

GENERAL INSTALLATION GUIDELINES FOR Wood Flooring



Mannington recommends the use of NWFA Certified Professionals for the installation of your new Mannington Hardwood Product. For further information, please see www.nwfa.org/cp-about.aspx

I. PRODUCT INSPECTION

Wood is a natural product, containing natural variations in color, tone, and grain. Color variation between planks is to be expected in a wood floor. Mannington cannot guarantee against natural variation in each plank, nor minor differences between samples and the color of the floor.

With Mannington, you're protected by our exclusive Pre-Installation Limited Warranty. Return any planks you are not satisfied with, uncut, BEFORE installation and we'll replace them. No questions asked.

We urge you to inspect for color, finish, and graining BEFORE installation. Care should be taken during installation to remove or repair particular characteristics you do not desire. We suggest you use cut planks as starter strips to begin each new row and to "rack" the flooring to ensure a random appearance. (See "racking" instructions below.) Some starter planks may be included in your carton of Mannington Hardwood. Look for planks labeled "Cut End". These may be used to start or end a row.

II. "RACKING" THE FLOOR

This process is essential to achieve a random appearance. Start by either using random length planks found in the carton or by cutting four to five planks in random lengths, differing by at least 6". Some cartons may contain "starter" boards with one end cut. These boards will be marked with an arrow facing the direction of the cut end. When starting these first few rows or courses, make certain to always measure from the tongue end of the plank for cutting. As you continue working across the floor be sure to maintain the 6" minimum between end joints on all adjacent rows. Randomly install different lengths to avoid a patterned appearance. Never waste materials; the ends cut from starter rows should be used at the opposite side of the room to complete rows or may also be used to start the new row.

NOTE: It is extremely important to blend planks from several cartons to ensure a good balance of color and graining.

NOTE: Mannington accepts no responsibility for costs incurred when a floor with visible defects has been permanently installed.

III. JOB SITE CONDITIONS

While considered a best practice, Mannington Engineered Wood flooring products do not need to be acclimated to the job site unless the flooring will be transported from one extreme temperature or humidity into another. If there is a severe temperature or humidity difference, make sure to condition the cartons of wood flooring and UltraSpread EZ Mastic™ adhesive, if being used, a minimum of 24 hours before the installation.

UltraSpread EZ Mastic™ has a minimum working temperature of 65°F. Never use UltraSpread EZ Mastic™ below this requirement. Open time for UltraSpread EZ Mastic™ is affected by temperature and humidity. As a general rule, the higher the temperature and humidity, the shorter the open time. If heating or air conditioning system is installed, it needs to be on and operating. If it is not possible for the permanent heating/and or AC system to be operating before, during and after install, a temporary heating and/ or dehumidification system that mimics the permanent system can be used until the permanent system is operating.

Please refer to the latest Professional Installation Guide for more information.

A. Radiant-Heated Subfloors

Most styles of Mannington engineered wood flooring may be installed over radiant-heated subfloors, provided the surface temperature of the system does not exceed 85°F. Before installing Mannington engineered wood flooring over a newly constructed radiant heating system, operate the system at maximum capacity to force any residual moisture from the cementitious topping of the radiant heating system. Then set the thermostat to a comfortable room temperature for the installation. All subfloor heating systems must be installed as recommended by their manufacturers instructions. Mannington wood floor warranties do not cover problems caused by inadequate radiant heating systems. Always check such systems as to their suitability in regard to wood flooring.

Mannington does not recommend installing the following species over radiant heat Brazilian Cherry or Hickory (Maison - Provence Hickory may be installed over Radiant Heat. All other styles of hickory are not recommended).

B. Subfloor/Underfloor Recommendations & Preparation

All subfloors must be installed as recommended by their manufacturers. Warranties offered by Mannington Wood Floors do not cover problems caused by inadequate substrates or their improper installation.

Make certain to check subfloor thoroughly for the following:

- Subfloor must be cleaned. Remove all oil, dirt, grease, wax, sealers, paint, adhesives, or any other substance that would hinder installation.
- Subfloor must be level to 1/4" per 10-foot span. To check, stretch a 10-foot string or lay a 10-foot straightedge over the subfloor. If the subfloor dips or crowns 1/4" or more in the span, it must be leveled. Use a cementitious patch or leveler to level low areas in the subfloor. If the floor has a crown or rise, level it by sanding to meet the 1/4" specification. Recommend subfloor meet L/360 as a reference.

C. Wood Subfloor

All wood subfloors must be structurally sound, dry, at least 3/4" in thickness, solidly fastened to appropriately spaced floor joists, and in compliance with all local building codes. For detailed information regarding each different kind of subfloor, refer to the latest Professional Installation Guide.

First, make sure subfloor is dry. Subfloor wood moisture content cannot exceed 14% prior to installation. To determine wood moisture content use a quality moisture meter.

Next, determine if subfloor is structurally sound. Use the following requirements as a guide:

- Planks may be installed (stapled, nailed, glued, or floated) to a single layer of 3/4"-thick, tongue-and-groove plywood or 3/4" structural grade oriented strand board (OSB) substrate over floor joists on 16" centers.
- If the subfloor is plywood or OSB less than 3/4" thick, add a second cross layer for strength and stability (minimum 5/16" thick to total 1" in thickness). To reduce the possibility of squeaking, install the underlayment per the manufacturer's guidelines.
- 19.2" and 24" on center joist spacing may be acceptable if the subfloor system is designed in accordance with local building codes and is free of deflection/meaning no vertical movement.

NOTE: Structurally sound wood floors will not have movements or deflections. Subfloor movement or improper subfloor installation will eventually cause squeaking. It is the owner's responsibility to be certain the substrate and substructure are in compliance with all local building codes. See Alternative Fastening Method available at www.Mannington.com/Residential/Hardwood/Installation.aspx

CAUTION: Wood substrates directly fastened to concrete are not satisfactory for the installation of wood floor coverings. This non-ventilated construction practice will result in deterioration of the wood substrate system and may cause problems such as underlayment joint telegraphing. Mannington will not accept claims regarding performance of our wood flooring products installed over this subfloor construction.

NOTE: Do not staple or nail down Mannington engineered wood flooring over particleboard subfloors.

D. Concrete Subfloors

All concrete subfloor systems must meet or exceed local building code specifications. For concrete slabs that are on or below-grade it is recommended that they be constructed so that ground water vapor cannot penetrate.

Basement and crawl space must be dry. If power washing is required, do so before flooring is installed and allow to subfloor and concrete to dry before installing flooring.

Suspended, above-grade concrete subfloors often require extended drying time to lose initial moisture. Suspended, pre-formed concrete plank construction requires a minimum of 1 1/2" concrete topping to make it suitable for wood floor products. This type of construction may also require extended drying time. Curing and drying time will vary depending on the type of concrete mix and the environment in which it is placed. New concrete slabs require a minimum of 6 weeks' drying time before covering them with a wood floor.

You may install Mannington engineered hardwood floors over concrete subfloors when you are using Mannington UltraSpread EZ Mastic™ (glue-down method) or Mannington MegaGlue™ adhesive (floating method) if the subfloor is visually dry and has no history of moisture problems. As a frame of reference, calcium chloride test results should be 5 lbs. or less moisture vapor transmission.

NOTE: Mannington Wood Floors' moisture release warranty is in effect only when Mannington UltraSpread EZ Mastic™ is used.

NOTE: Moisture tests can only indicate conditions at the time of the test. Neither Mannington nor the flooring contractor can be responsible if moisture levels change in the future.

NOTE: Mannington does not recommend and cannot be held responsible for any failures related to the use of plaster-type patching compounds when used on any grade level of concrete underfloor.

E. Glue-Down Installation

Wood planks are glued to the subfloor using urethane-based Mannington UltraSpread EZ Mastic™ adhesive and a minimum 3/16" x 5/32" V-notched trowel. This moisture-cured polyurethane adhesive forms a tenacious bond. The adhesive is V.O.C. compliant, nonflammable, contains 0% water, and has a very mild odor.

NOTE: Do not adhere Mannington Wood Floors over perimeter installed resilient flooring.

Special Tools

- Mannington UltraSpread EZ Mastic™
- Mannington PROTVNX trowel 3/16" x 5/32" V-notched (minimum)
- Releasable blue tape such as 3M 2090 or equivalent
- Tapping block SKU# 801926
- 100-lb. roller

Job Preparation & Installation

1. Before installation, do a calculation to determine the width of the last row of planks. If it is less than 1 1/2" wide, split the difference between the starter row and the last row. In any case, you will most likely be required to cut the last row of planks to width with a table saw.
2. Select a starter wall. An outside wall is best because it's more likely to be straight and square with the room. Measure out from this wall, at each end, the width of two planks.
3. Snap a chalk line from these points, parallel to that wall and perpendicular to the adjacent walls. Since most walls are not straight, the edge of some planks may have to be trimmed along the wall or cut to fit. (Although it is not necessary to leave an expansion space for Mannington Hardwood planks, it is considered a best work practice)
NOTE: It is extremely important to blend planks from several cartons to ensure a good balance of color, graining, and plank length.
4. Spread Mannington UltraSpread EZ Mastic™ from the chalk line out to the width of two planks with a minimum 3/16" x 5/32" V-notched trowel. Mannington recommends allowing the adhesive to set for 30 minutes. If desired, however, you may start laying planks immediately into wet adhesive.
5. Install the first row of starter planks and secure into position with the tongue facing the starter wall. Proper alignment is critical. Misaligned starter rows can ruin the entire installation. Professional installers sometimes firmly secure a straightedge along the chalk line (2x4s work well), as a guide and this also helps to prevent planks from shifting in the wet adhesive.
6. The precise engineering of our Ultra-Fit tongue-and-groove system creates a very stable floor. But, you MUST make a good connection. Use a tapping block to tap the planks together until the tongue-and-groove "snaps" into place.
7. When the first two starter rows are secure, spread 2 1/2 to 3 feet of adhesive across the length of the room. (Never lay more adhesive than may be covered in approximately 3 hours. If the adhesive has set and will not transfer to the back of the plank, scrape up the adhesive and apply fresh Ultra-Spread EZ Mastic™ adhesive.)
8. Place planks into position on top of adhesive and tap into place with a tapping block. Avoid clustering the end joints. Stagger random lengths so that end joints are no closer than 6".
9. After several rows of planks are down, lay perpendicular strips of Releasable "Blue" tape, 12" apart to hold the planks securely. Repeat this process as the installation progresses. Do not allow tape to remain on the wood for more than a few hours. Remove tape as soon as possible.

When you have finished installing planks across the work area, go back to the beginning of the installation and remove straightedges. Spread adhesive to exposed subfloor and use a pry bar to position the final two rows into place. Be aware that you will have to remove the tongue from the last row to complete the installation.

10. Retain a few leftover planks in case a repair is ever required. Clean any adhesive with mineral spirits and UltraClean spray cleanser. Roll floor with a 100-lb. roller. Remove releasable blue tape within 4 hours after installation.

Cleanup

Clean UltraSpread EZ Mastic™ adhesive from floor and tools with mineral spirits while still wet. Once the adhesive dries, it's very difficult to remove. If it dries on the floor's finish, use a urethane adhesive remover.

Final Inspection

After the floor is rolled and cleaned, inspect the floor for nicks, scratches, and planks that may have moved during installation, as well as any other imperfections that need attention. Touch up nicks and scratches with Mannington Wood Floors touch-up products. In typical climates, the new floor can accept foot traffic within 12 hours. Arid (dry) climates may require additional curing time.

F. Staple-Down Installation

This fast and easy method uses our own Mannington Spotnails Floor Monster pneumatic stapler and exclusive Mannington Spotnails nylon-coated precision staples. The staple-down technique is compatible for most Mannington Wood products for use over plywood and structural OSB. The steps outlined in this section are also suitable for the nail-down method provided that a specifically designed tongue-and-groove engineered flooring nailer is used.

The Mannington Spotnails Floor Monster pneumatic stapler comes complete with two adapters, allen wrenches, and oil. For a successful installation you will need the tools listed below.

Special Tools

- Mannington Spotnails Monster pneumatic stapler SKU# FS4825W2
- 1/2", 9/16", and 3/8" stapler attachment (included with stapler)
- Mannington Spotnails nylon-coated staples SKU# 4811PN-30M (5,000/box)
- Safety glasses
- Compressor (with regulator)
- Tapping block SKU# 801926
- Power drill

Setup and Use of Mannington Spotnails Floor Monster Pneumatic Stapler

Inspect Equipment Prior To Use

- Become familiar with the tools and their operation, especially the pneumatic stapler. When used improperly, staples can damage wood flooring. Test the tools on scrap material first.
- Parts that engage the planks must have no sharp burrs that can scratch or damage the flooring, especially pre-finished surfaces.
- Make sure the tool's adapter seats properly in the tongue-and-groove of the flooring.
- Use the retaining feet of the adapter to make adjustments so that the plank is held securely against the subfloor.

CAUTION: Make certain the adapter size for the Mannington Spotnails Floor Monster pneumatic stapler correlates directly with the size of the product being installed. For instance, if you are installing 1/2" thick wood flooring, use the 1/2" - 9/16" adapter.

CAUTION: Only use Mannington Spotnails 4811PN nylon-coated staples during staple-down installation with the Mannington Spotnails Floor Monster stapler.

Floor Monster Set-Up

- Loosen screws on retaining feet.
 - Using a scrap piece of flooring, test tool on sub floor and engage the adapter into tongue-and-groove.
 - Slide retaining feet down until they make contact with plank.
 - Tighten screws.
 - Calibrate the compressor so staples are properly set in the nail pocket to avoid damaging the floor or squeaking.
- NOTE: If stapler is improperly set up, staples will not position correctly and may cause squeaking, crackling, and dimpling of the floor.

Compressor Set-Up

- With the correct adapter fastened, attach tool to compressor.
 - Set the regulator at 80 psi and start the compressor.
- NOTE: Pressure must never exceed 100 psi, since it can damage the stapler and cause harm to you or others.
- On a scrap piece of flooring, set stapler flush on the substrate and fully engage the stapler into the tongue.
 - When the top of the staple's crown is flush with the nail pocket, the tool is properly positioned.
 - Should the staple penetrate too deeply or not deeply enough, reduce or increase the pressure until the staple is flush.

Job Preparation & Installation

1. For the staple-down and nail-down methods, cover the subfloor with red rosin paper or any other suitable lining material. This will help keep dust away from the wood floor, retard moisture from below, and may help prevent squeaks from occurring. There is no complete moisture barrier system, however, for nail-down and staple-down applications. Maximum subfloor moisture should never exceed 14%. As a added alternative we have found applying a small bead of mega glue to the bottom of the groove as a benefit to help eliminate squeaking or gapping. This is highly suggested for wider and longer plank formats. Please refer to the Alternative Fastening Methods document at www.mannington.com/residential/hardwood/installation.aspx
2. Before installation, do a calculation to determine the width of the last row of planks. If it is less than 1 1/2" wide, split the difference between the starter row and the last row. In any case, you will most likely be required to cut the last row of planks to width with a table saw.
3. Select a starter wall. An outside wall is best because it's most likely to be straight and square with the room. Measure out from this wall, at each end, the width of the plank plus 1/4".
4. Snap a chalk line from these points, parallel to that wall and perpendicular to the adjacent walls. Since most walls are not straight, the edge of some planks may have to be trimmed along the wall or cut to fit. It is not necessary to leave an expansion space for Mannington 9/16", 1/2", and 3/8" thick wood floors.
NOTE: It is extremely important to blend planks from several cartons to ensure a good balance of color, graining, and plank length.
5. Install the first row of planks by laying the tongue edges on the chalk line. Proper alignment is critical. Misaligned starter rows can ruin the entire installation. Drill pilot holes through the face of each plank (in darker grain) and secure to subfloor with finishing nails or use a pneumatic brad tacker.
6. After the first row is complete, adjacent rows should also be predrilled in the nail pocket and secured with finishing nails set at 45°. Rows of flooring will need to be installed in this manner until flooring planks are a sufficient distance away from the wall to accommodate the stapler. Stapling schedule is every 6" to 8" on center.
NOTE: Proper alignment of planks is critical. Misaligned starter rows can ruin the entire installation.

7. The precise engineering of our UltraFit tongue - and - groove system delivers a very stable floor. But you MUST make a good connection. Use a tapping block to tap the planks until the tongue and groove “snaps” into place.

CAUTION: Never use a rubber mallet to tap planks, since this can mark or damage the flooring.

8. Using the Mannington Spotnails Floor Monster stapler, with the proper adapter attached (see stapler set-up instructions), continue to staple new planks every 6” to 8” on center, fastening the ends of the planks approximately 2” from each end. NOTE: Avoid clustering end joints and stagger random lengths so that the end joints are no closer than 6”.
9. Using a pry bar, position the final filler planks.
10. Face nail or tack each final plank into place with the pneumatic stapler. Install the molding and retain a few leftover planks in case a repair is ever required.
NOTE: Use of any other nailers or staplers may result in dimpling or damage to planks. Do not use manual nailers on any Mannington Wood Floors maple flooring.

Cleanup

Sweep floor to remove all dust and dirt. Take care not to scratch the finish. Follow up with Mannington UltraClean™ spray cleanser.

Final Inspection

After the floor is cleaned, inspect the floor for nicks, scratches, or any other imperfections that need attention. Touch up nicks and scratches with Mannington Wood Floors touch-up products. The newly installed floor can accept foot traffic immediately.

G. Floating Installation

Most Mannington hardwoods may be installed using the floating method over numerous subfloors, including concrete, plywood, underlayment-grade composition board, ceramic tile, reinforced vinyl tile, sheet vinyl and radiant-heated floors. The only exception to this rule is 3/4” thick solid hardwood.

Special Tools

- Appropriate Mannington underlayment (see below for details)
- Mannington MegaGlue™ adhesive* (SKU #600021)
- Spacing wedges
- Safety glasses
- Tapping block (SKU #801926)
- Pry bar
- Releasable blue tape Mannington Underlayments AquaBarrier™ II

Underlayment sheeting that combines a foam cushion layer and moisture barrier film all in one. It also has a built-in edge sealing system when more than one sheet is needed. Use AquaBarrier™ II for below-grade or on-grade subfloors where moisture is a concern.

ComfortBarrier™

ComfortBarrier™ is an underlayment foam cushion to be used for above-grade subfloors ONLY where subfloor moisture is not a concern.

Mannington Whisper Underlayment Invented and Perfected by Mannington

Made from advanced vinyl foam construction, Mannington Whisper Underlayment stops footsteps in their tracks. When installed properly, this new underlayment system “deadens” the sounds made on a Mannington Hardwood Floor. Mannington Whisper can be installed over any level of subfloor and it is available in 300 sq ft rolls.

NOTE: While the floating method offers some advantages, there are some things of which you should be aware.

- (1) The floor may have a hollow sound when walking on it.
- (2) The wood rests on the subfloor with its own weight, which may cause the floor to have slight vertical movement.
- (3) A damaged plank cannot be replaced as simply as in a staple-down, or glue-down installation.

Job Preparation

1. Undercut all door casings 1/16” higher than the thickness of the flooring and underlayment to be installed. Place a scrap piece of plank and a sheet of underlayment against the doorcasing to act as a guide and cut the doorcasing with a hand saw or power jamb saw set to the correct height.
2. After deciding the direction in which the planks will run, measure the width of the room (the dimension perpendicular to the direction of the flooring). The last row of flooring should be no less than 1 1/2” wide. If it is less, we recommend cutting the starter row narrower. This will require extra cutting but it will make the rest of the installation easier and faster.
NOTE: It is extremely important to blend planks from several cartons to ensure a good balance of color, graining, and plank length.

Installation

Install one sheet of the selected underlayment net along the starting wall. Unroll only one sheet at a time during plank installation to prevent damaging the underlayment. If any part of the underlayment is punctured or damaged during installation, seal the area with tape.

3. Position 5/16” spacing wedges around the entire work area. (Put two wedges together, face to face, and place on edge against vertical surfaces.) This will help prevent squeaking and scratching on the adjacent walls due to the up and down movement of the floor.
4. Before starting to glue planks, dry-lay the entire first two rows on top of the underlayment. Begin in the upper right corner of the work area with the groove side of the planks facing the wall. Place spacing wedges along the walls on both the ends and sides of all planks.
5. An easy way to mark the last plank in a row is to place the plank in position with the tongue against the tongue of the previously laid plank and the end of the plank against the spacing wedge. Mark across the plank with a pencil and cut along this line. Place cut plank with cut end toward wall and pull into place with a pry bar.
6. Begin the next row by using the leftover piece from the previously cut plank. Now lay the remainder of the second row and tap into place with a tapping block.
NOTE: If any plank is shorter than 8” in length, do not install it; instead, cut a new piece to measure at least 8” long.
7. Cut the MegaGlue™ adhesive applicator nozzle at a 45° angle with a utility knife. Do not cut off any part of the cap locking ring around the nozzle.

8. In a floating floor installation, the flooring is NOT nailed or glued to the underlayment, but is glued in the plank's groove only. Apply Mannington MegaGlue™ adhesive to the bottom of groove along the entire length and on the end of each plank. Do not completely fill the groove with adhesive.
9. The installation sequence is critical and provides stability to the first two rows. Proper alignment is critical. Misaligned starter rows can ruin the entire installation. Closely follow the next several photos and instructions to obtain the proper gluing sequence for the first few rows of planks. To start, glue the first plank in the second row to the first plank in the starter row.
10. Use a tapping block and a hammer to push glued planks together until no gaps are seen. Immediately wipe away any excess adhesive with a clean damp cloth.

CAUTION: Never use a hammer or mallet directly on the flooring.

11. Glue the next plank to the first plank in the previous row. Apply adhesive only to the width end of the plank. Tap the planks together carefully with a tapping block and hammer. Remember to continually remove adhesive squeezed up between the joints with a clean, damp cloth.
12. Glue the next plank in the same row to the previously glued plank in the previous row. Apply adhesive to both the length and width edges of the plank.
13. Continue to install wood flooring using this stair stepping method, as illustrated. Simply install each plank according to the sequence of numbers shown.
14. At the end wall use a pry bar, if needed, to pull the ends of the planks tight. Continue laying the floor on top of the underlayment, working right to left, laying plank after plank, row after row, tapping the planks together as you go. Be sure to continue using 5/16" spacing wedges at all walls and obstructions throughout the installation.
15. Once the first sheet of underlayment is covered with wood flooring, install the second sheet. Butt the two edges together and seal with tape.
16. After several runs of planks are down, lay perpendicular strips of Releasable "Blue" tape 12" apart to hold the planks securely. Repeat this process as the installation progresses.
17. The last row will most likely require cutting to width but it should be no less than 11/2" wide. To do this, lay the plank on top of, and edge to edge with, the plank in the next to the last row. Trace the wall contour on the last plank using a scrap piece of plank and cut as required.
18. Install cut planks and pull into place with a pry bar. Install spacing wedges between planks and wall. Allow floor to dry for a minimum of 12 hours before removing all spacing wedges and allowing foot traffic. Sweep the floor to remove all dust and dirt, taking care not to scratch the finish.
19. Remove any glue residue using a white nylon pad dampened with mineral spirits. Follow up with Mannington UltraClean spray cleanser.

Final Inspection

After the floor is cleaned, inspect the floor for nicks, scratches, and planks that may have moved during installation, as well as any other imperfections that need attention. Touch up nicks and scratches with Mannington Wood Floors touch-up products.

H. Moldings & Trim

Molding Installation

Install Mannington wood moldings using traditional methods. Simply nail moldings into place with finishing nails. Follow the instructions below for specific installation techniques on each molding.

Quarter Round & Wall Base

Nail quarter round and wall base molding into the wall with finishing nails. Wall base and quarter round can either be used separately or together, each achieving a different look and style. Do not fasten these moldings directly into the flooring. They should be kept slightly off the floor as not to bind and jam the flooring.

1. When installing quarter round and wall base it is important to miter all the corners as well as junctures. Drill small holes for nailing in the molding to avoid wood splits and nail into the wall every 18".

Finish Moldings

Use appropriate finish moldings or terminating profiles as transitions to door thresholds, steps, or other floor coverings. T-molding, baby threshold, and reducer strip moldings can be glued or nailed to the subfloor using finishing nails.

2. When installing T-molding, baby threshold, or reducer strip, first drill small holes in the molding to avoid wood splits. Using the drilled holes as your guide, hammer finishing nails directly into the subfloor every 18".
3. Step nosing requires a unique installation method. Glue the wood flooring and step nosing directly to the stair thread using Mannington UltraSpread Mastic™.

Whatever option you choose foot traffic should be limited for 24 hrs after installation.