



General Installation Instructions

INSTALLER/OWNER RESPONSIBILITIES

Beautiful hardwood floors are a product of nature and therefore, not perfect. Our wood floors are manufactured in accordance with accepted industry standards, which permit a defect tolerance not to exceed 5%. The defects may be of a manufacturing or natural type.

- The installer assumes all responsibility for final inspection of product quality. This inspection of all flooring should be done before installation. Carefully examine flooring for color, finish and quality before installing it. If material is not acceptable, do not install it and contact the seller immediately.
- Prior to installation of any hardwood-flooring product, the installer must determine that the job-site environment and the sub-surfaces involved meet or exceed all applicable standards and recommendations of the construction and materials industries. These instructions recommend that the construction and sub-floor be dry, stiff and flat. The manufacturer declines any responsibility for job failure resulting from or associated with sub-surface or job-site environment deficiencies.
- Prior to installation, the installer/owner has final inspection responsibility as to grade, manufacture and factory finish. The installer must use reasonable selectivity and hold out or cut off pieces with defects, whatever the cause.

TOOLS & ACCESSORIES NEEDED

- Broom
- Tape Measure
- Chalk
- Hand saw or jamb saw
- Electric circular saw
- Moisture meter (wood, concrete or both)
- Rubber mallet (non marking)
- Hardwood flooring cleaner
- Safety glasses
- Portable work bench with clamping capability
- Framing Square

PRE-INSTALLATION PROCEDURES

Job Site Inspection

- The building should be closed in with all outside doors and windows in place. All concrete, masonry, framing members, drywall, paint and other "wet" work should be thoroughly dry.
- The wall coverings should be in place and the painting completed except for the final coat on the base moulding. When possible, delay installation of base molding until flooring installation is complete.
- Exterior grading should be complete with surface drainage directing water away from the building. All gutters and downspouts should be in place.
- Puzzle Floor may be installed on or above grade level. It is not recommended to install any hardwood floors below grade. Do not install in full bathrooms.
- Crawl space must be a minimum of 24" (600 mm) from the ground to underside of joists. A ground cover of 6-8 mil black polyethylene film is essential as a vapor barrier with joints lapped six inches and taped. The crawl space should have perimeter venting equal to a minimum of 1.5% of the crawl space square footage. These vents should be properly located to foster cross ventilation (see figure #1).
- Sub-floor must be checked for moisture content using the appropriate testing method.
- Permanent air conditioning and heating systems should be in place and operational. The installation site should have a consistent room temperature of 60-75° F and humidity of 35-55% for 14 days prior, during and until occupied, to allow for proper acclimation

STORAGE AND HANDLING

Handle and unload with care. Store in a dry place being sure to provide at least a four-inch air space under cartons that are stored upon "on-grade" concrete floors. Flooring should not be delivered until the building has been closed in with windows and doors in place and until cement work, plastering and all other "wet" work is completed and dry. Concrete should be at least 60 days old. Puzzle floor should be stored in the environment in which it is expected to perform.

SUBFLOOR REQUIREMENTS

- CLEAN - Scrape, broom clean, and smooth. Free of wax, paint, oil, sealers, adhesives, curing agents and other debris.
- LEVEL/FLAT - Within 3/16" in 10' and/or 1/8" in 6'. Sand high areas or joints.
- STRUCTURALLY SOUND - Nail or screw any loose areas that squeak. Replace any water-damaged, swollen or delaminated sub-flooring or underlayments. Avoid sub-floor with excessive vertical movement unless they have been properly stiffened prior to the installation of the wood flooring.
- DRY - Check moisture content of the sub-floor with a reliable moisture meter.

RECOMMENDED SUBFLOOR SURFACES

- PREFERRED: 1/2" (19 mm) CDX grade plywood
- 3/4" (23/32") OSB PS2 rated underlayment
- MINIMUM: 5/8" CDX grade plywood
- Existing solid wood flooring
- 1/2" Particleboard
- Radiant heated sub-floors
- Concrete Slabs

CONCRETE SLABS

The concrete must be of high compressive strength. All concrete subfloors should be tested for moisture content. Visual checks are not reliable. Acceptable test methods for subfloor moisture content include:

NOTE: Test several areas, especially near exterior walls and walls containing plumbing.

- A 3% Phenolphthalein in Anhydrous alcohol solution. Chip the concrete at least 1/2" deep (do not apply directly to the concrete surface) and apply several drops of the solution to the chipped area. If any color change occurs, further testing is required.
- Calcium Chloride test. The maximum moisture transfer must not exceed 3 lbs./1000 square feet with this test.
- Tramex Concrete Moisture Encounter meter (figure #3). Moisture readings should not exceed 4.5 on the upper scale. (Figure #3 shows an unacceptable reading of over 4.5)

A "DRY" SLAB, AS DEFINED BY THESE TESTS CAN BE WET AT OTHER TIMES OF THE YEAR. THESE TESTS DO NOT GUARANTEE A DRY SLAB. ALL CONCRETE SLABS SHOULD HAVE A MINIMUM OF 6 MIL POLY FILM MOISTURE BARRIER BETWEEN THE GROUND AND THE CONCRETE.

Moisture Barrier System: If moisture is present, inexpensive sheet vinyl or "slip-sheet" (PVC) may be installed. Use a premium grade, alkaline resistant adhesive and a full spread application system to properly bond the vinyl to the subfloor. Follow the sheet vinyl manufacturer instructions for installation procedures. A patch test may be required as an adhesion test. Install several small areas (3' x 3') and allow the vinyl to set for 72 hours. Remove the vinyl; if the backing remains attached to the concrete, the subfloor should be acceptable for sheet vinyl installation. If you have any questions regarding installation or the handling of moisture problems, please contact the distributor/retailer from whom the goods were purchased.

WOOD SUBFLOORS & WOOD STRUCTURAL PANEL SUBFLOORS

Plywood: Must be APA grade rated sheathing or CDX minimum. **Oriented Strand Board (OSB):** Must be PS2 rated installed sealed side down.

Particleboard must be a minimum 40-LB density, stamped underlayment grade and 1/2" thick.

Make sure existing floor or sub-floor is dry and well nailed or screwed down every 6" along each joist to avoid squeaking or popping before the floor is installed. The wood sub-floor must not exceed 13% moisture content. Measure moisture content of both sub-floor and wood flooring to determine proper moisture content with a reliable wood moisture meter. The difference between the moisture content of the wood subfloor and the Puzzle Floor must not exceed 4%. All underlayment panels should be spaced 1/8" apart to insure adequate expansion space. This can be achieved by using a circular saw set at the depth of the underlayment and cutting around the perimeter of the panel. T&G panels normally have built in expansion; DO NOT cut around the perimeter of T&G panels. Do not install over existing glue-down wood floors. Do not install over nailed floors that exceed 3-1/2" in width. Wide width floors must be overlaid with plywood. Applicable standards and recommendations of the construction and materials industries must be met or exceeded.

SUBFLOORS WITH RADIANT HEAT

- System must be operational and heated for at least 7 days prior to beginning installation.
- Turn off heat and let sub-floor cool down to room temperature 3-4 hours prior to starting the job.
- Radiant heated floors must be temperature controlled or engineered for the R-rating of the floor-covering product installed upon them. BEFORE installation begins, ascertain that the system is designed and controlled for wood flooring.

Failure to do so may cause excessive heat damage, shrinkage and delamination.

- After installation, turn system back on immediately to its normal room temperature setting. The sub-floor surface must not exceed 85° F throughout the life of the floor.

GENERAL INSTALLATION TIPS

- Use ELASTILON® floating floor underlayment.
- Puzzle Floor can be installed in two different patterns.
Pattern A: Alternating rows of male and female
Pattern B: Alternating male and female pieces in each row
- Using the attached worksheet plan the layout of the floor. Each dot on worksheet represents 3 inches.
- Floor should be installed from several cartons at the same time to ensure good color and shade mixture.

PUZZLE FLOOR – STEP BY STEP INSTALLATION INSTRUCTIONS

Please read the entire step-by-step instructions before proceeding.

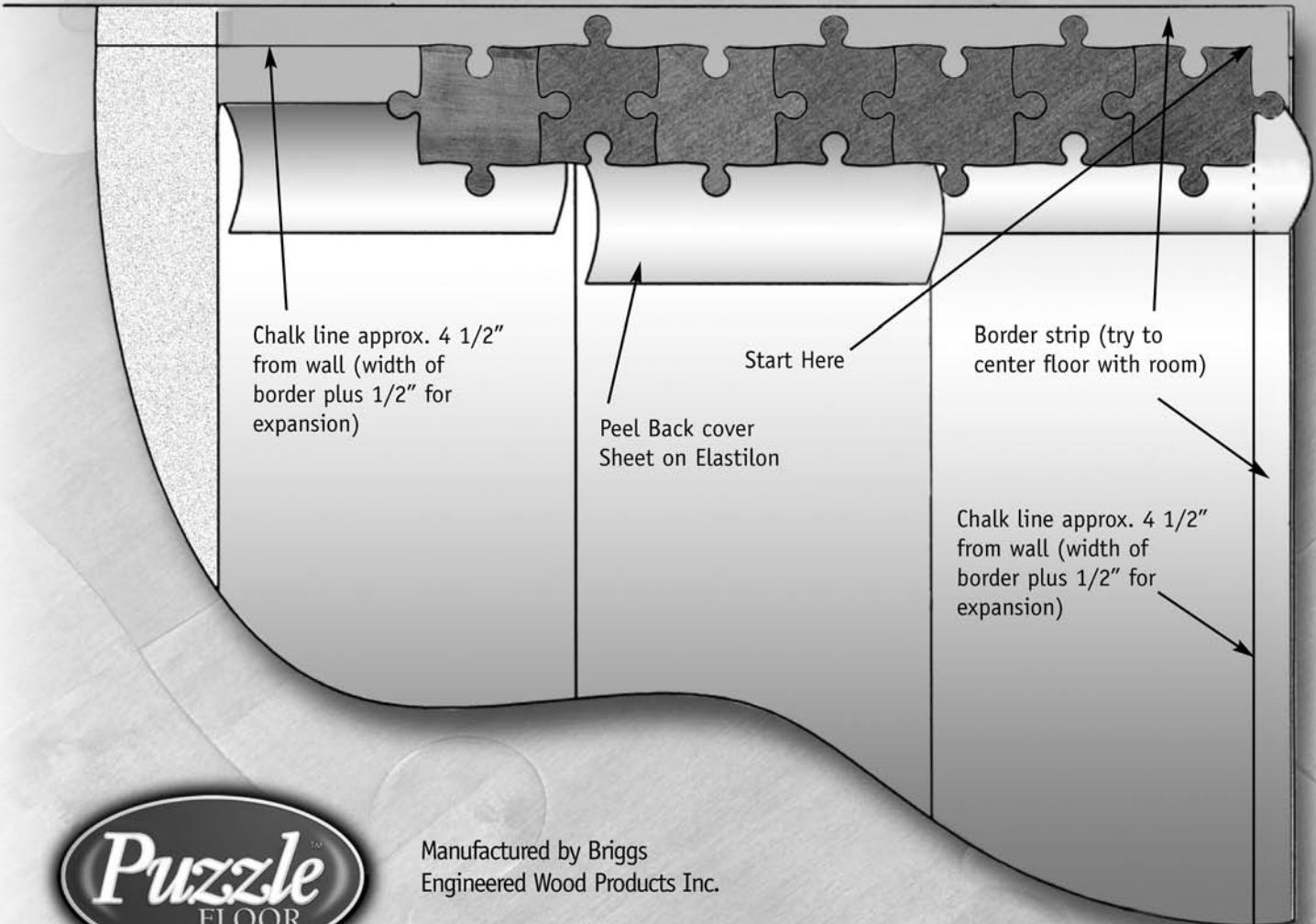
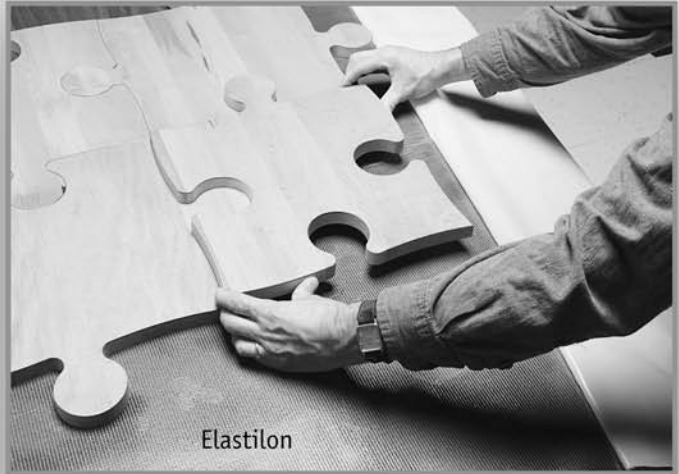
Note: When possible, always begin layout or installation from an outside wall, as these are normally the straightest.

1. Ensure room is clear of furniture and tools, baseboards are not in place and the subfloor is clean and ready to accept Puzzle Floor™.
2. Select the pattern you wish to use to install your Puzzle Floor™.
3. Accurately measure the floor surface of the room where Puzzle Floor™ will be installed. Using the attached Puzzle Floor™ floor plan of the correct pattern, draft your floor surface dimensions onto the plan. The scale on the plan is $3/8" = 1' 0"$. Make sure your drawing is done to scale. Don't forget to measure closets and doorways. Plan your installation so that the Puzzle Floor™ pieces bordering the four walls are approximately the same width. Note: If drawn to scale on the plan, you will know what the width will be for the row of trimmed Puzzle pieces bordering the walls.
4. Roll out the first section of ELASTILON® self adhesive underpad parallel and alongside one wall with the white plastic facing up. Do not yet remove the plastic.
5. Place a second section of ELASTILON® alongside the first section and repeat until the entire floor surface is covered. Do not overlap the ELASTILON®. Do not yet remove the white plastic.
6. Select the starting point of your floor at a corner adjacent to the longest wall of the room.
7. The first row of Puzzle Floor™ pieces are to be installed perpendicular (90° right angle) to the seams formed by the ELASTILON® sections.
8. Refer to your scale drawing. It should indicate the width of the first row of trimmed Puzzle pieces immediately beside the wall, as well as the distance away from the end wall. Ideally this measurement would show that the trimmed pieces would be 3.5" to 5" wide.
9. Measure away from the starting wall, a distance equal to the width of the starting strip plus 1/2". Make a mark on the plastic indicating the measurement (see illustration).

10. Repeat the measurement at the other end of the same wall.
11. Take your chalk line and snap a line using the two marks as a reference point.
12. Repeat steps 9 thru 11 above for the base wall so you now have 2 chalk line marks intersecting at a right angle in the

starting corner of the floor. These lines provide a reference for positioning the starting pieces of Puzzle Floor™.

13. Using a sharp utility knife and straight edge lightly cut into the white plastic covering, along the chalk line. Do not cut into or through the black ELASTILON® underpad.
14. Refer to your floor plan, peel back the corner of the white plastic covering, only enough to place your first full sized piece of Puzzle Floor™. Before placing, ensure that the Puzzle piece is in the same orientation and same shape (male or female as indicated on your floor plan). Note: you will be installing the trimmed pieces last, after all the full size pieces have all been laid.
15. The corners of each puzzle piece form a perfect square. Align the corners of the first Puzzle piece on the chalk line (which is parallel to the wall). As the tiles are self-aligning each successive tile naturally falls into its proper location relative to the adjacent tiles.
16. Take your second piece of Puzzle Floor™, pull back the white plastic covering the ELASTILON®, revealing the adhesive and place the second piece in place, interlocking with the first piece. Remember to maintain the pattern configuration you selected.
17. The process is repeated working from one end of the room to the other and across the width of the room. Avoid exposing more glue on the Elastilon® than is required. Avoid placing anything on the exposed glue surface other than the Puzzle Floor™ that you are installing.
18. Repeat until the entire floor is covered with full sized pieces.
19. To insert the trimmed pieces begin with a corner. Again pull back just enough of the white plastic protection sheet to allow the pieces to be installed.
20. When measuring pieces to be trimmed allow a 1/2" space (approximately) between the wall and the Puzzle Floor™. This space will be covered by the baseboard. This space is to allow for expansion of the flooring should it be exposed to higher heat or humidity in the future.
21. When all the trimmed pieces are in place, install the base boards. Fasten baseboards to the wall. Do not nail baseboards into the Puzzle Floor™ and subfloor. This would hinder the expansion and contraction of the floor as temperature and humidity fluctuate.
22. Finish the job by cleaning Puzzle Floor™ with a damp mop or a cleaner formulated for prefinished hardwood floors.
23. The floor is ready to use immediately. You do not have to wait for the adhesive to dry, cure, etc.



Manufactured by Briggs
Engineered Wood Products Inc.



1-800-750-5563
www.puzzlefloor.com



