



T & G Prefinished Engineered Plank 25 Year Residential Warranty

PLEASE READ THE ENTIRE INSTALLATION INSTRUCTIONS BEFORE PROCEEDING WITH THE ACTUAL INSTALLATION

OWNER / INSTALLER RESPONSIBILITY

- Hardwood flooring is a product of nature, which is characterized by distinctive natural variations in grain and color and is not considered flaws. Hardwood flooring will also experience a change in color over a period of time. The degree of change depends upon the specie and the amount of UV exposure. This hardwood flooring is manufactured in accordance with accepted industry standards, which permit a grading defect tolerance not to exceed 5%. The defects may be of a manufacturing or natural type.
- The owner/installer assumes all responsibility for final inspection of product quality. This inspection of all flooring should be done **before** installation. Carefully examine the flooring for color, factory finish, grade, and quality before installing it. Do not install (or cut off) pieces with glaring defects whatever the cause. If material is not acceptable, contact your distributor or dealer immediately before installation. Installation implies acceptance. **No warranty will be offered for material with visible defects once the product is installed.**
- Before beginning the installation of any hardwood flooring product, the installer must determine that the environment of the job site and the condition and type of the sub floor involved is acceptable, insuring that it meets or exceeds all requirements, which are, stipulated in the installation instructions which follow. The manufacturer declines any responsibility for job failure resulting from or associated with inappropriate or improperly prepared sub floors or job site environment deficiencies. For best results, we suggest using a National Wood Flooring Association Certified Professional for your flooring installation.
- The installer must document all site tests and the records must be available if a claim is filed.
- The use of stain, filler, or putty stick for the correction of defects, small cracks, or face nail holes during installation should be accepted as normal procedure.
- When ordering, 5-10% must be added to the actual square footage amount needed for grading and cutting allowances.
- We strongly recommend that you visit the NWFA website at www.woodfloors.org for installation help and maintenance tips.

JOB SITE INSPECTION & ACCLIMATION

- In new construction, hardwood flooring should be one of the last items installed. All work involving water or potential ground debris (plumbing, dry wall, etc.) should be completed prior to wood flooring being installed. Heating and air systems should be fully operating, maintaining a consistent room temperature at 60-80° F and a constant relative humidity of 35-55%.
- Flooring should not be delivered until the building has been closed in and cement work, plastering, painting, and other materials are completely dry. New concrete and plaster should be cured and at least 30 days prior to doing moisture testing.
- Check basements and under floor crawl space to be sure that they are dry and well ventilated to avoid damage caused by moisture. Crawl spaces must have a minimum 6 mil black polyurethane film as a vapor retarder on the ground surface if the crawl space is not finished with cement.
- Moisture content of both the sub-floor and the flooring should be checked and recorded before any work begins.
- Flooring should be at the job site a minimum of 72 hours prior to installation for acclimation. **The engineered flooring must be properly acclimated to temperature and humidity conditions prior to proceeding with installation. Do not open cartons until ready to install.** Follow the NWFA guidelines for acclimation (www.nwfa.org) on the job site and moisture equilibrium.
- Handle with care. Do not stand on ends. Store flooring in a dry place, being sure to provide at least a four-inch air



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- space on or around cartons.
- Do not store directly upon on grade concrete or next to outside walls. Cartons should be placed in the installation area.
 - The installation site should have consistent room temperature of 60°-80° F and a constant relative humidity level of 35-55% for a minimum of 5 days prior to installation of any flooring product.
 - Engineered flooring is for below grade, on grade or above grade installation only and **cannot** be installed in full bathrooms or other high moisture areas.
 - Some Engineered Flooring can be installed over Radiant Heat using the floating floor method on or above grade. See approved species below or check with your distributor.

SUB FLOOR PREPARATION

APPROVED SUB FLOOR TYPES:

- 1) Agency approved 5/8"(19/32") minimum thickness or 3/4" (23/32") CDX Exposure 1 plywood 16" on center floor joists properly nailed.
- 2) Agency approved 3/4" (23/32") underlayment grade OSB Exposure 1 16" center floor joists properly nailed.

Note: When installing approved plywood or OSB, refer to specific structural panel manufacturer's instructions for fastening and spacing.

- 3) Agency approved underlayment grade particleboard.(Nail down and glue down installation not recommended on particleboard)
- 4) Existing wood floors (installed at right angle only).
- 5) Concrete Slab
- 6) Resilient tile, sheet vinyl, and ceramic tile only over and above mentioned and approved sub floor.

SUB FLOORS MUST BE:

- **CLEAN** - Scraped or sanded, swept, free of wax, grease, paint, oil, previous or existing glues or adhesives, and other debris
- **SMOOTH/FLAT** - Within 1/8" on 6' radius. Sand high areas or joints, fill low areas (no more than 1/8") with a cement type filler no less than 3000 p.s.i. Follow the instructions of the leveling compound manufacturer, but make certain the leveling compounds are completely dry before beginning installation. Any irregularities may cause hollow spots between the flooring and sub floor in any installation method and are not warranted.
- **STRUCTURALLY SOUND** - Nail or screw any loose areas that squeak or show movement. Replace any delaminated or damaged sub flooring underlayment. Avoid subfloors with excessive vertical movement. If the subfloor has excessive vertical movement or deflection before installation it is likely it will have deflection after the flooring is installed.
- **DRY** - - Moisture content of sub floor **must not** exceed 14% prior to installation of wood flooring. All moisture testing must be verified & documented before and after wood has been acclimated a minimum of 48 hours and job site requirements met.

WOOD SUBSTRATES: Test the moisture of the wood substrate using a calibrated moisture meter approved for testing wood moisture according to the meter manufacturer. The reading should not exceed 14%, or read more than a 2% difference than moisture content of products being installed.

CONCRETE SLABS (regardless of existing floor covering): All concrete sub floors must be tested for moisture content prior to installation of the hardwood flooring. The concrete subfloor must be a minimum of 30 days old prior to testing. The moisture content of the concrete sub floor must not exceed 3 lbs. /1000 sq. ft. /24 hour emissions per CCTM and or 75% per Relative Humidity Test.

Below are methods to test to indicate moisture is present in the concrete sub floor:

- 1) Use an approved calibrated concrete moisture meter (Tramex Concrete Encounter) as a preliminary measurement for moisture. Follow manufacturer's specific calibration requirements.



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Any reading higher than 4% indicates the need for a Calcium Chloride (ASTM F-1869) and or Relative Humidity test (ASTM F-2170) and pH test.

- 2) Perform a polyfilm test. Tape down 2' x 2' polyfilm squares (a clear garbage bag or plastic drop cloth will do) in several places on the floor. Wait 24-48 hours, and then check for the appearance of condensation on the inside of the bag or plastic for a darkening on the concrete sub floor. Either occurrence signals the likely presence of excess moisture, requiring a mandatory calcium chloride test.
- 3) Test with a 3% Phenolphthalein in Anhydrous Alcohol Solution. Do not apply solution directly to the concrete surface. First chip 1/4" deep into the concrete test area and apply several drops of the solution. Any change in color signals the likely presence of excess moisture, requiring a mandatory calcium chloride test.
- 4) Once you have determined the moisture content and that moisture is present a calcium chloride and pH

alkalinity test **must** be performed to determine the moisture emissions through the concrete slab of the moisture and alkalinity in the concrete floor so appropriate corrective action can be taken.

- Perform a calcium chloride test according to the manufacturer's instructions. The maximum acceptable reading is 3-lbs. /24 hours/1000 sq. ft. for moisture emissions. Three test for the first 1,000 square feet and one test for every 1,000 square feet thereafter.
- Perform a Relative Humidity test according to the manufacturer's instructions. The maximum reading is 75%. Three test for the first 1,000 square feet and one test for every 1,000 square feet thereafter.
- Perform a pH alkalinity test according to the manufacturer's instructions. A pH reading of 6-9 on a pH number scale of 1-14 is acceptable.
- If the test results exceed this number the concrete slab should be sealed with appropriate sealers to correct those emissions as per the manufacturer's recommendations. This must be documented before installation.

Note: If excessive moisture (3-lbs. to 7-lbs.) is present or anticipated, use a moisture retardant system to seal the concrete or an inexpensive sheet vinyl/slip sheet glued directly to the concrete slab to reduce vapor intrusion. Follow the instructions of the sheet vinyl manufacturer, using a premium grade alkaline resistant adhesive, and full spread application system to bond the vinyl to the subfloor. For additional requirements and information, refer to our Slip Sheet Technical Note.

Note: If a sub floor has been flooded or rained upon, it may not be suitable to install flooring.

INSTALLATION on WOOD SUBSTRATE:

Note: Do not use the glue down or staple down installation method on underlayment grade particleboard. Sub floor should be constructed of 5/8" (19/32") or thicker plywood or 3/4" (23/32") OSB when installing directly over minimum 2 x 10 floor joists 16" on center. For up to 19.2" on center 3/4" (23/32") plywood or OSB should be used. For 19.2" to 24" on center 7/8" plywood or OSB should be used. Structural Panels must be installed sealed side down. Plywood sheets should be laid with grained outer plies at right angles to joists; adjacent rows staggered four feet and nailed every 6" along each joist with 7D or larger nails. When installing directly over old wood or strip floor, sand any high spots, re-nail old floor to eliminate squeaks or loose boards, and install new planks at right angle (perpendicular) to the old floor, or overlay old floor with 1/4" plywood underlayment. Leave a 1/8" gap at the edges and nail with 7D or larger nails every 6" at the edges and every 12" in both directions and through the interior of each sheet of plywood. Edge swell should be flattened. The moisture content of the wood or plywood should not exceed 14%.

INSTALLATION on CONCRETE SLABS:

All concrete sub floors should be tested for moisture content. New concrete slabs require a minimum of 90 days curing time before installation. Concrete sub floors must be free of existing adhesives, grease, oil, dirt, and curing compound. These may be removed chemically or mechanically, but do not use a solvent based stripper. The residual solvents can prohibit satisfactory bond of floor adhesives, the concrete, and the flooring. To ensure a lasting bond make



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sure the perimeter of the foundation has adequate drainage and vapor retarder. Apply a liquid based moisture vapor retarder coating to the subfloor. Over concrete use only concrete moisture sealer systems that are specifically designed for moisture suppression and adhesive bonding properties. Follow manufacturer's guidelines and recommendations. The underlying floor must be permanently dry and protected against moisture. If this requirement is not met, the planks can swell, shrink and warp and may void the warranty.

Note: LIGHTWEIGHT CONCRETE:

Lightweight concrete has a dry density of 100 pounds or less per cubic foot and is only suitable for engineered wood floors when using the floating installation method. Many products have been developed as self-leveling toppings or floor underlayment. These include cellular concrete, resin reinforced cementations, underlayments and gypsum-base materials. Although some of these products may have the necessary qualifications of underlayment for wood flooring installation, others do not. To test for lightweight concrete, scrape a coin or key across the surface of the sub-floor. If the surface powders easily or has a dry density of 100 pounds or less per cubic foot, use only the floating installation method.

INSTALLATION on SUB-FLOORS OTHER THAN WOOD OR CONCRETE:

Do not install over carpets.

Note: Perimeter glued resilient vinyl and rubber tiles are unacceptable underlayments and must be removed.

Terrazzo, marble, tile and any other hard surfaces that are well bonded to sub floor, dry, structurally sound and level, as described above, are suitable as a sub floor for this engineered hardwood flooring installation. As above, the surface must be sound, tight, and free of paint, oil, existing adhesives, sealers, wax, grease, and dirt. Terrazzo, marble, and ceramic tile must be scuffed to assure adhesion.

The flooring can be glued or floated directly over full spread permanently bonded acoustical cork. Density should be 11.4 lb. / cubic ft. and installed according to cork manufacturer's recommendations. Do not use foam underlayment when using the floating method over cork.

ASBESTOS 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.

JOB SITE PREPARATION

- Verify floor is level and structurally sound. Repair as needed. Sub floor irregularities may cause any wood flooring installation to develop hollow spots between the flooring and the sub floor. These are not the result of any manufacturing defect.
- Proper moisture testing is the key to determine readiness for installation.
- Follow the NWFA guidelines for acclimation (www.nwfa.org) on the job site and moisture equilibrium.
- Undercut door casings.
- Remove any existing wall base, shoe molding, quarter round or doorway thresholds
- Regardless of the installation method all floors should be racked.



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RADIANT HEAT SUB FLOORS:

ONLY PREFINISHED EUROPEAN WHITE OAK, AMERICAN CHERRY, ELM, MAPLE OR BIRCH ARE APPROVED FOR USE ON RADIANT HEAT APPLICATIONS. DO NOT USE BRAZILIAN CHERRY, HICKORY, ACACIA, OR ANY OTHER EXOTIC SPECIES. WARRANTY WILL BE VOIDED IF ANTHING OTHER THAN APPROVED SPECIES IS USED.

RADIANT HEATING SYSTEMS USED MUST BE DESIGNED AND CONTROLLED SPECIFICALLY FOR HARDWOOD FLOORING BY THE SYSTEM MANUFACTURER AND MUST INCLUDED AN OUTSIDE TEMPERATURE PROBE AND SURFACE TEMPERATURE CONTROLS.

Follow the below grade instructions (above) for underlayment requirements and installation instructions. Most radiant heat installations call for the requirements below when installing over radiant heat systems. Always refer to the manufacturer of the radiant heating system for detailed instructions.

- Floating floor installation is the preferred installation method. Do not use the staple installation method on radiant heat flooring. The nails may damage the radiant heating system. (Refer to NWFA Appendix H).
- Newly installed water- heated-radiant- heat systems should be operational for a minimum of 4 weeks with the temperature set between 64°-68°F to insure a dry subfloor with the proper moisture content.
- Existing water- heated-radiant- heat systems must be operated a temperature of 64°F 4 for a minimum of 4 days before acclimation and installation of hardwood flooring.
- A pressure test must be preformed and documented prior to installation.
- At the time of installation, sub floor must be 64°-68°F.
- Use an adhesive approved by the system manufacturer .
- If the subfloor is concrete and it has cured, turn the heat on, regardless of season, and leave it on for at least 5-6 days to drive out residual moisture before installation of the wood flooring.
- Glue-down applications, require the heat to be reduced or even turned off before installation of the flooring begins, so the adhesive does not cure excessively. Test concrete using, Moisture Guideline Testing and Vapor Retarders.

- After installation do not change the radiant heat settling for 48 hours.
- Gradually increase the heat in 3 - 5 ° increments daily to adjust the heating system temperature up or down to allow the flooring to adjust to the temperature changes
- The maximum temperature of sub floor under normal use should not exceed 85° F. (Check with heat system manufacturer).
- For correct water temperature inside heating pipes, check with manufacturer's suggested guidelines.
- Heating pipes must be covered with 1 1/4" of concrete or minimum 1/8" below bottom side of plywood sub floor. In addition, for plywood sub floor, heat transfer plates or insulation boards must be under pipes.
- Room temperature should be maintained between 60-80 ° F and not vary more than 15° F from season to season.
- Relative Humidity **MUST** be maintained in the range of 35-55% humidity in the home for radiant heated rooms.
- .Always refer to the manufacturer of the radiant heating system for detailed instructions.
- The maximum allowable subfloor surface temperature is 85° F (29.44° C).
- Expect some heating season shrinkage.