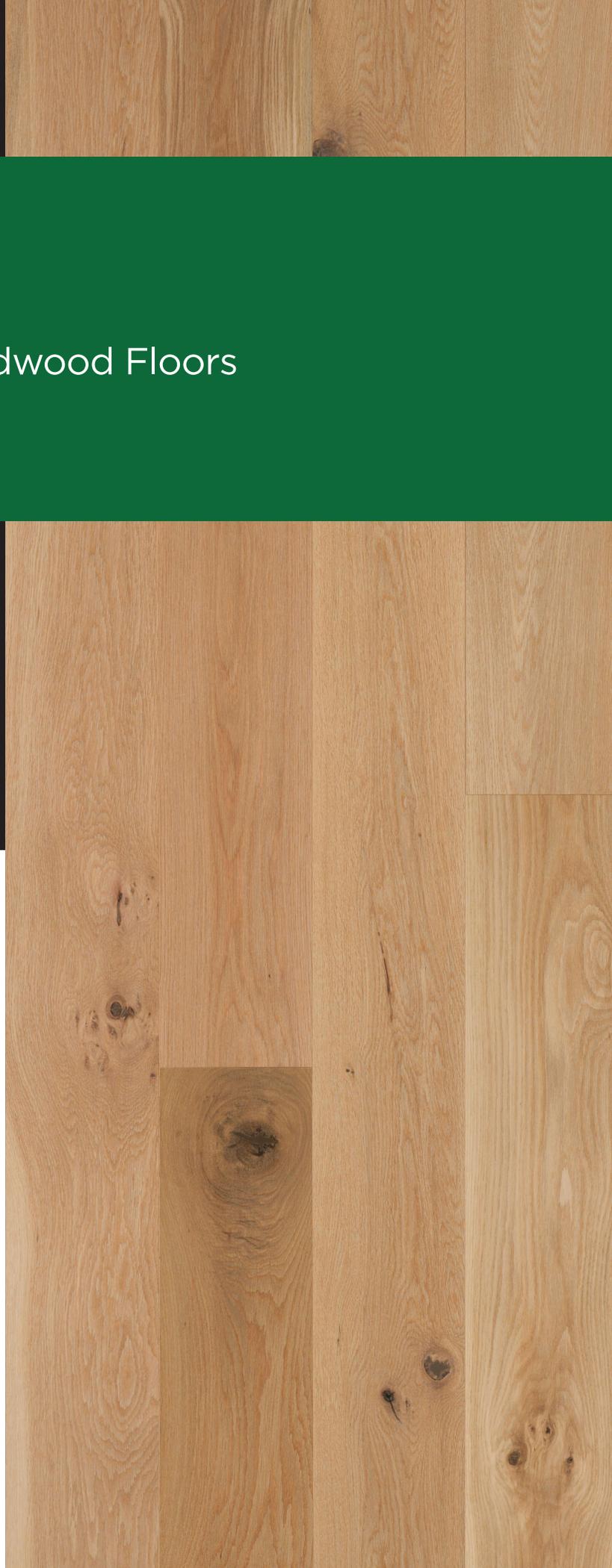


Installation Guide

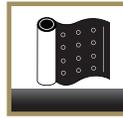
TruBalance Prefinished Hardwood Floors



Please read all instructions carefully before installation. Improper installation may void the warranty.

PRODUCT USE

Recommended Installation



Mirage TruBalance products may either be glued down over plywood/OSB or concrete subfloor or simply nailed/stapled down over plywood/OSB floor, using a specially designed hardwood floor stapler or nailer or floated over a recommended underlayment. However,

Herringbone and Chevron flooring are exceptions—please refer to the Herringbone Installation Guide and Chevron Installation Guide in the Guides and Support section at miragefloors.com for specific installation recommendations.

Most wood species, with the exception of Hickory, can also be installed over subfloor equipped with radiant heat systems.

INSTALLER AND OWNER RESPONSIBILITY

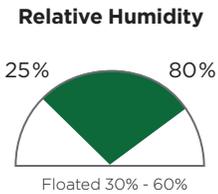
Prior to installation, the installer and owner must ensure that the work environment and subfloors meet or even exceed minimal specifications listed in this installation guide.

Standard trade practice allows for up to a 5% margin of error for natural imperfections and manufacturing defects. Prior to installation, the installer and owner should conduct a final inspection of grade, color, manufacturing and finish quality of boards to ensure that the floor conforms to purchased product.

Once installed, every board is considered as having been accepted by installer and owner, even if owner is absent at time of installation. When ordering hardwood flooring, it is recommended to add to the square footage needed an allowance for cutting waste.

WARRANTY

Structural lifetime warranty



Finish warranty

<p>STRUCTURE</p> <p>STRUCTURAL LIFETIME LIMITED WARRANTY</p> <p>ALL OUR FLOORS COME WITH A STRUCTURAL LIFETIME LIMITED WARRANTY.</p>	<p>DURAMATT</p> <p>DurAlive Cashmere*</p> <p>35-YEAR WARRANTY</p> <p>ON FINISH WEAR-THROUGH FOR RESIDENTIAL APPLICATIONS.</p> <p>3-YEAR WARRANTY</p> <p>AGAINST WEAR OF FINISH FOR LIGHT COMMERCIAL APPLICATIONS.</p>	<p>nanolinx COMMERCIAL</p> <p>5-YEAR WARRANTY</p> <p>AGAINST WEAR OF FINISH FOR COMMERCIAL APPLICATIONS.</p> <p>EXCLUDING HEAVY COMMERCIAL USE.</p>
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Cashmere is a registered trademark used under license.

To be eligible to fill a warranty claim, surface wear must be readily visible and cover at least ten percent (10%) of the total flooring surface area.

Disclaimer

- The nature of Character grade flooring explains the appearance of certain characteristics visible at time of purchase or developing over time, including pronounced color variations, open and closed knots, mineral streaks, cracks, surface holes, and other character or milling marks are part and parcel of this effect.
- Some distinctive marks may become prominent over time due to changes in the environment.

For more information on the warranty, consult the [Mirage Warranty Certificate](#) on our website miragefloors.com. In the event of a discrepancy between the information in the Installation Guide and the Mirage Warranty Certificate, the latter shall prevail.

MIRAGE*, Technical Service
 1255, 98th Street, Saint-Georges (Quebec) Canada G5Y 8J5
 Tel.: 418-227-1181 - 800-463-1303 - Fax: 418-227-1188
 Or by email: technical@miragefloors.com



*MIRAGE, our renewed corporate brand, embodies the quality and care found in our prestigious brands such as Mirage Hardwood Floors, Vintage Hardwood Flooring, Ten Oaks and Alexandra Hardwood Flooring. Our legal entity is called Boa-Franc G.P.

RECOMMENDED TOOLS, MATERIAL AND ACCESSORIES

- Vacuum cleaner or broom
- Scraper
- Leveling bar
- Level
- Leveling compound (optional)
- #20 grit sandpaper (optional)
- Wood and/or concrete moisture meter
- Miter saw
- Handsaw
- Security glasses
- Trowel
- Claw hammer
- Nail punch
- Pry bar
- Square 16" x 24"
- Measuring tape
- Chalk line
- Reversing tongues (optional)
- Repair Kit
- *KLEAN by mirage* (maintenance kit)



GLUED DOWN INSTALLATION

For guidance on recommended adhesives that meets the MIRAGE performance criteria, refer to our [Technical Newsletter #23](#) in the Guides and support section of our website at miragefloors.com.

- Trowel recommended by adhesive manufacturer as tooth size is important for ensuring optimal strip adherence to subfloor.
- 2" (50 mm) concrete nails and 1" x 3" x 8' (25 mm x 75 mm x 245 cm) laths for first-row holding block.
- 3M blue adhesive tape or easily removable equivalent.
- 100 to 150 lbs (45 to 68 kg) pound roller.
- Remover towels for hand and tool cleaning.
- Adhesive cleaner.
- Recommended underlayment if necessary. Refer to [Technical Newsletter #26](#) in the Guides and support section at miragefloors.com.



NAILED/STAPLED DOWN INSTALLATION

Refer to our [Technical Newsletter #30](#) to learn criteria for selecting fasteners (nails and staples) in the Guides and support section at miragefloors.com. For details on the specific requirements for various widths, especially those **7-3/4" and wider, which require the mandatory use of glue assist** with nailed/stapled down installation, refer to our [Technical Newsletter #36](#) in the Guides and support section at miragefloors.com.

- Pneumatic staplers/nailers.
- Power drill and 3/32" (2 mm) bit.
- Finishing nails: 2-1/2" po (63 mm).
- Flooring screws.



FLOATED INSTALLATION

Products that are 7-3/4" and wider require a glued-down installation; **a floated installation is prohibited.**

Refer to our [Technical Newsletter #20](#) in the Guides and support section at miragefloors.com.

- Recommended underlayment.
- Use a wood glue with a sufficiently thick consistency that retains flexibility for optimal adhesion. Consider the following options:
 - Carpenter's glue of a trusted brand that meets the CSA 0112.4 standard (avoid using multi-purpose glue).
 - Type 2 wood glue (such as carpenter's glue, enhanced PVA glue, etc.). Please refer to adhesive manufacturer for detailed mechanical properties.
- Waterproof adhesive tape (3M tape).

Note: MIRAGE cannot be held responsible for any floor damage resulting from use of inadequate fasteners or adhesive, differing from those recommended. All the installation material must be at the recommended room temperature prior to the installation ± 72 °F (± 22 °C).

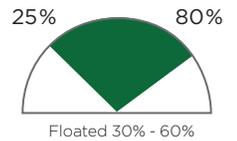
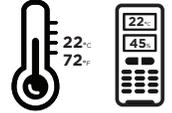
HANDLING AND ACCLIMATIZATION

Prefinished hardwood floor installation **requires a little more time and precaution than unfinished flooring**; handle with care to avoid board surface and finish damage.

PRE-INSTALLATION CHECK LIST

Basic requirements

- Hardwood floor installation should be the very last step of any construction or renovation project.
- Prior to installation, heating system must be in operation, and room temperature must have been maintained at $\pm 72^{\circ}\text{F}$ ($\pm 22^{\circ}\text{C}$) for at least one week.
- To avoid any moisture-related damages, subfloor must be dry and basement well ventilated.
- For below grade installation, ensure that foundations, concrete slab or any adjacent objects are thoroughly leakproof.
- Relative humidity must be maintained around $\pm 45\%$ at all times. For glued down and nailed/stapled down installation, relative humidity must always be maintained within a range of 25% and 80%. For floated installation, it must be maintained between 30% and 60%.



Radiant heat performance:

- Refer to [Technical Newsletter #31](#) in the Guides and support section at miragefloors.com for recommendations on radiant heat systems.

Subfloor moisture level check

Wooden subfloor: **Wooden subfloor moisture reading must not exceed 12%** and differential between boards and subfloor must be less than 4%. Wood moisture meters are available from your Mirage Authorized dealer. If moisture reading is too high, postpone installation, find moisture source and correct it if needed. Raise heat and increase ventilation until proper conditions are met.



Concrete subfloor: Prior to installation, concrete subfloor should preferably be 45 to 90 days old, **30 days being the absolute minimum**. Concrete moisture meter must be used to check subfloor moisture level; if the result exceeds 3.5%, calcium chloride test must be performed. **The concrete subfloor moisture content must not exceed 3 lbs / 1,000 sq. ft. /24 hours**. If the reading exceeds 3 lbs, use a complete moisture-proofing system (sealer and adhesive) compatible with the selected adhesive. Please refer to the manufacturer's documentation for the selected products for information on their warranty, product limitations, and installation recommendations.

Product Temperature

Note: Ensure boxes reach room temperature if necessary. Do not open boxes or remove plastic wrap before starting installation.

Owner and installer are solely and jointly responsible for pre-installation subfloor moisture level check and must ensure that all conditions and/or specifications listed in this guide have been thoroughly met prior to installation of hardwood floor.

SUBFLOOR PREPARATION

- Stapled down installation requires minimum 5/8" (16 mm) plywood, or 23/32" (18 mm) OSB chipboard subfloor.
- **Sound:** Wooden subfloor must be securely screwed down to joists to prevent any movement or squeaks. Thoroughly inspect and replace existing floor or subfloor that shows evidence of water damage or structural weakness. Snow and rain during construction could affect negatively some properties especially on OSB. Concrete subfloor must be just as structurally sound before installing hardwood floor and should be rated with a minimum compressive strength of 3000 psi.
- **Flat:** The subfloor surface must be flat. For glue down or nailed/stapled installation, the maximum tolerance is 3/16" (5 mm) over a 10 ft (3 m) span. For floated installation, the maximum tolerance is 3/32" (2 mm) over a 7 ft (2 m) span. To check the surface, use a rigid straight ruler and continuously measure (at all points) the entire subfloor in all directions (360 degrees). Correct deviations by flattening high points with a suitable tool and filling in low points with an appropriate filler to meet the required tolerances.
- **Level:** The subfloor must be level. Any deviation should be minimal, barely noticeable to the naked eye. Some standards suggest a maximum deviation of 1/2" (13 mm) over a 10 ft (3 m) span. It is important to note that leveled installation of items such as cabinets, decorative frames, and windows impact the visual perception of levelness and the overall visual appeal for the end user.
- **Dry:** Subfloor must be dry and within moisture reading specs.
- **Clean:** Vacuum and free subfloor from any debris or obstacles such as cleats, nail heads, dried glue or any other material.

PREPARATION BEFORE FLOORING INSTALLATION

- Sketch installation to avoid surprises.
 - Decide starting point or wall.
 - Decide layout angle.
- Remove any baseboard, doorsill and old floor covering if necessary.
- Trim bottom of the doorstop with handsaw to insert boards underneath.
- To enhance the floor's look, use several boxes at once and mix boards to ensure variations in color, shade and length.
- Start by selecting the boards that will best go with the transition moldings.



GLUED DOWN INSTALLATION INSTRUCTIONS (Illustration #1)

Wear security equipment and maintain a safe environment at all times.

Step 1: Starting point

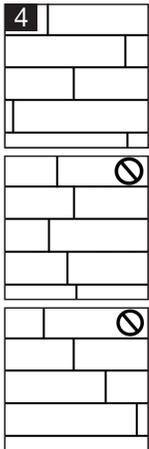
- Using a chalk line, make a starting mark **A** parallel to starting wall **B**. The distance from the parallel wall and the starting line is based on the board widths. See the table below.

Board widths	Distance between wall and starting line
3-5/16" (84 mm)	30" (762 mm)
4-7/16" (112 mm)	31-1/8" (790 mm)
5" (127 mm)	30-1/4" (768 mm)
6-1/2" (165 mm)	32-11/16" (831 mm)
7" (177 mm)	35-1/8" (891 mm)
7-3/4" (197 mm)	31-1/4" (794 mm)
9" (226 mm)	35-13/16" (910 mm)

- Working area **C** between starting wall and starting line, will be last floor section laid. Above measurements account for ideal fit, so that it will not be necessary to rip saw finishing board row, while allowing for required 1/4" (6 mm) expansion **D** gap.
- Holding block **E** must be nailed down alongside starting line inside working area to secure starting row in place.

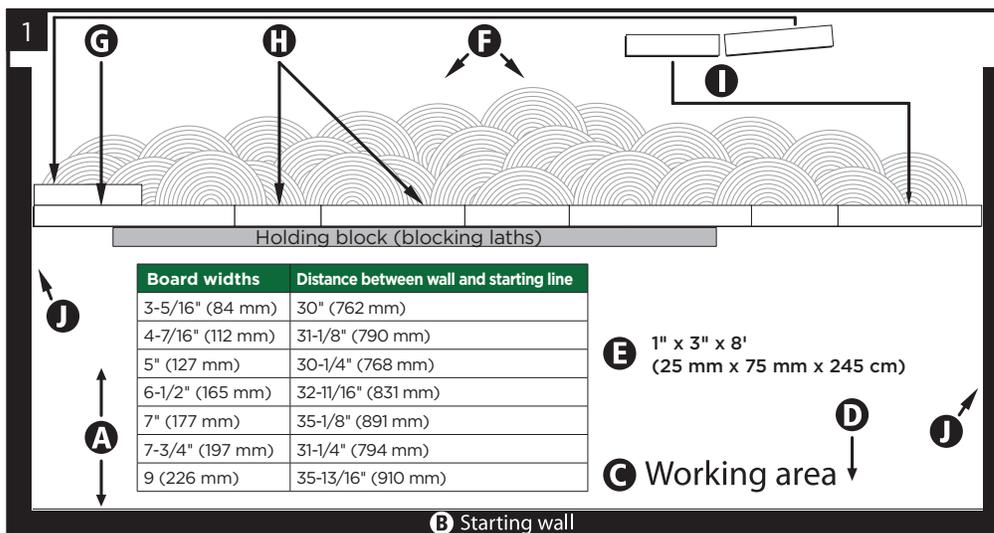
Step 2: Adhesive application (Technical Newsletter #23)

- For optimal adhesive application, work trowel **F** in circular motion at 45° angle; adhesive left on floor by trowel teeth is just the right amount. (One gallon covers about 45 to 50 sq. ft. depending on manufacturer's specs. See container.)
- Note: Only cover surfaces that can be reasonably laid in two hours, since adhesive may dry too quickly and not stick properly. Reaction time may vary from one adhesive to another and may also be affected by room temperature and relative humidity (see manufacturer's specs on container).



Step 3: Board laying

- It is very important that installation be started straight and square.
- Carefully select boards. As needed, cut boards that appear different or move them to a less visible location.
- Laying from working area, leave 1/4" (6 mm) gap alongside left wall which is perpendicular to starting line, prop tongue side against holding block and press first board **G** down into adhesive.
- Install subsequent boards, **H** proceeding from left to right until ready to trim first-row end board.
- To minimize trim waste, select board long enough **I** for row end, so that remaining trimmed end may be used to start subsequent row. Leave 1/4" (6 mm) gap at end of each row **J**.
- First board of second row must be at least 6" (150 mm) shorter or longer than that of first row. Cross joints must be staggered by at least 6" (150 mm) from one row to the next. Avoid lining the joints up or having them follow too regular a pattern (Illustration #4).
- Insert tongue end into board groove, lower board as close as possible to adjacent one, slide tongue into groove and press board down.
- Proceed the same way for subsequent rows.
- Once main part of floor has been laid, remove blocking laths from working area and complete installation in the same manner. Use pry bar to fit last row of boards into place and be sure to leave minimum required 1/4" (6 mm) expansion gap.



4 | GLUED DOWN INSTALLATION

Notes:

- When used, acoustic underlayment must be glued down over subfloor prior to gluing down boards using the same recommended adhesive ([Technical Newsletter #26](#)).
- Extremely precise board milling may require use of tapping block for better tongue and groove fit.
- Row to row installation requires that no glue seeps into grooves at any time for perfect tongue and groove fit.
- Avoid getting adhesive on hands to minimize clean up. **Wipe any adhesive from floor right away**, using solvent and towels. Use paint thinner or lighter fluid to remove stubborn adhesive spills.
- To maintain boards in place and avoid board movement causing gapping during installation, use 3M blue adhesive tape.
- For better board contact with adhesive, it is recommended to use adhesive manufacturer's recommended pound weight roller (usually 100 to 150 lbs / 45 to 68 kg required) over laid floor section **before adhesive dries**. Use roller's protective padding to avoid damage to floor surface.

Step 4: Accessories installation

- If applicable, install transition moldings, stair nosings and reducers.
- If applicable, reinstall baseboards and quarter rounds, making sure to nail them only to walls and not to floor (to allow free floor movement).

Step 5: Post-installation

- Wait 24 hours before moving furniture back into place or allowing heavy traffic.
- Set a few boards aside in case of future repairs.
- When installation is completed, vacuum floor thoroughly, spray light mist of *Klean by mirage* Hardwood Floor Cleaner on terry cloth mop and clean floor.

For more information on floor care, consult the **Mirage's Residential Maintenance** on our website miragefloors.com.





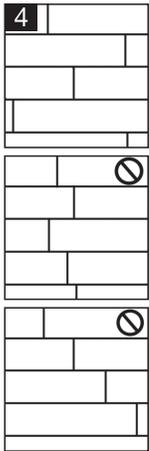
NAILED/STAPLED DOWN INSTALLATION (Illustrations #2 and #3)

Wear security equipment and maintain a safe environment at all times.

Step 1: Starting point

- Using a chalk line, make a starting mark **A** parallel to starting wall **B**. The distance from the parallel wall and the starting line is based on the board widths. See the table below.

Board widths	Distance between wall and starting line
3-5/16" (84 mm)	3-9/16" (90 mm)
4-7/16" (112 mm)	4-5/8" (118 mm)
5" (127 mm)	5-1/4" (133 mm)
6-1/2" (165 mm)	6-3/4" (171 mm)
7" (177 mm)	7-1/4" (183 mm)
9" (226 mm)	9-1/4" (232 mm)



Step 2: Board laying

- It is very important that installation be started straight and square.
- Carefully select boards. As needed, cut boards that appear different or move them to a less visible location.
- Align first board tongue side with starting **A** line, grooved side facing starting wall; leave 1/4" (6 mm) gap from right side **E** wall which is perpendicular to starting line. Drill and nail board vertically **C** as close to wall as possible to hide nail heads when baseboards and quarter rounds **D** are in place. Install subsequent boards from right to left until ready to trim row end board.
- To minimize trim waste, select board long enough for row end, so that remaining trimmed end may be used to start subsequent row. Leave 1/4" (6 mm) gap at end of each row **E**.
- First board of second row must be at least 6" (150 mm) shorter or longer than that of first row. Cross joints must be staggered by at least 6" (150 mm) from one row to the next. Avoid lining the joints up or having them follow too regular a pattern (Illustration #4).
- Since wall proximity prohibits use of stapler, use finishing nails approximately every 4" (100 mm) alongside tongue **F** for first few rows, and punch nail heads down.
- Subsequent rows must be installed the same way, using the stapler. Staple boards every 4 to 6" (100 to 150 mm), and must have a fastener (staple) between 2 and 3" (50 and 75 mm) on the ends of each board.
- Because of wall proximity, installation of last 4 or 5 rows is identical to installation of first few rows. You might have to rip-saw last row of boards to leave required 1/4" (6 mm) gap **B** alongside finishing wall.

Note: Extremely precise board milling may require use of tapping block for better tongue and groove fit.

Step 3: Accessories installation

- If applicable, install transition moldings, stair nosings and reducers.
- If applicable, reinstall baseboards and quarter rounds, making sure to nail them only to walls and not to floor (to allow free floor movement).

Step 4: Post-installation

- Set a few boards aside in case of future repairs.
- When installation is completed, vacuum floor thoroughly, spray light mist of *Klean by mirage* Hardwood Floor Cleaner on terry cloth mop and clean floor.

For more information on floor care, consult the **Mirage's Residential Maintenance** on our website miragefloors.com.

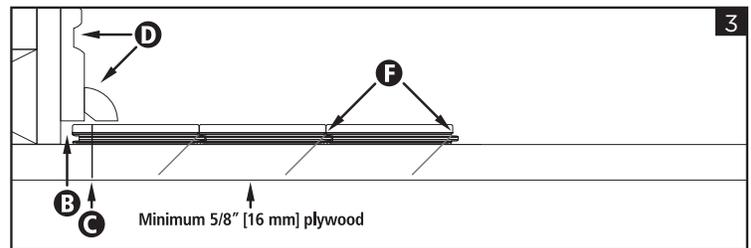
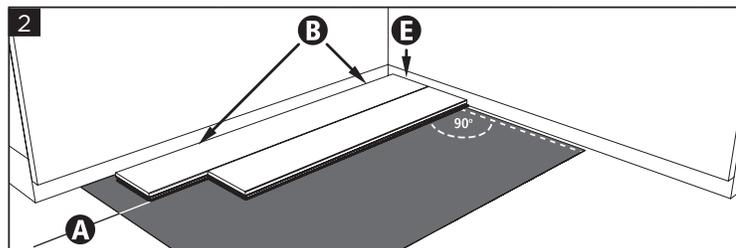


PNEUMATIC STAPLER TIPS

Warning

To avoid damaging boards during installation:

- Ensure that stapler/nailer base plate remains clean and free from nicks at all times.
- When stapler/nailer is not being used, place on piece of plywood or cardboard, but never directly onto floor.
- Ensure that stapler/nailer base sits flat on floor and plumb against tongue before stapling board down.
- Check base plate condition and proper operation of nailer/stapler regularly.**
- Set and check air pressure regularly on subfloor types requiring specific air pressure settings.





FLOATED INSTALLATION

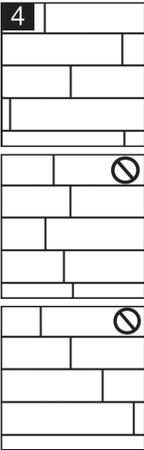
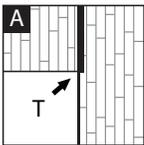
Step 1: Underlayment ([Technical Newsletter #20](#))

The recommended underlayment is required when Mirage TruBalance is floated. For more details, please contact our Technical Service Department at 1-800-463-1303.

- Cover all of the subfloor as well as the base of the walls (approx. 2" (51 mm)) with the recommended underlayment. Place the underlayment in the opposite direction to the boards, which is to be installed without overlapping.
- Use waterproof tape to attach the strips on the each side.
- Consult the documentation that comes with the recommended underlayment for installation instructions.

Step 2: Starting point

No part of the floor must be attached to any surface. A minimum 1/2" (13 mm) space must be left for expansion around all room fixtures (walls, moldings, columns, pipes, steel door frames, kitchen island cabinets, heavy objects, etc.). Attach buffers to each wall to ensure enough space is left.



If a room exceeds 40' (12 m) width or 66' (20 m) length, use a "T" molding to increase the space required for the expansion gap. In irregularly shaped spaces (L-, F-, T-, or U- shaped), use a "T" molding for intersections (Illustration A).

- While facing the wall, start on the left corner leaving a gap at both walls with the tongue facing you. Leave a 1/2" (13 mm) gap between the wall and the edge of the board.
- Side joints only should be glued using recognized carpenter glue meeting CSA 0112.4 or type 2 wood adhesive. No glue should ever be applied to end joints. (Please refer to the adhesive manufacturer for the mechanical properties of the glue). Apply the glue on the top corner of inside groove only. Flip the board, as shown on the picture, to make it easier.
- Moving right, put the next board in place. Sliding vertically, insert the end tongue into the end groove of the first board. Continue in this way until it is time to cut the last board to finish the first row.
- The board chosen to finish the first row should be long enough to start the second row with the trimmed end, so as to minimize trim waste.
- Leave a gap for the board to expand in all directions.
- Start the second row with the trimmed end of the board. It should be at least 6" (150 mm) longer or shorter than the board used in the first row.
- Cross joints must be staggered by at least 6" (150 mm) from one row to the next. Avoid lining the joints up or having them follow a too regular pattern (Illustration #4).
- It is recommended to use 3M blue tape to hold the flooring in place (X pattern to prevent shifting) until the adhesive has completely dried. Straps can also be used to hold the flooring in place.
- **Any excess glue should be cleaned off the surface of the floor immediately as flooring is being installed.**

- As the floor can still be moved after the third row has been installed, it is recommended that you measure and realign with buffers, if necessary.
- The boards on the last row must be at least 1-1/2" (38 mm) wide. Remember to leave a gap for the expansion space.

Step 3: Accessories installation

- If applicable, install the transition moldings, stair nosings and reducers.
- Remove the buffers.
- Reinstall the moldings and quarter rounds as required, through the underlayment. Nail them to the walls and not to the floor, so that the floor can move naturally.
- Cut the underlayment that goes beyond the moldings.

Step 4: Post-installation

- Set a few boards aside in case future repairs are required.
- When installation is completed, vacuum the floor thoroughly, spray a light mist of *Klean by mirage* Hardwood Floor Cleaner on a terry cloth mop and clean the floor.

For more information on floor care, consult the **Mirage's Residential Maintenance** on our website miragefloors.com.

