



INSTALLATION INSTRUCTIONS:

PREFINISHED SOLID HARDWOOD FLOORING

■! *Please review the following instructions before starting the plank installation.*

Application: Nail-Down

Prefinished solid hardwood floors are typically installed using standard flooring nailers or staplers. Natural variations and characteristics within species such as hardness and brittleness can affect installation time or workability and is not considered a manufacture defect. This flooring is not intended for below-grade or radiant heat applications.

Handle with Care

It is understood that wood products are sensitive to moisture, temperature and humidity. Therefore, store your new flooring inside in the area to be installed not in buildings, garages, sheds without climate controls or directly on bare concrete or next to outside walls. It is important to keep wood flooring dry, protect the flooring from rain or snow during transportation. Lay the flooring flat in a dry, level place. Provide air flow under and around cartons. Cartons should be placed close to the center of the installation area as possible. Keep out of direct sunlight and away from heat/air vents. To prevent board warping, twisting or bowing do not cut the outside plastic banding straps or remove product from the box until ready to install.

Owner/ Installer Responsibilities:

It is the responsibility of the customer/installer to inspect the goods and ensure the jobsite conditions and jobsite sub-floor are environmentally and structurally acceptable before installation is started. The manufacturer declines any responsibility for job failure resulting from deficiencies associated with sub-floor or job-site environment.

Proper installation can be affected by moisture content of flooring, moisture content of job site, acclimation of flooring to proper site conditions, preparation of job site, preparation of all sub surface, sub-floor, and flooring layout.

Prior to installation, the customer/installer is responsible for the final inspection of materials and is encouraged to report any deficiencies in grade, manufacture and finish directly to the seller. Do not install defective materials. Warranties do not cover visible defects once they are installed. During installation, use reasonable board selectivity and good judgment. Defects should be cut off placing the remainder in closets or near walls. To minimize gapping, boards of similar widths should be placed together in the same row. A reasonable amount of installed flooring (up to 25% or 100sqft whichever is less) is enough to determine acceptance of quality.

Wood is a natural product with natural color variations, grain variations, and tone variations, these natural variations are neither flaws or defects, but rather the natural beauty and uniqueness of wood, and should be expected. Only stained products will have the most uniformity in color or shade. Our floors are manufactured in accordance with accepted industry standards that may allow possible defects not to exceed 5%.



We recommend ordering 5% above the actual square footage requirements to allow for cutting and grading of material.

Handling and Site Conditions:

- ! The building must be complete and enclosed. To prevent moisture related issues such as buckling or cupping, all wet trades involving water or moisture (plumbing, ceramic tiles, drywall finishes, painting, etc.) should be finished with ample time allowed for complete drying prior to wood floor installation.
- ! The exterior grading should be complete with all gutters, downspouts and drainage directed away from the building. The crawl space must have adequate perimeter venting and a 6-mil polyethylene sheet plastic must be used as a moisture vapor barrier, it has to cover 100% of the crawl space.
- ! Permanent HVAC systems must be working and in operation 2 weeks before installation to stabilize the interior environment and to acclimate the flooring. Ideal conditions are a temperature between 60-80F and relative humidity between 35-55%.
- ! Solid wood flooring must be installed on or above grade level, and should not be installed in full bathrooms.
- ! Take special care when unloading hardwood flooring at the job site. The material must be stored at least 4" or more off the ground and stored in a dry area. This practice will prevent a significant change in the moisture content. Open the cartons and allow flooring to acclimate. Follow NWFA guideline for acclimation on job site.
- ! Flooring should be stored in small lots in the rooms where the installation will take place and allowed to properly acclimate to the job environment.
- ! Flooring should be allowed to acclimate for 4 days or longer until conditions meet minimum installations requirements for moisture content.
- ! Moisture content should be checked with the appropriate device to ensure proper installation conditions. Moisture content of wood sub floor should not exceed 12% and the moisture content of the wood should be within 4% of the sub floor.

Subfloor Specifications:

- ! Sub-floor surface should be scraped, cleaned and made smooth prior to installation. The surface should also be free of wax, paint, oil, sealers, curing agents and other debris.
- ! Concrete subfloor:
 - i.! concrete should be flat to within 1/8" over 6' or 3/16" over 10'.
 - ii.! concrete compressive strength must equal 3000 psi or better.
 - iii.! use minimum 3/4" (23/32, 18.3mm) CD Exposure 1 Plywood subfloor panels (CDX), 4' x 8' sheets for subfloor/underlayment
 - iv.! it's highly recommended the use of a moisture barrier when installing solid wood flooring over concrete sub floor. Install 6 mil (plastic) poly sheeting completely covering the concrete overlap seams 6" and duct tape.
 - v.! Allow 3/4" minimum expansion space at all vertical obstructions.
- ! Wood subfloor:
 - i.! all wood subfloor components must not exceed 12 percent moisture content.
 - ii.! Minimum of 3/8" CD panel thickness is recommended when used as an underlayment.



- iii.! Wood subfloors must be securely nailed or screwed to joists to minimize movement or squeaks.
- iv.! In the event that the wood sub-floor is less than 3/4" thick, add a single cross layer with a minimum thickness of 5/16" for a total of 1" inch of thickness in order to combat possible squeaking after installation.
- v.! Thoroughly inspect and replace existing floor or subfloor that shows evidence of water damage or structural weakness. Repair any sagging or loose sections of the subfloor. Squeaky or loose boards should be re-secured

Acclimation

All hardwood products are affected by environmental conditions. After harvesting, wood flooring is kiln-dried for optimum service. During transit, delivery and storage, wood flooring must be protected from moisture. Wood is hygroscopic, meaning its size and shape changes with the absorption or release of moisture. The amount of change varies with wood species, cut, and type of flooring. Therefore, wood movement (shrinkage or expansion) is to be properly controlled and achieved at the work-site. First, acclimate the new flooring while in the boxes in the areas to be installed to the expected environment that the floor will service. The goal is to reach a moisture balance between the new flooring and its normal indoor surroundings before assembly, fastening or installation.

Extended conditioning is not unusual for exotic species having natural oils or for very dense species like Brazilian Teak, Brazilian Cherry, Santos Mahogany, Brazilian Walnut and others. For best performance, condition and maintain the flooring to consistent indoor temperatures of 60°-80° F and indoor humidity levels of 30% - 50%, before, during and after installation. Proper jobsite conditions, acclimation, moisture testing of the subfloor and new flooring all work together for the success of the installation, and is the responsibility of those overseeing the project. Not following the above recommendations can negatively impact board performance and can result in excessive movement, squeaks, board gapping, board-edge cupping, finish splits and other related issues.

Using the chart below, you can convert your temperature and relative humidity into the Equilibrium Moisture Content (EMC) needed for your floor. This goes for your subfloor also.

MOISTURE CONTENT OF WOOD AT VARIOUS TEMPERATURES AND RELATIVE HUMIDITY READINGS																					
Fahrenheit	Celsius																				
		30	1.4	2.6	3.7	4.6	5.5	6.3	7.1	7.9	8.7	9.5	10.4	11.3	12.4	13.5	14.9	16.5	18.5	21.0	24.3
40	1.4	2.6	3.7	4.6	5.5	6.3	7.1	7.9	8.7	9.5	10.4	11.3	12.4	13.5	14.9	16.5	18.5	21.0	24.3	26.9	
50	1.4	2.6	3.7	4.6	5.5	6.3	7.1	7.9	8.7	9.5	10.4	11.3	12.4	13.5	14.9	16.5	18.5	21.0	24.3	26.9	
60	1.3	2.5	3.6	4.6	5.4	6.2	7.0	7.8	8.6	9.4	10.2	11.1	12.1	13.3	14.6	16.2	18.2	20.7	24.1	26.8	
70	1.3	2.5	3.5	4.5	5.4	6.2	6.9	7.7	8.5	9.2	10.1	11.0	12.0	13.1	14.4	16.0	17.9	20.5	23.9	26.6	
80	1.3	2.4	3.5	4.4	5.3	6.1	6.8	7.6	8.3	9.1	9.9	10.8	11.7	12.9	14.2	15.7	17.7	20.2	23.6	26.3	
90	1.2	2.3	3.4	4.3	5.1	5.9	6.7	7.4	8.1	8.9	9.7	10.5	11.5	12.6	13.9	15.4	17.3	19.8	23.3	26.0	
100	1.2	2.3	3.3	4.2	5.0	5.8	6.5	7.2	7.9	8.7	9.5	10.3	11.2	12.3	13.6	15.1	17.0	19.5	22.9	25.6	
	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	98	
Relative Humidity (percent)																					

Source: Wood Handbook, Wood as an Engineering Material. Forest Products Laboratory-U.S. Department of Agriculture Forest Service.



Installation of wood flooring:

Evaluate job-site and sub floor condition to ensure proper installation environment. 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. Expansion can be affected by geographical area, interior climate control and time of year. When installing wood floorings over crawl spaces or rooms over basements and garages use moisture vapor paper such as (white Silicon Vapor Shield® or 15 lb. black roofing felt paper) or similar as a minimum to provide protection against moisture vapors

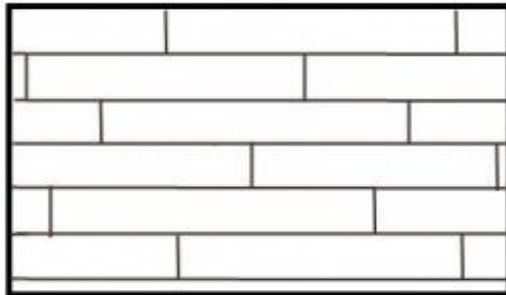
All flooring strips and planks should be installed perpendicular (right angle) to the floor joists, or on a diagonal for any single layer subfloor. It is recommended that you start your rows on the longest, straightest wall. Parallel installation is not recommended due to the potential of sagging. However, if required 3/4" solid boards can be laid parallel with the floor joists provided the subfloor is reinforced with an additional layer of a minimum 1/2" CDX plywood underlayment or braces are established between joists with a 2"x6" (or wider boards) every 24" minimum.

- ! A 15 lbs. asphalt saturated felt paper must be placed over the entire wood sub-floor prior to install, and a moisture barrier of 6 mil polyethylene film may also be necessary.
- ! Research the species of wood you're installing to determine whether or not it will require pre-drilling in order to nail it down
- ! Work from at least 5-6 different cartons of product at one time to properly match color, grade, and length to create a random appearance. Laying out 6-8 rows of product before installing will allow you to mix board lengths and shades, and it will help to ensure end joints are properly aligned to the preceding row.
- ! Stagger boards randomly as possible, avoid creating patterns. (see picture below)
- ! Start rows on the longest, straightest wall. Snap a working line parallel to the starting wall allowing 3/4" expansion space between the starting wall and the edge of the first plank run.
- ! Install the flooring with the tongue side facing away from the starting wall (Use long straight planks for first two rows). Nail on the tongue side of the flooring.
- ! Top and blind nail the first row at 45-degree angle (hand nail if necessary), using 6d or 8d flooring nails. Pre-drilling of top nails will reduce splitting, and countersink blind nails will ensure flush engagement of groove.
- ! Nails should be 2-3" from the ends of the boards and every 8-10" along the edge of the boards and for 5" or a wider flooring 1-2" from the ends of the boards and every 4-6" along the edge of the boards, going in at a 45° angle.
- ! At finishing wall and other vertical obstructions, it may be necessary to blind nail by hand until top nailing is required.

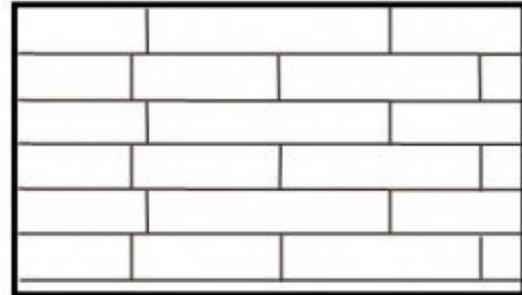
When finished, install appropriate trim moldings and wall moldings along walls and doorways to cover edges and conceal gaps resulting from any irregularities in perimeter dimensions. Fill in nail holes and minor gaps with close matching wood filler. Clean, sweep, and vacuum installed floor before further use.



Install Flooring with Random, Well Spaced, Staggered End Joints



Properly staggered random joints



Improperly close joints and "H" patterns

Care and Maintenance

- ! Regularly, sweep, dust mop and/or vacuum to keep dirt and grit from dulling the shine and scratching the finish
- ! Felt protectors should be placed under the legs or bottoms of heavy furniture, chairs, etc.
- ! Use a damp cloth to blot up spills as soon as they happen. Never allow liquids to stand on your floor.
- ! Do not use flood or wet mop the floor with soap, water, oil-soap detergent, or any other liquid household cleaning material. This could cause swelling, warping, delamination, joint-line separation and void the warranty.
- ! For spots such as candle wax or chewing gum, harden the spot with ice and then gently scrape with a plastic scraper, such as a credit card. Be careful not to scratch the flooring surface. Wipe clean with a damp cloth.
- ! Clean flooring with cleaning products safe for urethane finishes
- ! Avoid wearing spike-heeled shoes or damaged shoes on the floor as they can cause damage.
- ! Place mats at all points in the home with exterior entrances to avoid debris being tracked onto the flooring.
- ! Do not allow sharp, pointed, or rough textured objects to be exposed to the hardwood flooring.
- ! Toys and tools can scratch and dent the finishes, are site related and not warrantable.

Tools and Accessories:

- | | |
|--------------------------|----------------------------------|
| - Broom | - 6-7 screw shank nails |
| - Drill with 1/16" bit | - Rubber Mallet |
| - Tape Measure | - Pencil |
| - Hammer | - Asphalt felt |
| - Ear and eye protection | - 4d-6d Flooring Nails |
| - Chalk line | - Compressor with regulator |
| - Hand / Jamb Saw | - Moisture Meter (wood/concrete) |
| - Nail set | - Recommended Hardwood Cleaner |



General Notes:

- ! Do not install flooring directly over floor joist without subflooring. Subfloors provide strength and a proper nailing base.
- ! Do not install the hardwood floors over particleboard, wafer board, pressed wood or fiberboard, as this will automatically void the warranty.
- ! Do not install over radiant heated floors
- ! Do not install this product below-grade or in basements.
- ! Save a box of flooring for future repairs.
- ! An Expansion space must be left around the perimeter and at all vertical obstructions.
- ! Install flooring in normal proper lighting.
- ! Inspect subfloor for flatness, squeaks, and moisture
- ! It is extremely important to use the appropriate nailer and fasteners for installation.

To obtain assistance with the product information, please contact the store of original purchase or customer service at www.masonwoodfloors.com