



BELLELUXE NATURAL HERRINGBONE INSTALLATION INSTRUCTIONS

Engineered hardwood flooring can be installed over most properly prepared subfloors and are engineered to be dimensionally stable, making them suitable for installation on all grade levels where excessive moisture conditions do not exist. We continuously make technological advancements that improve product performance or installation techniques and methods. To confirm you have the most recent installation instructions, please visit our website at karastan.com or contact Technical Services at 888-387-9881.

Our Herringbone flooring is made of European Oak, which is bonded to an engineered base to ensure stability. The planks are all pre-finished in an extensive range of colors.

CAUTION: Wood Dust Cutting, sanding or machining wood products produces wood dust. While wood products are not hazardous under the OSHA Hazard Communication Standard (29 CFR 1910.1200), the International Agency for Research on Cancer (IARC) and the State of California have classified wood dust as a human carcinogen.

Precautionary measures: Airborne wood dust can cause respiratory, skin and eye irritation. Power tools should be equipped with a dust collector. Use an appropriate NIOSH-designated dust mask. Avoid dust contact with skin and eyes. First aid measures: in case of irritation, flush eyes with water. If need, seek medical attention. If dermatitis occurs, seek medical attention. To request Safety Data Sheets, call 888-387-9881.

WARNING: Drilling, sawing, sanding or machining wood products can expose you to wood dust, a substance known to the state of California to cause cancer. Avoid inhaling wood dust or use a dust mask or other safeguards for personal protection. For more information, visit: P65Warnings.co.gov/wood

WARNING! DO NOT MECHANICALLY CHIP OR PULVERIZE EXISTING RESILIENT FLOORING, BACKING, LINING FELT, ASPHALTIC "CUTBACK" ADHESIVES OR OTHER ADHESIVES.

Previously installed resilient floor covering products and the asphaltic or cutback adhesives used to install them may contain either asbestos fibers and/or crystalline silica. (The products in this carton DO NOT contain asbestos or crystalline silica). Avoid creating dust. Inhalation of asbestos or crystalline dust is a cancer and respiratory tract hazard. Smoking by individuals exposed to asbestos fibers greatly increases the risk of serious bodily harm. Unless absolutely certain that the product is a non-asbestos containing material, you must presume it contains asbestos. Regulations may require that the material be tested to determine asbestos content and may govern the removal and disposal of material. See current edition of the Resilient Floor Covering Institute (RFCI) publication Recommended Work Practices for Removal of Resilient Floor Coverings for detailed information and instructions on removing all resilient covering structures.

IMPORTANT HEALTH NOTICE FOR MINNESOTA RESIDENTS ONLY: These building materials emit formaldehyde. Eye, nose, and throat irritation, headache, nausea and a variety of asthma-like symptoms, including shortness of breath, have been reported as a result of formaldehyde exposure. Elderly persons and young children, as well as anyone with a history of asthma, allergies or lung problems, may be at greater risk. Research is continuing the possible long-term effects of exposure to formaldehyde. Reduced ventilation may allow formaldehyde and other contaminants to accumulate in the indoor air. High indoor temperatures and humidity raise formaldehyde levels. Homes located in areas subject to extreme summer temperatures, an air-conditioning system can be used to control indoor temperature levels. Other means of controlled mechanical ventilation can be used to reduce levels of formaldehyde and other indoor air contaminants. If you have any questions regarding the health effects of formaldehyde, consult your doctor or call your local health department.

Installer/Owner Responsibility

It is the responsibility of the installer and owner to ensure that job site environmental, subfloor and subsurface conditions involved meet or exceed all requirements as outlined in installation instructions prior to installation. Karastan declines all responsibility for product performance or installation failure due to subfloor, substrate or environmental deficiencies or job site conditions. Karastan warranties do not extend to installer workmanship. Engineered flooring products should be acclimated for a minimum of 48 hours prior to installation. Acclimation allows flooring to achieve equilibrium moisture content (EMC) with the installation environment.

The owner/installer assumes all responsibility for final inspection of product quality. Examine flooring for color finish and style PRIOR TO INSTALLATION. If material is unacceptable, contact the seller immediately. Wood is a natural product and contains characteristics such as variations in color, tone and graining. Flooring is manufactured in accordance with industry standards which allow manufacturing and natural deficiency tolerances up to 5% of the total installation. Installer should work from minimum of three cartons at the same time to ensure good color and shade blend. The installer must use reasonable selectivity and hold out or cut off pieces with deficiencies. Do not install undesirable pieces. Flooring warranties DO NOT cover materials with visible defects once they are installed. Installation is acceptance of product quality. All work involving water or moisture (plumbing, masonry, painting, plastering) must be completed prior to flooring being delivered. Building envelope must be complete and exterior doors and windows installed. Exterior grading and gutter downspouts should be completed and permanent HVAC systems in operation. Purchase an additional 5% of flooring to allow for cuts and an additional 10% if installing diagonally.

Precautions should be taken to protect floors from other trade work. Do not cover floors with plastic, red rosin, felt or wax paper or previously used cardboard. Instead use a breathable material such as clean, dry, plain uncoated cardboard or Kraft paper. Inks from printed cardboard could damage the hardwood floor. The floor should be thoroughly cleaned before covering to remove grit and debris that would damage the finish. The floor must be completely covered to eliminate uneven ambering from exposure to UV light. Flooring should not be covered for an extended period of time to prevent moisture related issues from trapped condensation.

Permanent HVAC should be on and operational a minimum of 14 days and maintained between 65°-75°F (18-23°C) degrees and a relative humidity of 35%-55% prior to delivery, during, and thereafter installation for the life of the product. If HVAC is not possible at time of installation, the environmental conditions must be at or near normal living conditions between 60°-80°F (16 °-27° C) at the average yearly relative humidity for the area. Building interiors are affected by two distinct humidity seasons - heating and non-heating. Care should be taken to maintain humidity levels between 35% - 55% year-round. As with all wood flooring, expansion and contraction will be minimized if the interior relative humidity is consistently maintained year- round. Humidification and/or dehumidification systems may be necessary to maintain your home environment to prescribed relative humidity conditions. Seasonal gapping is an inherent characteristic of all wood products.

Heating season, low humidity, dry: All heating methods create dry, low humidity conditions. Humidifiers are recommended to prevent excessive shrinkage or gapping in wood floors due to seasonal periods of low humidity.

Non-heating season and coastal or waterfront areas: During the non-heating season, or in areas with high humidity or wet conditions, proper humidity levels should be maintained by using an air conditioner or dehumidifier.

Karastan warranties do not cover natural expansion and contraction that results in separation between planks or damage caused by excessively low or high humidity. Seasonal gapping is not considered a manufacturing defect.

WARRANTY NOTE: Installer should provide owner with one carton end label from installed product along with the pre-installation moisture content readings for warranty purposes. Owner should retain carton end label and copy of invoice with product style name and style number for their records and attach to these instructions. Owner should retain excess flooring and store in a climate-controlled area for future repairs in the event of damaged flooring. The use of stain, filler or putty for correction is considered a normal practice and a routine part of installation.

Do not install wood flooring until appropriate temperature and humidity conditions have been achieved. Flooring should be delivered and stored inside the HVAC controlled area of the jobsite. Flooring should be stacked with at least a 4" (102 mm) airspace under the cartons. Make certain that the room temperature is set to normal living conditions as described above. Test wood subfloors by taking a minimum of 20 moisture readings for per 1,000 square feet of subfloor using a pin type moisture meter. Average these readings and include on the data sheet at the end of these instructions. Likewise check the Karastan flooring moisture content and record on the same sheet. These moisture readings are to be left as a permanent record of testing with the homeowner. When both the subfloor and Karastan flooring are below 12% moisture content or the flooring is within 4% of the subfloor moisture, the product can be installed. Do not install the floor until these moisture conditions are met.

NOTE: To increase reliability, subfloor appropriate moisture testing should be performed after the HVAC system has been in operation for a minimum of 14 days. Excess moisture on any flooring substrate, if not corrected prior to installation, will cause floor covering failure. Our warranties DO NOT cover problems due to moisture levels that exceed these guidelines.

Subfloor Requirements On, Above, or Below Grade

These guidelines are not intended to supersede federal, state or local building codes, but as with many other interior finish products, may require modifying existing structural components for a successful installation. Hardwood flooring is not a structural component. The product warranty does not protect against loss caused by inadequate subfloors, vertical deflection, flooring substructures or improper installation of said substructures. Engineered hardwood floors may be installed over any structurally sound subfloor that is flat, clean and dry on all grade levels. All subfloors should be:

- **Clean:** Subfloor must be clean and free of dirt, curing compounds, drywall mud, wax, paint, oil, sealers, adhesives and other debris. These may be removed mechanically. Do not install glue down floors over chemically cleaned substrates.
- **Flat:** Subfloor must be flat within 3/16" in 10' radius (5 mm in 3 m) and/or 1/8" in 6' radius (3 mm in 2 m). Sand high areas or joints. Fill low areas with a high compressive strength (min. 3,000 psi) Portland based compound. Failure to correct flatness can create hollow spots or noise.
- **Dry:** Wood floor moisture should be evaluated using the guidance supplied above under the heading.

"Job Site Conditions". Concrete subfloors must be cured for a minimum of 60 days. The moisture content of a concrete subfloor should be tested using an In-Situ Probe (ASTM F2170) with readings less than <80% RH. Test results must be recorded on these instructions and left as a permanent record of testing with the homeowner. If moisture levels exceed these limits, DO NOT INSTALL the flooring until appropriate corrections are made.

NOTE: Basements and crawl spaces must be dry. Use of a 6-mil black polyethylene membrane is required to cover 100% of the crawl space earth. Crawl space clearance from ground to underside of joist should be no less than 18" and perimeter vent spacing should be equal to 1.5% of the total square footage of the crawl space area to provide cross ventilation.

NOTE: To increase reliability, appropriate subfloor moisture testing should be performed after the HVAC system has been in operation for a minimum of 14 days. Excess moisture on any flooring substrate, if not identified and corrected prior to installation, will cause floor covering failure. Our warranties DO NOT cover any problems due to moisture levels that exceed these guidelines.

Structurally sound wood subfloor: Screw down any areas that are loose or squeak. Wood panels should exhibit an adequate fastening pattern, glued, screwed or nailed as system requires, typically 6" (15 cm) along bearing edges and 12" (31 cm) along intermediate supports. Flatten edge swell as necessary. Replace any water-damaged, swollen or delaminated subfloor or underlayment.

Building codes establish requirements for structural support components of flooring systems which may not provide adequate rigidity and support for proper installation and performance of a hardwood floor. Whenever possible, install flooring perpendicular to the floor joists for maximum stability

Structurally sound wood subfloor: Concrete substrate should be at least 60 days old constructed in accordance with ASTM E1745. Level substrate and fill all cracks, holes and low spots with a polymer modified Portland cement patch or leveling compound. Burnished or steel troweled concrete substrates must be inspected for porosity by placing a few drops of water on the surface. If the water is not absorbed within 3 minutes, the substrate should be considered non-porous. Abrade the surface with 30-grit sandpaper until porosity is achieved. Glue down floors may be applied to concrete with a rating of 3,000 psi or greater. Glue down application over lightweight concrete (less than 3,000 psi) is not permissible.

Wood Subfloors

Approved subfloor panels should meet or exceed the following guidelines:

- **Plywood:** Must be minimum CDX EXP 1 grade and conform to U.S. Voluntary Product Standard PS1-19 performance standard or Canadian performance standard CAN/CSA 0325 (NIST PS 2-10).
- **Oriented Strand Board:** Strand board (OSB) must conform to U.S. Voluntary Product Standard PS 2-18 or Canadian performance standard CAN/CSA 0325 (NIST PS 2). The panels must be tongue and groove and installed sealed-side down.
- **Particleboard:** (Floating installation only) Must be a minimum 40-lb density, stamped underlayment grade and 3/4 inch (19 mm) thick.

Floor joist/truss spacing will determine the minimum acceptable thickness of the subfloor panels. Joist/truss spacing of 16 inches on center or less for single panel subflooring requires a minimum 5/8-inch (19/32-inch, 15.1 mm) CDX (EXP 1) 4-foot x 8-foot subfloor panels. Joist/truss spacing of greater than 16 inches, up to 19.2 inches (488 mm) on center, requires a minimum nominal 3/4-inch (23/32-inch, 18.3 mm) tongue and groove CDX (EXP 1) plywood or OSB PS2-18 4-foot x 8-foot subfloor panels, glued and mechanically fastened. Floor systems with joists/truss spaced greater than 19.2 inches (488 mm) on center up to a maximum of 24 inches (610mm) require minimum 7/8-inch tongue and groove CDX EXP 1 plywood or OSB PS2-18 4-foot x 8-foot subfloor panels, glued and mechanically fastened.

Installation over joist spans greater than 24 inches on center is not recommended. For installation over joist spans greater than 24 inches on center, consult NWFA (National Wood

Flooring Association - 800.422.4556) for panel thickness guidance.

IMPORTANT: Precision is the key when installing Herringbone hardwood flooring. Verify measurements and frequently check row alignment to ensure the pattern is laid accurately and evenly.

Installing Herringbone flooring requires a high degree of technical ability and should be only performed by qualified professional installers.

Please read the entire installation instructions carefully before proceeding with the installation, and contact Technical Services with any questions at 888.387.9881, option 3.

Preparation

- Herringbone flooring must be installed using glue down method only.
- Visually inspect the boards before installation. Once installed, the boards are considered accepted by the installer and the homeowner.
- Each pack of Herringbone contains six left planks and six right planks. A left-tongue plank and a right-tongue plank will be required to form each joint.
- The Herringbone direction should run in accordance with client preference. The pattern may look best with the points in the direction of the longest dimension of the room or toward a major focal point.
- Flatness of the subfloor is critical when dealing with a herringbone installation.

Glue Down Installation Method

Recommended Adhesive Products

- For slabs that feel dry to the touch, have an intact moisture barrier, and do not have a history of moisture issues, Performance Accessories Silent Bond and Timberstrong can be used without moisture testing.
- Moisture requirements are not interchangeable between adhesives and vary dependent upon the subfloor type and conditions. Using adhesives besides the above 2 mentioned requires moisture testing outlined on the carton insert instructions.
- To correct any subfloor conditions concerning moisture, either wait until the subfloor dries to meet specifications or use an appropriate moisture barrier.
- For more information concerning moisture conditions, contact Technical Service Department at 888-387-9881.

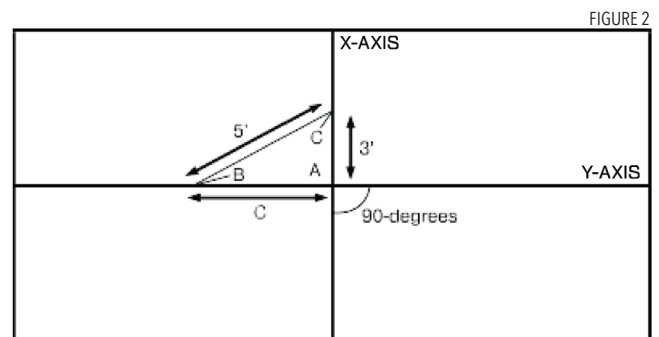
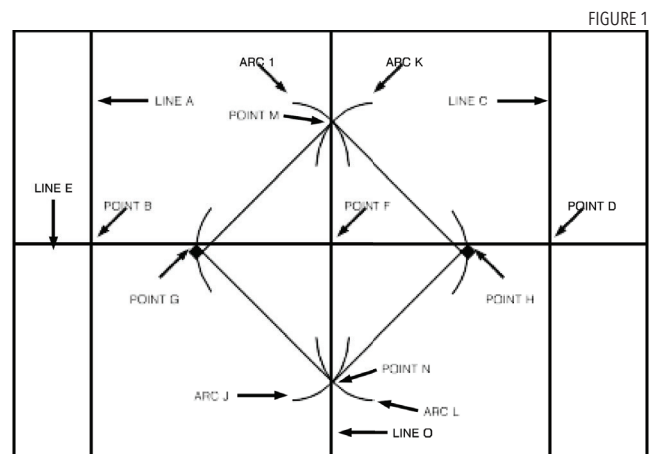
Mark Center and Working Lines

Using trammel points, follow these guidelines to find and mark the center of the room and to define working lines.

Trammel points consist of two adjustable points, typically mounted on a wooden beam.

The marking point usually holds a pencil or pen, while the anchor point holds a metal pin used to anchor the center of a circle or arc. The size of the radius can be adjusted by sliding the marking point along the wood beam to the desired length and locking it into position.

1. Measure the width of the room from top to bottom left of center (Line A in Figure 1).
2. Find the center of Line A and mark it (Point B).
3. Measure the width of the room from top to bottom right of center (Line C).
4. Find the center of Line C and mark it (Point D).
5. Adjust for any difference in center between Point B and Point D. For example, if Point B is one inch different than Point D, divide the difference by two to establish the new center point of Line A.
6. Snap a line the length of the room from Point B through Point D. This is now Line E.
7. Find the center point of Line E and mark it Point F.
8. From Point F, use trammel point at fixed position on flat board to mark through Line E left of center, and mark it Point G.
9. From Point F, use trammel point at the same fixed position on flat board to mark through Line E right of center, and mark it Point H.
10. From Point G, use trammel point at a fixed position on flat board to draw arc above Line E. Mark this Arc I.
11. From Point G, use trammel point at the same fixed position on flat board to draw arc below Line E. Mark this Arc J.
12. From Point H, use trammel point at the same fixed position on flat board to draw arc above Line E. Mark this Arc K.
13. From Point H, use trammel point at the same fixed position on flat board to draw arc below Line E. Mark this Arc L.
14. Where Arc I and Arc K intersect, mark it Point M.
15. Where Arc J and Arc L intersect, mark it Point N.
16. Snap a line from Point M through Point N, and mark it Line O.
17. Where Line O intersects Line E is the center of the room. Line E and Line O also form a 90-degree angle.
18. Check the 90-degree angle using the 3-4-5 method as shown in Figure 2.

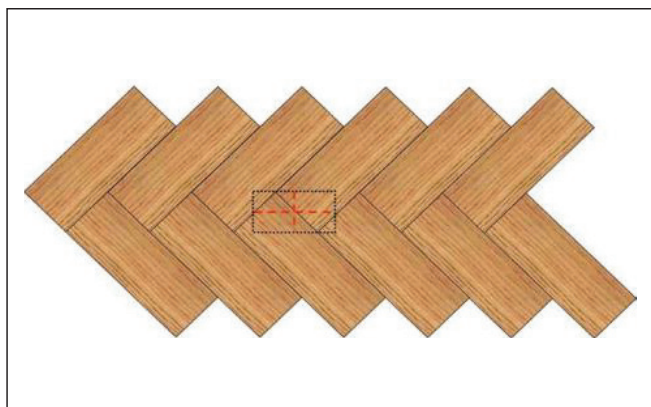
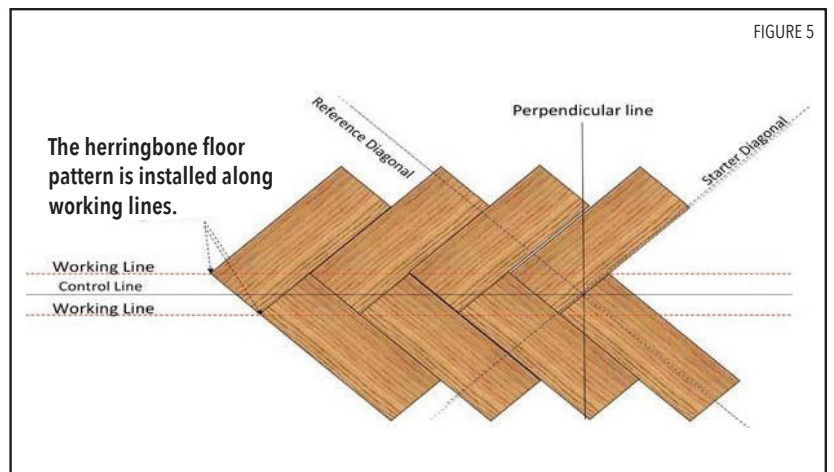
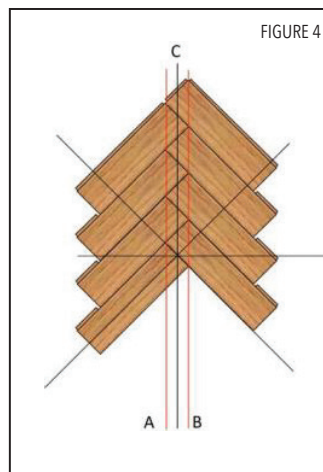
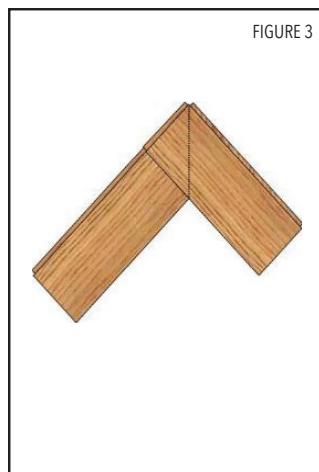
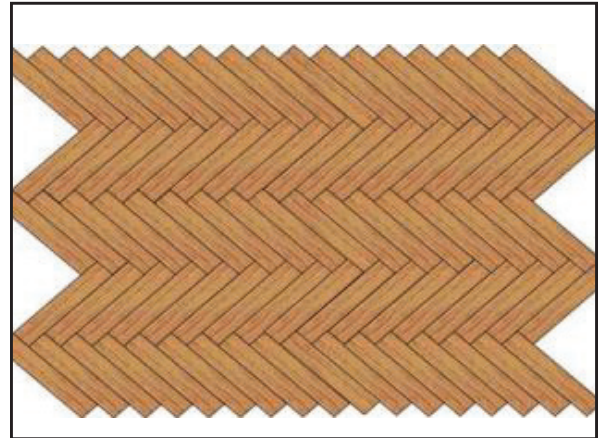


The overall board pattern is readily definable in herringbone layouts.

The tongue and groove system used for Karastan Herringbone flooring is unique in that there are "left" and "right" boards to accommodate the directional design. The faces of a left board and a right board are a mirror image of each other. Equal amounts of both are shipped with flooring orders.

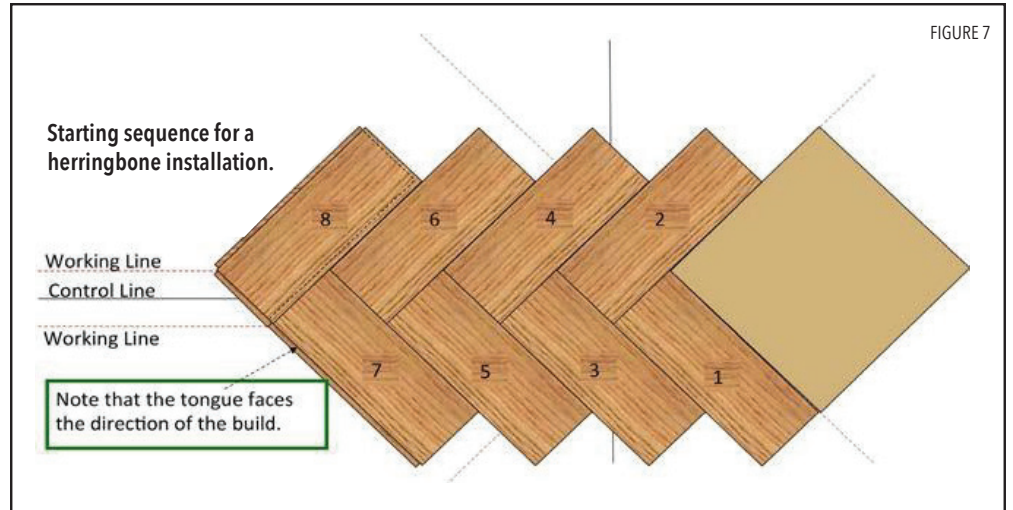
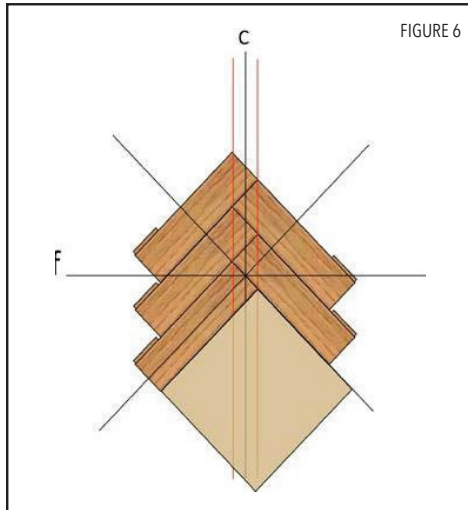
Laying Out A Herringbone Pattern

1. Determine the diagonal dimension of the flooring.
2. Determine the herringbone pattern orientation in the room.
3. Always confirm this information with the work order or your contact, customer, architect, salesperson, or designer.
4. Measure the room for center and strike the main control, perpendicular and diagonal reference lines using the trammel point method described previously and shown below in Figures 4 and 5.
5. Measure for true center on the herringbone pattern to establish working lines as shown in Figure 3.
6. Divide the measurement by four. For Herringbone flooring, the measurement should be $1\text{-}5/16"$. This dimension will be used to establish the working Lines A and B on both sides of the control line.
7. Using the measurement derived above, strike two working lines on either side of the main control line as shown in Figures 4 and 5.
8. Measure the distance from Line A to Line B. Line C should be half the distance and run parallel to Lines A and B. The centerline of the room and the center of the pattern is represented by Line C.
9. Herringbone can be laid out parallel to the room or at a 45-degree angle to the room. Regardless of the direction, herringbone will require a centerline and two working lines.



NOTE: The true center position of a herringbone pattern.

10. Dry lay a small section and measure to confirm a balanced layout. Once the working lines are established, the installation can begin.
11. 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 as shown in Figures 6 and 7 below.



Installing A Herringbone Pattern

1. The starting point must include working lines and diagonal lines as described previously.
2. For direct glue, do not spread adhesive over working lines.
3. Start with the tongue toward the build direction.
4. Install pattern one row at a time.
5. Periodically check alignment.

To Continue the Pattern

1. Dry lay eight boards.
2. Lay a framing square from the points on the working line to the outermost point.
3. Record measurement A. This becomes your working line for the next course.
4. Once measurement A has been established, the working lines can be repeated throughout the installation as shown below in Figure 9.

After Installation

- Allow the newly installed floor to fully cure based on adhesive recommendations before allowing foot traffic or moving furniture on the floor.
- Remove any adhesive from the surface of the flooring (smudges, fingerprints, etc.) before it dries, using mineral spirits.
- Use wood filler or putty to correct minor flooring damage that might occur during installation.
- Retain excess planks for future repairs.

Final Touches

Install the proper trim and door moldings. Trims and moldings should be nailed into the wall, not the floor.

Complete the job by using the wood filler that coordinates with the installed engineered flooring to fill any gapping along the joints or areas where brad nails were used in the trim or the flooring. Clean the finished floor with Performance Accessories Cleaner.

Maintenance

Karastan Natural Wood Hardwood Floors are very easily maintained. No wax, no mess.

The best way to care for your new floor is to schedule routine maintenance which includes sweeping the entire floor at least once a week to remove dirt and debris that may scratch the floor. High traffic areas such as entrances, doorways, and traffic lanes will require cleaning more frequently depending upon of the amount of concentrated foot traffic. Following these easy steps is the key to keeping your new floor looking beautiful for years to come.

Step One: Routinely sweep your floor with a soft bristle broom or use a vacuum designed for use on hardwood floors.

WARNING: Vacuums with a beater bar, power rotary brush head or any steam cleaning device can damage a wood floor and should never be used.

Step Two: Apply Performance Accessories Wood & Laminate FloorCare Essentials to a microfiber mop; do not spray directly onto the floor. Use a back and forth motion with the mop. When the microfiber cover becomes soiled, simply replace it with a clean one. Cleaning the floor with a soiled cover could cause streaking. The covers are reusable so simply throw the cover in the wash and dry it as you would any towel. DO NOT USE FABRIC SOFTENER when washing microfiber covers.

Tips & Warnings

- Sweep regularly with a soft bristle broom.
- Remove spills promptly and use Performance Accessories Wood & Laminate FloorCare Essentials.
- Use felt protectors under heavy pieces of furniture and chairs.
- Use protective mats at all exterior entrances.
- Never use rubber or latex backed rugs on your floor.
- Spiked heels or shoes in need of repair can severely damage floor.
- Replace hard plastic, metal casters, or wheels on furniture with soft neoprene casters or by using a protective mat under the casters.
- Never wet or damp mop your floors.
- Never use steam cleaners or power scrubbers on your floor. This will force moisture into the finish and cause damage to your floor.
- Never use oil soaps, wax, liquid or other household products to clean your floor.
- Keep pet nails trimmed as recommended by your veterinarian.
- Protect your floor when using a clean, soft-tire dolly for moving furniture or appliances.
- Use protective window coverings to protect hardwood floors from excessive heat during periods of direct sunlight.

Hardwood Flooring will Scratch and Dent

With today's active lifestyles it is important to note that hardwood flooring can, and will, scratch and dent. See Tips & Warnings for protecting your hardwood floor. To prevent excessive abuse, the use of strategically placed mats and area rugs as well as floor protectors on chair and table legs are a must.

Transition Mats

Transition Mats should be used at all exterior entrances to minimize tracked-in soil and reduce moisture during inclement weather. Ideally, the purchase of two sets of transition mats for each exterior entrance will allow a fresh one to replace the soiled one weekly during routine cleaning. This will prevent the transition mat from becoming a soil source.

Hardwoods React to Sunlight

Hardwood contains certain types of acids in their cellular structure. With exposure to sunlight, these acids begin to amber. The color change is referred to as patina. The wood will reach its own natural warmth and patina level and stop ambering. The amount of patina is directly related to the species, amount of acids and the level of sunlight. The entire floor will reach the same patina level over time. This effect is often noticed after a rug is removed and the floor underneath is noticeably different in color. If you remove the rug and expose the entire floor to the same amount of light, it will even out over time and become uniform in color.

Warranty

Karstan warrants that the factory applied finish will not wear through or will not lack finish adhesion as a result of normal use. Additional structural warranty and moisture warranty may be applicable to this engineered hardwood. See Karstan Wood Warranty or your retailer for specific details and duration of warranty.