

SOLID WOOD FLOORING INSTALLATION INSTRUCTIONS

Hardwood flooring is a natural product and its fundamental beauty stems from the fact that each piece is unique- no two pieces are alike. Due to the fact that this flooring is a natural product, the installer and/or owner, have the following responsibilities:

- ❖ **Understanding how the floor will look after installation** – the installer and owner must review prior to installation:
 - Review the control samples, (the samples from which the floor was chosen), and compare to the purchased flooring onsite prior to installation. Make sure it meets the owner's expectations as to:
 - Grade – is it the proper grade? Grade from may vary slightly from batch to batch, so make sure the owner is happy with this batch of flooring you are about to install.
 - Color/Graining – do dark/light or wild grained pieces need to be culled-out to meet the owner's expectations?
 - Color Change – does the owner understand how the wood will change color over time? The owner may have chosen their floor from samples that have aged so they need to understand in advance of installation the expected color change in this wood. (Ask your sales representative for more information on color change).
 - Finish issues:
 - Is the gloss-level correct?
 - Does the appearance of the finish meet the owner's expectations?
 - Does the owner understand that the finish will scratch and wear and that the floor must be properly maintained during installation and in-use?

Congratulations! You have now made sure that the owner will not be disappointed once the flooring is installed and they see it for the first time! JG Architectural Supply cannot be responsible for visual issues after the flooring is installed.

- ❖ **Installer responsibilities during installation:**
 - Make sure the flooring is received as ordered and meets the owner's expectations.
 - Test the subfloor and relative humidity on site to make sure site conditions conform to NWFA guidelines.
 - Follow these Installation Instructions.
 - Cull-out any pieces with visible defects and stop the installation should a reoccurring problem be found that exceeds the 5% defect tolerance used in the industry. DO NOT INSTALL pieces with visible defects.
- ❖ **Keep a Permanent Job Record** – use [JG Architectural Supply's Wood Flooring Installation Report](#).
- ❖ **Make sure the owner understands the danger of excessively moist and excessively dry conditions as they relate to their hardwood flooring** – wood is a natural material and will shrink/cup/move when over-dried and will expand, delaminate, warp and buckle/cup when excessively wet.
- ❖ **Make sure the owner understands proper floor maintenance** – Give them a copy of [JG Architectural Supply's Wood Flooring Maintenance Guide and Warranty](#).

WARNING: Our hardwood flooring is manufactured to strict tolerances and levels of quality. We are not responsible for site conditions, as we do not control them. Only the installer can test and correct for proper site conditions prior to installation.

NOTE: Wood flooring installed in areas where the relative humidity is below 35% may cup, shrink in width/length, or crack. In these dry conditions a humidifier is necessary to elevate the relative humidity above 35%. Flooring installed on top of wet sub floors may crown, (and then cup), swell, (and then shrink), buckle, telegraph, or edge/tip raise. Flooring that is soaked from above will do the same. DO NOT INSTALL THIS FLOORING ON WET SUBFLOORS OR IN OVERLY DRY CONDITIONS without first correcting any inadequate conditions.

WHERE OUR SOLID WOOD FLOORING SHOULD NOT BE INSTALLED

Our solid wood flooring products are NOT recommended for below grade installations, NOR on grade installations where there exists the possibility of excess moisture from below. Moisture transfer to the wood product in these environments will lead to warping.

ThinStrip products (3/8" Thick) have a pronounced tendency to cup/warp if they are exposed to large humidity swings, soaked from above, or if they wick moisture from below. Our solid ThinStrip floors should not be installed in areas with seasonal fluctuations in humidity greater than 25%, nor in areas where the subfloor might give off excess moisture. Neither should ThinStrip floors be installed where maintenance cannot be controlled (e.g. Soaking of the floors by excessive wet mopping).

PRE-INSTALLATION JOBSITE REQUIREMENTS

Inspect the flooring in a well-lit area prior to installation for grade, color, finish and quality. If flooring is unacceptable, contact your distributor immediately and arrange for replacement. JG Architectural Supply cannot accept responsibility for flooring installed with visible defects. Prior to installation of any flooring, the installer must ensure that the jobsite and subfloor meet NWFA guidelines. JG Architectural Supply is not responsible for flooring failure resulting from unsatisfactory jobsite and/or subfloor conditions.

Hardwood flooring should be one of the last items installed for any new construction or remodel project. All work involving water or moisture should be completed before flooring installation. Warning – Installing hardwood flooring onto a wet subfloor will likely cause cupping and subsequent gapping.

Room temperature and humidity of installation area should be consistent with normal, year-round living conditions for at least a week before installation of wood flooring – i.e. HVAC should be running to maintain a room temperature of 65-75°F and a humidity range of 35-65%. Warning - humidity levels below 35% will likely cause movement in the flooring, including gapping between pieces and possible cupping and checking in the face.

JG Architectural Supply cannot be held responsible for site conditions.

PRE-INSTALLATION SUBFLOOR REQUIREMENTS

All subfloors must be:

1. Structurally sound
2. Clean: Thoroughly swept and free of all debris (If being glued down, subfloor must be free from wax, grease, paint, sealers, & old adhesives etc., which can be removed by sanding)
3. Level: Flat to 3/16" per 10-foot radius
4. Dry and will remain dry: Subfloor must remain dry year-round. Moisture content (M.C.) of wood sub floors must not exceed 11%; concrete must not exceed 3.5% as measured with a commercial concrete moisture meter.

Wood Sub floors must be dry, well secured, and shored up flat. 5/8" minimum thickness plywood is the recommended subfloor. Check M.C. in several areas of sub floor, including the space below the sub floor. Nail or screw every 6" along joists to avoid squeaking. If not level, sand down high spots and fill low spots with an underlayment patch.

Concrete Sub Floors must be fully cured, at least 60 days old, and should have minimum 6-mil polyfilm between concrete and ground. Subfloor should be flat and level within 3/16" on 10'. If necessary grind high spots down and level low spots with a self-leveling concrete.

Do not install on concrete unless YOU ARE SURE it stays dry year-round. All concrete should be tested for moisture and be below 3.5% moisture content as measured by a commercial concrete moisture meter.

It is highly recommended, that if gluing down on concrete, (even if you believe it is dry), which is on or below grade, to install [Sheet Vinyl](#) first and then glue the wood flooring on top of the vinyl, as this provides an effective permanent moisture barrier. Another alternative to sheet vinyl is to use the [Sika Primer MB](#) moisture barrier system, which provides warranties to you.

Remember, a concrete slab on /below grade that measures dry today may become moist in the future due to rising groundwater. Installing a moisture barrier now may be viewed as an insurance policy against concrete becoming wet in the future, which would lead to subsequent floor failure. JG Architectural Supply is not responsible for site related moisture issues.

Ceramic tile, resilient tile, cork and sheet vinyl covered Subfloors must be well-bonded to subfloor, in good condition, clean and level. *Do not sand existing vinyl floors, as they may contain asbestos.*

EQUALIZING YOUR SOLID WOOD FLOORING

All solid wood flooring **MUST** be properly equalized before installation. Wood is porous material, which expands as it picks up moisture in moist environments and shrinks as it dries in dry environments. It is this movement which can cause cracks, separation, and warping of your wood floor if not properly equalized before installation.

All wood will eventually acclimate itself to its environment, reaching the “equilibrium point” or “equilibrium moisture content”. By taking relative humidity and temperature readings at a job site, the ideal equilibrium point of your solid wood flooring can be determined using the chart below. The numbers in the middle of the chart are the equilibrium moisture content points that all solid wood flooring will reach.

Temp	Relative Humidity					Relative Humidity					Relative Humidity					Relative Humidity				
	5%	10%	15%	20%	25%	30%	35%	40%	45%	50%	55%	60%	65%	70%	75%	80%	85%	90%	95%	98%
30 F	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
40 F	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 F	1.4	2.6	3.6	4.6	5.5	6.3	7.1	7.9	8.7	9.5	10.3	11.2	12.3	13.4	14.8	16.4	18.4	20.9	24.3	26.9
60 F	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 F	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 F	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	26.0
90 F	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 F	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

Chart from US Dept of Agriculture “Wood Handbook as an Engineering Material”

Wood flooring is usually exposed to both long-term (seasonal), and short-term (daily), changes in relative humidity and temperature even after it has been installed. Therefore, wood is virtually always undergoing slight changes in moisture content even after installation. The purpose of equalizing your solid wood floor to the job site, prior to installation, is to minimize the amount of subsequent movement after installation. No one equilibrium moisture content right for all situations – only your installer, with their critical knowledge of local conditions, used in conjunction with proper testing and planning, can establish the proper equilibrium point at which to install your solid wood flooring.

We produce our solid wood flooring to 6 - 9% moisture content. However, this may not be low/high enough for your installation. Therefore, it is absolutely necessary that your installer follows the following recommendations for equalizing solid wood flooring. JG Architectural Supply shall not be responsible for any shrinkage/swelling or other movement of the floor after installation as JG Architectural Supply does not control any of the job-site variables - only the installer and end user do.

Recommendations for Equalizing Solid Wood Flooring:

- 1) Establish the job-site specific target equilibrium point by taking into account all of the following variables:
 - Existing relative humidity and temperature
 - Planned or existing heating/cooling systems
 - Planned or existing dehumidifying or humidifying systems
 - Measure other existing wood elements to see what equilibrium point they have reached
 - Projected seasonal variations at the site and estimated average equilibrium point

- 2) Room temperature and humidity of installation area should be consistent with normal, year-round living conditions for at least a week before installation of wood flooring – i.e. HVAC should be running to maintain a room temperature of 65-75°F and a humidity range of 35-65%.
- 3) Check moisture content of the flooring upon delivery to job site.
- 4) If the flooring is too high in moisture content for the job-site, it must be allowed to dry out and shrink prior to installation. If it is too low, it must be allowed to pick up moisture. This can be accomplished by removing the flooring from its packaging and completely spreading out all of the individual pieces to allow good air circulation around them, until they fully equalize to the moisture content desired.

Tip - To speed up the equalizing process you can build piles of flooring by criss-crossing the pieces in an open stack and using fans to force air over/through the stack. Periodically moisture content readings of the flooring as you monitor its movement towards the desired equilibrium point. By using a two-pin type moisture meter with insulated pins you can take reading at both the surface and the core of the wood flooring. This will enable you to tell the direction the moisture content in the flooring is moving, how quickly it is moving there and when it has reached the desired equilibrium point. Once the flooring has reached the target equilibrium point it is now ready to be installed.

INSTALLATION TOOLS AND MATERIALS

For all installation methods:

- [3M Blue Tape](#)
- Chalk line
- Crosscut power saw
- Hammer
- Pencil
- Pry bar
- Tape measure
- Tapping block
- 3/8" Wood or Plastic spacers

Sub Floor Type	Installation Method
Plywood (at least 1/2" thick)	All Installation Methods
OSB (at least 3/4" thick)	All Installation Methods
Existing Wood Floor	All Installation Methods
Underlayment Grade Particleboard	Glue-down Only
Concrete Slab	Glue-down Only
Cork	Glue-down Only
Ceramic Tile	Glue-down Only
Resilient Tile & Sheet Vinyl	Glue-down Only

For nail/staple-down installation method, you'll also need:

- Air Nailer/Stapler
 - For 3/4" Thick Solid Wood Flooring: 1 1/2" T-Nails **OR** 1/2" x 1 1/2" Staples
 - For 3/8" ThinStrip Solid Wood Flooring: 1/2" x 1 1/2" Staples
- Air Compressor

For the glue-down installation method, you'll also need:

- Urethane Flooring Adhesive (**DO NOT USE** water based mastics as they will cause the floor to fail)
- On concrete slabs, which are on/below grade, we strongly recommend installing [Sheet Vinyl](#) or another permanent moisture barrier such as the [Sika Primer MB](#) system prior to installing the wood.
- Trowel per flooring adhesive manufacturer's recommendations.

STARTING THE INSTALLATION

Make sure subfloor is properly prepared and is tested for moisture.

Since wood expands with any increase in moisture content, always use 3/8" wood or plastic spacers to leave an expansion space between flooring, walls and any other permanent vertical objects, (such as pipes and cabinets). This space will be covered up once you reapply base moldings around the room.

When laying flooring, stagger end joints from row to row by at least 8". When cutting the last plank in a row to fit, you can use the cut-off end to begin the next row. If cut-off end is 8" in length or less, discard it and use a new plank at a random length to start the next row. Always begin each row from the same side of the room.

Work from several open boxes of flooring and "dry lay" the floor before permanently laying the floor (But never open more than a few boxes in advance). This will allow you to arrange the varying grains & colors in a harmonious pattern. It also allows you the opportunity to select out very dark/light pieces for use in hidden areas in order to create a more uniform floor. Remember, it is the installers' responsibility to set the expectations of what the finished floor will look like with the end user, and then to cull out pieces that do not meet those expectations.

Always use a tapping block (a short piece of flooring) with a hammer to fit planks together, as tapping the flooring directly will result in edge damage. When near a wall, you can use a pry bar to pry close the side and end joints. Take care not to damage edge of flooring. For glue down & floating applications, use [3M Blue Tape](#) to hold any pieces which might have side bow straight & tight until the adhesive sets up.

It is usually best to begin installation next to an outside wall – this is usually the straightest and best reference for establishing a straight working line. Establish this line by measuring an equal distance from the wall at both ends and snapping a chalk line. The distance you measure from the wall should be the width of a plank plus about 3/8" for expansion space. You may need to scribe cut the first row of planks to match the wall in order to make a straight working line if the wall is out of straight. You may want to dry lay a few rows, (no glue or nails), before starting installation to confirm your layout decision and working line.

NAIL/STAPLE-DOWN INSTALLATION (RECOMMENDED)

We recommend nailing or stapling all solid wood flooring on 8" centers along edge, per [NWFA Guidelines](#).

Note: After nailing down the first 22 sqft, test to make sure that this section of flooring is firmly affixed. Particularly, check that the groove side of each piece, being held down only by the tongue of the adjacent piece, does not rock up and down if weight is placed on it and then removed.

If the groove side does exhibit up/down movement, it will be necessary to glue this floor down in addition to nailing it in order to correct this condition, which is caused by a tongue and groove that is too loose. Loosely milled flooring may be nailed and installed in beads of a non-hardening construction adhesive such as "a Liquid Nails caulking type" laid on 8" centers perpendicular to the direction of the flooring; or the flooring may be laid with a full mastic spread in addition to nailing.

It is the installer's responsibility to determine whether this "too loose T & G" condition exists in the flooring prior to installation. If the flooring is found to have this condition, call JG Architectural Supply Toll-Free: (877) 482-4771. JG Architectural Supply will compensate the installer for the extra cost of the adhesive/mastic now necessary to insure a good installation. JG Architectural Supply shall not be responsible for replacing any flooring in excess of the 22 sqft nailed down as the test section and then found to have excessive up/down movement.

Other Nailing Tips for Exotic Woods

Problem	Solution
Filling Nail Holes	Match the fill to the color the wood will change to, not the color of the freshly milled wood
Nailing Hard Woods	Increase the pressure on the pneumatic nailer to fully set nails and staples
Splitting Tongues	Experiment with changing the nail entry height or angle (try taping the nailer's faceplate)

GLUE-DOWN INSTALLATION

On concrete subfloors, which are at or below grade, always assume the worst and even if they measure dry. Installing a permanent moisture barrier is cheap insurance against the cost of ripping out and replacing a floor which has failed due to high moisture from the subfloor.

Option #1: Install a sheet vinyl floor before gluing down our solid wood flooring over the sheet vinyl. Follow the vinyl manufacturers' recommendations. An example is provided here: [Sheet Vinyl Installation Instructions](#) .

Option #2: Use [Sika Primer MB](#) moisture barrier systems, which provides a warranty against moisture damage.

We Recommend the Following Flooring Adhesives: [SikaBond T-54 and T55](#)
(WARNING: Use only urethane adhesives – **DO NOT USE** water based mastics!)

Follow the adhesive instructions for proper trowel size, application, and set times. Lay the first row of flooring with groove facing the wall, and continue laying flooring for the first section of the floor. Use tapping block to fit planks together, but be careful not to let installed floor move on the wet adhesive while you are working.

Continue laying the floor section by section. Use a damp cloth to immediately remove any adhesive that gets on the flooring surface. DO NOT allow adhesives to dry on the finished surface as it is very difficult to remove without damaging the flooring. Remember to stagger end joints from row to row and to leave at least a 3/8" expansion space between flooring and all walls and vertical objects (such as pipes and cabinets).

Walk the floor within its drying time to ensure a good adhesive bond. Flooring planks on the perimeter of the room may require weight on them until adhesive cures.

JG Architectural Supply also recommends the [Sika Accoubond System](#) for glue-down installation of solid wood flooring. This revolutionary system allows the installer to permanently affix solid and engineered wood flooring to nearly any stable and level subfloor at or above grade. The system acts as both a moisture and sound barrier, making it ideal for residential and commercial installation alike.

SITE FINISHING (FOR UNFINISHED SOLID WOOD FLOORS)

Many of our exotic woods have resins which can react adversely with certain types of finishes and either impede drying and/or change the appearance of the wood and finish. In addition, all the finish manufacturers are constantly reformulating their products to comply with new environmental regulations. This makes it impossible to document how each and every finish on the market will affect each and every wood species that we offer. Therefore, it is absolutely necessary to test the finish on sample pieces of the wood PRIOR TO INSTALLATION.

Water-based urethanes are the safest to use on exotic hardwoods. They statistically produce fewer adverse reactions to resinous exotics when compared to more traditional oil-based, acid-cure, and moisture-cure urethanes. For those that wish to enhance the color and grain of an exotic hardwood prior to finishing, JG Architectural Supply recommends the following after you screen:

- 1) Tack with denatured alcohol
- 2) Immediately apply a fast-drying sealer such as [Dura Seal Quick Dry Sealer](#)
- 3) Allow sealer to set-up for one full day
- 4) Finish durable with a water-based urethane such as [Bona Traffic](#)

All sanding, screening, and finishing should conform to [NWFA guidelines](#).

AFTER INSTALLATION

- ❖ If you decide to cover the floor while other construction trades continue working, or to protect the floors prior to final cleanup and turnover to the owner, use only rosin paper and [3M Blue Tape](#) (to hold the rosin paper to the floor). DO NOT USE plastic film or other non breathing type coverings as this can cause humidity buildup and ultimately flooring damage. DO NOT USE any tape to hold the rosin paper that was not designed for delicate finishes.
- ❖ Remove expansion spacers and reinstall base and/or quarter round moldings to cover the expansion space.
- ❖ It is suggested that you buff the floor with lambs wool pads in order to “pull any splinters”, remove any residues and handprints/foot prints, etc.
- ❖ Install any transition pieces that may be needed (reducer, T-moldings, nosing, etc.).
- ❖ Do not allow foot traffic or heavy furniture on floor for 24 hours (if glue-down or floating).
- ❖ Dust mop or vacuum your floor to remove any dirt or debris.

CLEANING, MAINTENANCE, & REFINISHING

Please visit our website for cleaning, maintenance and re-finishing instructions, see the Wood Flooring Maintenance Guide: <http://www.jgarchitectural.com/tech.html>



National
Wood Flooring
Association