

## GENERAL INSTRUCTIONS FOR INSTALLING ENGINEERED HARDWOOD FLOORING

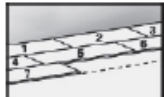
### Product inspection

Wood is a natural product that contains natural variations in colour, tone and grain. It is normal for natural hardwood floor planks to vary in colour. The manufacturer cannot guarantee that there will not be natural variations on individual floor planks or minor differences among the floor planks or in the colouring of the floor. Installers or owners must do a final inspection of the product prior to installation. Do not install a product if the grade, make or finish of the product is questionable. Industry standards allow a margin of error of up to 5% of imperfections. A product with a veneered top layer of less than 1/16" (2 mm) is not guaranteed against surface cracking/checking.

Please check the colouring, finish and grain of the wood PRIOR to installation. During installation, it is recommended that you carefully discard any unwanted pieces or repair any defects. It is suggested that you use cut planks at the beginning of each row to ensure that the joints are staggered and lay the planks out for customized installation. The installed floor planks are considered accepted (or approved) by the installers or owners, regardless if the latter was present or not during installation. The wood will contract and expand with humidity. Even if the flooring is installed properly, spaces may appear between planks and slight deformations may develop. These are natural occurrences and are excluded from the warranty.

### Layout of planks

This process is important to achieve a customized look. Begin by using the planks of the same length in each box or cut four or five planks to different lengths, with a variance of at least 12" (300 mm). Once you have laid out the first few rows or begun a pattern, ensure that you always measure from the long side before you cut. As you lay the flooring, please ensure that you maintain a minimum distance of 12" (300 mm) between the joints in the adjacent rows. Customize your installation of planks of different lengths to avoid a regular pattern. Do not waste any material: off-cuts (no shorter than 12" or 300 mm) from the first few rows should be used to finish off or start a new row on the other side of the room.



Note 1: It is important to mix planks from several boxes in order to balance the colouring and grain of the hardwood.

Note 2: Under no circumstances will the manufacturer be held liable for any costs incurred in connection with planks with visible defects following the permanent installation.

### Condition of work area

There is no need to acclimatize the engineered flooring planks to the work area unless they were transported from one extreme temperature to another. Allow the boxes of flooring to rest if there was a significant variation in temperature. The planks must be stored in temperatures ranging from 60.8°F - 69.8°F (16°C - 21°C) for at least 5 days prior to installation and throughout the following year. Humidity is the leading cause of problems with hardwood-based flooring. Engineered hardwood flooring must be installed in specific environmental conditions including a relative humidity from 35% to 65%. Hardwood subfloors must be absolutely dry at all times: the level of humidity should be kept stable all year long and must not vary more than 5% in comparison to that of the planks of composed engineered hardwood flooring manufactured at between 6% and 9%. Water vapour emission levels for concrete subfloors must not be more than 3 lbs / 1000 ft<sup>2</sup> (1,36 kg / 92,9 m<sup>2</sup>) in 24 hours, as per the calcium chloride anhydrous test (ASTM F1869-98).

### Radiant-heat subfloors

Engineered hardwood flooring may be installed on radiant-heat raised floors provided the system's surface temperature does not exceed 90°F (32°C). Prior to installing the flooring on a radiant-heat system, run the system at full capacity in order to remove any residual humidity from the cement surface. Then set the thermostat to a temperature comfortable for the installation.

### Concrete sub floors

1. The sub-floor must be dry (< 10% humidity).
2. Make sure the sub-floor is clean, flat, smooth and even. Slopes of more than 1/4" over more than 6 feet or 6.35 mm over more than 2 meters must be levelled. Correct all slopes with a levelling compound. Allow the compound to dry thoroughly for at least 1 week before installing engineered hardwood flooring.
3. Apply an anti-dust sealant.

4. **REQUIRED:** spread a polyethylene film of 0.008" (0.2 mm), 100% virgin with a density of 0.92 lb/ft<sup>3</sup> (14.73 kg/m<sup>3</sup>) and a thickness tolerance of +/- 10%. Let the edges overlap 8" (200 mm). Seal the edges by installing the wide adhesive tape along the whole joint.
5. **REQUIRED:** attach the polyethylene film up 1" (25 mm) on the walls to keep humidity from infiltrating through the edges of the flooring.
6. Follow the **Installation Instructions**.

### Wood sub-floors and other surfaces

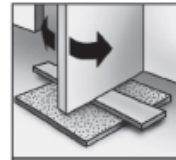
1. Make sure the sub-floor is clean, flat, smooth and even. Slopes of more than 1/4" over more than 6 feet or 6.35 mm over more than 2 meters must be levelled. Correct all slopes (if you use a levelling compound, you must install a water-resistant membrane over the section being repaired).
2. Follow the **Installation Instructions**.

### Special notes

1. On all concrete sub-floors, any carpeting or under-padding must be removed to avoid humidity problems.
2. If you have radiant floor heating, (water based heating system not over an electrical heating system) make sure to lower the thermostat to 60°F (15°C) at least 1 week before the installation (do not turn the heat off if the outside temperature is below freezing).
3. It is recommended that you install a foam sub-floor with an engineered hardwood floor to reduce the effect of clicking (noise) resulting from a floating installation. The 1/16" (1.5 mm) foam sub-floor should have a minimum compressive strength of 300 kPa and a consistent thickness of +/- 15%.
4. Cyanoacrylate glue can be used only on flooring that includes specific instructions for applying glue to flooring joints. The cyanoacrylate glue must meet or exceed the standard for water-resistant PVA glue and must be able to achieve a maximum strength of 4000 psi. Use spacers between the planks and the wall or any other fixed object, e.g. a kitchen island, to leave 1/4" (6.35 mm) for expansion space. You will need approximately one spacer per square foot (0.093 m<sup>2</sup>).

### Installation preparation

1. Make sure to leave a free space of at least 1/2" (12.5 mm) between the top of the flooring and the bottom of the electric baseboard heaters.
2. Check the space between doors and doorframes to be sure that the doors will swing freely without coming into contact with the flooring surface and that there is enough clearance 5/16" (8 mm) below the doorframe to allow the floor to expand.
3. Remove the moulding and baseboards.
4. Although the boards can be installed in any direction, the rule is that floors are generally installed so that they are perpendicular to a wall with a window. Installing the boards parallel to the longest wall tends to make the room appear bigger.
5. The entire perimeter of the expansion space, as well as any other expansion space in laundry rooms or bathrooms, including the space surrounding the toilet evacuation drain, must be filled with a silicon-based sealant that is 100% mould-resistant. Expansion spaces in kitchens or other areas where there is a specific risk of moisture or water leakage must also be filled with a sealant (i.e., in front of a sink, dishwasher, refrigerator, around an ice machine, an exterior door, a sliding glass door).



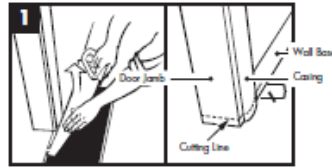
### Installation

#### Tools and materials required

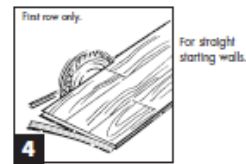
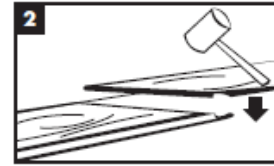
- Polyethylene film (where necessary) • Spacers • Installation bar • Knife • Measuring tape
- Tapping block • Pencil • Circular saw with fine-toothed carbide blade • Safety glasses & gloves
- Rubber hammer • Recommended: Foam underlayment

**Engineered hardwood floors are installed without glue and must be installed as a "floating floor."**

1. Undercut the door frame and wall base. Slide the flooring at least the thickness of the material underneath the frame and wall base. Also leave the same expansion space under each.



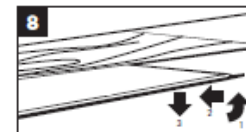
2. Assemble the first row of planks with the tongue side towards the starting wall. Insert the tongue into the groove of the end joints and drop downward. Keep planks aligned and joints closed.



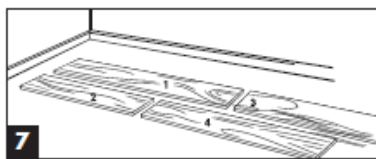
4. Remove the tongue on the end of the first plank and the tongue along the length of all planks against the starting wall when the starting wall is straight.



6. Unroll one width of the foam underlayment of 1/16 inch (1.5 mm) with a minimum compressive strength of 300 kPa. Use only under planks without attached underlayment foam.

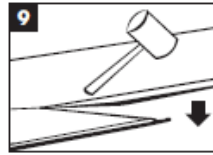


5. If the starting wall is uneven, scribe or draw the contour of the wall on the planks and cut along the pencil line. Also remove the tongue on the end of the first plank of the first row.

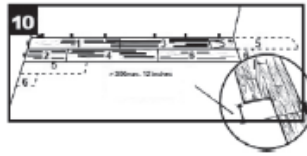


7. Loosely lay the first row of planks approximately 2 feet (61 cm) from the starting wall. Cut the first plank of row two 32 inches (81 cm) in length and loose lay several full sized planks for row two. You can cut the excess with a utility knife.

8. At a slight angle, insert the tongue of plank 2 into the groove of plank 1 until the edges meet. There should not be any gaps at the joints.



9. A. Install the second plank of the second row by inserting the long side tongue into long side groove.  
B. Slide plank to align end joint.  
C. Rotate downward and then with the rubber hammer, press downward until the joint locks. There should be no gaps or raised edges. Use this method to complete the rows all the way to the opposite wall and to finish the remainder of the floor. Stagger the end joints from one row to the next by 12 inches (300 mm) or more.



10. Slide the two assembled rows to the starting wall. Maintain a space of at least the thickness of the material. Use pieces cut from the opposite wall to begin the next row or another row, always leaving a distance of at least 12 inches (300 mm) between the end joints in successive rows.

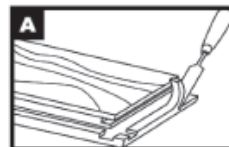


11. Cutting the last row: place a full row of planks directly on top of the last installed row of full planks. Use the full width of a scrap piece of plank. Place the tongue side against the wall and the pencil against the extended groove and mark a line the length of the wall. Cut along the pencil line.

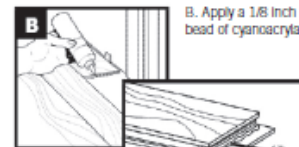


12. When installing around pipes, leave a spacing of the product width around the pipes. Use glue to join the cut pieces.

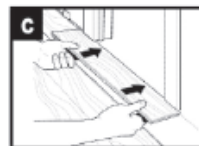
#### Installing flooring under door frames



A. Remove locking ridge on end joint.



B. Apply a 1/8 inch (3.2 mm) bead of cyanoacrylate glue.



C. Align the tongue into the groove of the short side. Slide plank beneath the door frame.



D. Tapping method only to be used when a plank cannot be raised and rotated. Place the tapping block no closer than 8 inches (200 mm) from either end of the plank and tap along the long side until the joint is closed tightly. Clean up excess glue with hot water.

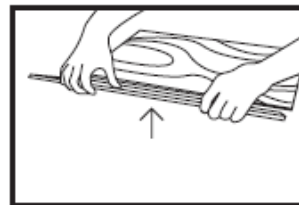
#### Final inspection

Once the floor has been cleaned, inspect it for scuffs, scratches, planks that may have moved during the installation or any other imperfections that may require your attention. Touch-up the scuffs and scratches with recommended touch-up products.

#### Installation of baseboards and quarter-rounds

Nail the quarter-rounds and baseboards to the wall using finishing nails. They can be placed individually or together, depending on the desired effect. Do not attach these mouldings directly to the floor; they must be installed slightly above the floor to avoid jamming the floor covering. Once you have installed the quarter-rounds and the baseboards, it is essential that you meter all the corners and joints. Drill small holes to avoid splitting the wood and nail the mouldings to the wall at 18" (45 cm) intervals. Attach these materials to the walls without gluing them to the floor.

#### Uninstalling the planks (if required)



A. Lift all the panels from the same row at the long sides against the previous row.



B. Lift slightly, and slide the unwanted panels horizontally from the short side. Do not lift up the panels against the short side when panels are clicked in place.

#### Plank replacement:

Using a straight edge and sharp utility knife, cut the center of the damaged plank approximately one inch (2.54 cm) from the edge of the adjoining planks. Remove the center of the damaged plank. Make a cut from each corner back to the inside edge. Carefully remove the edges of the cut plank. Do not damage adjoining planks. Prepare the replacement plank by removing the tongue and groove on each side and by removing the groove on the long side.