a period of time. The degree of change depends upon the species, time and the amount of UV light exposure.
- The owner/installer assumes all responsibility for final inspection of product quality. This inspection of all flooring should be done **before** installation. Carefully examine the flooring for color, factory finish, grade, and quality before installing it. Do not install flooring pieces with glaring defects whatever the cause. If material is not acceptable, contact your retailer immediately before installation. Installation implies acceptance. **No warranty will be offered for material with visible defects once the product is installed.**
- Before beginning the installation of any hardwood flooring product, the installer must determine that the environment of the job site and the condition and type of the sub floor is acceptable, ensuring that it meets or exceeds all requirements, which are, stipulated in the installation instructions which follow. The manufacturer declines any responsibility for job failure resulting from or associated with inappropriate or improperly prepared sub floors or job site environment deficiencies.
- The installer must document all site tests and the records must be available if a claim is filed.
- The use of stain, filler, or putty stick for the touch up of the floorings during installation should be accepted as normal procedure.
- When ordering, 5-10% must be added to the actual square footage amount needed for grading and cutting allowances.

FOR PRODUCTS WIDER THAN 5": In addition to the use of mechanical fasteners, assisted glue applications should be used. The glue should be a premium grade urethane construction adhesive applied in a serpentine pattern to the back of each board. Then follow the recommended fastening pattern.

SITE REQUIREMENTS

- In new construction, ENGINEERED HARDWOOD floors should be one of the last items installed. All work involving water or potential ground debris (plumbing, dry wall, etc.) should be completed prior to wood flooring being installed. Heating and air systems should be fully operating, maintaining a consistent room temperature at 60°-80° F and a constant relative humidity of 35-55%.
- Flooring should not be delivered until the building has been closed in and concrete, masonry, framing members, drywall, paint and other "wet" work are completely dry.
- Check basements and under floor crawl space to be sure that they are dry and well ventilated to avoid damage caused by moisture. Crawl spaces must have a minimum 6 mil black polyurethane film as a vapor retarder on the ground surface if the crawl space is not finished with cement.
- Moisture content of both the sub-floor and the flooring should be checked and recorded before any work begins.
- Flooring should be stored at the job site for a minimum of 48 hours prior to installation for acclimation. **Flooring must be properly acclimated to temperature and humidity conditions prior to installation. Do not open cartons until ready to install.**
- Handle with care and do not stand flooring on ends.
- Flooring should be placed in the installation area, but do not store directly upon concrete floors or next to outside walls. Store flooring with at least a four inches of air space around cartons and elevated at least four inches if stored upon a concrete sub floor.
- The installation site should have consistent room temperature of 60°-80° F and a constant relative humidity level of 35-55% for a minimum of 2 days prior to installation of any flooring product.
- Engineered flooring is for below grade, on grade or above grade installation only and **cannot** be installed in full bathrooms or other high moisture areas.

SUBFLOOR/ UNDERLAYMENT

Recommended Subfloor/Underlayment Surfaces

(All Installation Methods)

• Wood subfloors

Note: Solid wood flooring can be fastened to most existing flooring materials providing they can be penetrated with the fastener and the subfloor/underlayment materials meet or exceed the recommended subfloor/underlayment requirements. Laminated rosin paper or #15 builders felt (tar paper) acts as a moisture retarder and may be used to reduce movement caused by changes in subfloor moisture, thereby reducing cupping and warping. (This is especially helpful over crawl spaces and basements.) In addition, the use of these materials can give the flooring a more solid feeling, reduce sound transfer, prevent noise caused by minor irregularities and debris, and make it easier to slide the wood together across the surface of the subfloor. Kraft paper may be used to make the installation easier but DOES NOT serve any other purpose.

General: The wood subflooring materials must not exceed 13% moisture content. Using a reliable wood moisture meter, measure moisture content of both subfloor and the hardwood flooring to determine proper moisture content. The difference between the moisture content of the wood flooring and the hardwood flooring must not exceed 4% for strip and 3% for plank flooring. 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 wood underlayment. Applicable standards and recommendations of the construction and materials industries must be met or exceeded.

• Wood structural panels and underlayment

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

- Plywood:** Must be minimum CDX grade (exposure 1) and meet US Voluntary Product Standard PS1 performance standard or Canadian performance standard CAN/CSA 0325-0-92. The preferred thickness is 3/4" (19 mm) as a subfloor [minimum 5/8" (16 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 0325-0-92 construction sheathing. Check underside of panel for codes. 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.
- Waferboard and Chipboard:** Conforming to US Voluntary Product Standard PS2 or Canadian performance standard CAN/CSA 0325-0-92. Must be 3/4" (19 mm) thick when used as a subfloor and 3/8" (9.5 mm) thick when used as an underlayment.

- Particleboard:** Must be a minimum 40-lb. density, stamped underlayment grade and 3/4" (19 mm) thick.

• Fully adhered existing wood floors

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 1 dense softwood (Pine, Larch, Douglas Fir, etc.) No. 2 common, kiln dried with all board ends bearing on joists.
- For glue down applications add 3/8" (9.5 mm) approved underlayment.

Existing Wood Flooring

(All Installation Methods)

- Existing engineered flooring must be well bonded/fastened. When gluing over existing wood flooring of any thickness, the finishing materials must be abraded or removed to foster an adequate adhesive bond. When flooring is to be mechanically fastened, the existing engineered wood flooring must be a minimum of 3/8" (9.5 mm) thick installed over approved wood/wood composite underlayment that has been properly fastened. When installing over engineered flooring that is glued to concrete, the minimum thickness of that flooring must be 1/2" (13 mm) to allow for the length of the fastener.
- Existing solid wood flooring that exceeds 6" (15 mm) in width must be covered with 3/8" (9.5 mm) approved underlayment and fastened as required. Do not install over solid flooring attached directly to the concrete.

Existing Wood Flooring

(Glue-Down Installations)

- Make certain the floor covering materials are well bonded to the subfloor/underlayment with full spread adhesive and are no more than two layers thick, not to exceed 3/16" (5 mm).
- With approved wood/wood composite subfloors, if vinyl or tiles are loose, broken, or in poor condition, install a 3/8" (9.5mm) approved underlayment directly over the flooring materials.
- Clean the flooring materials as necessary to create a good adhesive bond. If a maintenance material is present on the floor covering or a gloss is present, de-gloss with a flooring pad and a commercially available stripper, then rinse completely. Allow ample drying time. (NOTE: Do not sand any resilient products. They may contain asbestos fibers, which may be harmful.)
- Cork floors must have all sealers and surface treatments removed before installation begins. Always check for adequate adhesive bond.

(Mechanically Fastened/Staple-Down Installations)

- Do not install over floors that exceed one layer, as the thickness of the flooring materials will prevent an adequate mechanical bond.
- Make certain that the subflooring materials meet minimum requirements.
- Some tile products may be too brittle for staple penetration. Always test an area for breakage before proceeding.
- Fully adhered vinyl sheet, resilient tile, cork flooring and linoleum**
- Mechanically Fastened/Staple-Down Installations**
- Do not install over floors that exceed one layer, as the thickness of the flooring materials will prevent an adequate mechanical bond.
- Make certain that the subflooring materials meet minimum requirements. (See previous sections).
- Some tile products may be too brittle for staple penetration. Always test an area for breakage before proceeding.
- Glue-Down Installations**
- Make certain the floor covering materials are well bonded to the subfloor/underlayment with full spread adhesive and are no more than two layers thick, not to exceed 3/16" (5 mm).
- With approved wood/wood composite subfloors, if vinyl or tiles are loose, broken, or in poor condition, install a 3/8" (9.5 mm) approved underlayment directly over the flooring materials.
- Clean the flooring materials as necessary to create a good adhesive bond. If a maintenance material is present on the floor covering or a gloss is present, de-gloss with a flooring pad and a commercially available stripper, then rinse completely. Allow ample drying time.

Note: Do not sand any resilient products. They may contain asbestos fibers, which may be harmful.

- Cork floors must have all sealers and surface treatments removed before installation begins. Always check for adequate adhesive bond.

(Glue Down and Floating Installations Only)

• Concrete

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, sealer or paint must be removed by grinding or sanding. Do not install over slick, heavily troweled or burnished concrete. The surface must be roughened as necessary by sanding or grinding. Use an appropriate NIOSH-designated dust mask. Floating floors can be installed over any structurally sound concrete.

Concrete Moisture Tests

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 subfloor moisture content include:

- Tramex Concrete Moisture Encounter Meter** Moisture readings give qualitative reading results-not quantitative ones and should not exceed 4.5 on the upper scale. These results are a quick way to determine if further testing is required.

NOTE: The following tests are required in residential/commercial applications. Either or both tests are acceptable. If both tests are conducted, then both tests must pass.

- 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 2170)** 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 a Moisture Retardant System, such as an inexpensive sheet vinyl must be used to reduce vapor intrusion or recommended adhesive.

- Adhesive:** Apply the adhesive using a trowel. Flooring can be installed immediately after applying the adhesive.
- Sheet vinyl:** Sheet vinyl or "slip-sheet" (felt-backed with vinyl wear layer) must be installed. Use a premium grade, alkali resistant adhesive and a full spread application system to properly bond the vinyl to the subfloor. Follow the sheet vinyl manufacturer's instructions for installation procedures. A bond test may be required as an adhesion test. Install several small areas (3' x 3') (1 m x 1 m) and allow the vinyl to set for 72 hours. Remove the vinyl. If the backing remains attached to the concrete, the subfloor should be acceptable for sheet vinyl installation. Install the sheet vinyl and allow the adhesive to cure for 24 hours prior to beginning installation. De-gloss as necessary to create an adequate adhesive bond. Always check for adequate adhesive bond.

Acoustic Concrete

Acoustic concrete normally contains large quantities of gypsum that may inhibit the adhesive's capability to properly bond. Acoustic concrete must be primed with the concrete manufacturer's recommended primer/surface hardener. Test the concrete by scraping the surface with a nail or other sharp object. If the concrete powders or crumbles, it is not sound and hardwood flooring should not be directly installed use of floating sub-floor system. Always check for adequate adhesive bond. The concrete must have a minimum compressive strength of 2000 PSI.

• Ceramic Tile, Terrazzo, Slate & Marble

All grout joints and broken corners that exceed 3/16" (5 mm) must be filled with a cementitious leveling compound Patch, Underlayment & Embossing Leveler with Underlayment Additive. The surface must be cleaned and abraded to create a good bonding surface for the adhesive. Loose tiles must be re-adhered to the subfloor or filled as above. Remove all sealers and surface treatments must be removed Always check for adequate adhesive bond.

• Acoustic cork

The flooring must be glued or floated directly over full spread, permanently bonded acoustic cork. The cork must have a density of no less than 11.4 lb./cubic foot. The cork, in general, should be pure cork combined with a polyurethane or resin binder. Install cork in accordance with cork manufacturer's recommendations. Always check for adequate adhesive bond. When floating floors over cork **DO NOT** use foam underlayment.

SUB FLOORS MUST BE:

- CLEAN** - Scraped or sanded, swept, free of wax, grease, paint, oil, previous or existing glues or adhesives, and other debris.
- SMOOTH/FLAT** - Within 1/8" on 6' (3 mm in 2 m) radius and/or 3/16" in 10' (5 mm in 3 m). Sand high areas or joints, fill low areas (no more than 1/8") with a cement type filler no less than 3000 psi. Follow the instructions of the leveling compound manufacturer but make certain the leveling compounds are completely dry before beginning installation. Any irregularities may cause hollow spots between the flooring and sub floor in any installation method and are not warranted. Flatten edge swell as necessary.
- STRUCTURALLY SOUND** - Any areas that are loose, show movement or squeak, must be nailed or screwed. Replace any delaminated or damaged sub flooring or underlayment. Avoid subfloors with excessive vertical movement. If the subfloor has excessive vertical movement or deflection before installation it is likely it will have deflection after the flooring is installed.
- DRY** – Check and document moisture content of the sub floor using appropriate moisture tests. All moisture testing must be performed & documented before and after the flooring has been acclimated at least 48 hours and job site requirements met. Replace any water-damaged, swollen or delaminated subflooring or underlayments.
- WOOD SUBSTRATES:** Test the moisture of the wood substrate using a calibrated moisture meter approved for testing wood moisture according to the meter manufacturer. Take readings from at least 20 different locations per 1000sqft area and average the results. The moisture content of the flooring should be within 4% of the average wood sub floor moisture content before beginning installation.
- CONCRETE SLABS (regardless of existing floor covering):** All concrete sub floors must be tested for moisture content prior to installation of the hardwood flooring. The concrete subfloor must be cured for a minimum of 60 days prior to moisture testing. The moisture content of the concrete sub floor must not exceed 3lbs per 1000sqft in 24 hours per the Calcium Chloride test (ASTM F 1869) or not exceed 75% per the Relative Humidity In-Situ Probe test (ASTM F 2170).

Note: If a sub floor has been flooded or rained upon, it may not be suitable to install flooring.

SUBFLOORS WITH RADIANT HEAT:

ENGINEERED HARDWOOD floors can be used over heated concrete slabs or other 'under-floor' heating systems. Please consult the manufacturer of the heating system and follow all guidelines. Specific exceptions of heated flooring systems must be followed or the warranty will be considered void.

- Relative Humidity must be maintained between 35-55%
- Subfloor moisture should never vary greater or less than 3% from the flooring moisture content
- Concrete that has been cured for 45 days, 5/8" Plywood or ¾" oriented strand (OSB) boards are recommended for subfloor materials
- Radiant heat system must be turned on and in operation for at least 7 days before installation.
- The system must be turned down to 65°F and maintained 36 hours prior to installation.
- After installation, bring the heating system back up to normal operating temperature over a period of 5-7days.
- Floor should never be heated over 80°F.

TOOLS AND SUPPLIES

This is not an exhaustive list of the tools that may be needed to install your Engineered wood floor. You will need additional equipment depending on the type of installation you choose. See Additional equipment below.

All Installation Methods

- Vacuum or broom
- Mitre saw
- Measuring tape
- Chalk line
- Square
- Handsaw
- Hammer and tapping block
- Levelling compound and sander
- Slip tongue and wood glue (as needed)

Additional equipment for glued installation

- Waterless, urethane-based adhesive

Recommended adhesives:

- Finitec AcoustiTECH AD-532+ / AD-844 MS
- Titebond 811 Advantage
- Bostik's BEST, EFA+, or BST

- Trowel recommended by the manufacturer of the adhesive

- 3M blue masking tape or equivalent
- Guide strips and concrete nails
- 100 lb. to 150 lb. (45 kg to 68 kg) roller
- Urethane-based adhesive cleaner
- AcoustiTECH Leed 3.3 acoustical membrane* (or equivalent with a maximum thickness of 5 mm, ≥ 2 psi, and 25% compression or a maximum thickness of 5 mm to 8 mm, ≥ 5 psi, and 25% compression)

Additional equipment for nailed or glued installation

- Hardwood flooring nailer or stapler (pneumatic or manual)
- Drill and 3/32" (2.38 mm) bit
- Nail punch and spiral finishing nails between 1 ½" (38 mm) and 2 ½" (63 mm) in length, depending on the thickness of the floor
- Floor screws

Additional equipment for floating installation

Recommended adhesive and membrane:

- PVA Type II wood glue
- AcoustiTECH VP acoustical membrane*(or equivalent with a maximum thickness of 3.5 mm, ≥ 5 psi, and 25% compression)

PROCEDURE

FOR PRODUCTS WIDER THAN 5": In addition to the use of mechanical fasteners, assisted glue applications should be used. The glue should be a premium grade urethane construction adhesive applied in a serpentine pattern to the back of each board. Then follow the recommended fastening pattern.

Glued installation

There is one way to install when using wood adhesive (wet lay, that is, to lay directly onto wet adhesive). **Caution:** When installing using the wet method, follow all guidelines set by the adhesive manufacturer. By not adhering to the guidelines you can void your flooring warranties.

How to install flooring

Step 1:

Select a starter wall. It is recommended to start the installation along an exterior wall; it's more likely to be straight and square with the room. Measure out from the wall the width of two strips plus 1/4" and mark each end of the room and snap your chalk line.

Step 2:

Spread "adhesive" from the chalk line to the starter wall using the recommended trowel (1/4" x 1/4" x 1/8" square notch). It is important to use the correct trowel at a 45° angle to get the proper spread of adhesive applied to the sub-floor, which will produce a proper and permanent bond. Improper bonding can cause loose or hollow spots. Note: Change the trowel every 2000 to 3000 square feet due to wear down of the notches. This assures you always get the proper spread of adhesive.

Step 3:

Install the first row of starter strips with the tongue facing the starter wall and secure into position. Alignment is critical and can be achieved by top nailing the first row with finishing nails (wood installation instructions: engineered floor sub-floor), or sprig/pin nails (concrete sub-floor). This prevents slippage of the strips that can cause misalignment.

Note: The strips along the wall may have to be cut to fit since most walls are not straight, and leaving an expansion space is not necessary with engineered strips.

Step 4:

Once the starter rows are secure, spread 2-1/2 to 3 feet of adhesive the length of the room. (Never lay more adhesive than can be covered in approximately 2 hours.) Place the tongue into the groove of the strips and press firmly into adhesive. Never slide strips through adhesive. Use a tapping block to fit strips together snugly at side and butt ends. Test for proper bond by occasionally lifting a board and looking for good coverage (90%), and then replace it into the adhesive. Clean any adhesive off the surface before it cures using water. Use mineral spirits after it cures. Use 3M Blue Masking Tape to hold strips securely in place as you are installing and continue the process throughout the installation. Caution when using a rubber mallet to butt material together, it can burnish the finish and cause marring.

Note: Never work on top of the flooring when installing with the wet lay method. Light foot traffic is allowed after 12 hours but wait 24 hours after installation to remove the 3M blue masking tape. Once the tape is removed clean any adhesive residue left from the tape.

Nailed or stapled installation

ENGINEERED HARDWOOD floors may be installed over wood sub-floors using staples or nailing cleats. When installing engineered wood strips or strips by nailing or stapling, it is necessary to use the proper type of flooring stapler or nailer.

How to install flooring

Recommended Staplers and Nailers

We have tested and recommend the following staplers and nailers:

- The Bostitch Floor Runner (S3297-LHFZ) with the Bostitch 1" staple (S1397)
- The Bostitch Floor Stapler with 1 1/2" or 2" staples.
- The Bostitch Power Nailer – 50C nailer using a 1 1/2" power cleat. (Note: use the 1/2" adapter)

Caution: We have tested the above-recommended tools. Other staplers, staples, nailers and cleats may work as well. However, since they are not currently recommended, if their use damages or fails to properly secure the flooring it is the responsibility is the installer/owner.

Step 1:

You must staple or nail 1"–2" from the ends and every 4"–6" along the edges. This will help ensure a satisfactory installation. It is best to set the compressor PSI at 80 – 85 lbs. to keep the staples from going through or breaking the tongues. Improper stapling techniques can cause squeaks in the floor. Adjustments may be necessary to provide adequate penetration of the nail or staple into the nail bed. You want it flush in the nail pocket. Use a scrap piece of flooring material to set tools properly before installation. 15lb roofing felt or resin paper may be substituted for the polyethylene and installed as below.

Layout the job:

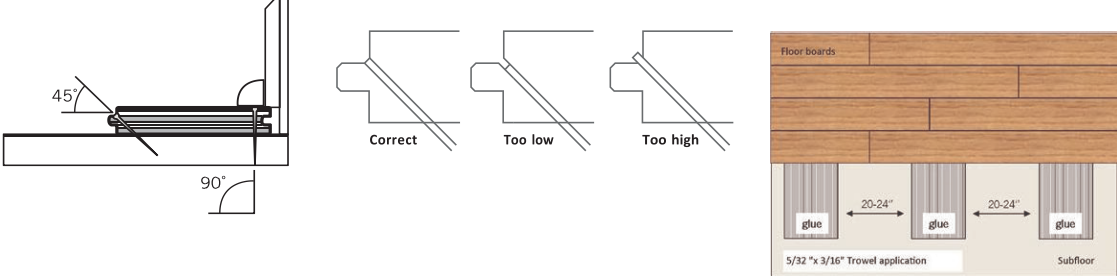
Measure out from the ends of your starting wall 2 3/4" when installing 2 1/4" strip flooring or 3 1/2" when installing 3" strips and mark both ends. Where possible lay the flooring at 90° angles to the floor joists. Make a chalk line along the starting wall using the marks you made.

Beginning installation:

Place the strips with the tongue facing away from the wall and along your chalk line. Use brads or small finishing nails to secure the first row along the wall edge 1"–2" from the ends and every 4"–6" along the side. Counter sink the nails and fill with filler that blends with the flooring installed. Place the nails in a dark grain spot in the board. The base or shoe molding will cover the nails when installed after completion of the flooring installation. Blind nail at a 45° angle through the tongues. It will be easier IF YOU PREDRILL THE HOLES IN THE TONGUES. Nail 1" – 2" from the ends and every 4" – 6" along the sides. It will be necessary to blind nail the next two rows. A Stanley BT35 brad nailer with 1" – 1-3/8" brads can also be used to blind nail and no pre-drilling is needed. Continue the installation using an engineered wood flooring stapler and the recommended staples or nails. Nail or staple the flooring 1" – 2" from the ends and every 4" – 6" along the edge tongues.

- Fasteners must be installed at a 45-degree angle. (see Image 2)
- You may need to use a tapping block to fit the boards together. NEVER use a hammer or a sledgehammer directly on the boards.
- For best results, stagger joints 6" to 8" (152 mm to 203 mm) between rows and alternate board lengths.
- The use of urethane-based glue is recommended in addition to nailing for flooring that is 6 ½" (165 mm) and 8 ½" (206 mm) wide. Apply a trowel width of adhesive perpendicular to the direction of the flooring every 20" (508 mm) or so. (see Image 3)
- The last rows of boards should be installed in the same manner as the first.
- You may have to rip the last row lengthwise to allow a ½" (13 mm) expansion gap.

Image 1



Warning!
Split or broken tongues can cause creaking. When working with harder woods, it's important to pay close attention to the pressure on the compressor.

Floating installation

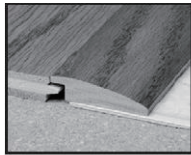
How to install flooring

Make sure subfloor is tested for moisture content first and is properly prepared. Laying an underlayment of 6-mil polyfilm with seams overlapped 8" is recommended for on or below grade. Fasten seams every 18-24" with duct tape. Run the outised edges of film up perimeter of each wall 4" which will trimmed after the installation is complete. Laying Foam underlayment with edges butted (not overlapped) and taped full length of the seam is recommended for sound proofing.

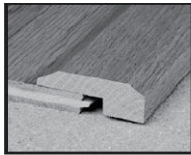
Start first row with groove toward wall. Glue end joints of the first row by applying a small continuous bead of Titebond to bottom side of the side groove. Clean up any adhesive that is on the face by using a damp rag immediately. Always leave at least a 3/8" expansion space between flooring and all walls and vertical objects such as pipes and cabinets. Use wood or plastic spacers during installation to maintain this expansion space. Lay subsequent rows of flooring by applying glue to side and end joints and fitting planks together with tapping block. Remember to stagger end joints from row to row at least 8" apart. Clean up any adhesive that is on the face of the floor by using a damp rag – DO NOT allow adhesive to dry on the flooring face as it is difficult to then remove without damages the flooring.

WALL MOLDINGS / TRANSITION

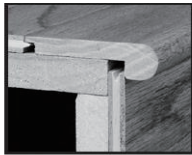
- Reducer Strip:** A teardrop shaped molding used around fireplaces, doorways, as a room divider, or as a transition between hardwood flooring and adjacent thinner floor coverings. Fasten down with adhesive, small nails or double-faced tape.
- **Threshold:** A molding undercut for use against sliding door tracks, fireplaces, carpet, ceramic tile, or existing thresholds to allow for expansion space and to provide a smooth transition in height difference. Fasten to subfloor with adhesive and/or nails through the heel. Predrill nail holes to prevent splitting.
 - **Stair Nosing:** A molding undercut for use as a stair landings trim, elevated floor perimeters, and stair steps. 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.
 - **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.



Reducer Strip



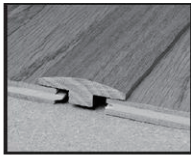
Threshold



Stair Nosing



Quarter Round



T-Molding

MAINTENANCE / AFTER CARE

CLEANING YOUR FLOOR

- Use a damp cloth to blot up spills and spots as soon as they happen. For tough spots such as oil, paint, markers, lipstick, ink, tar, or cigarette marks, use specific remover then wipe with a damp cloth. Always avoid allowing liquids to stand on your floor.
- Vacuum (using the hard floor attachment not the beater bar), dust mop or sweep the floor to minimize abrasive grit, debris and dirt.
- **Do not** use wax oil or UV oil for maintenance. The surface of this product is water-based paint. Periodically clean the floor with a special flooring cleaner, which is specially formulated for the finish.
- **Do not** use oil based, wax, and polish, strong ammoniated or abrasive cleaners, steel wool or scouring powder to clean the floor.
- **Do not** wash or wet mop the floor with soap, water, oil soap detergent or any other liquid cleaning material. This could cause swelling warping, delamination and joint-line separation, and void the warranty.
- **Do not** use any type of buffing machine.

PROTECTING YOUR FLOOR

- Use quality area rugs and doormats by outdoor entrance areas to prevent dirt, sand, grit and other substances such as oil, asphalt or driveway sealer from being tracked onto your floor. The rugs must be made of a breathable material to prevent moisture entrapment.
- Sweep, dust or vacuum the floor regularly to prevent accumulation of dirt or grit that can scratch or dull the floor finish.
- Clean up spills and excessive liquids immediately.
- Damp mop as needed. Use recommended wood floor cleaners that do not contain wax or oil.
- Never drag or slide heavy objects or furniture across the floor. Use protective caster cups or felt pads on the legs of furniture to prevent damage to the flooring. Use wide bearing leg bases, barrel type caster wheels or rubber rollers to minimize indentations and scratches from heavy objects. As a rule of thumb, the heavier the object, the wider the floor protector should be.
- Do not use rubber or foam backed plastic mats or area rugs as they may discolor or leave an imprint on the floor. To prevent slippage, use an approved vinyl rug underlayment.
- Maintain a normal indoor relative humidity level between 35-55% and a temperature of 60°-80° F throughout the year, to minimize the natural expansion and contraction of wood.
 - **Heating Season (Dry):** A humidifier is recommended to prevent excess shrinkage due to low humidity levels. Wood stove and electric heat tends to create very dry conditions. Minor gapping between wood planks during the heating season is a normal occurrence with hardwood flooring.
 - **Non-Heating Season (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 during periods of inclement weather. Do not obstruct in any way the expansion joint around the perimeter of your floor.
- Please care for your floor, this kind of product is not wear resistant, sharp or pointed objects can damage it. Don't walk on your floor with stiletto-style heels, spiked shoes, or cleats as they may cause indentations in your floor.

- Keep pet's nails trimmed to minimize finish scratches.
- Rearrange area rugs and furniture periodically so the floor ages evenly. UV sunlight will soften the tone of different species of hardwood to varying degrees.
- Protect your floor from direct sunlight. Use blinds and UV resistant film on large glass doors and windows. Over time natural and artificial light could discolor the floor.
- Use a dolly when moving heavy furniture or appliances. But first, put down a sheet of quarter inch plywood or Masonite to protect the floor and help prevent denting. Carpet or cardboard is not adequate to prevent surface compression scratches. Never try to slide or roll heavy objects across the floor to avoid denting.

DISASSEMBLING

- Retain several planks for future repairs.
- Minor damage can be easily repaired with finishing putty. Major damage will require board replacement. If using the floating installation, your floor can easily be disassembled to allow for replacement. Please use a professional floor installer for disassembling.

CAUTION/ WARNING (LEGAL)

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 anasal 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 Irritation: In case of irritation, flush eyes or skin with water for at least 15 minutes.

MINNESOTA RESIDENTIAL FORMALDEHYDE REGULATION: IMPORTANT HEALTH NOTICE THESE BUILDING 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 TO BE LOCATED IN AREAS SUBJECT TO EXTREME SUMMER TEMPERATURES, AN AIR-CONDITIONING SYSTEM CAN BE USED TO CONTROL INDOOR TEMPERATURE 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.

WARNING! DO NOT MECHANICALLY CHIP OR PULVERIZE EXISTING RESILIENT FLOORING, BACKING, LINING FELT, ASPHALTIC "CUTBACK" ADHESIVES OR OTHER ADHESIVES.

These products may contain either a sbestos fibers and/or crystalline silica. Avoid creating dust. Inhalation of such dust is a cancer and respiratory tract hazard.Sm oking by individuals exposed to asbestos fibers greatly increases the risk of serious bodily harm. Unless positively certain that the product is a non–a sbestos containing material, you must presume it contains asbestos. Regulations may require that the material be tested to determine asbestos content and may govern the removal and disposal of material. See current edition of the Resilient Floor Covering Institute (RFCI) publication "Recommended Work Practices for Removal of Resilient Floor Covering" for detailed information and instructions onrem oving all resilient covering structures. The products in this carton DO NOT contain asbestos or crystalline silica.

WARRANTY

Wear, Staining and Fading

LifeScapes™ warrants to the original purchaser that the flooring will be free of manufacturing defects, and the surface will not wear through*, stain or fade from sunlight or artificial light for 25 years (LifeScapes Engineered Hardwood Flooring) after the date of purchase of the product when used under normal indoor residential traffic conditions. Special buy and promotional purchases carry a limited 10 year residential warranty.

*Wear-through is defined as total loss of pattern in a minimum of 2 square inch area, readily visible from a distance of 6 feet. Scratches and loss of gloss are not considered as wear-through.

If the product wears through, stains or fades, LifeScapes will at its option replace or refund the portion of the floor in question as covered under this warranty. This warranty does not cover labor, unless professionally installed, nor any other incidental expenses incurred as a result of covered defect.

Should the original floor be discontinued, LifeScapes will replace the defective material with a LifeScapes floor of equal value.

This warranty is exclusive to the original purchaser and in lieu of all other warranties, expressed or implied, and all other remedies, guarantees or liabilities arising by law or otherwise.

Warranty Exclusions

The owner/installer must inspect the color, finish and quality of the flooring prior to installation. LifeScapes is not responsible for labor costs incurred for flooring installed with visible defects. Isolated floor squeaks is not a defect and are not covered under warranty. This warranty does not cover damage caused by improper installation, negligence, water erosion, abrasion, extreme heat or temperature, cleaning care or maintenance contrary to written instructions provided by LifeScapes, physical abuse or misuse, accidents causing indentation, scratching, impact, cutting, freight damage, alteration, chemical damage or any wear or damage caused by acts of God. This warranty does not apply if product is installed in areas where condensation repeatedly occurs, or any other areas contrary to the recommendations of LifeScapes, including, but not limited to, exterior applications, unstable/improper subfloors, areas exposed to excessive topical and ground moisture. Protective pads should be used under furniture legs, and mats should be used under any chairs with rolling casters. Pet urine must be wiped up and not allowed to dry.

LifeScapes excludes and will not pay incidental or consequential damages under this warranty. By this we mean any loss, expense, or damages other than to the flooring itself that may result from a defect in the flooring. No implied warranties extend beyond the term of this written warranty, LifeScapes assumes no liability for incidental or consequential damages. Some states do not allow the exclusion of limitation for incidental or consequential damages. In that case, these exclusions may not apply to you. This warranty gives you specific legal rights, and you may also have other rights that vary from state to state. LifeScapes reserves the right to have a representative inspect the floor and remove samples for additional evaluation if needed. No installer, retailer, agent or employee of LifeScapes has the authority to increase or alter the obligations or limitations of this warranty.

For Warranty Service

To make a claim, you may:

Contact your LifeScapes retailer no later than 30 days after the discovery of the defect. Proof of purchase is required. Your retailer will assist in coordinating a resolution of your claim. OR:

Contract a certified independent inspector (www.NWFA.org). The inspector should submit a copy of the inspection report directly to your LifeScapes retailer for consideration. Note that while independent inspections are credible and usually reliable, the final decision rests solely with LifeScapes. Only NWFA inspectors or other certified inspectors approved in writing, in advance by LifeScapes will be considered.

IMPORTANT HEALTH NOTICE FOR MINNESOTA RESIDENTS ONLY:

THESE BUILDING MATERIALS EMIT FORMALDEHYDE, EYE, NOSE, AND THROAT IRRITATION, HEADACHE, NAUSEA AND A VARIETY OF ASTHMA-LIKE SYMTOMS, INCLUDING SHORTNESS OF BREATH, HAVE BEEN REPORTED AS A RESULT OF FORMALDEHYE EXPOSURE. ELDERLY PEARSONS 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 TO BE LOCATED IN AREAS SUBJECT TO EXTREME SUMMER TEMPERATURES, AN AIR-CONDITIONING SYSTEM CAN BE USED TO CONTROL INDOOR TEMPERATURE LEVELS. OTHER MEANS OF CONTROLLED MECHANICAL VENTILATION CAN BE USED TO REDUCE LEVELS OF FORMALDEHYDE AND OTHER INDOOR AIR CONTIMAINANTS. IF YOU HAVE ANY QUESTIONS REGARDING THE HEALTH EFFECTS OF FORMALDEHYDE, CONSULT YOUR DOCTOR OR LOCAL HEALTH DEPARTMENT.