

Engineered Hardwood Flooring

Installation Instructions, Care/Maintenance Guide & Warranty

We make every effort to ensure that the finest hardwoods are used to create our wood planks, that the natural characteristics of the wood are preserved, and that our Aluminum Oxide Urethane finish provides the protection needed to help preserve the look of your hardwood flooring for years.

IMPORTANT

In order to preserve the natural beauty of your new wood flooring, it is important to read all of the following installation and maintenance instructions, prior to installation. Please note: Complying with the following installation and maintenance instructions will ensure the full benefit of your hardwood flooring warranty. With wood's natural beauty you can expect variations in color, tone and grain. Therefore, we cannot warrant against color variation within a floor, or variation between samples and the installed floor.

- Installers: Please review with your customers the information under the section: "Installers—Advise Your Customers of the Following."
 - Prior to installation, it is the responsibility of the installer to determine that the job-site environment and subfloors meet or exceed all applicable standards and recommendations of the construction and materials industries. These instructions recommend that the construction and subfloor be dry, clean, secure and flat. The manufacturer declines any responsibility for job failure resulting from, or associated with, sub-surface or job-site environmental deficiencies.
 - Install out of several cartons simultaneously to achieve proper color and shade mix.
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Installer/Owner Responsibility

Your hardwood floors are manufactured in accordance with accepted industry standards, which permit a natural or manufacturing defect tolerance, not to exceed 5%.

- Please insure that a 5% overage in material is ordered to allow for cutting and grading waste factors. Floors installed in a pattern or on a diagonal may require additional material.
- Prior to installation, the installer must inspect all flooring material and assumes all responsibility for final inspection of product quality. Carefully examine flooring for color, manufacturing, finish and quality before installing. The installer must use reasonable selectivity and separate out or cut off pieces with defects, whatever the cause. If material is not acceptable, do not install it, and contact the seller immediately.

INSTALLATION INSTRUCTIONS

Tools Needed For Installation

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| • Electric Power Saw, Circular or Jigsaw | • Wooden or plastic spacer wedges |
| • Chalk line | • Broom |
| • Hammer | • Adhesive and Adhesive Remover |
| • Handsaw | • Trowel |
| • Tape measure | • Moisture Testing Equipment |
| • Pull bar | |
| • Tapping block | |

For glue down installations, Mapei ECO 975, 980, 985, 995; or Sika T15, T21, T35, T55; or equivalent flooring adhesive. (See your distributor for adhesive recommendations.) Follow manufacturer's guidelines and tool recommendations when using adhesive. For nail-down or staple-down installations, use the proper nailer. (see Nail-down or Staple-Down Installation). For floating installations use a quality white wood glue (PVAC).

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

Note: Never strike the plank edges directly with a hammer – always use a tapping block to protect the edges of the boards.

WARNING: Do not use tape to secure flooring planks when installing your prefinished hardwood floor. Use of tape may leave adhesive residue, or may harm the finish of your new hardwood floor! Damage resulting from use of tape during or after installation may void your finish warranty.

INSTALLERS - ADVISE YOUR CUSTOMER OF THE FOLLOWING

SEASONS: HEATING AND NON-HEATING

Hardwood flooring product dimensions are slightly affected by varying levels of humidity within your installation area. Use care to control humidity levels within the 35-55% range (humidity may vary with regional conditions). In addition, 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.
- Non-Heating 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 moisture during periods of inclement weather. Do not obstruct in any way the expansion joint around the perimeter of your floor.

FLOOR REPAIR

Minor damage can be repaired with a touch-up kit or filler. Major damage may require board replacement, which should be performed by a professional wood flooring installer.

PRE-INSTALLATION PROCEDURES

ACCLIMATING THE HARDWOOD FLOORING

HVAC systems should be fully operational at least 14 days prior to flooring installation, maintaining a consistent room temperature between 60°–80° 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. Hardwood flooring should be handled and unloaded with care and stored within the environmentally controlled site. Flooring stored upon "on-grade" concrete floors should be elevated at least four inches to allow air circulation under cartons.

ROOM PREPARATION

Remove existing baseboards, quarter rounds and thresholds. Undercut door jambs, using a piece of flooring material as a guide. Door frames and other wooden elements should be sawed off at the bottom to ensure proper fit and expansion tolerances of the installed wood flooring.

PRE-INSTALLATION INSPECTION

It is the responsibility of the installer to inspect each board for visible defects prior to installing the board. Any board with visible defects will be replaced at no cost. If a defective board is installed, manufacturer will not assume cost of labor for repair or replacement of defect.

SUBFLOOR TYPE

Engineered hardwood flooring can be installed over the following properly prepared subfloors:

- Concrete: On, above or below grade installations are acceptable. Must be clean, dry and smooth to within 3/16" over 10'. Concrete slabs must be at least 30 days old prior to installation.
- Terrazzo: Should be lightly sanded and cleaned with mineral spirits prior to spreading the adhesive. Allow the mineral spirits to dry prior to spreading the adhesive.
- Ceramic Tile: Tiles must be securely fastened to the subfloor. Surface should be roughened up with a sander or grinder and cleaned to remove all dust. If grout lines are too deep they must be filled.
- Wood Subfloors: plywood, OSB and underlayment particleboard and tongue and groove boards. Must be smooth and dry. Squeaks and popping areas should be secured prior to spreading adhesive.
- Vinyl: sheet vinyl and vinyl tile. Vinyl must be securely fastened to the subfloor with full spread adhesive. Loose laid or perimeter glued sheet vinyl must be removed. De-gloss flooring as necessary to create a good adhesive bond using an abrasive pad. Do not sand sub-surfaces such as vinyl or synthetic tiles that may contain asbestos. Do not install over floors that exceed one layer, as the thickness of the flooring materials will prevent an adequate mechanical bond.

SUBFLOOR PREPARATION

Subfloor must be:

- Clean and free of wax, paint, oil, and debris. Scrape smooth and sweep thoroughly prior to installation.
- Flat to 3/16" per 10' radius. If subfloor levelling is required, "hills" should be sanded down and "valleys" filled with an underlayment patch, developed by a reputable manufacturer for use with hardwood flooring.
- Structurally sound prior to installation. Secure loose areas to reduce squeaking, and replace water damaged or delaminated sub-flooring or underlayments.

Testing For Moisture Content All concrete subfloors must be tested for moisture content. 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 established between the ground and concrete. A minimum of at least three test locations for areas up to 1,000 sf are recommended; add one additional test for each 1000 sf or fraction thereof.

- Tramex Concrete Moisture Encounter Meter. Moisture readings obtained should not exceed 3.5 on the upper scale.
- Calcium Chloride. Moisture emission should not exceed 3 lbs./1,000 square feet during a 24-hour period with this test. Per industry standards, 0-3 lbs. is dry, over 3lbs requires moisture barrier (see below), and over 7lbs is too wet. RH (relative

humidity) probe: RH testing is determined by in-situ probes at a depth of 1.5" or 40% of the slab depth. Readings should not exceed 75% RH. Installations over a concrete floor with readings over 75% RH require use of a vapor retarder.

Moisture Barrier System

If the above tests reveal excessive moisture or relative humidity levels, install an impermeable vapor retarder or vapor-resistant membrane with a permeance rating of one perm or less. Follow manufacturer's instructions for use when applying any vapor retarder.

SET UP

- In order to have sufficient material on hand, calculate area and add 5% more flooring material to allow for cutting waste and for minor natural or manufacturing defects. When installing on a diagonal or in a pattern increase your cutting waste accordingly.
- Work out of several cartons at the same time to insure color and shade mix.

LAYOUT

- Layout should be designed to save labor and materials, as well as to enhance the appearance of the floor. Lay the floor so that the end joints are staggered at least 8 inches on adjacent rows to avoid a stair step or H pattern. Staggered or irregular joints mean less material waste and a better overall appearance.
- 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.
- Allow 3/8" expansion space along all walls. Flooring should be laid at right angle to the floor joist and, if possible, parallel to the longest wall.

NAIL-DOWN OR STAPLE-DOWN INSTALLATION

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. roofing felt, overlapping 4" along the edges, and securing with tape.

INSTALLATION

To determine a straight first starting row, snap a chalk line the width of a few boards plus 3/8" 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 chalk line. For nailer or stapler, use correct shoe based on thickness of flooring. Use pneumatic staplers with correct shoe base for the thickness of the product. (Powernail® Model 2000 Pneumatic Powernailer.) Set the compressor pressure to recommended PSI and adjust accordingly using a "practice" board. Check for surface and tongue damage before proceeding with installation. Manual Model 250 Powernailer can also be used. Begin installation with several rows at a time, tightening boards as necessary to reduce gaps before fastening. Nail/staple each board placing fasteners every 6"-8" and 3" from the ends. The last 1-2 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 edge-glued 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.

GLUE-DOWN INSTALLATION

GLUING THE PLANKS (Figures 1.1)

- To determine a straight first starting row, snap a chalk line the width of a few boards plus 3/8" 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 chalk line.
- Make another snap line at a comfortable working distance from the holding board (about 24").
- 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 chalk 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 and glue it in place.

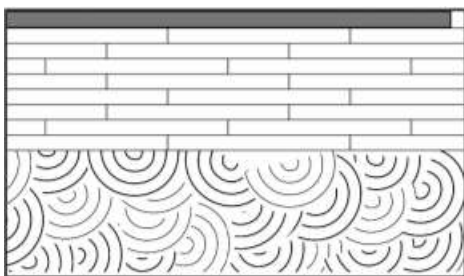


Figure 1.1

FLOATING INSTALLATION

INSTALL UNDERLAYMENTS

Install 6-mil Polyethylene vapor barrier over entire flooring surface. Overlap sheets of Polyethylene 16" and tape edges creating an airtight seal. Using 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. Tape down any additional loose edges. A "2-in-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. Stagger the ends of the boards a minimum of 8 inches on adjacent rows to avoid creating a stair step or H pattern. 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 wall, using a scribe, onto first row of planks and cut to size.

APPLICATION OF ADHESIVE

To secure the wood floor in a floating application, the boards must be bonded with adhesive in the tongue and groove. We recommend a quality waterproof PVAC glue. The glue must be applied in a continuous 1/8" bead on the top of the tongue 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° 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 8" to achieve effective staggered pattern. Floating installation is completed by gluing and taping flooring profiles together. Separate first two rows noting installation order. Apply a thin bead of glue to the top of the tongue 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. If necessary, you may use straps to hold planks together to prevent gapping between rows.

Note: Do not use tape on the surface of the floor. Tape may damage the finish and void the finish warranty. 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. 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.**

INSTALLATION OVER RADIANT HEAT (FLOATING INSTALLATION ONLY)

HEATING SYSTEM

- Maximum allowable temperature is 80° Fahrenheit.
- System must be fully operating at normal temperature for a minimum of 21 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.
- Not all wood floors and species are suitable for installation over radiant heat. Please check with your retail sales advisor for suitability of this product over radiant heated subfloors.

SUBFLOOR

Note: Only the pre-installation and structural warranties are valid when installing over radiant heat.

- The subfloor should be completely dry. Moisture on a dry weight basis must not exceed 1.5% for concrete, and 6–8% for wood subfloors.
- A vapor barrier should be installed on all concrete, stone or mineral subfloors.
- Starting 2 days after completion of installation, gradually increase the temperature over a 7-day period (3–4° Fahrenheit per day) to normal operating level. Never allow the floor surface temperature to exceed 80° Fahrenheit.
- Maintain recommended interior humidity levels (35%-55%) at all times, if necessary, by means of humidifiers.
- Room temperature should not vary more than 15° Fahrenheit season to season. Maintain 35–55% humidity in radiant heated rooms.
- Heating pipes must be covered with 1" of concrete or be a minimum of 1/8" below bottom of plywood subfloor.
- Under plywood subfloors, heat transfer plates or insulation must be in place.

Important Note: Not all species or types of wood flooring are suitable for installation over radiant heat. There is a great risk of gaps or face checking occurring especially when installed over radiant heating systems. Such occurrences are not manufacturing defects. Take the above into consideration when choosing a wood floor to be installed over radiant heat.

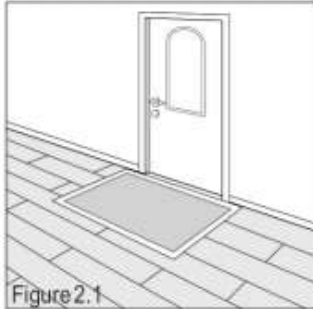
ALL INSTALLATIONS: COMPLETING THE JOB

- Remove spacer wedges.
- Cover all expansion gaps along walls and vertical protrusions with baseboard, quarter round or other suitable moldings.
- Clean, sweep and vacuum installed flooring before use.
- Avoid placing area rugs on your newly installed hardwood floor for a minimum of two weeks to prevent discoloration.

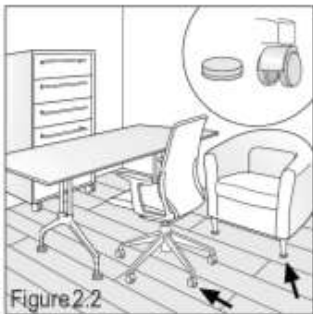
CARE AND MAINTENANCE GUIDE

PREVENTIVE MAINTENANCE

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



- Use floor mats at all entrances to help keep dirt and moisture from being tracked in (Figure 2.1). 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. Clean rugs periodically to remove dirt and grit.
- To help guard against scratches and dents, install felt floor protectors under furniture legs. It is important they are changed on a regular basis to prevent dirt, debris buildup. (Figure 2.2).
- Rolling castors may damage the floor. Therefore, we do not recommend them. If you choose to use them, the rubber barrel-type or double wheel types are the best option. (Figure 2.2).



- Do not wear high heel shoes that need repair while walking on your hardwood floor. Some types of high heel shoes can severely damage the surface of any floor covering.
- Keep your pet's nails trimmed regularly to avoid marring or scratching the floor.
- Maintain a healthy humidity range at 35-55%, which may require either a humidifier or a dehumidifier. Certain regions within North America have extreme changes in humidity levels that can affect all wood floors.



- **For cleaning, Use the appropriate cleaner type for your specific flooring finish. We recommend a cleaning system that does not allow any loose liquid to touch the floor. Suitable hardwood floor cleaner is available at most retail floor covering stores. Never use wax or wax products. DO NOT USE STEAM MOPS! Contact your floor covering dealer for recommended maintenance and floor care products for your specific hardwood flooring.**

REGULAR MAINTENANCE

- Do not let sand, dirt and grit build up on your floors.
- Immediately wipe up wet areas from spills, foreign substances, or wet feet.
- Dust, sweep and vacuum floors regularly. When using a vacuum cleaner, disengage the beater bar or use the "bare floor" setting to avoid damaging your floor. The vacuum head must be brush or felt, a wand attachment is preferable. (Figure 2.3).
- **NEVER CLEAN OR WET MOP WITH WATER.** Water may permanently damage the floor. **DO NOT USE STEAM MOPS!**
- There are many different types of prefinished hardwood floors available today, and not all maintenance products are suitable for all flooring types. Polyurethane based Aluminum Oxide finishes may be cleaned with Woodpecker Hardwood Floor Cleaner and applicator. Oil based finished should be cleaned and maintained with WOCA Oil Soaps and Refresher Oils specifically designed for those products. Consult with your retail sales advisor to determine what floor care products are appropriate for use on your floor.

