

ENGINEERED FLOORING INSTALLATION INSTRUCTIONS & FLOOR CARE GUIDE

VERY IMPORTANT

Please read these instructions before proceeding with installation.

- Impressions Hardwood desires for you to have the best performing floor possible.
- For proper performance, it is your responsibility to handle and install this product in strict adherence to these installation instructions.
- Please read instructions in entirety before beginning installation.
- To ensure the full benefit of warranties, these instructions and maintenance procedures must be followed.
- Hardwood flooring is a beautiful product with natural variations in color, tone, and grain.
- We cannot warrant against color variations within a floor nor variations between samples and the installed floor.
- Beautiful hardwood floors are a product of nature. This flooring is manufactured in accordance with accepted industry standards, which permit a defect tolerance not to exceed 5%. The defects may be manufacturing or natural.

PROPER HANDLING AND ACCLIMATION

- Never unload or transport flooring in rain, snow, or excessive moisture conditions.
- Make sure job conditions are right before delivering wood.
- Flooring should not be delivered until the building is closed in with windows and doors in place and until cement work, plastering, and all other "wet" work is completed and dry. Concrete must be at least 60 days old. Handle and unload with care.
- Do NOT store flooring where there is no climate control (no heat or A/C). HVAC systems should be fully operational at least 14 days prior to installation. A consistent room temperature between 60 and 75 degrees F and relative humidity between 35-55% must be maintained.
- Flooring stored upon "on grade" concrete floors should be elevated at least four inches to allow air circulation under cartons. Cartons should be spaced out, not stacked or stored on pallets. Leave flooring in closed cartons during acclimation process.
- Do NOT install until flooring is within minimum installation requirements for moisture. Moisture content of subfloor must not exceed 12% or have more than a 4% difference than moisture level of product being installed.

INSTALLER/OWNER RESPONSIBILITY

- It is the responsibility of the flooring installer and owner to conduct a quality inspection of flooring prior to installation. All pieces of flooring should be examined for quality of manufacture, finish, and color. Flooring that has been installed will be deemed to have been inspected and accepted by the installer and owner. If the product quality is deemed unacceptable, it should not be installed.
- It is the responsibility of the flooring installer to ensure that the job site, subfloor, and installation tools and materials meet or exceed industry standards.
- It is the responsibility of the flooring installer and owner to make sure the wood is properly acclimated to normal temperature and humidity conditions. Climate control at the job site must be maintained between 60-75 degrees Fahrenheit and humidity within 35-55% before, during, and after installation. These conditions should be maintained at least 14 days prior to installation and at all times following installation to ensure proper performance of the floor.
- Recognizing that wood floor dimensions will be slightly affected by varying levels of temperature and humidity within your building, care should be taken to control them. To protect your investment and to ensure that your floors provide lasting satisfaction, we recommend the following:
 - * Heating season (Dry) - A humidifier is recommended to prevent excessive shrinkage in wood floors due to low humidity levels. Wood stoves and electric heat, in particular, tend to create very dry conditions.
 - * Nonheating season (Humid, Wet) - Proper humidity levels can be maintained by use of an air conditioner, dehumidifier, or by turning on your heating system periodically during the summer months. Avoid excessive exposure to water from tracking during periods of inclement weather. Do not obstruct in any way the expansion joint around the perimeter of your floor.

TOOLS NEEDED

- Handsaw, circular saw or jigsaw
- Chalk line
- Hammer
- Tape measure
- Pull bar
- Tapping block
- Wooden or plastic spacer wedges
- Moisture meter (wood, concrete or both)

For glue-down installations, use Fortane Adhesives or equivalent flooring adhesive (See your distributor or retailer for adhesive recommendations.) Follow manufacturer's guidelines and tool recommendations when using adhesive. Do not use water based adhesives over sheet vapor barriers or sound insulation.

For nail-down or staple-down installations, use the proper nailer. See Nail-Down or Staple-Down Installation.

For floating installations use white wood glue (PVAC).

CAUTION: By not using proper tools, "puckering" may result on the face of the plank. The manufacturer is not responsible for problems caused by use of improper tools. See your distributor for tool recommendations and use.

Note: Never hit the planks directly with a hammer. Always use a wooden block to protect the edges of the boards.

PRE-INSTALLATION PROCEDURES

JOB SITE EVALUATION

It is the responsibility of the installer to ensure all factors that could impact the performance of a hardwood floor are evaluated and addressed prior to installation. The job site environment and subfloors involved must meet or exceed all applicable standards and recommendations of the construction and materials industries. These instructions recommend that the construction and subfloor be dry, stiff, and flat. The manufacturer declines any responsibility for job failure resulting from or associated with sub-surface or job site environmental deficiencies.

SUBFLOOR REQUIREMENTS

Subfloor Type: The flooring can be installed over the following subfloors if properly prepared.

Concrete: On, above, or below grade installations are acceptable. Must be clean, dry, and smooth within 3/16" over 10'.

Acoustic Cork: Must be bonded to the surface. Density must be between 11.4 and 13 lbs/cuft. Cork must be a maximum of 1/4" thick made from pure cork and polyurethane binders.

Terrazo and Ceramic Tile: Should be lightly sanded and cleaned with mineral spirits. Allow the mineral spirits to dry prior to spreading the adhesive. If grout lines are too deep they need to be filled and allowed to dry before installation.

Wood Type Subfloors: Includes plywood, OSB, underlayment, particle board, and tongue and groove boards. Must be smooth and dry. Squeaks and popping areas should be screwed prior to spreading adhesive.

Vinyl: Includes sheet and vinyl tile. Must be securely fastened to the subfloor with full spread adhesive. Loose laid or perimeter glued sheet vinyl must be removed. Lightly sand vinyl, clean with mineral spirits and allow to dry prior to spreading the adhesive.

SUBFLOOR PREPARATION

Subfloor must be:

CLEAN and free of wax, paint and debris. Scrape smooth and sweep.

LEVEL/FLAT - flat to 3/16" over 10'. If subfloor prep work is required, "hills" should be sanded down and "valleys" filled with and underlayment patch, developed by a reputable manufacturer for use with hardwood flooring. Do not sand subsurfaces such as vinyl or synthetic tiles that may contain asbestos. For depressions less than 1/4", it is possible to use dry sand as a leveler.

STRUCTURALLY SOUND prior to installation. Screw loose areas to reduce squeaking and replace water damaged or delaminated subflooring or underlayments.

WOOD SUBFLOOR MOISTURE TESTING

Check moisture content of subfloor especially adjacent to exterior walls and plumbing fixtures.

Moisture content of subfloor must not exceed 12%; should be no more than a 2% difference on 3" or wider plank and no more than 4% difference on 3" or narrower plank between subfloor and flooring. If there is more than the allowable difference, remedy moisture issue prior to installation.

CONCRETE SUBFLOOR MOISTURE TESTING

Several tests are outlined below. These tests do not guarantee a dry concrete slab year round. With that in mind a moisture barrier using a minimum of 6 mil poly film should have been installed between the ground and the concrete.

- **3% Phenolphthalein in Anhydrous Alcohol Solution** Do not apply solution directly to concrete surface. First, chip 1/4" deep into concrete test area and apply several drops of the solution. If any change in color is observed, further testing is required.

- **Calcium Chloride**

Moisture transfer should not exceed 3 lbs/1,000 square feet with this test. One test must be performed every 250 square feet.

- **Relative Humidity Testing** (using in situ probes)

Perform 3 test for each 1000sf. RH should be below 75%. Readings over 75% may require additional moisture prevention steps prior to installation.

MOISTURE BARRIER SYSTEM

If the above tests reveal unacceptable moisture levels, use a moisture vapor product such as Fortane One or Fortane Zero.

SET UP

- In order to have sufficient material on hand, **calculate area and add 5%** of material to allow for cutting waste and minor natural or manufacturer's defects.
- **Work out of several cartons at the same time** to ensure color and shade mix.

LAYOUT

- Layout should be designed to save labor and materials as well as to enhance the appearance of the floor. The floor will be stronger and more stable if you lay it so that the joints in the rows are staggered at least 10 inches. Staggered or irregular joints mean less material waste and a better overall appearance. Stair stepping and "H" joints are not as visually pleasing as randomly staggered end joints and will waste labor and material.
- Plan the layout so that the last row of flooring (which usually needs to be cut lengthwise) is not too narrow. In some cases, it may be necessary to cut the first row as well as the last row. Measure across the entire room to calculate the width of the last board. The last board cannot be less than 2" wide. If necessary, rip your first row (remove tongue edge) so last board can be at least 2" wide.
- Allow 1/2" expansion space along all walls. Flooring should be laid at right angle to the floor joist and, if possible, in the directions of the longest dimension of the room.
- For rooms larger than 1,000 sq ft or exceeding 25' in any direction, the perimeter expansion space must be increased 1/16" for every additional 3'. Also, leave 1/2" expansion space where flooring will meet stairs, tiles, cabinets, etc....

INSTALLATION OVER RADIANT HEAT (Floating installation only)

Note: Special care should be taken into consideration when choosing a wood species to be installed over radiant heat. Maple, Beech, Ash and Asian Jatoba expand and contract more than other species. There is a greater risk of gaps occurring especially when installed over radiant heating systems and may void the warranty. Acacia should not be installed over radiant heat.

INSTALLERS—ADVISE YOUR CUSTOMER OF THE FOLLOWING

- Maximum allowable wood surface temperature is 80° Fahrenheit. Note that rugs can increase surface temperature 5 degrees Fahrenheit or more.
- Maintain 45-60% humidity at all times. If necessary, use humidifiers.
- Room temperature should not vary more than 15° Fahrenheit season to season.

HEATING SYSTEM REQUIREMENTS

- Only low temperature radiant heating systems with accurate control systems that assure that the floor's surface temperatures never exceed 80°F are permitted.
- The entire floor area must be evenly heated. Even with perimeter heating systems the floor's surface temperature must never exceed 80°F.

SETTING THE HEATING SYSTEM FOR INSTALLATION

- System must be fully operating at normal temperature for a minimum of 14 days prior to floor installation.
- The heating system must be turned off 24 hours prior to installation and must remain off for 24 hours after installation.
- Starting 24 hours after completion of installation, turn on the heating system and gradually increase the temperature over a 7-day period to normal operating level. Never allow the floor surface temperature to exceed 80° Fahrenheit.

SUBFLOOR

- The floor construction should have a heat dissipating layer that provides an even temperature across the entire floor area and avoids high temperatures in any area.

- Transfer plates or insulation must be in place under plywood subfloors.
- The subfloor should be completely dry. Moisture on a dry weight basis must not exceed 1.5% for concrete, 0.3% or less for gypsum and 6-12% for wood subfloors.
- A vapor barrier should be installed on all concrete, stone, mineral or wood subfloors. It must be directly under or as close to the flooring if possible.
- Heating pipes must be covered with 1" of concrete or be a minimum of 1/8" below bottom of plywood subfloor.
- The wood floor must lie tight against the sub-surface without an air gap that can cause considerable drying out of the wood.

LAYOUT

- Separate adjoining radiant heated and non-radiant heated areas with expansion joints.

FLOATING INSTALLATION

INSTALL UNDERLAYMENTS

Install 6 mil Polyethylene vapor barrier over entire flooring surface. Overlap sheets of Polyethylene 16" and tape together creating an airtight seal. Using a minimum 1/8" foam padding, roll out one roll at a time over vapor barrier being careful not to poke holes or otherwise damage material during installation. Run padding up walls 1" to 1.5" and secure in place with tape. Join padding sections with tape strip. Tape down any additional loose edges. A 2in 1" foam padding / moisture barrier may be substituted for Polyethylene.

INSTALLING THE FLOOR

Boards are installed left to right with the groove side facing the wall. A stair-step pattern will be repeated throughout installation. Stagger the ends of the boards a minimum of 8" inches. Leave a minimum 3/8" expansion around all vertical objects, such as walls, poles, and stairs. If starting wall is uneven, trace the contour of the wall, using a scribe, onto first row of planks and cut to size.

APPLICATION OF ADHESIVE

To secure a durable wood floor the boards must be bonded with adhesive in the tongue and groove. We recommend waterproof PVAC glue. The glue must be applied in a continuous 1/8" bead on the inside top of the groove on both the long and short edges.

GLUING AND TAPING

Dry fit first row using stair-step pattern. Number each plank in the order of installation. When you reach the last plank in first row, turn plank 180 degrees so tongue is flush against tongue of previous plank. Mark the plank and cut to length. Dry fit final plank of row.

Begin dry fitting second row, starting with (if possible) left over piece from previous row. Be sure to stagger end of boards at least 10" to achieve effective stair step pattern.

Floating installation is completed by gluing and taping floor profiles together. Separate first two rows noting installation order. Holding the first board with the tongue resting in the palm of your hand, apply a thin bead of glue in the groove on the side and end of the board. Repeat process with subsequent planks. Press each board firmly together, tapping profiles lightly with a block and hammer if necessary. Clean excess glue from between boards with a damp cloth. Tape each board together at side and end seams. Often the last row will not end with a full plank. When this happens, place a full row of planks on top of the last row installed. Insert a 3/8" spacer against wall, and using a full width plank, trace distance from wall onto final row. Cut planks for final row to designated width. Apply glue and fit into place. Tape may be removed within 1 hour. Allow 12 hours before placing furniture on floors and 24 hours before introducing heavy objects or full traffic. Note: Do not install cabinets or walls on top of floating floors.

GLUE-DOWN INSTALLATION

GLUING THE PLANKS

- To determine a straight first starting row, use a snap line the width of a few boards plus 3/8" 1" x 2" or 1" x 4" holding board on the first snap line. To keep first rows straight and in place, nail a straight 1" x 2" or 1" x 4" holding board on the first snap line.
- Make another snap line at about 24" from the holding board.
- Spread adhesive in first working area. Do not spread more adhesive than can be covered within 20 minutes.
- When the first section is complete, strike another parallel snap line from the last row installed, spread the adhesive and complete the section.
- Repeat section by section until the job is finished. Remove the starting board, spread adhesive, and complete the area from the starting board to the wall.
- To fit the last piece, lay it upside-down with the tongue edge parallel to the tongue edge of the piece next to it, the short end butting up against the wall. Mark the cutting line on the back of the board and cut it to the correct width (save the cut off piece for the second row). Turn it over, fit it and glue it in place.

NAIL DOWN OR STAPLE DOWN INSTALLATION

Note: Do not nail or staple 5/16" thick flooring planks.

SUBFLOOR PREPARATION

Remove all dirt and rough areas by thoroughly cleaning, sanding and leveling. Note: Particle board is not a suitable subfloor for nail down or staple down installation. The clean subfloor should be covered wall to wall with 15 lb felt paper or equivalent, overlapping 4" along the edges.

INFORMATION FOR PNEUMATIC FASTENING MACHINES

Note: Use pneumatic staplers with correct shoe base for thickness of the product. Improper pressure settings and failure to use proper adapters can cause severe damage to the flooring. The correct adapter and air pressure setting will properly set the fastener and damage adjoining boards. Air pressures set too high may cause damage to the tongue which may dramatically reduce the holding power of the fastener causing loose, squeaky floors. Make certain that the compressor has a regulator in line with the air hose for proper adjustment. Set the compressor pressure to recommended PSI and adjust accordingly using a "practice" board. Check for surface and tongue damage before proceeding with installation. A manual model 250 Powernailer can also be used.

INSTALLATION

To determine a straight first starting row, use a snap line the width of a few boards plus 1/2" expansion space from the wall. To keep first rows straight and in place, nail a straight 1" x 2" or 1" x 4" holding board on the first snap line. For nailer or stapler use correct shoe based on thickness of flooring. Begin installation with several rows at a time, tightening boards as necessary to reduce gaps before fastening. Attach each board with fasteners every 3"-4" with staples, every 4"-6" with cleats, and 1"-2" from the ends. The last 1 to 2 rows will need to be face nailed where clearance does not allow blind nailing with stapler or brad nailer. Brad nail or face nail on tongue side. Rip the final row to fit and face nail. If the final row is less than 1" width, it should be glue-edged to the previous row, before installation. The two joined rows can be face nailed as one board. Go back to the starting wall, remove the starting block and complete final rows using 6d nails, counter sunk and filled.

PLEASE NOTE:

Our products are not warranted against squeaking, popping, or crackling when using nail-down or staple-down installation methods. Some squeaking, popping, or crackling is normal and possible when using nail-down or staple-down installation methods. These symptoms may be aggravated in arid areas or during dry conditions.

ALL INSTALLATIONS: COMPLETING THE JOB

- Remove spacer wedges.
- Cover all expansion gaps along walls and vertical protrusions with base board, quarter round or pocket moldings. Nail moldings to wall, never to the flooring.
- Clean, sweep and vacuum installed flooring before use.
- Use of stain, filler or putty stick for defect correction during installation should be accepted as normal procedure.
- If the floor is to be covered, use a breathable material such as cardboard. Do not cover with plastic or any other material acting as a vapor barrier.

FLOOR CARE GUIDE

PREVENTATIVE MAINTENANCE

To ensure the full benefit of warranties and to extend the beauty of your new hardwood floor, we recommend the following preventative maintenance steps for your hardwood floor.

- Use floor mats at all entrances to help keep dirt and moisture from being tracked in. Area rugs are recommended in high traffic areas and at sinks. Mats and area rugs should be slip resistant with backing that will not discolor the floor.
- To help guard against scratches and dents, install felt floor protectors under furniture legs and equipment.
- Use soft rubber castors for rolling furniture.
- Remove high heels or shoes that need repair. Some types of high heel shoes can severely damage the surface of any floor covering.
- Maintain a healthy humidity at 40-60%. Certain regions within North America have extreme changes in humidity levels that can affect all wood floors. To maintain the humidity at the healthy range of 40-60%, it may require either a humidifier or a dehumidifier.

REGULAR MAINTENANCE

- Do not let sand, dirt and grit build up on your floors.
- Dust, sweep and vacuum floors regularly.
- For normal cleaning use the Impressions Hardwood cleaner or comparable product.
- **DO NOT use a steam cleaner or steam mop to clean hardwood.**
- Never use wax, oil soaps, or vinegars!