



Installation Instructions

It is recommended this product be installed by a qualified hardwood flooring specialist. Many important decisions affecting the performance and appearance of the installed floor must be made on the installation site, and therefore are the responsibility of the installer and/or owner. These include, but are not limited to, complete evaluation of the site, condition of sub-flooring, moisture testing of the site and flooring, acclimation of flooring, milling, grade and color, site preparations, layout of flooring, proper inspection/installation methods, and clean up.

Do not install any flooring if there is any question as to acceptability or proper installation methods. Installation of flooring constitutes acceptance. Refer to the National Wood Flooring Association web site at www.nwfa.org for a comprehensive guide to assist in the installation and maintenance of your new hardwood floor.

Considerations before you start:

Solid flooring should be installed on or above grade only. It is highly recommended that solid hardwood flooring not be installed below grade level. Installation below grade voids the manufacturer warranty.

To help prevent damage, wood floors should be installed after all other construction has been completed, i.e. dry wall, acoustical ceilings, paint, plumbing, and HVAC.

The performance of the wood floor is influenced by environmental conditions. Wood is hygroscopic. It will absorb and expel moisture based on its environment. It is 100% hardwood and is not immune to these changes. A temperature of 70°F +/-10° and relative humidity between 35%-55% is the ideal condition. It is recommended that HVAC be in operation before, during, and after installation. Before installation, the flooring should be acclimated a minimum of three to five days and containers should be open to facilitate good air movement.

Moisture is the most critical of all factors when installing a hardwood floor. Inspect the installation site and look for excess moisture due to poor drainage, wet basement, and lack of proper ventilation. In crawl spaces, exposed earth should be covered with 6-mil polyethylene sheeting overlapped 4"-6". Crawl space vents should be at least 1.5% of the total square footage of the crawl space, vents should be positioned to ensure good cross ventilation, and vents should be open at all times.



Sub-Flooring

Wood:

Exterior plywood or OSB (Oriented Strand Board) is recommended to use for the sub-floor. It is strongly advised not to use particle board. The sub-floor must be dry to within 4% of the hardwood flooring moisture content for strip flooring and 2% if flooring is 4" wide or wider. Minimum single layer sub-floor thickness is $\frac{5}{8}$ " over floor joists 16" on center. Additional sub-floor thickness is required under two conditions: when hardwood flooring will run parallel to the joists; and when existing sub-floor does not meet recommended thickness. Under these circumstances, $\frac{1}{2}$ " plywood should be overlaid at a 90 degree angle.

Concrete:

Hardwood flooring may be installed over concrete slab foundations by first installing a minimum of $\frac{3}{4}$ " plywood installed as a screed/sleeper system with a minimum of 6-mil polyethylene sheeting secured to the slab overlapped 4"-6". All concrete sub-floors should be cured for one month prior to installation. Installation directly to concrete by the use of adhesives voids the manufacturer warrantee.

Radiant Heat:

Great care must be taken to successfully install hardwood flooring over radiant heat systems. The surface temperature of the sub-floor is not to exceed 85oF. The heat system must be operational for at least four to five days before the flooring installation can begin. Humidity control guidelines outlined in the Consideration Section must be followed. Failure to explicitly comply with these guidelines voids the manufacturer warrantee.

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Site Preparation:

The sub-floor must be clean, dry, flat (within $\frac{3}{16}$ " in 10') and structurally sound. Sand any joists that are not flush. Screw the sub-floor securely to avoid squeaking. Undercut any door jambs, casings, drywall or moldings as needed. A clearance of $\frac{1}{16}$ " above the floor is recommended so the new flooring fits underneath and allows for proper expansion space. Lay a piece of flooring or plywood upside down to use as a flat guide for sawing. Always allow $\frac{1}{2}$ " expansion space between the wood flooring and any walls or other vertical objects.

Inspection:

While every attempt is made to assure the quality and consistency of the grade, color variation, manufacture, and finish quality of our flooring, it is ultimately the responsibility of the installer to inspect all flooring prior to installation. The procedure that we recommend is to set up saw horses with a sheet of plywood on top. Flooring boxes are then opened and inspected layer by layer. This system works best because inconsistencies in finish and manufacturing are readily apparent in comparison to the surrounding material.



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Layout:

We recommend that you lay the floor parallel to the longest direction of the room. Whenever possible, apply the flooring at right angles to the floor joists. When this cannot be achieved, additional sub-flooring is required. While each installation job is unique, it is best to always establish a primary line for the entire job, i.e. the longest continuous area, and reference all flooring layout from that line.

Fastening:

It is recommended that 2" fasteners be used. Use ½" fasteners when installing over plywood attached to concrete to avoid puncturing the moisture barrier. Fastener should be spaced 8"-10" apart and be 2"-3" from the ends. Driving nails at closer spacings to "stitch" bowed pieces into place is also recommended.

Once the first row of flooring is installed, "rack" the floor by loosely laying out a few rows of flooring. Distribute the long and short pieces by staggering the ends to avoid repeating patterns and clusters of end joints. Work simultaneously from several cartons to achieve good color distribution. Ensure footwear is clean and void of dirt and debris.

Avoid damage to the flooring with hammers, mallets, and nailer. Use caution to avoid edge and face damage during installation. Special footer plates are available for most flooring tools to protect factory finished flooring faces and edges.

Finishing Touches:

- Remove all scraps and debris from installation site.
- Clean the floor.
- Install moldings and baseboards.
- Clean the floor.
- Fill any existing nail holes or voids with the proper filler.

Note: Applying additional finish or maintenance material over the factory finish may produce mixed results and does not improve durability or seal the joints. Since this is out of the manufacturer's control, any finish materials used that are not recommended voids your manufacturer warranty.