Hardwood Flooring Installation Instructions

NORWOOD HILL

PLEASE READ BEFORE INSTALLATION

INSTALLATION WARNING

Installation conditions – including temperature, sun exposure and humidity – will affect this product's performance over time. For best results, room temperature and humidity of installation area must be kept consistent with normal, year-round living conditions for a minimum of one week prior to installation. All products require a specific temperature range of 60°F to 80°F with 35% to 55% relative humidity. Installation outside of these recommended ranges or over a wet subfloor will likely cause movement in the flooring, including potential shrinkage, tip-raising, gapping between pieces, cupping and face-checking. **Norwood Hill Hardwood Flooring MUST be installed according to the National Wood Flooring Association's (NWFA) installation guidelines in order for the Limited Warranties to be valid.** The most current publication of the NWFA guidelines is available to all NWFA members, and can be found at www.nwfa.org (800-422-4556)

INSTALLER'S / OWNERS RESPONSIBILITY

As a natural product, hardwood contains inherent variations in color, grain and appearance and other visual imperfections. Norwood Hill Hardwood Flooring is manufactured in accordance with industry

standards which permit a defect tolerance not to exceed 5%. These defects may be the result of manufacturing or naturally occurring characteristics of the material. It is recommended that a 5% cutting or grading allowance be added to the total sq footage when calculating the quantity of the flooring required. It is the sole and joint responsibility of the installer and owner to conduct a quality inspection of all the flooring prior to installation. All pieces of flooring should be examined for quality of manufacture, finish and color. If the product quality is deemed unacceptable, it should not be installed. Flooring that has been installed will be deemed to have been inspected and accepted by the installer and owner. It is the sole responsibility of the flooring installer to ensure that the job site, subfloor and installation tools and materials meet or exceed industry standards. Norwood Hill voids all responsibility for problems arising from incorrect or improper site preparations or installations procedures.
IMPORTANT! Adhesive/masking tape applied directly to hardwood floor surface will damage the factory finish and void the manufacturer warranty

SITE PREPARATION

- The building is completely enclosed with all outside doors and windows in place and secured.
- All concrete, masonry, plastering, drywall, texturing, painting and other wet work is complete and has been allowed to cure and dry completely.
- Basements and crawlspaces are dry. Crawlspaces must have no standing water and have a vapor barrier installed in accordance with local building codes.
- Exterior surface drainage is directing water away from the house.
- Interior heat and humidity levels can be controlled and maintained at recommended levels for the duration of the acclimatization and installation period.
- Sub-floor is properly prepared for installation.

FLOORING ACCLIMATIZATION AND CLIMATE CONTROL

- Climate control at the job site must be maintained with the temperature between 60-80°F and humidity at 35-55% before and during the installation. These conditions should be maintained for at least one week prior to installation.
- Flooring material should not be delivered to job site until the site has been acclimatized as detailed above.
- After delivery, the flooring must be allowed to acclimatize on the job site for 72 hrs prior to installation.
- Do not open packages during the acclimatization period, leave boxes sealed until ready to start installation, and then only as needed.

SUBFLOOR PREPARATION

Wood Sub-floors

- Sub-floor must be structurally sound and properly secured with nails or screws every 6 inches along joists to reduce the possibility of squeaking.
- Wood sub-floors must be dry and free of wax, paint, oil, and debris. Replace any water-damaged or delaminated sub-flooring or underlayment.

- Additional requirements for flatness are required for floating floors as stated in installation guidelines.
- Preferred sub-flooring-3/4" CDX Grade Plywood or ¾" OSB PS2 Rated sub-floor/underlayment, sealed side down, with joist spacing of 19.2" or less. Minimum sub-floors-5/8" CDX Grade Plywood sub- floor/underlayment with joist spacing of no more than 16". If joist spacing is greater than 19.2" on center, add a second layer of subflooring material to bring the overall thickness to 1-1/8" for optimum floor performance. Hardwood flooring should be installed perpendicular to flooring joist. If flooring is installed parallel with joist then an additional layer of ½" plywood must be installed to meet minimum requirements of 1-1/8".
  Sub –floor moisture check. Measure the moisture content of both the sub-floor and the hardwood flooring with a pin moisture meter. Sub-floor must not exceed 12% moisture content. The moisture difference between sub-floor and hardwood flooring shall not exceed 4%. If sub-floors exceed this amount, an effort should be made to locate and eliminate the source of moisture before further installation.
- Do not nail or staple over particle board or similar product.

Concrete Sub-floors

- Concrete slabs must be of high compressive strength with minimum 3,000 psi. In addition, concrete sub-floors must be dry, smooth and free of wax, paint, oil grease, dirt, non-compatible sealers and drywall compound etc.
- Engineered hardwood flooring may be installed on, above, and/or below-grade.
- Concrete substrates must meet or exceed adhesive manufactures guidelines for flatness.
- Additional requirements for flatness are required for floating floors as stated in installation guideline.
- Lightweight concrete that has a dry density of 100 pounds or less per cubic foot is not suitable for engineered wood floors. To check for lightweight concrete, draw a nail cross the top. If it leave an indentation, it is probably lightweight concrete.
- Concrete sub-floors should always be checked for moisture content prior to the installation of wood flooring. Standard moisture tests for concrete sub-floors include relative humidity testing, calcium chloride test and calcium carbide test.
- Measure the moisture content of the concrete slab using a TRAMEX concrete moisture meter. If it reads 4.5% or above, then this slab must be checked using calcium chloride tests. Flooring should not be laid if the test result exceeds 3 lbs per 1000 sq ft of vapor emission in a 24-hour period. Please follow the ASTM guideline for concrete moisture testing.

Other Sub-floors

- Ceramic, terrazzo, resilient tile and sheet vinyl, and other hard surfaces are suitable as a sub-floor for engineered hardwood flooring installation.
- The above tile and vinyl products should be level and permanently bonded to the sub-floor by appropriate methods. Clean and abrade surfaces to remove any sealers or surface treatments to insure a good adhesive bond. Do not install over more than one layer that exceeds 1/8" in thickness over suitable sub-floor.
- Substrate must meet or exceed adhesive manufacturers guidelines for flatness.
- Additional requirements for flatness are required for floating floors as stated in installation guidelines.

EXPANSION SPACE

Hardwood flooring will expand and contract with changes in ambient temperature and humidity. To allow for this, during installation leave a ½" expansion space around the entire perimeter of the floor between the flooring and the walls. Also leave a ½" expansion space where the flooring will meet any vertical obstacle, such as stairs, pipes, door sills, tiles, cabinets, etc.

Note: In climates with extreme variations in humidity, it may be necessary to leave a larger expansion space.

NAIL DOWN INSTALLATION GUIDELINES:

NOTE: Nailing planks wider than 7.5" without a full spread adhesive will void all warranties. Nail down installation is not recommended for 7.5" or wider planks.

- Make sure to properly test subfloor before installation, following subfloor preparation instructions previously discussed.
- A 15 lb. felt paper moisture barrier should be applied to the plywood subfloor with 6" overlaps before installing the new wood floor per ASTM D-4869.
- Create a working line parallel to the starting wall, in multiples of our engineered plank width, to set up the baseline of installation.
- Install the first row of wood with the groove side towards the wall using top nails as necessary to hold the first row firm and in place. Adjust as necessary.
- Use adjustable pneumatic power hammer or nailing machine with 1 1⁄2" – 2" nails as is required and make sure nailing foot is appropriate to the nails / staples used. To avoid damage to the tongue be sure to adjust for proper pressure on the compressor.
- Add each additional row of flooring, watching the pattern repeat and offsetting or staggering the joints as desired. (Generally, joints should either match in a specific pattern or be staggered by no less than six inches). Finished areas should be covered with a breathable protective paper, NEVER PLASTIC, immediately after installation to prevent damage. Do not tape protective paper to the finished surface of the wood for extended periods of time.

Disclaimer:
Norwood Hill Hardwood Flooring products are not warranted against squeaking, popping or crackling when using nail down/staple installation methods. Squeaking, popping or crackling is normal, and these symptoms may be aggravated in arid areas or during dry conditions.

GLUE-DOWN INSTALLATION GUIDELINES:

- Make sure to properly test subfloor before installation, following subfloor preparation instructions previously discussed.
- Apply a moisture barrier to slab.
- A urethane-based adhesive should be used exclusively recommended by Norwood Hill.
- Read the glue manufacturer's instructions (printed in detail on the glue container) to choose the correct size trowel.
- Create a working line parallel to the starting wall, in multiples of our engineered plank width, to set up the baseline of installation.

- Following the spread rate and curing time suggested by the glue manufacturer, spread glue evenly on the subfloor to cover an area appropriate to the number of planks that can be laid in time for best result of the glue.
- Lay one row of flooring planks along the entire length of the work line. Add each additional row of flooring, watching the pattern repeat and offsetting or staggering the joints as desired. (Generally, joints should either match in a specific pattern or be staggered by no less than six inches).
- A 1⁄2" expansion space should be left around the perimeter. Roll whole floor with a 150 lb. roller within 3-6 hours after installation. Finished areas should be covered with a breathable protective paper, NEVER PLASTIC, immediately after installation to prevent damage. Do not tape protective paper to the finished surface of the wood for extended periods of time.

FLOATING INSTALLATION GUIDELINES:

- Sub-floor flatness is critical to the success of a floating floor installation. A flatness tolerance of 1/8" in a 10-foot radius is required for floating floor installation.
- Install a leading brand pad-2 in 1 or 3 in 1. Follow pad manufacturer's instructions. If it is a concrete sub-floor, It is required to install a 6 mil polyethylene film.
- Use adhesive such as Titebond Tongue and Groove adhesive or similar product as recommended by Norwood Hill.
- Snap a working line parallel to the starting wall, allowing expansion space as specified above.
- Boards should be installed left to right with the tongue facing away from the wall. Install first three rows by applying a thin bead of glue in the groove on the side and end of each board. Press each board firmly together and lightly use a tapping block if necessary.
- Continue installation as above by applying a thin bead of glue in groove side and end groove of every board throughout installation.
- Clean excess glue from between boards with a clean cotton cloth. Tape each board together at side and end seams using 3-M blue Tape. Allow glue to set before continuing installation of subsequent rows.
- Continue the installation until finished. Distribute lengths, staggering end joints as recommended above.
- Thoroughly clean, sweep, and vacuum installed floor and inspect the floor for scratches, gaps and other imperfections. Do not apply any tape directly to the installed flooring to hold down floor protection. The new floor can be used after 12-24 hours.

Disclaimer:
Upon completion of the floating installation of a random length engineered wood floor, the floors surface may not appear as continuously flat as compared to a traditional long strip floating floor. Hollow sound and squeaking should be expected since the flooring is not secured to the subfloor by means of chemical fastening (gluing) or by mechanical fastening (staples, cleats or nails). Hollow sound is NOT a defect caused by manufacturing, but rather the result of the way in which the floor is put together.