ENGINEERED HARDWOOD FLOOR INSTALLATION

HANDLING AND STORING

Hardwood is a natural living material, which reacts to changes of relative humidity. It absorbs and releases moisture before and after it is installed, depending on the variations in the environment. Hard- wood expands in summer and shrinks in winter. To prevent excessive expansion or shrinking of your hardwood floor, it is recommended to maintain the relative humidity level in your home (location of wood installed), at the appropriate humidity level for your area (between 37% and 50% approximately) throughout the year.
Your authorized Dealer / Distributor supplies you with specially designed cartons that have been stored in a heated and well-ventilated warehouse. It is important not to transport your wood under raining and/or damp conditions, nor should you store it in a non-heated or poorly ventilated area.

NAILED DOWN INSTALLATION

Plywood base tongue and groove hardwood floor

STEP 1: We recommend using moisture barrier between sub floor and hardwood planks. Select an air assisted or manual nailer. Make sure to use a machine that is suited for the proper thick - ness of the engineered material. Contact your supplier for details. The use of proper size cleats/staples is imperative, for ½ thick floor use only 18-gauge and 1 to 1 1/2" length staples or 22- gauge and 1 to 1/4" length cleats. Follow the manufacturer's safety instructions in regards to eyewear, power cords, air pressure grounding of equipment, footwear, hardhats, if required, etc.

STEP 2: It is best to run the hardwood flooring perpendicular to the joist 90 degrees.

STEP 3: Allowing an expansion gap of 1/2" or 3⁄4" (the thickness of the material) along the wall, snap a chalk line for the width of a plank + 1/2". E.g. (3 1/4" + 1/2" = 3 3/4")

STEP 4: Place the planks in front of the chalk line. This is known as racking out the material. Use 3 to 4 cartons at a time. Mix in or use boards that range in color, grain, and length.

STEP 5: Place the edge of the boards along the chalk line with the tongue side facing the installation area and the groove side facing the wall.

STEP 6: Face drill into the plank approximately every 8-10" staying 1/2" to no more than 3/4" from the edge of plank (groove side). For best visual results, drill into the darker grain of wood rather than the lighter. Use a nail punch to counter sink. The use of putty is recommended even if these nail holes will be covered by shoe moulding or baseboard to prevent the possibility of cleaning material entering the holes.

STEP 7: Blind nail on a 45 degree angle into the plank's tongue approximately every 8-10". Complete the entire first row along the chalk line and check to see if you can start using your nailer without hitting any walls or objects. A second row of blind nailing may be required. No face nailing on second row.

STEP 8: Avoid what our industry calls "clustered" by staggering the end joints by at least twice the plank's width. Example: using a 3 1/4" wide plank would put the next row's end joint no closer than 6 1/2". See diagram for details. If available, the use of a Brad nailer is ideal to speed up the above face and blind nailing procedure. Ensure that there is a nail approximately 1-2" away from both ends of the board.

STEP 9: Start using your nailer or stapler respecting every 4-6" and 1-2" at both ends. Rack out your floor using 3-4 boxes. Again, be careful not to use only long pieces but rather mix together longer and shorter boards, and vary light and dark, as well as mixing in the different grain pattern to provide the best possible natural wood look.

STEP 10: Continue on each row. When cutting the last board on the row, you can use the balance of the board for the next starting board, provided that it is larger than 6"

GLUED DOWN INSTALLATION of plywood based tongue and groove floor.

Use only the recommended moisture-cured urethane or rubber adhesive, trowel size, and spread rate to ensure adhesive transfer to substrate and hardwood. Check adhesive expiration date. Conduct a moisture test on concrete (refer to the concrete paragraph in the sub floor section of this document). Spread out a small amount of adhesive on the concrete and check for adhesion bonding. Use a metal trowel only. The teeth in a plastic trowel will wear down and cause a difference in spreading rate that will directly affect the hardwood's ability to adhere to the substrate.

For optimized acoustic and stability performance, we recommend using a quality membrane between subfloor and hardwood plank. Use a membrane with double-glued characteristics. Glue will be spread between wood and membrane and subfloor. This installation type is named "double-glued". Plank glued directly on subfloor is named "simple-glued".

Notes:

• Adhesives have a set up time which may vary from brand to brand.

• Make sure not to spread out the adhesive beyond your working time.

• Immediately remove any adhesive from the face of the hardwood using the proper adhesive remover. Refer to the manufacturer's adhesive label for details.

• Never slide or drag a board along the applied adhesive as adhesives have an elastic memory and will move back or away from position.

• Hold the trowel on a 45-degree angle, pressing firmly. Respect the spread rate of the manufacturer's guidelines.

• Replace any trowel that has worn teeth. Do not try to create your own notches by cutting teeth out with tin snips.

• Open time will vary by climate, region, or dwelling humidity.

• It is considered a good practice to check occasionally that you have enough adhesive transfer on the back of the hardwood plank.

• On large concrete installations, use more than one trowel as teeth will wear down.

Installation:

STEP 1: We recommended that planks be installed parallel to the outside wall which is usually the longest and straightest. Therefore, snap a chalk line measuring the products width and thickness out from wall (4 1⁄4" board width + 3/4" board thickness for expansion= 5" out from the wall).

STEP 2: Spread out a sufficient amount of adhesive so you can work within the available set up or work time. The freshly applied adhesive must leave trowel marks/trowel ridges. Only apply adhesive up to your chalk line and not over it.

STEP 3: Use 3 to 4 cartons at a time. Mix in or use boards that range in color, grain, and length. Place the planks into the wet adhesive with the groove side on the chalk line and facing the outside wall. This is the same direction to that of a nailed/stapled down installation. Ensure that the 1st row is exactly on the chalk line. Use different board lengths, grain, and color tones within each carton to give you a better visual of natural wood.

STEP 4: Cut off the last piece in your starting row, leaving proper expansion space from the wall 1/2" (13 mm) from the wall and use it as your 1st piece or starter board for the 2nd row. It is best to not use a piece under 6" (≈15 cm) as they tend to move out of position. Continue on each row, engaging the groove into the tongue along the side 1st, then the end to be engaged 2nd. Avoid end joint cluster by staggering ends by twice the plank width or approximately 8 1/2" (21.5 cm) on 4 1⁄4" wide flooring. If any adhesive comes in contact with the face of planks, use adhesive remover before it dries.

STEP 5: To keep your planks from moving out of position, we highly recommend the use of 3M Blue masking tape or a painter's tape. Do not use any regular masking, duct, or electrical tapes as they can leave a mark on the plank face. Apply tape 90 degrees to row direction with approximately a 15-16" (38 to 41 cm) long piece; or long enough for 3-4 rows wide. Lap over or curl up the tape at one end to allow for fast, easy removal. Place tape at 48" apart or across the rows.

STEP 6: Complete the field area. For the last board, leave again a proper expansion gap 1/2" (13 mm) away from wall. If it is necessary to finish the last row with boards less than a full board width wide, then cut or rip along board width using a table saw. Always use safety glasses.

• We cannot be held responsible for the poor quality of the installation.

• The installer should use reasonable selectivity in assessing the quality of the wood, the grade, and arranging the boards according to the natural color variations of the species selected. We cannot be held responsible for any error due to the installer's bad judgments.

• It is the owner's responsibility to ensure that the wood delivered is the wood that has been ordered and chosen.

• The installer and/or the owner should select boards appropriately and, either discard, relocate in hidden places or cut out pieces with slight defects, if any, when required.

• Note: The selection of mechanical fasteners such as nailers varies by manufacturer, offering the installer the choice of manual or air-assisted. Therefore, it is the installer's liability to ensure that the cleat is properly set as dimpling of the wood face is not considered a manufacturing defect. It is recommended to test a couple of pieces by nailing them down and examine the edge where the two (2) pieces meet. Particularly in installations of 90 degrees to outside walls, Dimpling could be very apparent in direct sunlight.

• Installer: please take the time to carefully read over our detailed installation instructions as they could be different from other engineered products.

• A 5% material waste allowance should be included within your total square footage. The use of wood putty, filler, or stain might be required during the installation process and is considered an industry standard.

• If at any time you feel that in any way our product is not to standard in reference to grade, width, color, sheen, milling tongue or groove placement, STOP.

• PLEASE IMMEDIATELY CONTACT THE RETAILER WHERE YOU PURCHASED YOUR FLOOR FOR ASSISTANCE.

Our engineered floors can be installed in a basement as well as above floors.

• Maintain proper humidity conditions within your home. It is recommended that the humidity level stay in the recommended range between 37% and 50% throughout the year. Problems related to humidity level variations can be minimized by proper ventilation, humidifying, dehumidifying or heating.

• Regularly vacuum the floor to prevent sand or abrasive dust from accumulating and scratching the finish.

• Entrance doormats to all dwellings help reduce dirt, stones, gravel, and sand from damaging your new hardwood floor.

• Remember that wood and water do not mix! Never wash your floor with water and do not leave water or any other liquid to dry on your hardwood floor. Wipe up spots and spills immediately. Note: Avoid vinegar.

• Be sure to keep pets' nails cleaned and trimmed as they could damage the finish of your hard- wood floor.

• Although our finish is very durable and resistant, sharp and pointed objects can cause damage to your floor.

• Never use wax, household detergents, or soap, as they will leave a greasy film on your floor. Avoid all oily products and all products designated for the maintenance of hardwood furniture. These types of products are not designed for the

maintenance of your hardwood floor. Use maintenance products specially designed for the care of your hardwood floor. Always clean your hardwood floor lengthwise following wood installation direction.

• Avoid wearing high heels on your hardwood floor. Do not wear shoes that are covered with dirt, gravel, or abrasive dust.

• Use adequate floor protection (felt pads) under all furniture legs, and appliances. Use protective mats at doorways, close to sinks and / or dishwasher.

• Protect the floor while moving heavy pieces of furniture and appliances i.e. stove, fridge, etc. Carry them or place them on a rug, wrong side up, and slide the rug. The use of one or more piece(s) of clean plywood 5/8" could also be used to move objects on (make sure to lift plywood high enough from floor).

• Repairs: If an incident should damage your prefinished hardwood floor, replacing the affected board(s) is easy. Your Authorized Dealer can assist you regarding any repairs. We recommend keeping a few planks for future repairs.

INSTALLATION OF ¾ INCH ENGINEERED FLOORING

STEP 1: We recommend using moisture barrier between subfloor and hardwood planks

STEP 2: Select an air assisted or manual stapler. Make sure to use a machine that is suited for 3/4" (19 mm) thick engineered material. Contact your staple gun manufacturer supplier for details. The use of proper size staples is imperative 1 3⁄4" or 2") and 15.5 gauges diameter. The air compressor pressure should be approximately 90 psi and be sure to optimize stapler settings to adjust staples depth. Follow the manufacturer's safety instructions in regards to eyewear, power cords, air pressure grounding of equipment, footwear, hard hats, if required, etc.

STEP 3: It is best to run the hardwood flooring perpendicular to the joist 90 degrees.

STEP 4: Allowing an expansion gap of 1/2" (13 mm) along the wall, snap a chalk line for the width of a plank+1/2").E.g. 41/4"+1/2"=4-3/4"

STEP 5: Place the planks in front of the chalk line. This is known as racking out the material. Use 3 to 4 cartons at a time. Mix in or use boards that range in color, grain, and length.

STEP 6: Place the edge of the boards along the chalk line with the tongue side facing the field area and the groove side facing the wall.

STEP 7: Face drill into the plank approximately every 8-10" (20 to 25 cm) staying 1/2" to no more than 3/4" from the edge of plank (groove side). For best visual results, drill into the darker grain of wood rather than the lighter. Use a nail punch to counter sink. The use of putty is recommended even if these nail holes will be covered by shoe moulding or baseboard to prevent the possibility of cleaning material entering the holes.

STEP 8: Blind nail on a 45 degree angle into the plank's tongue approximately every 5-6". Complete the entire first row along the chalk line and check to see if you can start using your nailer without hitting any walls or objects. A second row of blind nailing may be required. No face nailing on second row.

STEP 9: Avoid what our industry calls "clustered" by staggering the end joints by at least twice the plank's width. Example: using a 4 1/4" (10.8 cm) plank would put the next row's end joint no closer than 8 1/2" (21.6 cm). See diagram for details. If available, the use of a Brad nailer is ideal to speed up the above face and blind nailing procedure. Ensure that there is a nail approximately 1-2" (2.5 to 4 cm) away from both ends of the board.

STEP 10: Start stapling, respecting every 5-6" and 1-1/2" at both ends. Rack out your floor using 3-4 boxes. Again, be careful not to use only long pieces but rather mix together longer and shorter boards, and vary light and dark, as well as mixing in the different grain pattern to provide the best possible natural wood look.

STEP 11: Continue on each row. When cutting the last board on the row, you can use the balance of the board for the next starting board, provided that it is larger than 6” (15 cm).

STEP 12: As you approach the last few rows, the use of the stapler will not be possible. Therefore you must blind nail as mentioned earlier, every 5-6” (12 to 15 cm) and 1-2” from ends of board.

STEP 13: Face nail and putty the last row. Remember to nail only in the darker grain to help hide these holes. Don’t forget to leave a 1/2” expansion gap.

STEP 14: If it is necessary to finish the installation of the last row with a narrow width board, measure the boards and allow a 1/2” to 3⁄4” expansion area in your calculations and rip boards on a table saw.

TOOLS AND MATERIAL REQUIRED

READ THE FOLLOWING BEFORE INSTALLING YOUR HARDWOOD FLOOR: The installer and/or the owner assumes Final responsibility to the product quality. Therefore, all flooring must be inspected prior to installation. Carefully examine your floor for color, grade, finish, and general quality before installing it. If any material is not acceptable, immediately contact your authorized Dealer / Distributor and DO NOT INSTALL THE FLOOR.

Once the strip / plank has been nailed down, it is deemed accepted by the installer and/or the owner.

- Tongue and groove adhesive bottle (floating method)
- Vacuum cleaner or broom
- Jamb saw (for under cutting door frames and casing)
- 1.5” finishing nails (for wood sub floors only)
- Wood/concrete moisture meters
- 3 mm tape or painters tape
- Leveling bar
- Tape measure
- Scraper
- Chalk line
- Drill
- Circular saw
- Chisel
- Tapping block
- Last board puller
- Nail punch
- Chop saw or hand saw
- Hammer
- touch up and maintenance kits
- 1/8’’ close cell foam (floating method)

• Proper nailer (nailed down method) with cleats/staples.

• Moisture cure urethane adhesive (glued down method)

STAPLE DOWN INSTALLATION

SUBFLOORS

Conditions & Inspections

1) **STRUCTURALLY SOUND:** Nail or screw down the sub floor (plywood or OSB) if there are any loose areas that could cause squeaks. Gluing or nailing a hardwood floor down to the sub floor will not take away any problems of squeaking. It may only hide it somewhat. The sub floor must be strong enough to support the weight of the floor. Your installation will only be as good as the subfloor underneath. We suggest the use of plywood, CDX and concrete

2) **DRY**: Conduct a moisture test in different areas of the subfloor and record your readings. For plywood and OSB subfloors, the percentage moisture difference between the hardwood floor and the sub floor must not exceed 2 points with a maximum of 12% for the hardwood. For concrete subfloors, the moisture content of the concrete should never exceed 4%. The installer and the floor owner are both responsible for measuring the moisture content of the subfloor and making sure it is within the recommended level prior to installation.

3) **CLEAN**: Broom sweep the area and vacuum. Ensure that there is no wax, paint spills, oil, or any other materials that could cause a problem with the adhesive adhering to the substrate. Our engineered products are designed to perform on concrete, plywood or O.S.B. subfloors. Subfloors can be made of different material as long as they are structurally strong enough to support the overall weight of the floor.

IMPORTANT: Wall to wall carpeting must be removed before installing your new hardwood floor.

PLYWOOD: The industry now allows for the use of CDX plywood (exterior grade) with a minimum of 5/8" (16 mm) tongue and groove. Check that the subfloor is fastened down with the proper fastener (deck screws work well). The use of drywall screws is not acceptable. The recommended nailing/ screwing down pattern is 4"- 6" in the field area and 2"-4" on the seams.

Contact with the joist is always preferred. Always check for moisture content to not exceed 12% prior to installation using a wood moisture meter. Also, make sure that the percentage moisture content of the engineered flooring is within 2% of that of the subfloor.

O.S.B. : 3/4" OR 23/32" stamped exterior grade also is approved. Install hardwood 90 degrees to joists only. Always check for moisture content to not exceed 12% prior to installation using a wood moisture meter. Also, make sure that the percentage moisture content of the engineered flooring is within 2 % of that of the subfloors'.

CONCRETE: For new concrete, allow a minimum of 30 days cure time prior to start of concrete moisture tests. Various methods and testing devices exist to check the moisture level of a concrete subfloor.

• Our engineered products are designed to perform on concrete (glued down or floated), plywood and O.S.B. (nailed or glued down). Please consult your source of supply technical department for questions regarding the above orany reference to the installation instruction hereafter.

FLOATING FLOOR INSTALLATION

All Engineered Hardwood Floors

STEP 1: For ease of installation, always roll out the underlayment in the same direction as the engineered product. Tape edges of underlayment together (Tuck tape is the best choice). Some underlayment already have a pressure sensitive tape on edges. For optimized acoustic and stability performance, we recommend to use vapor-barrier underlayment with a maximum thickness of 1/8" (3 mm) with a 20% minimum compression.

STEP 2 : Always leave a proper expansion space from all walls. Engineered hardwood floors used in a floating floor method requires the use of wedges or spacers against starting wall to help keep the flooring from shifting or moving during installation. Make sure that the starting wall is straight and perpendicular to the room.

STEP 3: Apply the same T&G floating floor adhesive to the BOTTOM of the GROOVES (side and end). Reverse the plank direction by having the tongue side (edge) facing the starter board. Remember to leave a proper expansion gap alongthe end wall. Engage plank boards together.

STEP 4: Continue on using engineered boards for 1st row. Cut off last board in 1st row leaving a proper expansion space. Use the cut off for the 2nd row. Install 3rd, 4th, etc. rows. If cut off from end piece is too small, discard and use a new piece. The use of a tapping block is required. Never hit the groove side or edge of any board as damage may occur. Simply wipe off any adhesive that comes in contact with the sawed board face. A dampened cloth (water only required) works well. Check with adhesive manufacturer for details.

Note: Be careful to stagger all end joints approximately twice their width (min. 6 1/2" total) to achieve best visual. Use boards of different random lengths and grain appearance for best results. A tool referred to as a board puller can be used to engage end joints if needed.

STEP 5: In most installations, the last or nail row will need to be ripped to width. Remember to calculate into your measurement a proper space for expansion.

STEP 6 : Visual inspection of installation, making sure there is no adhesive or residue left on the engineered floor face.

FLOATING FLOOR INSTALLATION WARNING

THE FLOOR MUST NOT BE FIXED TO ANY SURFACE AND CANNOT BE SUBMITTED TO ANY MOVEMENT RESTRICTIONS.

Expansion gaps play a fundamental role in the performance of a floating floor installation. They allow the flooring to expand and contract freely in relation to changes in ambient humidity and prevent damage that can affect the aesthetics and structural integrity of the floor. When the room humidity varies strongly, cumulative expansion and contraction can become damaging for the aesthetics and durability of the floor.

1/2" minimum expansion gaps are standard for most installations of floating flooring. The expansion gaps must be respected on all walls, columns, doorways, moulding, etc. (ANY FIXED ELEMENTS). The use of spacers during installation insures that appropriate expansion gaps will be respected.

IF LENGTH OR WIDTH OF THE ROOM EXCEEDS 26 FEET see reference table below. Note: The installation of a « T » molding might be necessary for any room exceeding 40' in length or width. The drywall should be undercut to obtain the necessary expansion room.

Installing Moldings:

Adequate expansion space must be envisioned for the installation of all moldings.

IMPORTANT NOTICE: We recommend fastening the ¾ inch flooring on approved subfloors, with staples only. The use of cleats/nails can decrease installation constancy and fastening strength. Insufficient fastening strength could result in flooring movement and will void the warranty.

4) LEVEL/FLAT: Using a straight edge or level, check to see if the subfloor(concrete) is within 3/16" in 10' or 1/8" in 6'. Make sure that the subfloor is free of any imperfections (including nails or screws).

5) For the purpose of acoustics and stability, we recommend the installation of an underlayment up to 1/8" thick with a maximum compression of 20 percent. You must also install a vapor barrier to avoid any deformation of the hardwood from excess subfloor humidity. In order to obtain optimal installation and full warranty coverage, the subfloors must be rectified prior to installation, leveling out any irregular surfaces (concrete OR subfloor ply- wood) that may cause improper installation (refer to point 4 in section "Subfloor conditions and inspection"). You may correct these

irregularities by using a self-leveling cement (on concrete or on plywood). Please contact our customer service agents for more details and to obtain a products authorized by the manufacturer.

REFERENCE TABLE:

Required expansion Gap

Maximum room width	Maximum room length
1⁄2" Up to 26'	½" Up to 52'
3⁄4" Between 26'-40'	¾" Between 52' to 80'

Contact your local dealer for further inquiries