Mae Terra™ Hardwood

Installation Instructions

¾" Solid Nail Down

Protect your investment. Review and adhere to the flooring installation instructions. Please note that these are instructions for the experienced hardwood flooring installer. For more detailed information on the basics of installing hardwood flooring, please contact the National Wood Flooring Association (NWFA) at 1-800-422-4556 or visit www.nwfa.org.

Installer/Owner Responsibility

Hardwood flooring is a natural product. Therefore, defects in the flooring can occur in the manufacturing process, or naturally as a characteristic of the wood. The flooring is manufactured within accepted industry standards, allowing for up to 5% defective product based on the original hardwood flooring purchase order. Order an additional 5% of flooring product above actual square footage requirements to allow for cutting and grading of material. The installer must hold out or cut off defective flooring material during installation. Filler or putty stick may be used to correct minor flooring defects during installation and is considered a normal procedure.

Prior to installation, the installer assumes all responsibility for final inspection and quality of the product

Flooring should be carefully examined for finish and quality. Do not install hardwood flooring that is unacceptable. Should there be problems, contact the seller immediately. Manufacturer will not, in any case, be liable for installer's lack of judgement, quality of installation, labor, installation, and associated cost.

The installer must determine that the jobsite environment and sub-floor surfaces meet applicable construction and material industry standards.

Manufacturer declines any responsibility for job failure resulting from deficiencies associated with sub-floor or job-site environment. The installer is commissioned and contracted by the owner. The owner should choose the installer carefully by checking references and previous job experience, etc. The cheapest is not always the best. Installing hardwood flooring is a highly skilled operation. The contract to install is between the owner and the installer. Manufacturer is in no way responsible for the owner's choice of installer or any failure by the installer to satisfy the owner.

Installation Applications

Refer to proper application for the installation of the flooring you plan to install. There are several types of products that require different installation applications. Flooring products can be installed using a nail-down, glue-down, or floating application. Also, there are several different flooring profiles that are only suited for one or two applications. ¾" and 5/8" solid products can be installed using the nail-down application only.

Basic Tools and Accessories needed for Installation

Rubber Mallet
Pencil
Jamb saw or hand saw
Chalk line
Hammer
Tape measure
Table Saw or Band Saw
Broom

Installation Applications

Bona Hardwood flooring cleaner
Quality moisture meter with manufacturer's relevant exotic species calibration figures
Drill with 1/16" drill bit
4d-6d flooring nails
Nail set

Recommended Fasteners and Nail/Staple Guns

Powernail Pneumatic Model 50P FLEX and coated 18 gauge x 1-3/4" nail (100 psi range) (www.powernail.com) Other machines designed and adapted specifically to ¾" and 5/8" solid or engineered wood flooring Ÿ1-1/2" (minimum) glue coated fastener ¾" and 5/8" Solid Products require one of the following nail guns:

Different heating/air conditioning systems can also dramatically alter on-site relative humidity. As a result, there is no fixed moisture content that is right for all situations. It is up to the individual installer to establish the proper moisture content for each installation.

Pre- Installation

Prior to installing hardwood floors, the building must be structurally complete and enclosed, including installation of exterior doors and windows. Concrete, masonry, drywall, and paint must also be complete, allowing adequate drying time as to not raise the moisture content within the building. HVAC systems must be fully operational at least 14 days prior to flooring installation, maintaining a consistent room temperature between 60-75 degrees Fahrenheit and relative humidity between 35-55%. This not only stabilizes the building's interior environment, but also is essential when acclimating hardwood flooring to the job-site. Exterior grading, directing drainage away from the structure, as well as gutters and down-spouts should also be completed. Floors can only be installed on or above grade level and are not recommended in full bathrooms. In extreme dry climates, it may be necessary to use humidifiers to assure relative humidity levels meet or exceed the 35% minimum. Also, dehumidifiers may be necessary to control the humidity level above the 55% level. All hardwood flooring manufacturers require these levels and no warranty for wood flooring products covers extreme dryness or high humidity. It is essential that basements and crawl spaces are dry. Crawl spaces must be a minimum of 24" from the ground to underside of joists. A vapor barrier must be established in crawl spaces using 6 mil polyethylene (poly) film with joints overlapped and taped. During the final pre-installion inspection, sub-

floors must be checked for moisture content using the appropriate metering device for wood and/or concrete. This is covered for each type of installation application (Nail-Down, GlueDown, and Floating)

Equalizing Hardwood Flooring

Note: Equilibrium points vary dramatically throughout the country, form the dry desert areas of the Southwest to moist areas along the Gulf of Mexico. In addition, a wide range of relative humidity can be experienced between individual job-sites within the same basic locale.

Wood is a porous material with a natural cellular structure that expands and contracts depending on the amount of relative humidity present in the surrounding atmosphere.

DO NOT ACCLIMATE/EQUALIZE ENGINEERED PRODUCTS WITH THE DRY-SAWN TOP VENEER. THESE PRODUCTS ARE SPECIALLY DESIGNED TO BE INSTALLED IMMEDIATELY AFTER OPENING THE CARTONS. FOR ALL OTHER PRODUCTS, FOLLOW THE INSTRUCTIONS BELOW FOR ACCLIMATION/EQUALIZING OF THE WOOD.

Equalizing moisture content to the job-site equilibrium point before installation is paramount to stabilizing movement after installation.

Handle and unload hardwood flooring with care and store within the environmentally controlled site in which it is expected to perform. Flooring should be elevated at least four inches to allow air circulation under cartons. Hardwood flooring must acclimate for as long as necessary to meet minimum installation requirements for moisture content.

Use a hardwood flooring equilibrium moisture content chart to determine the proper moisture content for the installation. Always use a moisture meter to determine where the flooring and present job-site conditions are in relation to the projected final equilibrium point taking into account seasonal changes. If the wood is neither gaining nor loosing moisture, an equilibrium condition has been reached.

Recommended Sub-Floor

Preferred – ¾" (19MM) CDX Grade Plywood or ¾" (23/32) OSB P52 Rated Underlayment with a minimum 40 lbs. density. Minimum – 5/8" CDX Grade Plywood with a minimum 40 lbs. density. DO NOT NAIL OVER PARTICLE BOARD OR SIMILAR PRODUCTS, INCLUDING GYPCRETE. PRODUCTS CANNOT BE INSTALLED OVER RADIANT HEAT.

Sub-Floor Preparation

Sub-floors must be dry and free of wax, paint, oil and debris. Replace any water-damaged or delaminated subflooring or underlayment. Scrape smooth and sweep prior to installation. Sub-Floor should be level/flat within 3/16" over 10' or 1/8" over 6'. If sub-floor is plywood or equivalent, high areas or joints can be sanded flat. Low spots can be lifted to flat using shims or layers of builders felt between wood and sub-flooring during installation, Plywood or equivalent sub-floor must be structurally sound prior to installation. Sub-floor must be properly secured with nails or screws every 6 inches along joists to reduce the possibility of squeaking. Appropriate moisture tests must be performed as outlined in Step 5: Testing for Moisture.

¾" or 5/8" thickness sub-floor material recommendations are satisfactory for 16" on Center joist spacing. Only ¾" subfloor recommendations will allow up to 19.2" joist spacing. When joist spacing is greater than 19.2" on Center, flooring will exhibit minimum performance. Therefore a second layer of sub-floor material (bringing the overall thickness to 1 to 1-1/8") is necessary to provide optimum results when joist spacing exceeds 19.2" on center. Sub-Floor panels should be spaced 1/8" apart to allow for expansion.

Hardwood flooring should, whenever possible, be installed perpendicular to flooring joists. Do not install hardwood flooring over existing glue-down wood floors or over wood floors that exceed 3-1/4" face size. In these applications, or when installing flooring parallel to existing wood floors, first install an additional ¼" layer of plywood to assist stabilization.

Check for Moisture

Using a quality moisture meter, measure the moisture content of both the sub-floor and the hardwood flooring. Subfloors must not exceed 12% moisture content and the difference between sub-floor and hardwood flooring cannot exceed 4%. If sub-floors exceed this amount, an effort must be made to locate and eliminate the source of moisture before installation. If there is a concern that the moisture is in the high range, a moisture barrier is recommended.

A 6 mil polyethylene film minimum may be required in addition to the 15lb. Asphalt felt. The Asphalt felt is not considered a moisture barrier.

Expansion Space

You must have the proper expansion space around all vertical obstructions. This is needed to allow for the floor to expand or contract as it gains or releases moisture. Door jambs must be undercut to allow proper expansion and the installer should allow for ½" gap at all walls, jambs, and other vertical obstructions. These gaps will be covered by/undercut door jambs, or by using IP moldings. (Reducer, Threshold, etc.)

Installing the Floor

Remove flooring from several different cartons to maximize color and shade mixture. Stagger the ends of the boards at least 6" in adjacent rows. Installation parallel to the longest wall provides the best visual effect. Before you begin installing the flooring, cover sub-floor area with 15lb asphalt felt.

Undercut or notch-out door casings 1/16" higher than the thickness of the flooring being installed to avoid difficult scribe cuts during installation. Also, remove existing base and shoe molding as well as doorway thresholds; each can be replaced after installation is complete.

An exterior wall is usually the straightest and best reference line to start the installation. The direction of wood flooring should be at right angles to the floor joists whenever possible. Establish a starting line by leaving a minimum ½" expansion gap around the vertical obstructions. In large spans, more spacing may be needed depending on geographical area, interior climate control, and time of the year. Measure this distance from the starting wall (in at least two places) close to the starting wall's opposite corners. Mark these points and snap a working chalk line parallel to the starting wall allowing the required expansion space between the starting wall and the edge of the first row of flooring.

On the first row of flooring use 6d or 8d flooring nails to top nail surface of flooring and countersink (pre-drilling nail holes will prevent splits). Nails should hit the joist whenever possible. To ensure proper alignment of flooring, make sure the flooring along the working chalk line is straight. Allowing for a ½" minimum expansion gap is critical. Wood expands and contracts with changes in humidity. Wood will buckle and/or cup if an adequate expansion space is not provided. Always allow for expansion when making end or side cuts around vertical objects.

CAUTION: It is extremely important to use the appropriate nailer and fasteners for installation.

Make sure to properly space nails every 8'-10' along the length of the board with a minimum of 2 fasteners per piece and fasteners at 2" to 3" from each end. If face width of flooring is 5' or wider, properly space nails every 4' to 6' along the length of each board. Top (hand nail) nail enough rows to allow adequate spacing from wall to engage the gun and continue installation with a floor-nailing machine. Continue across the room until finished; remember to provide adequate spacing for expansion gap. Once completed, install molding and trim. Thoroughly clean, sweep, and vacuum installed floor before further use. If floor is to be covered, use a breathable material such as cardboard or rosin paper. Do not cover with plastic.