

Making Dream Surfaces Attainable

### INSTALLATION INSTRUCTIONS

**PLEASE CAREFULLY READ  
ALL INSTRUCTIONS BEFORE  
YOU BEGIN YOUR INSTALLATION.  
IMPROPER INSTALLATION  
WILL VOID THE WARRANTY.**

1. Read enclosed detailed installation instructions before beginning install.
2. A flat subfloor is a must!
3. Proper moisture testing is a must!
4. Proper expansion around all permanent structures is a must!
5. Molding, trim, transition, and finish pieces must not prevent the floor from floating.
6. Failure to follow installation instructions will void warranty.
7. No acclimation is required under proper conditions.

### WOOD DUST WARNING



WARNING: Drilling, sawing, sanding, or machining wood products can expose you to wood dust, a substance known to the state of California to cause cancer. Avoid inhaling wood dust or use a dust mask or other safeguards for personal protection. For more information go to [www.P65Warnings.ca.gov/wood](http://www.P65Warnings.ca.gov/wood)

**WARNING!** The International Agency for Research on Cancer has classified wood dust as a nasal carcinogen. Sawing, cutting, sanding, and/or machining of wood products can produce wood dust that can cause respiratory, eye, and skin irritations. When sawing, cutting, sanding, and/or machining this wood flooring product, the equipment

should be equipped with a dust collector to reduce airborne wood dust. Wear an appropriate NIOSH approved dust mask to reduce exposure to airborne wood dust. Avoid contact with eyes and skin. In case of irritation, flush eyes or skin with water for at least 15 minutes. In cases of severe irritation; seek immediate medical attention.

### ASBESTOS WARNING

**WARNING!** DO NOT MECHANICALLY CHIP OR PULVERIZE EXISTING RESILIENT FLOORING, BACKING, LINING FELT, ASPHALTIC "CUTBACK" ADHESIVES OR OTHER ADHESIVES. Installed resilient floor covering products and the asphaltic or cutback adhesives used to adhere them may contain either asbestos fibers and/or crystalline silica. The products in this carton DO NOT contain asbestos or crystalline silica. Avoid creating dust or inhalation of asbestos/crystalline dust as they can cause cancer and respiratory tract hazard. Smoking by individuals exposed to asbestos fibers greatly increases

the risk of serious bodily harm. Unless positively certain that the previously installed product is a nonasbestos 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 (WWW.RFCI.com) publication "Recommended Work Practices for Removal of Resilient Floor Coverings" for detailed information and instructions on removing all resilient covering structures.

### REQUIRED TOOLS AND SUPPLIES:

- Saw (Miter, Jamb, Table)
- Wood pin moisture meter
- Safety glasses
- 1/2" or 5/8" spacers
- Utility knife
- Odorless mineral spirits
- Putty knife
- Low adhesion painter's tape
- 75 lb. smooth roller
- Clean white cloth/towel
- Appropriate engineered wood floor adhesive
- NIOSH approved dust mask • Plastic scraper
- Pry bar/trim puller
- Pull bar
- Starting row wedges
- Broom/Vacuum
- Thick felt protectors
- Straight edge ruler or T square
- Pencil
- Tape measure
- Dust mask or respirator
- Concrete in situ moisture meter
- Chalk line
- Tapping block
- Appropriate adhesive trowel

### GENERAL

Always check flooring planks for defects such as chips and color variations under good lighting conditions prior to beginning installation. Wood flooring is a product from nature and contains characteristics such as variations in color, tone, and graining which is not considered a defect. Use planks from multiple boxes during installation to ensure random pattern and color variation. Installation of the flooring confirms the acceptance of product quality.

This product is for indoor use only. Building envelope must be complete and exterior doors and windows installed. All work

involving water or moisture (e.g. painting, plumbing, etc.) must be completed prior to flooring being delivered.

It is the responsibility of the installer/owner to ensure that the job site environment, subfloor, and subsurface conditions are meeting or exceeding the requirements as outlined in this installation instruction manual prior to the install. The flooring manufacturer will not cover any issues related to installation failure, subfloor/substrate deficiencies, or environmental/jobsite conditions.

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#### GENERAL CONTINUED

The area in which the flooring is to be installed must have an installed and working HVAC for a minimum of 5 days prior to arrival of the flooring, and maintained between 65°F-75°F with a relative humidity level between 35%-55%. This temperature and humidity condition must be maintained prior to and during the installation of the product, and for the life of the product thereafter. Humidification and/or dehumidification systems may be necessary to maintain these conditions.

Manufacturer warranties do not cover natural expansion and contraction that results in separation between planks or damage caused by excessively low or high humidity. Seasonal gapping is not considered a manufacturing defect as it is natural process in wood flooring products.

Before installation begins, the flooring must be acclimated for 72 hours in the room it is being installed under the appropriate temperature and humidity conditions outlined above. The material should be stacked with at least 4" airspace under the cartons, removing all plastic wrap that may be around the packaging, and opening the ends of the cartons.

A wooden subfloor and wood flooring must be of similar moisture content. In order to ensure this, the subfloor should be tested by taking a minimum of 20 moisture content readings per 1,000 square feet using a pin type moisture meter. Average the readings and include them on the data sheet provided at the end of these instructions. The wood flooring moisture content also needs to be checked and recorded on the sheet. The readings need to be left with the owner of the flooring as permanent record of testing. After the acclimation period the subfloor and flooring should be below 12% moisture content, and the flooring should be within 4% of the subfloor

#### SUITABLE SUBFLOORS AND FLOOR PREPARATION ON ABOVE OR BELOW GRADE

The sub floor must be **structurally sound, flat, dry, and clean**. Carpet staples or any/all adhesive residue must be removed and the floor must be clean to ensure proper installation. All wooden subfloors must be structurally sound and must be installed following the American Plywood Association's (APA) and the manufacturer's recommendations. Nail or screw any areas that are loose or squeaking. Vertical deflection must not exceed 3/16". Wood panels should exhibit an adequate fastening pattern, glued, screwed or nailed as system requires, using an acceptable nailing pattern, typically 6" (15 cm) along bearing edges and 12" (30.5 cm) along intermediate supports. Flatten edge swell as needed. Replace any water damaged, swollen or delaminated subflooring or underlayment. Building codes establish requirements for structural support components of flooring systems which may not provide adequate rigidity and support for proper installation and performance of hardwood flooring. Whenever possible, install flooring perpendicular to the floor joists for maximum stability. When joist spacing exceeds the traditional 16" on center, it is recommended that you apply a thin bead of water resistant tongue and groove glue to the bottom side of the groove to lock the tongue and groove profile in place. This will reduce the potential for movement of the tongue and groove, which may contribute to squeaking or crackling sound underfoot. When using this method of installation, you may continue to choose to staple or nail down the hardwood depending

moisture content. Concrete subfloors must be cured for a minimum of 60 days. The moisture content of a concrete subfloor should be tested using an in-situ probe and show <75% RH (ASTM F2170). Test results should be recorded on the data sheet provided at the end of this instruction manual and left as permanent record with the purchaser. Moisture in concrete subfloors can create high moisture-vapor emission levels, hydrostatic pressure, and high alkalinity levels. This combination is highly corrosive and damaging to flooring, over time. To avoid this, ensure construction of concrete subfloors are according to the American Concrete Institution's guidelines (ACI's 302.2 Guide). Only once these readings and conditions are achieved and/or appropriate moisture mitigation corrections have been made is the flooring to be installed.

This flooring should not be installed under cabinets or other permanent fixtures, this can cause gapping or other issues with the planks. The flooring should not be installed over carpet.

If the floor is being covered, it should be completely cleaned prior to covering to prevent damage caused by dirt/debris. Do not cover the floor with plastic, previously used cardboard, wax paper, felt, or red rosin paper. Ink from printed cardboard could damage the flooring. A breathable material such as clean, dry, plain, uncoated cardboard or craft paper can be used. A common reinforced builder's paper is also a good choice for covering the floor. When covering the floor a low-adhesion painters tape should be used against the base or shoe moldings. Avoid taping to the flooring directly. If taping two covers together at the seams be sure to tape to each other instead of the floor. The floor should be completely covered to avoid uneven ambering of the floor which is natural when the wood floor is exposed to UV light.

on your preference. Using the tongue and groove glue with the staple reduces movement as the sub-floor deflects.

To check for the flatness of your subfloor, hammer a nail into the center of the floor. Tie a string to the nail and push the knot against the floor. Pull the string tight to the farthest of the room and examine the floor for any high/lows relative to the string. Subfloors must be flat to 3/16" per 10' (5mm per 3 meters) and/or 1/8" in 6' radius (3mm in 2m). Any areas in excess of the flatness specification must be sanded down or filled with an appropriate leveler.

Concrete subfloors should be at least 60 days old and constructed in accordance with ASTM E1745. Level the substrate and fill all cracks, holes, and low spots with a polymer modified Portland cement patch or leveling compound. Burnished or steel troweled concrete substrates must be inspected for porosity by placing a few drops of water on the surface. If the water is not absorbed within 3 minutes, then the substrate should be considered non-porous. Abrade the surface with 30-grit sandpaper until porosity is achieved. After abrading, remove all debris before proceeding with installation. Glue down floors may be applied to concrete with a rating of 3,000 psi or greater. Glue down application over lightweight concrete (less than 3,000 psi) is not permissible.

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### SUITABLE SUBFLOORS AND FLOOR PREPARATION ON ABOVE OR BELOW GRADE CONTINUED

Approved wood subfloor panels should meet or exceed the following guidelines:

- Plywood must be minimum CDX EXP 1 grade and conform to U.S. Voluntary Product Standard PS2 or Canadian performance standard CAN/CSA 0325-0-92.
- Oriented Strand Board (OSB) must conform to U.S. Voluntary Product Standard PS2 or Canadian performance standard CAN/CSA 0325-0-92. The panels must be tongue and groove and installed sealed side down.
- Particleboard must be a minimum 40-lb. density, stamped underlayment grade and 3/4" (19mm) thick. (Floating installation only)

Floor joist/truss spacing will determine the minimum acceptable thickness of the subfloor panels. Joist/truss spacing of 16", up to 19.2" (488mm) on center, requires a minimum nominal 3/4" (23/32", 18.3mm) tongue and groove CDX EXP 1 plywood or OSB 4'x8' subfloor panels, glued and mechanically fastened. Floor systems with joists/truss spaced greater than 19.2" (488mm) on center up to a maximum of 24" (610mm) require minimum 7/8" tongue and groove CDX EXP 1 plywood or OSB 4' x 8' subfloor panels, glued and mechanically fastened. Installation over joist spans greater than 24" on center is not recommended. For installation over joist spans greater than 24" on center, consult NWFA for panel thickness guidance.

Solid Wood Subfloor (direct glue or staple down applications):

- Minimum 3/4" (19mm) thick with a maximum width of 6" (15cm) 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 direct glue down applications add 3/8" (9.5mm) approved floor panel underlayment.

Existing wood flooring (direct glue or staple down applications):

- Existing engineered flooring must be well bonded/fastened. When gluing over existing wood flooring, the surface finish must be abraded or removed to allow adequate adhesive bond.
- Existing solid hardwood flooring that exceeds 6" (15cm) in width must be covered with 3/8" (9.5mm) compatible underlayment and fastened as required.
- Do not install over solid or engineered flooring attached directly to concrete. Instead remove existing wood flooring and follow instructions for installation over concrete.

Wood sub-floors should be well nailed or secured with screws. Nails should be ring shank and screws need to be counter sunk. The wood subfloor must be structurally sound, without loose boards, vinyl or tile. If subfloor panels are a single layer, less than 3/4" thick, add another single cross layer for strength and stability, minimum 3/8".

Underlayment floor panels must be installed sealed side down. When used as a sub-floor, allow 1/8" (3.2 mm) expansion space between each panel. If spacing is inadequate, cut in with a circular saw. Do not cut an expansion space on tongue and groove panels. When installing parallel to the floor joists, it may be necessary to increase rigidity of the structural subfloor system by installing an additional minimum of 3/8" (9.5 mm) compatible underlayment floor panel.

Avoid subfloors with excessive vertical movement no more than 3/16" (4.7mm) deflection. If the subfloor exhibits excessive vertical movement (deflection) before installation of the flooring, it will likely do so after installation of the flooring is complete. Indications of excessive deflection are uneven finish wear, fastener release, squeaking, compromised or damaged locking systems, sectional contours such as bowing or dipping in floors and uneven flooring material.

Lightweight concrete: Engineered wood flooring is not recommended for glue down installation over lightweight concrete subfloors. To test for lightweight or acoustical concrete, scrape a coin or key across the surface of the subfloor. If the surface powders easily or has a dry density of 100 pounds or less per cubic foot, the engineered flooring should not be installed using the glue down method. Product can be installed using floating installation method. For leveling and repair of lightweight concrete, contact the lightweight concrete manufacture to ensure correct methods are used.

Existing perimeter glued resilient vinyl and rubber tiles are unacceptable underlayment and must be removed. Terrazzo, vinyl, resilient tile, cork and linoleum or hard surfaces that are dry, structurally sound and flat are suitable as a subfloor. As outlined above, the surface must be sound, tight and free of paint, oil, existing adhesives, wax, grease, dirt, and debris. Terrazzo and ceramic tile must be scuffed to ensure proper adhesion.

**WARNING:** Do not sand existing resilient tile, sheet flooring, backing or felt linings. These products may contain asbestos fibers that are not readily identifiable. Inhalation of asbestos dust can cause asbestosis or other serious bodily harm. Check with local, state and federal laws for handling hazardous material before attempting the removal of these floors.

Direct glue installation: Make sure the floor covering materials are well bonded to the subfloor or underlayment with full spread adhesive and no more than two layers thick, not to exceed 3/16" (4.7 mm). With approved wood or wood composite subfloors, if vinyl or tiles are loose, broken or in poor condition, install a 3/8" (9.5 mm) approved subfloor panel directly over the flooring materials. Clean the flooring materials as necessary to remove waxes, sealers or cleaning residues to allow a good adhesive bond. Cork floor sealers and surface treatments must be removed. Always perform a bond test prior to beginning direct glue installation.

**Moisture test is required on all subfloors as outlined above and must meet the requirements before installation takes place, regardless of the installation method used.**

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#### RADIANT HEAT

This flooring can be used in combination with multiple types of in-floor heating. The heating system can be cast in a concrete floor or in a thin layer of filler on the surface of a concrete subfloor. It can also be installed under a wood subfloor or installed on the surface of the subfloor as an electrical matting, provided it meets the floor flatness requirements.

- Follow the instructions from the manufacturer of the floor heating system.
- Concrete subfloors must be installed and cured with no heat transfer for a minimum of 60 days.
- The heating system must be operated for at least two weeks prior to the flooring installation.
- Prior to flooring installation, the system should be set to a temperature suitable for installation (65° to 72°F).
- After installation, temperature should be raised slowly, 2°F, every day until desired temperature is reached.

#### ADDITIONAL TIPS BEFORE BEGINNING

- Pre-plan the laying of the floor to determine best direction of installation.
- Trims and moldings are coordinating (not matching), and so it is best to preselect the planks you want to blend directly next to these trims/moldings for best possible outcome.
- Remove all wall mounted moldings such as base and quarter round.

#### GLUEDOWN INSTALL

Note: It is important to select the right compatible adhesive depending on the subfloor type and subfloor conditions before proceeding. To apply adhesive, follow the instructions from the adhesive manufacturer. Warning: Whether installing through dry

#### WET LAY METHOD

1. Select a starter wall. It is recommended to start the installation along an exterior wall as it is more likely to be straight and square with the room. Measure out from the wall the width of two flooring planks plus the plank thickness, mark each end of the room and snap your chalk line.
2. Spread adhesive from the chalk line to the starter wall using the recommended trowel size for the adhesive. It is important to use the correct trowel at a 45° angle to get the proper spread of adhesive applied to the subfloor and produce a proper and permanent bond. Improper spread can cause poor bonding which can lead to loose planks or hollow spots in the installation.

**NOTE:** It is best to change the trowel every 2,000 to 3,000 square feet, or sooner as needed, due to wearing of the teeth. If spreading adhesive with worn teeth improper bonding can occur.

3. Install the first row of starter planks with the tongue facing the starter wall making sure to align the planks before securing. Alignment is critical and can be achieved by securing a straight edge along the

- The flooring surface temperature, which is the surface of the subfloor or the heat radiating from electric heating mats, should not exceed 80°F (27°C).
- Do not use area rugs on top of engineered flooring installed over radiant heat systems as they can trap heat, creating temperatures that can damage the flooring.

**Note:** Basements and crawl spaces must be dry. Installing a 6-mil black polyethylene membrane is required to cover 100% of the crawl space earth. Crawl space clearance from ground to underside of joist should be no less than 18" and perimeter vent spacing should be equal to 1.5% of the total square footage of the crawl space area to provide cross ventilation.

Excess moisture exposure can damage the flooring and breed mold/mildew growth on subfloor and walls. This is not considered a defect in the flooring and issues arising from this are not covered by the manufacturer.

- The flooring should be installed by blending planks from multiple cartons to ensure good color and shade blend throughout the installation.
- Stagger the ends of the boards at least 6", or longer for wider width products, in adjacent rows.

or wet method, be sure to follow the guidelines from the adhesive manufacturer. Failing to follow the adhesive manufacturer's instructions could void your floor's warranty. Proper ventilation within the room must be provided. A fan may be helpful.

chalk line. If installing over wood subfloor alignment can also be achieved by top nailing the first row with finishing nails. If installing over concrete, adjustable spacers can be used to achieve proper alignment. These additional measures prevent slippage of the planks that can cause misalignment.

**NOTE:** Most walls are not straight and therefore the planks along the wall may have to be scribed and cut to fit in order to maintain a consistent expansion space. Try to maintain at least 2" on the scribed plank.

5. Once the flooring has been installed, go back to the start of the install to remove the straight edges and spread adhesive on the remainder of the open subfloor. Keep in mind that the planks close to the wall may have to be scribed and cut to fit due to the wall not being straight.

**NOTE:** Light foot traffic is allowed 12 hours after install, but wait 24 hours after the installation to remove the painters tape (low adhesive for delicate surfaces). After the tape is removed you can clean any adhesive residue by using mineral spirits and a clean white cloth/towel.

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#### FINISHING TOUCHES

Re-install / install any transition pieces, reducer strips, T-molding, thresholds, base boards and/or quarter rounds needed to achieve transition and cover the edges of any gaps along the wall.

**NOTE:** Trims and moldings should be nailed into the wall or subfloor, **NOT THE FLOORING.**

Heavy furniture and appliances should not be rolled over the floor. Use plywood or appliance lifts if needed. Thick felt pads should be used on legs of furniture to prevent damage to the flooring.

#### STAPLE DOWN INSTALLATION

Thickness	Fastener Gauge	Side Spacing	End Spacing
1/2" and 5/8"	18 gauge staple not less than 1-1/2" in length	4"-6"	1"

This engineered wood floor can be installed over wood subfloors with exception of Parquet or Masonite. If stapling the floor down, it is necessary to use the proper type of flooring stapler that is compatible for the thickness of the engineered wood flooring that is being installed.

**TIP:** In order to reduce squeaking and other noises created by the opposing floors, in addition to the ground cover that is mandatory in the crawlspace, a 15 lb. felt or rosin paper can be installed over the subfloor prior to the installation of the engineered wood flooring.

When installing the flooring apply a bead of tongue and groove wood flooring adhesive to the bottom side of the groove, to help lock the tongue and groove profile in place. This helps to reduce the likelihood of movement of the tongue and groove, which can contribute to squeaking and other noises underfoot.

Steps for staple down install:

1. From the ends of your starting wall, measure out the width of the plank plus plank thickness\* 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.

\*Expansion gap must be left along walls and fixed objects for this flooring. The expansion gap space should be equal to the thickness of the product. E.g. if you are installing a 1/2" thick engineered wood flooring, the expansion gap should be 1/2", if the flooring being installed is 5/8" thick the expansion gap should be 5/8", etc.

2. With the groove side of the planks facing the wall, place the planks along your chalk line. Use brad or small finishing nails to secure the

first starter row along the wall. Nails should be 1 to 2" from the ends and every 4 to 6" along the side.

**Note:** The nails should be below the surface of the floor (not sticking up). You can fill the holes with wood filler that blends with the flooring that is being installed. It is also best to place the nails in a dark grain in the board. The baseboard or quarter round will cover the nails around the perimeter after the install is complete.

3. For the next two rows blind nail at a 45° angle through the tongues of the engineered wood floor. You can pre-drill holes for the nails to make this easier, or use a brad nailer with 1" to 1-3/8" brads to avoid the need to pre-drill. Nail 1 to 2" from the ends and every 4 to 6" along the sides.
4. Continue the installation using an engineered wood flooring stapler with recommended staples. Stapling should be done 1 to 2" from the ends and every 4 to 6" along the edge tongues.

#### TIPS:

- It is recommended to initially set the compressor between 80 and 85 PSI and adjust the pressure as needed to properly set the fastener. The pressure should not be too high such that the nails go through or break the tongues, and not too low such that the nails stick out from the surface.
- Improper stapling/nailing can cause squeaks and/or surface dimpling of the floor.
- Since adjustments may be necessary to provide the right penetration of the nail or staple in the nail/staple pocket it is recommended to use scrap flooring to find the right tooling calibration.
- Always use flooring installation tools with the factory designed floor plate attached to ensure proper fastener penetration angle.

#### FLOATING INSTALLATION

Space preparation:

- Undercut door casings 1/16" higher than the thickness of the flooring being installed + underlayment thickness.
- Install Abatec™ underlayment per guidelines on [www.msissurfaces.com](http://www.msissurfaces.com). Underlayment other than Abatec™ is not recommended as excessive pad compression/compaction is a common cause of seam failure.
- Expansion gap needs to be left along all walls and fixed objects. The expansion gap should be equal to the thickness of the flooring being installed.

- Doorways or archways 48" or less are required to have T-Molding.
- Rooms larger than 26'x33' are required to use a T-molding break.

**NOTE:** Glue will still be required for floating installation. A compatible engineered wood tongue and groove glue must be placed on every plank along the topside of the groove and bottom side of the tongue for the full length of the sides and ends. Only apply approximately 3/32" bead of glue, don't fill the groove with glue or it will be difficult to close the seam and will result in a loose fit.

### Making Dream Surfaces Attainable

#### FINISHING TOUCHES CONTINUED

Steps for floating installation:

1. Use wooden wedges as spacers to establish the proper expansion gap from the wall (which is equal to the flooring plank thickness). It will be necessary to work from right to left and the first plank should be a full length board laid in the right hand corner of the room. The first row should start by facing the groove of the long side against the wall (which means the groove side will be firmly against the wood wedges).
2. After the first plank is down, apply the glue to the short side along the topside of the groove (which will be the first plank that is already down) and the bottom side of the tongue (which will be the second plank). Slide the end tongue of the second plank into the end groove of the plank already down.
3. Continue this method until the first row is complete, cutting the last plank to also account for the expansion gap. The row must be straight, square, and tightly together (use a tapping block where necessary) in order to establish the alignment for the rest of the floor. Planks may require scribing and cutting to fit any wall curve/irregularities.
4. Start on the second row, ideally using a leftover plank from the first row cut to minimize wastage. End joints on adjoining rows should be offset by no less than 6". Align the plank and lock the side into place against the first plank in the first row (the new second row

will have the plank grooves going into the tongues of the flooring already down in the first row). Keep in mind that locking together the tongue and groove requires the same method of adding glue to the tongue and groove as mentioned above. Be sure to use a tapping block to tap the planks together to make sure they are snug. Continue to lay the planks in this manner.

**Note:** For the final row you will likely need to cut the planks along the length of the planks so that the width fits in the space (accounting for the necessary expansion gap at the wall). Also a pull bar should be used to ensure the final row is tight to the second to last row.

**Tips:**

- Stretch tight and stick low adhesion delicate surface painters tape across every 3 to 5 rows of planks approximately 2' apart from one another to hold the floor in place while the glue sets. Remove the tape within 24 hours and clean any leftover adhesive residue with a clean white cloth and mineral spirits.
- If any glue squeezes out of the seam and gets on the planks, allow it to dry for 15 minutes and lightly scrape it away with a plastic scraper or putty knife.
- Do not allow the glue to dry on the face of the flooring as it will be very difficult to clean off without scratching the surface.