

STANTON

FINE HARDWOOD

Uptown, Seaport, SoHo, SoHo Peak, Hudson, Lexington

Engineered Plank and Pattern Plank

INSTALLATION GUIDE

Thank you for choosing Stanton Fine Hardwood Flooring. When properly installed and cared for, your new flooring will be easy to maintain and will keep its great look for years. Please read all the instructions before you begin the installation.

NOTICE BEFORE BEGINNING THE INSTALLATION

DEALER/INSTALLATION GROUP SHARED RESPONSIBILITY

Stanton Fine Hardwood is manufactured from products found in nature and are not a recreation of natural products. The Grades: Prime-Classic-Country: Color Variation: Graining: Knots: Finish: All Must Be Understood. An implied understanding and knowledge of marketing, selling, managing the expectations of the end user, installing, and servicing our natural hardsurface products is expected from our dealers and their installers. Stanton recommends only using NWFA/CFI Certified Installers.

- The best policy for confirming your selection is to review the dealer's samples, (the samples from which the floor was chosen), and compare to the actual flooring with the end user prior to installation. Claims on color or variation after installation will not be covered.
- The Dealer/Installation Group assumes all responsibility for final inspection of product quality PRIOR TO INSTALLATION. It is imperative that you inspect the product's size, profile, quantity, style, color, and any other natural variation to ensure that the product is satisfactory and meets your specifications. Also be sure to check each board during installation for any visible defects such as mis-milled planks and blotches.
- Do not install the product if there is any concern about its quality or specifications. If material is not acceptable, contact the seller immediately. Requests for replacement, refund or compensation made AFTER installation will NOT be honored.
- 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. The installer must use reasonable selectivity and hold out or cut off pieces with defects, whatever the cause.
- This is a rustic product! Hardwood flooring is a product of nature, and its inherent beauty stems from the fact that each piece is unique with no two pieces the same. This product may have very high color / character variation. This wood grade allows for some open wood character which may need some touch up after the installation is complete. Inspect each board for loose or rough wood character and cull out pieces appropriately.
- Stanton Fine Hardwood is a decorative product and not designed to be structural, we do not recommend installing hardwood under cabinets. In the event of a claim, Stanton will not be liable for cabinet removal or replacement.
- If the defective board has been installed, no cost of labor will be paid for repair or replacement of defect.

I. MATERIAL

- Stanton Fine Hardwood is designed as durable decorative flooring, this product is not designed to be a structural material. This product is designed to be installed in full time climate conditioned indoor spaces out of direct UV light conditions.
- DELIVERY: Proper handling of Stanton Fine Hardwood flooring is critical to the overall success of the installation. Damage of the planks face and locking profile can happen during handling. To ensure safety during the staging and storage process, stack cartons flat on the back, never on the edge, and no more than 10 cartons high.
- JOBSITE STORAGE: Hardwood cartons are encapsulated in plastic after manufacturing to insulate from moisture gain and

loss. After Delivery, jobsite storage will require slitting the plastic to allow for acclimation and to measure the moisture content of the wood prior to installation.

- Hardwood stored or acclimated on a concrete slab should not sit directly on the concrete. The product must be placed either on a pallet or uniform slats to allow an minimum of 4 inches of air movement between the hardwood and the concrete.
- To allow for proper acclimation the boxes should not be stacked tightly together but space to allow adequate air flow.
- STORAGE: Long term storage of uninstalled materials should be done with consideration. Long term storage prior to installation should be climate controlled to prevent damage to

the product. Extreme climate swings and rapid moisture changes during storage can damage the product. Post installation of attic stock should be kept in climate-controlled areas at all times.

- **ACCLIMATION:** Acclimation of the material is required for both temperature and moisture content for all installations. Stanton requires that the NWFA Installation Guidelines for acclimation be followed.
- **Moisture Testing:** The product must be moisture tested with a calibrated pin meter prior to installation. The moisture content of the wood should never exceed the range of 6% - 10% prior to and after installation.
- This product is not rated for high moisture installations

II. SITE PREPARATIONS

- Before starting the installation, the building envelope to be completely sealed from exterior conditions for a minimum of 2 weeks prior delivery. All exterior doors and windows must be installed and all exterior grading, gutters and down spouts, and water runoff and collection must be complete prior to installation of Stanton Hardwood.
- All wet work or trades requiring moisture (e.g. drywall, plumbing, masonry, painting, plastering, etc.) must be complete prior to delivery.
- **HVAC:** must be running 2 weeks prior to the delivery of the hardwood. The internal conditions of 60o-75o F must be maintained prior to, during, and post installation for the lifetime of the floor
- **RELATIVE HUMIDITY:** Stanton requires that the site conditions internal relative humidity of 30%-60% must be maintained prior to, during, and post installation for the lifetime of the floor
- A hygrometer is recommended prior to, during, and after installation to monitor the relative humidity in the air space.
- A humidifier is recommended at 35% RH and lower
- A dehumidifier is recommended at 55% RH or higher.
- **BASEMENTS/CRAWL SPACE:** Must be dry and free from standing water and water intrusion.
- **Crawl Spaces** must have a minimum of 18 inches of clearance between the bottom of the joist/ truss and the top of the soil.
- **Crawl Spaces** must have 100% coverage of all soil and earth with 8-mil polyethylene film. The 8-mil must be a class 1 vapor retarder, it must have its own warranty, and its own installation instructions.
- **Crawl Space Venting** with cross flow is required on all non-acclimatized crawl spaces.
- The perimeter venting in the crawl space should be equal to 1.5 % of the square footage area of the crawl space.

Wood Subfloors

- Stanton Fine Hardwood is a decorative product and not designed to be a structural material
- All subfloor and subfloor systems must be structurally sound and rigid. Stanton recommends that L/360 be observed as the minimum for floor rigidity.
- All local building codes must be followed; however, they may only establish minimum requirements of the flooring system and may not provide adequate rigidity and support for the proper installation and performance of Stanton Hardwood Flooring.
- All wood subfloor panels must comply with the U.S. Voluntary Products Standard PSI-107, Construction and Industrial Plywood and/or US Voluntary PS2-04 and/or Canadian performance standard CAN/CSA 0325.0-92 Construction Sheathing. Plywood: Must be minimum CDX EXP 1 Grade Tongue and Groove. Oriented Strand Board: Must be PS2-18 Tongue and Groove. **DO NOT INSTALL over PARTICLE BOARD!!!**
- All structural subfloor and underlayment panels are required to have their own Warranty and Installation Guidelines. Stanton is not responsible for claims caused by subfloor failure or improper installation of the subfloor.
- On wood subfloors with joist/truss spacing of 16" on center or less a minimum of 23/32 structural subfloor is required. Follow NWFA Guidelines on joist spacing and subfloor thickness.
- On wood subfloors with joist/truss spacing of 19.5"-24" on center a minimum of 1" of structural subfloor is required. It must meet L/360 for rigidity.
- The subfloor must be clean, and free from dirt, curing compounds, sealers, drywall mud, paint, wax grease, urethane, or any other bond breaker that would affect the integrity of the flooring material or adhesives used to install the flooring.
- The subfloor must be flat to the tolerance of 1/32" in 1 foot, 1/8" in 6 foot and 3/16" in 10 feet.
- The subfloor must be dry and never exceeded 12% moisture content prior to, during or after installation.
- Moisture testing the subfloor is required. For the first 1,000 sqft measure 20 locations with a pin meter and 4 locations for every 100 sqft after. Follow NWFA Guidelines for measuring and calculating and documenting subfloor moisture.
- Moisture testing the product is required. For the first 1,000 sqft measure the moisture of 40 planks. Follow NWFA Guidelines for measuring and calculating and documenting product moisture.
- Stanton requires that there be no more than 2% difference in moisture content between the subfloor and the product.
- A copy of All Documentation concerning moisture testing must be left with homeowner for permanent records.

Solid Wood Slat Subfloor

- Must be a minimum of 3/4" thick and a minimum of 6" wide.
- Must be installed at 45o angle to the floor joist.

- All joints must end on a joist for support.
- Requires 1/2" approved underlayment to be installed.

Existing Floors Carpet/Resilient/Hardwood

- All Carpet, Cushion, Tack Strip, Staples, and adhesives must be removed down to the bare subfloor prior to installation.
- All Floating floors MUST be removed prior to installation.
- Existing resilient sheet goods are not suitable to install Stanton Hardwood over. Please follow all local, state, and federal regulations.
- Stanton hardwood CANNOT be installed over existing hardwood installed over concrete or sleeper systems over concrete.
- Stanton hardwood can be installed (Floating, Nail/ Staple Down, or Glue Down) over existing hardwood floors installed (Nail/Staple or Glued Down) on wood subfloors. They Must be installed at a 45o angle to the existing floor. If the new floor is glued, the existing hardwood must be sanded to remove the finish.

Ceramic Tile and Terrazzo

- All waxes, sealers, and contaminates must be removed with an appropriate cleaner/stripper prior to installation. The process may take several subsequent cleans to remove the chemical residue of the cleaner/stripper.
- Acoustic Cork: Must be bonded to the surface. Density must be between 11.4 and 13 lbs/cubic foot. Cork must be a maximum of 1/4" thick, made from pure cork with polyurethane binders.
- Terrazzo 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.
- Vinyl: Includes sheet 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. Lightly sand vinyl, clean with mineral spirits and allow to dry prior to spreading adhesive.

Concrete

- Stanton Hardwood can be installed on concrete slabs constructed On-Grade, Above-Grade, or Below-Grade.
- All concrete slabs must be cured for a minimum of 60 days prior to the delivery and installation of the product.
- All concrete must be structurally sound and comply with all local building codes and constructed in accordance with ASTM E1745.
- All installations over concrete require moisture testing prior to installation. Stanton only recognizes ASTM F1869 Calcium Chloride Test and ASTM F2170 as suitable test for moisture.
- ASTM F1869 values must be < 3 lbs/1000ft².
- ASTM F2170 values must be < 75% RH with in-situ probe.
- Moisture ranges outside of these parameters will require moisture mitigation prior to installation.

- The subfloor must be clean, and free from dirt, curing compounds, sealers, drywall mud, paint, wax grease, urethane, or any other bond breaker that would affect the integrity of the flooring material or adhesives used to install the flooring.
- The substrate will require mechanical abrasion to remove sealers and curing compounds.
- When adhering hardwood to concrete, the adhesive may require mechanical grinding to open the porosity of the concrete slab.
- Stanton recommends that adhesives with built-in moisture protection should be used.
- The subfloor must be flat to the tolerance of 1/32" in 1 foot, 1/8" in 6 foot and 3/16" in 10 feet.
- Mechanically grind all humps or high spots and fill all depressions with leveling or patching compounds > 4000 psi.

Light Weight Concrete

- Engineered wood is not suitable for glue down installation over light weight concrete. All installations over light weight concrete must be floating and not subjected to rolling loads.
- The subfloor must be flat to the tolerance of 1/32" in 1 foot, 1/8" in 6 foot and 3/16" in 10 feet.
- For repair and or leveling please contact the manufacturer of the lightweight concrete

Suspended Slabs and Pre-Cast Concrete Plank

- Suspended slabs may require more drying and curing time to align with the requirements of installation.
- Suspended slabs require a minimum of 1 1/2" of thickness.
- Pre-cast construction requires a minimum of 1 1/2" topper poured over prior to installation.
- The subfloor must be flat to the tolerance of 1/32" in 1 foot, 1/8" in 6 foot and 3/16" in 10 feet.

Moisture Barrier System

If the above tests reveal unacceptable moisture levels, install sheet vinyl (PVC) directly to concrete slab. Follow instructions from sheet vinyl manufacturer, using a premium grade alkaline resistant adhesive and full spread application system to bond vinyl to subfloor. Do not use water based adhesives over sheet vapor barriers or sound insulation.

SET UP

- In order to have sufficient material on hand, calculate area and add 5% for plank and 10% for parquet patterns 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.

INSTALLATION OVER RADIANT PLANK AND PARQUET

INSTALLERS—ADVISE YOUR CUSTOMER OF THE FOLLOWING:

- Maximum allowable wood surface temperature is 80° Fahrenheit. Note that rugs can increase surface temperatures 5° F or more.
- Maintain 35-60% humidity at all times. If necessary, use humidifiers.
- Room temperature should not vary more than 15° F 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 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.
- 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° F.

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. Under plywood subfloors heat transfer plates or insulation must be in place.
- 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 and as close to the flooring as 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.

First Aid Measures In Case of Irritation

In case of irritation, flush eyes or skin with water for at least 15 minutes. Material Safety Data Sheets are available upon request.

ATTENTION INSTALLERS, CAUTION: WOOD DUST – Sawing, sanding and machining wood products can produce wood dust. Airborne wood dust can cause respiratory, eye and skin irritation. The International Agency for Research on Cancer (IARC) has classified wood dust as a nasal carcinogen in humans. If power tools are used, they should be equipped with a dust collector. If

high dust levels are encountered, use an appropriate NIOSH-designated dust mask. Avoid dust contact with eye and skin.

TOOLS NEEDED FOR INSTALLATION

- 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 nail-down or staple-down installations, use the proper nailer. Staples must be at least 18 gauge, 1-1/2" long with a 1/4" crown.

For floating installations use white wood glue (PVAC).

For glue-down installations, contact Stanton Technical Services for adhesive recommendations.

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.

INSTALLERS: ADVISE YOUR CUSTOMER OF THE FOLLOWING SEASONS: HEATING AND NON-HEATING

FLOATING INSTALLATION PLANK AND PARQUET

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 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 "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. A stair-step pattern will be repeated throughout installation. Stagger the ends of the boards a minimum of 8 inches. Leave a minimum 3/4" 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 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° 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 flooring 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 3/4" 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 one 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.

PLANK INSTALLATION

Layout For Planks

- 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 3/4" 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.
- The greater the surface area, the greater the room for expansion required. 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, additional expansion joints must be added in the middle of the room or in appropriate doorways and archways. The expansion space should be covered with transition moldings (T-moldings). Do not fill the expansion gaps.

Plank Glue-Down Installation

Gluing the planks

- To determine a straight first starting row, use a snap line the

width of a few boards plus 3/4" 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.

- 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 in place.

Plank Nail-Down OR Staple-Down Installation with Glue Assist

Subfloor Preparation – Remove all dirt and rough areas by thoroughly cleaning, sanding and leveling. Note: particle board is not a suitable subfloor for nail- or staple-down installation.

General 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 in the nail pocket. Low air pressures may fail to 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. Manual Model 250 Powernailer can also be used.

Installation – It is required that supplemental construction adhesive be used with nail down installation of wide planks. Failure to supplement nail use with adhesive may result in board movement or noises to emanate from moving boards which will not be considered a manufacturing defect. These adhesives may be trowelled on using methods and trowel recommended by the manufacturer or laid down in a bead if using sausage or cartridge adhesive. If trowelling and nailing the floor you should spread rows of adhesive that are perpendicular to the board direction and no more than 12 inches apart. If beads of adhesive are used they should be applied to the subfloor in a serpentine fashion along the entire length of the boards. A flexible wood flooring adhesive such as Bostik Best, Liquid Nail, Bona R851, R850T (tube), or urethane construction adhesive should be used. (See your distributor 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. Care must be taken to remove excess adhesive from the floor surface immediately or permanent damage may result.

To determine a straight first starting row, use a snap line the width of a few boards plus 3/4" 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. (See illustration under glue-down installation.)

Begin installation with several rows at a time, tightening boards as necessary to reduce gaps before fastening. Attach each board with fasteners every 6"-8" and 3" from the ends. Staples must be at least 18 gauge, 1-1/2" long with a 1/4" crown or 18 gauge cleat nail.

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.

PARQUET PATTERN INSTALLATION

Parquet Pattern Set Up

In order to have sufficient material on hand, calculate area and add 10% of material for cutting waste and minor natural or manufacturer's defects. Some patterns have larger waste factors. See the "Material for Pattern Floors: Calculation Formulas" document for guidelines.

Work out of several cartons at the same time to ensure color and shade mix.

Installation Guidelines – The cartons must only be opened directly before installation work begins. Our quality controllers have graded and inspected the hardwood flooring prior to packaging. Any questions or claims regarding grading or visual defects must be made prior to the installation of the floor. We cannot accept any subsequent claims. Remember that the end result is the responsibility of the installer.

Installation should be carried out in accordance with NOFMA and NWFA installation guidelines.

In general – and particularly in the case of new buildings – it is preferable to install the hardwood flooring as one of the last tasks. If this is not possible, it is essential that the surface of the floor be protected using builders paper, hardboard or cardboard. (Never use plastic film, as this does not allow for the diffusion of moisture.)

The laying out of the floor must be carefully considered before beginning the installation process. This will depend on the type of pattern chosen.

To obtain a good final result it is very important to be precise in

the installation of the first rows of strips. The strips are always placed in the adhesive in front of the previous row and pushed and rotated into place along the side and end of each strip.

Perimeter Working Lines

- Establish working lines at the perimeter of the room, which will represent the estimated inside working lines of the border.
- Perimeter working lines should be equal to a multiple of the width of the materials being installed, and should be equidistant from their adjacent walls. These lines should be adjusted to fit the width and the aesthetics of the border design. If the number of pattern repeats in the field is uneven, adjust the center working line so that the pattern is even on each side of the room.
- Using a chalk line, snap parallel lines representing the inside of the border.
- Working from the center of the room, build the field of the floor toward the perimeter working lines. Periodically check the measurements and make adjustments to ensure that the field will meet the perimeter working lines without the need for unsightly cuts or rips.

Parallel Layout – For parallel layouts, begin with 90-degree working lines at the center of the room. There are three methods for doing this.

Choose one of the following options:

OPTION 1: The trammel point method (preferred)

OPTION 2: The 3-4-5 method

OPTION 3: The laser method

For diagonal layouts, skip to "FOR DIAGONAL LAYOUT: The trammel point method"

OPTION 1: THE TRAMMEL POINT METHOD (Preferred Method) SEE DIAGRAM 1

- The Secondary Line must be exactly 90 degrees to the Primary Line. The directions below describe using trammel points and measurements of 3, 4 and 5 feet in a room measuring 12 by 20 feet. However, larger rooms may require doubling, tripling or even quadrupling those dimensions.

To determine the Primary Line:

- 1) Measure Wall 2 to find the center point, and mark that point on the subfloor and wall.
- 2) Measure Wall 4 to find the center point, and mark that point on the subfloor and wall.
- 3) Snap a chalk line between those two points. This represents the Primary (center) working line.

To determine the Secondary Line:

- 1) Measure to find the center point on the Primary working line. Mark that point C.
- 2) Using a 6-foot trammel point beam or bar compass set at 4 feet, scribe arcs on the Primary working line to the right and left of center point C.

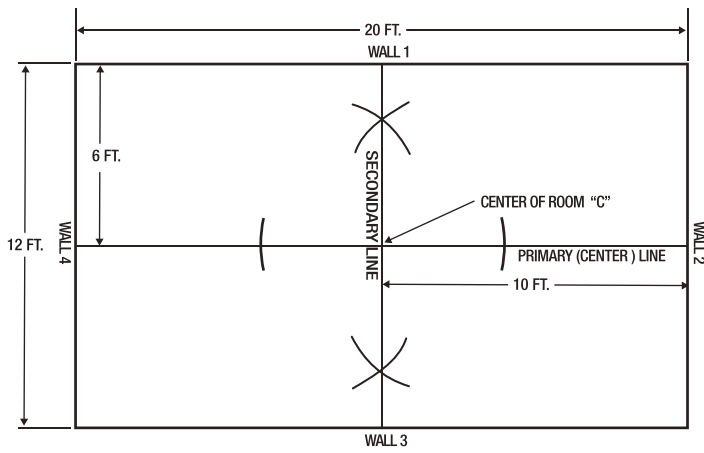


DIAGRAM 1

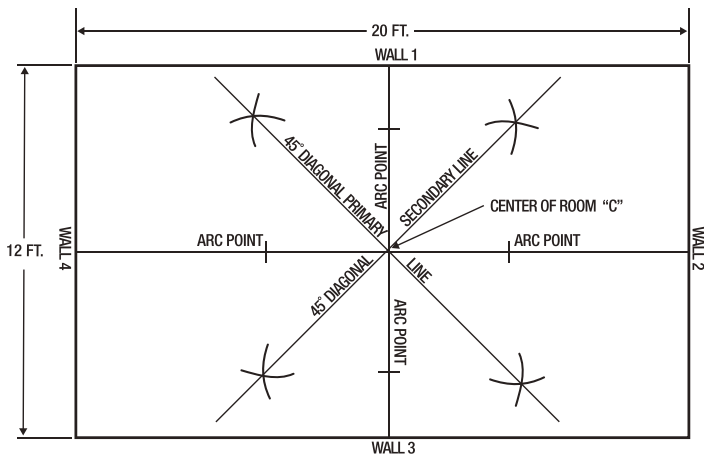


DIAGRAM 3

3) From the points at which the arcs intersect with the Primary working line, adjust the trammel point beam or bar compass to 5 feet and scribe arcs in the general area of where the 90-degree Secondary Line will be. Do this both above and below the Primary working line.

4) Snap a line between the points where the arcs intersect, extending the line from Wall 1 to Wall 3. Also make a mark on each wall where the Secondary Line meets the walls. This line will be the Secondary working line and should be at a 90-degree angle to the Primary working line.

5) Verify all measurements using the 3-4-5 method before proceeding.

OPTION 2: THE 3-4-5 METHOD (Pythagorean Theorem) SEE DIAGRAM 2

- The Secondary Line must be exactly 90 degrees to the Primary Line. The directions below describe using measurements of 3, 4 and 5 feet. However, larger rooms may require doubling, tripling or even quadrupling those dimensions.

To determine the Primary Line:

1) Measure Wall 2 to find the center point, and mark that point on the subfloor and wall.

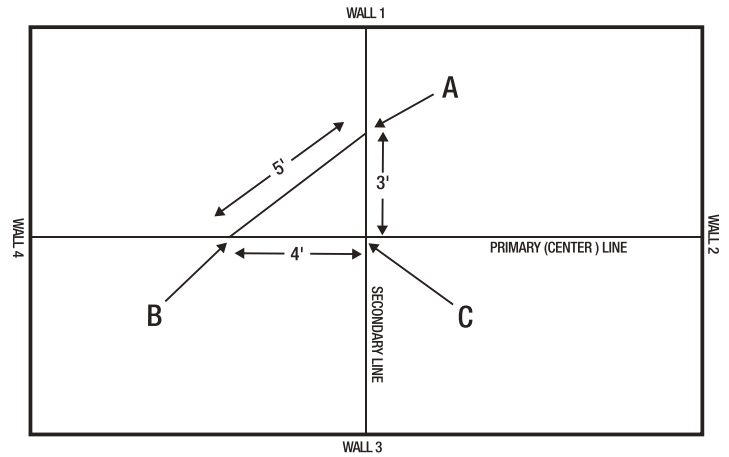


DIAGRAM 2

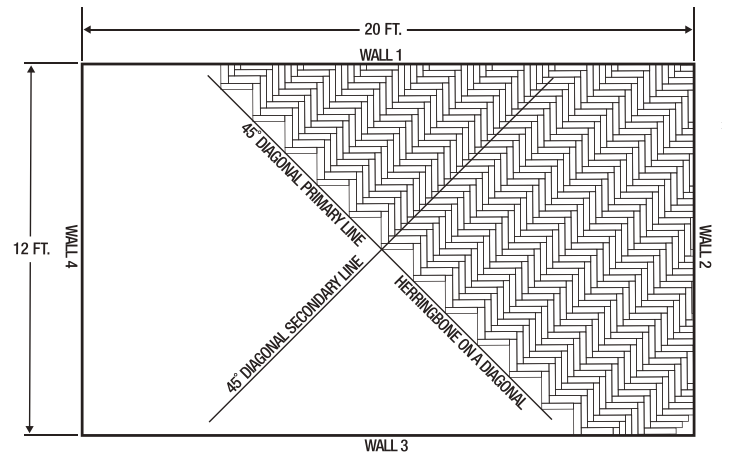


DIAGRAM 4

2) Measure Wall 4 to find the center point, and mark that point on the subfloor and wall.

3) Snap a chalk line between those two points. This represents the Primary (center) working line.

To determine the Secondary Line:

1) Measure to find the center point on the Primary working line. Mark that point C.

2) From the center point C, measure 4 feet along the Primary Line and mark that point B.

3) From the same center point, measure 3 feet in the general direction of where the Secondary Line will be and scribe an arc.

4) Return to the original 4-foot mark (point B) on the Primary Line and measure 5 feet, scribing an arc that crosses the 3-foot arc made in the previous step. Mark that point A.

5) Verify all measurements before proceeding.

6) Snap a chalk line through the conjunction of the two arcs (point A) and the center point (point C) of the Primary Line.

This will be the Secondary Line.

OPTION 3: USING A LASER TO DETERMINE WORKING LINES SEE DIAGRAM 3

Today's laser layout tools can assist in accuracy and speed in floor layout. Most laser layout tools have a primary beam line and a perpendicular beam, and often incorporate a 45-degree beam, as well. More advanced lasers also have lights to align floor layout to tray ceilings, chandeliers and other features above the floor. Follow the manufacturers' directions and cautions on the use of any laser. General rules for using a laser layout tool are to:

- 1) Mark the center of Walls 2 and 4 at the base.
- 2) Align the laser to target both marks.
- 3) Turn on the perpendicular lines and/or 45-degree lines.
- 4) Mark lines accordingly and snap chalk lines.

Not all lasers can establish diagonal lines. To establish a diagonal working line, trammel points or the method described in the following section, "Diagonal layout," can be used.

OPTION 4: DIAGONAL LAYOUT (The trammel point method) SEE DIAGRAM 4

- Using the Primary and Secondary Lines previously established, set the trammel point beam or bar compass at 4 feet and scribe arcs on the Primary and Secondary Lines on both sides of the center point of the room (C).
- Extend the trammel point beam or bar compass to 5 feet. Starting from the arc points on the Primary and Secondary Lines, scribe arcs in the approximate areas where the 45-degree working line will be located.
- Snap lines between the points where the arcs intersect, extending from Wall 1 to Wall 3, and also make marks on the walls where the lines meet the walls.
- These lines will represent the diagonal working lines and should be at a 45-degree angle to the Primary and Secondary working lines.
- Verify all measurements before proceeding.
- Diagram 4 illustrates an example of how diagonal working lines might be used to install a herringbone pattern. These diagonal working lines may be sufficient for laying herringbone units or other manufactured parquet patterns on a diagonal. However, additional working lines must be used when installing herringbone in a slat-by-slat method.

Choice of pattern, reference markings, and projectiles – The laying out of the hardwood flooring must be carefully considered before beginning the installation process. This will depend on the type of pattern chosen. When choosing the brick pattern, it is an advantage to install the strips lengthwise to the main source of light, so as to take into account the angle of incidence. When other patterns are chosen, installation should begin at the center of the room which is determined by laying out guide strings from opposite walls. It is essential that an expansion gap of 3/4" is left between the edge of the floor and all walls and projectiles. To avoid "curving" in larger rooms, it is advisable to use a template during installation. To avoid so-called, bow tension, i.e. gaps forming between strips in large rooms, a staggered installation is recommended (refer to drawing).

HERRINGBONE

Layout – Herringbone directions should be installed in accordance with client preference. The Pattern may look best with the points in the direction of the longest dimension of the room, or towards a major focal point. Flatness of the subfloor is especially critical in herringbone installation, so ensure that the subfloor is flat to within specified tolerances – typically within 1/8" over 10'.

- Measure out the room for center and strike the main control, perpendicular and diagonal reference lines.
- Measure for true centre on the herringbone pattern to establish working lines.
- Strike two working lines alongside the main control line.
- Transfer the diagonal lines to the working lines.
- Dry lay a small section and measure to confirm a balanced layout.

The herringbone floor pattern is installed along working lines. Note the true centre position of a herringbone pattern.

DETERMINING THE DIAGONAL DIMENSION OF THE FLOORING

– This measurement will vary according to the width of the flooring.

- Divide the diagonal measurement by four
- This is the dimension used to establish the working lines A and B on both sides of the control line (C).
- Once the working lines are established the installation can begin.
- To keep the installation square, cut a square piece of plywood the size of the herringbone pattern and anchor it at the intersection of the working lines and diagonal lines.

INSTALLING A HERRINGBONE PATTERN

- The starting point must have working lines and diagonal lines.
- For direct glue make sure working lines are visible.
- Start with the tongue towards the build direction.
- Install pattern one row at a time.
- Periodically check alignment.

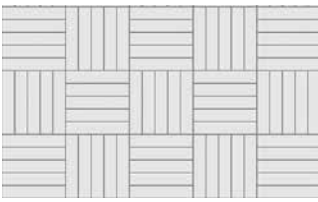
TO CONTINUE THE PATTERN

- Dry lay eight boards
- Lay a framing square from the points on the working line to the outermost point
- Record measurement A, this becomes your working line for the next course

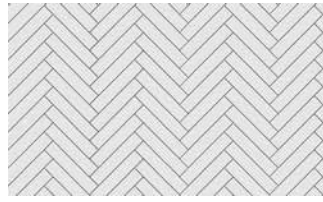
Once measurement D is established, the working lines can be repeated throughout installing.

BLOCKS, BRAIDED, AND SQUARE PATTERNS

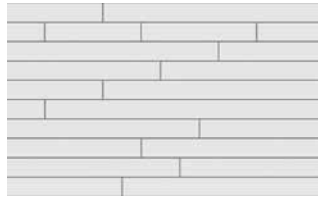
Installing block pattern – It is important to ensure that the overall visual affect is aesthetic. If the room is relatively small then begin installation at the center point of the wall. If the room is large, begin in the center. Remember to allow an 3/4" expansion



Block



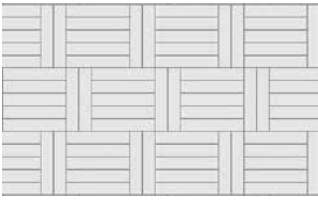
Herringbone



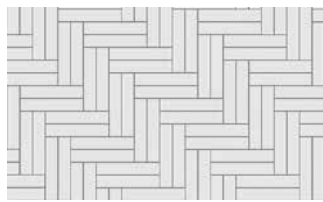
Plank



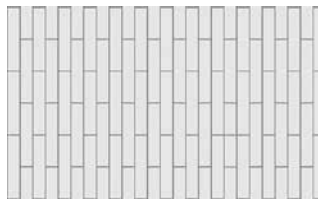
Double Border



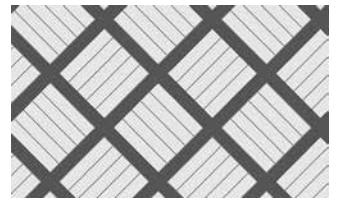
Basketweave



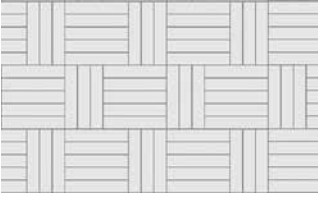
Double Herringbone



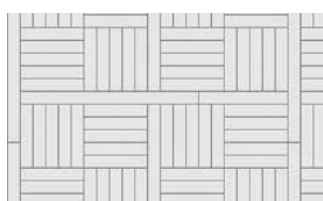
Brick



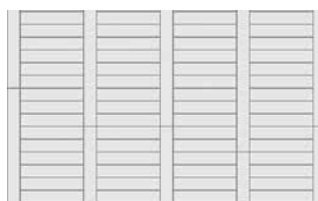
Marie



Triple Basket



Foursquare



Ladder

gap along all walls. When starting along the wall, fix a 90° angle template to the sub-floor at the center point of the wall. When installation begins in the center of the room, start by finding the center point of the room and fix a template to the floor at this point, parallel to the wall. Each square is made up of 5 strips. Start installing the strips in the corner of the template, completing 1 square at a time. The second square is installed at right angles to the first square. Install approx. 3' x 3' and allow hardwood flooring to adhere to the sub-floor (refer to the adhesive manufacturers' instructions), before removing the perpendicular board. Continue installation from the center point but in the opposite direction, working in a staggered pattern outwards towards the walls. Important! Check the guide string regularly during installation.

Installing the braided pattern – Firstly, determine the rooms center and mark a square diagonal line. As the pattern is offset you can not use a guide board. Build up the four board pattern that meet without the cut 4-3/4" square " blocks in the center. They add one 4-3/4" square block and build up the next set of 16 planks moving along the marked center line. Be sure each set of 16 planks remains square in its center as you go.

Squares incorporating decorative planks and squares – Installation is the same as for squares, but using the squares (4-3/4" x 4-3/4") at the corners along with strips, to form a frame around the 7-strip squares.

PARQUET FLOATING, GLUE-DOWN, AND NAIL DOWN DETAILS

Radiant heat heating – Parquet multi-layer hardwood flooring is suitable for gluing to a sub-floor which incorporates an under-floor heating system. The surface temperature of the hardwood flooring must not exceed 80°F. The heating system must distribute the heat evenly throughout the entire floor

irrespective of the heat setting.

CAUTION! Carpets and rugs with backings made of insulating materials (e.g. rubber/foam) must not be used, as they cause an accumulation of heat which can damage the wood.

GLUING

The multi-layer hardwood flooring must always be glued directly to the sub-floor. The tongue and groove must NOT be glued. The choice of adhesive is dependent on the type of sub-floor and conditions associated with the buildings' construction. See first page and follow mfg recommendations. The adhesive is applied using a course toothed spatula. Do not apply more adhesive than can be "worked" in the course of 10 – 15 minutes.

NAIL DOWN

Subfloor preparation

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

General 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 in the nail pocket. Low air pressures may fail to 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. Manual Model 250 Powernailer can also be used.

Installation

Depending upon pattern, to begin either establish two straight boards perpendicular to each other or work to the line as required by your pattern.

Begin installation with several patterns at a time, tightening boards as necessary to reduce gaps before fastening. Attach each board with fasteners every 6”-8” and 3” from the ends. Staples must be at least 1-¾” long with a ½” crown.

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.

Remove any starting blocks and complete other sections using 6d nails, counter sunk and filled.

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.

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