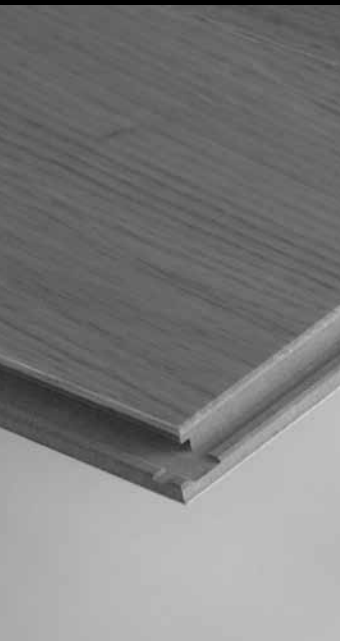


Installation Guide

Glueless Engineered Prefinished Hardwood Floors

VERSION FRANÇAISE AU VERSO

m i r a g e[®]
Lock



1 BASICS

mirage

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

PRODUCT USE

Mirage Lock engineered products can be installed above, on or below grade. They may be installed over plywood/OSB, concrete subfloor or over subfloor equipped with radiant heat system. Mirage Lock floors can also be installed over existing flooring such as linoleum and asphalt, vinyl asbestos, cushion vinyl, rubber, marble, or ceramic tile as long as these materials meet the requirements and recommendations set out in this guide. Lock floors **should never** be installed on carpeting or any other soft floor covering.

Glueless installation requires the Mirage recommended waterproof acoustic membrane. You may use the Ulti-Mat membrane or refer to the technical newsletter #20 at miragefloors.com in the Guide and Support section.

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, any 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

Boa-Franc warrants, to the original purchaser, that the surface finish on its Mirage prefinished hardwood floor **will not wear through** or separate from the wood for a period of:

- **Twenty-five [25] years** from the date of purchase, when used under **normal residential traffic conditions**;
- **Three [3] years** from the date of purchase, when used under **light commercial conditions**;

Surface wear must be readily visible and cover at least ten percent [10%] of the total flooring surface area.

For more information on the warranty, consult the Mirage Warranty Certificate. In the event of a discrepancy between the information in the Installation Guide and the Mirage Warranty Certificate, the latter shall prevail.

FLOOR CARE PREVENTION TIPS

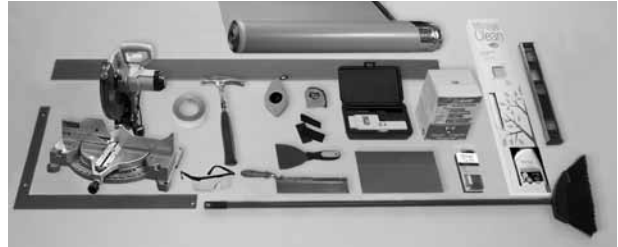
For information on floor care prevention, consult Mirage's Residential Maintenance and Warranty Certificate on our website www.miragefloors.com.

Boa-Franc, G.P., Technical Service Department
1255, 98th Street, Saint-Georges [Quebec] Canada G5Y 8J5
Tel.: 418-227-1181 – 800-463-1303 – Fax: 418-227-9360
Or by e-mail: technical@boa-franc.com



2 TOOLS

mirage



RECOMMENDED TOOLS, MATERIAL AND ACCESSORIES

- Vacuum cleaner or broom
- Scraper
- Leveling bar
- Level
- Leveling compound [optional]
- #20 grit sand paper [optional]
- Wood and/or concrete moisture meter
- Buffers
- Ulti-Mat or recommended membrane [See technical newsletter #20 in the Guide and Support section at miragefloors.com]
- Waterproof adhesive tape
- Miter saw
- Handsaw
- Claw hammer
- Square 16" x 24"
- Measuring tape
- Chalk line
- Security glasses
- *Mirage Touch* [touch up kit]
- *Mirage Clean* [maintenance kit]

Prefinished accessories such as reducers, stair nosing, etc. are available from your Mirage Authorized dealer.

Notes: Boa-Franc cannot be held responsible for any floor damage resulting from use of inadequate tools or adhesive.

All the installation material must be at the recommended room temperature prior to the installation ± 72 °F [± 22 °C].

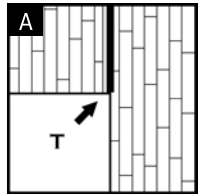
3 PREVENTATIVE MEASURE

EXPANSION SPACE REQUIRED

Wood needs a certain amount of room to expand and contract with variations in humidity. **No part of the floor must be attached to any surface. A minimum 1/2" [13 mm] space must be left for expansion [see reference table below] around all room fixtures** [walls, moldings, columns, pipes, steel door frames, heavy objects, etc.]. Attach buffers to each wall to ensure enough space is left.

If a room exceeds the dimensions in the reference table below, 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].



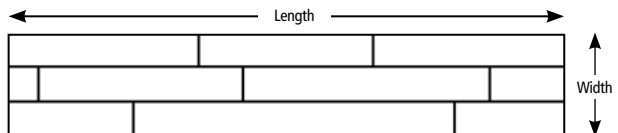
Reference Table

Expansion space required	Maximum room width	Maximum room length
1/2" [13 mm]	Up to 26' [8 m]	Up to 52' [16 m]
5/8" [16 mm]	Up to 33' [10 m]	Up to 66' [20 m]
3/4" [20 mm]	Up to 39** [12 m]	Up to 79** [24 m]

* 39' is the absolute maximum width possible.

** 79' is the absolute maximum length possible.

To establish the expansion space required, use either the length or width, whichever is longer.



MANUTENTION AND ACCLIMATIZATION

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

Acclimatization: Keep sealed boxes of wood in room where flooring is to be installed for at least 24 hours before installation. This will give the wood time to acclimatize to the recommended indoor conditions.

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 ± 72 °F [± 22 °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 leak proof.
- **Relative humidity must be maintained around 45%** [between 40 and 60%] at all times.
- **Radiant heat performance:**
 - The radiant heat system must have been tested and in operation for a few weeks prior to installation.
 - The wood surface temperature must never exceed 80 °F [27 °C].
 - If the radiant heat pipes are visible or exposed in the subfloor, you must cover them with 3/8" [10 mm] plywood to spread heat more evenly.

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; in case of positive reading, calcium chloride test must be performed. **The concrete subfloor moisture rate must not exceed 7 lbs / 1,000 sq. ft. / 24 hours**. Never install a hardwood floor if the calcium chloride test reveals humidity levels of more than 7 lbs / 1,000 sq. ft. / 24 hours.

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

- Glueless installation requires minimum 5/8" [16 mm] plywood, or 3/4" [19 mm] approved 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. Concrete subfloor must be just as structurally sound before installing hardwood floor.
- **Flat:** Subfloor surface must be flat and maximum tolerance is 3/32" [2 mm] per 7' [2 m]. If necessary, flatten down any irregularities, using #20 grit paper, and fill any uneven spots with leveling compound.
- **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

- Sketch installation to avoid surprises.
 - Decide starting point or wall.
 - Decide layout angle.
 - Boards in the last row must be at least 1-1/2" [38 mm] wide to be attached properly. If the last row is to be less than 1-1/2" [38 mm] wide, you must reduce the width of the first row so that both the first and last rows meet this minimum requirement.
- Remove any baseboard, doorsill and old floor covering if necessary.
- Trim bottom of the doorstop with handsaw to insert boards underneath.

HELPFUL ADVICE

It is very important to start off straight and square. Use the chalk line to draw a line parallel to the starting wall and perpendicular to the adjacent wall.

Leave the boards in their original packaging until ready for use.

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.

Never force boards into place. Clear away or remove anything that could get in the way of the tongue.

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

PROCEDURE

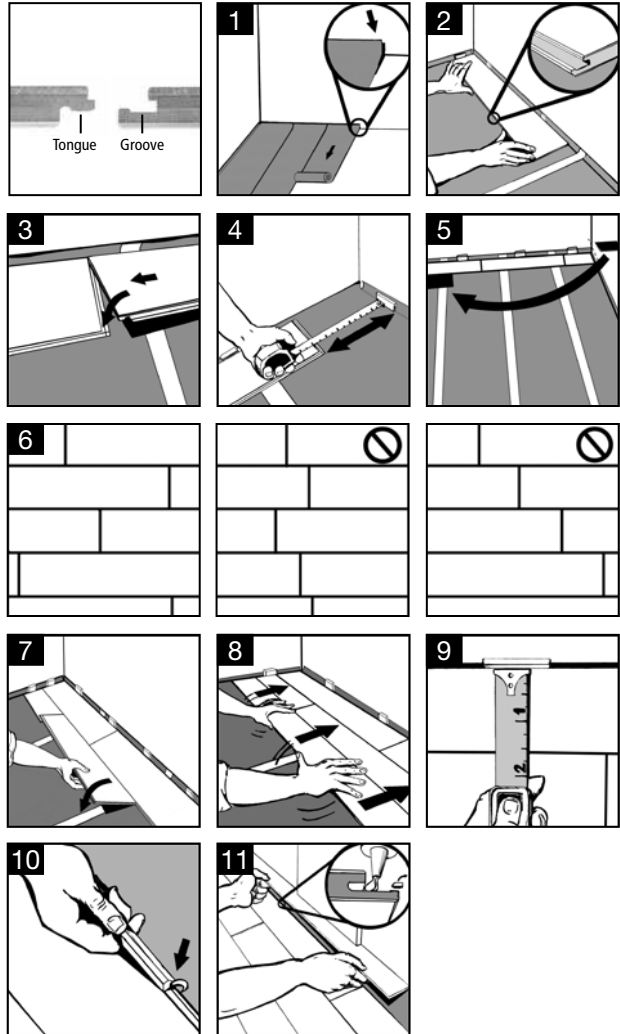
- Cover all of the subfloor as well as the base of the walls [approx. 2" (51 mm)] with the recommended membrane. Place the membrane in the opposite direction to the boards, which is to be installed without overlapping. The recommended membrane includes a self-adhesive flap. Use waterproof tape to attach the strips on the short side. **[Consult the documentation that comes with the recommended membrane for installation instructions.]**
- While facing the wall, start on the left corner leaving a gap at both walls with the groove facing you. Leave a 1/2" [13 mm] gap between the wall and the edge of the board. **This gap will be covered by a molding attached to the wall rather than the floor.**
- Moving right, put the next board in place. Moving 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 too regular a pattern.
- Insert the tongue at the side of the board into the groove of the first row at a 45° angle. Line up the far left side, set the board down and apply slight pressure to lock in place. Install subsequent rows in the same way.
- 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.
- If an obstacle prevents the last board sliding into place, cut the latch of the groove's locking system with a chisel.
- Apply wood glue to the groove and insert the last board.

Finishing touches

- If necessary, install the transition moldings, stair nosings and reducers.
- Remove the buffers.
- Reinstall the moldings and quarter rounds as required, through the membrane [Illustration 12]. Nail them to the walls and not to the floor, so that the floor can move naturally.
- Cut the membrane that goes beyond the moldings.

Maintenance

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

**12 ATTACHING MOLDINGS**

Choose a molding wide enough to cover the required expansion space and overlap at least 3/8" [10 mm]. The molding must be attached to the wall to enable the floor to shift naturally. It is very important to emphasize that the molding covering the expansion joint must be attached to the wall, unlike the "T" molding, which must be attached to the floor.

