

Installation Guide

Lock Prefinished Hardwood Floors

Installation systems

2G 5G

Patent protected
www.valinge.se/patents
ID: 620011368

mirage™
Lock



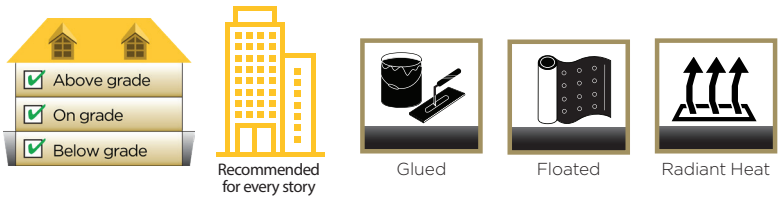


1 | INTRODUCTION

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

PRODUCT USE

Recommended Installation



Mirage Lock products with 2G™ angling system (on the long-side of the board of all widths) and 5G® Fold Down system (on the short-side of the board of 6-1/2" width) 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 hardwood flooring, 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 mem-brane. You may use recommended membrane or refer to the Technical Newsletter #20 at **mirage**floors.com in the Guides and Support section. While in glued down method, we refer to Technical Newsletter #33 for a recommended adhesive and Technical Newsletter #34 for recommended membrane.

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.

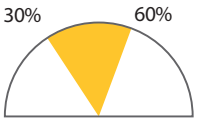
Standard trade practice allows for up to a 5% margin of error for natural imperfections and manufacturing defects. Prior to installation, the installer and owner should conduct a final inspection of grade, color, manufacturing and finish quality of boards to ensure that the floor conforms to purchased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

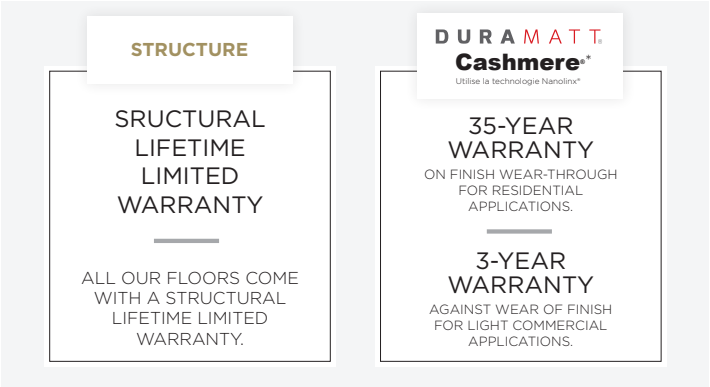
WARRANTY

Structural lifetime warranty

Relative Humidity



Finish warranty



*Cashmere®is a registered trademark used under license.

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
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2G™ and 5G® are patented technologies invented by Välinge Innovation AB. The 2G™ and 5G® word marks and logos are registered trademarks owned by Välinge Innovation AB and any use of such marks is under license.

*MIRAGE, our renewed corporate brand, embodies the quality and care found in our prestigious brands such as Opulence Hardwood Flooring, 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
- Buffers
- Recommended membrane (See Technical Newsletter #20 in the Guides and Support section at **mirage**floors.com)
- *UnLocKey tool*
- Waterproof adhesive tape
- Miter saw
- Handsaw
- Claw hammer
- Square 16" x 24"
- Measuring tape
- Chalk line
- Security glasses
- Dust Mask (using a miter saw)
- Repair Kit
- *KLEAN by mirage* (maintenance kit)

For a 6-1/2" width Lock floor installation, have in hand the UnLocKey tool available at a Mirage authorized dealer.

Prefinished accessories such as reducers, stair nosings, etc. are available from your Mirage authorized dealer.



GLUED DOWN INSTALLATION

For guidance on recommended adhesives that meets the MIRAGE performance criteria, refer to our Technical Newsletter #33 in the Guides and support section of our website at **mirage**floors.com.

- Trowel recommended by adhesive manufacturer as tooth size is important for ensuring optimal strip adherence to subfloor.
- 100 to 150 lbs (45 to 68 kg) pound roller.
- Remover towels for hand and tool cleaning.
- Adhesive cleaner.
- Recommended membrane if necessary. Refer to Technical Newsletter #34 in the Guides and support section at **mirage**floors.com.

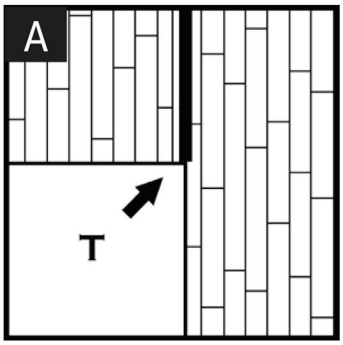
Note: MIRAGE cannot be held responsible for any floor damage resulting from use of inadequate fasteners or adhesive, differing from those recommended. All the installation material must be at the recommended room temperature prior to the installation ± 72 °F (± 22 °C).

EXPANSION SPACE REQUIRED FOR FLOATED INSTALLATION

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 following reference table) 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 the dimensions in the reference table, 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

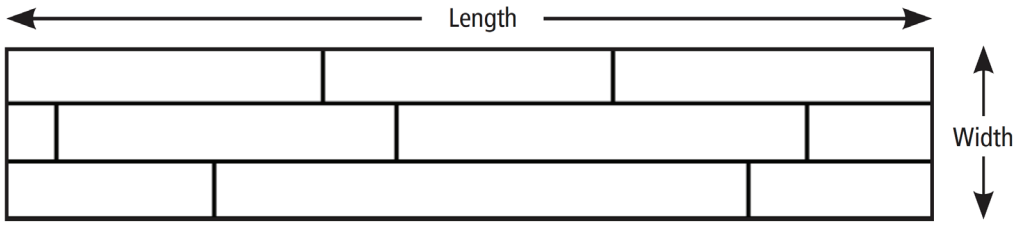
Expansion space required	Maximum room width	Maximum room length
1/2" (13 mm)	Up to 26' (8 m)	Up to 52' (16 m)
5/8" (16 mm)	Up to 33' (10 m)	Up to 66' (20 m)
3/4" (20 mm)	Up to 39' * (12 m)	Up to 79' ** (24 m)

* 39' is the absolute maximum width possible.
** 79' is the absolute maximum length possible.

EXPANSION SPACE REQUIRED FOR FLOATED INSTALLATION

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 1/4" (6 mm) space must be left for expansion around all room fixtures (walls, moldings, columns, pipes, steel door frames, etc.). Attach buffers to each wall to ensure enough space is left.

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

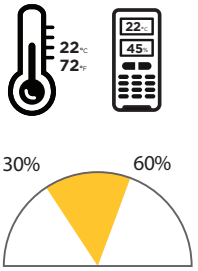


MANUTENTION AND ACCLIMATIZATION

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% at all times.



Radiant heat performance:

- Refer to Technical Newsletter #31 in the Guides and support section at **mirage**floors.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 exceed 3,5%, 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.

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.



4 | PREPARATION

SUBFLOOR PREPARATION

- Glueless 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. Concrete subfloor must be just as structurally sound before installing hardwood floor.
- **Flat**: The subfloor surface must be flat. For glue down 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 recommended specs.
- **Clean:** Vacuum and free subfloor from any debris or obstacles such as cleats, nail heads, dried glue or any other material.
- For glued down, wooden subfloor or concrete, if using a membrane please follow criteria from Technical Newsletter #34 and Technical Newsletter #33 in the Guides and Support section at miragefloors for the adhesive.

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 saw to insert boards underneath.

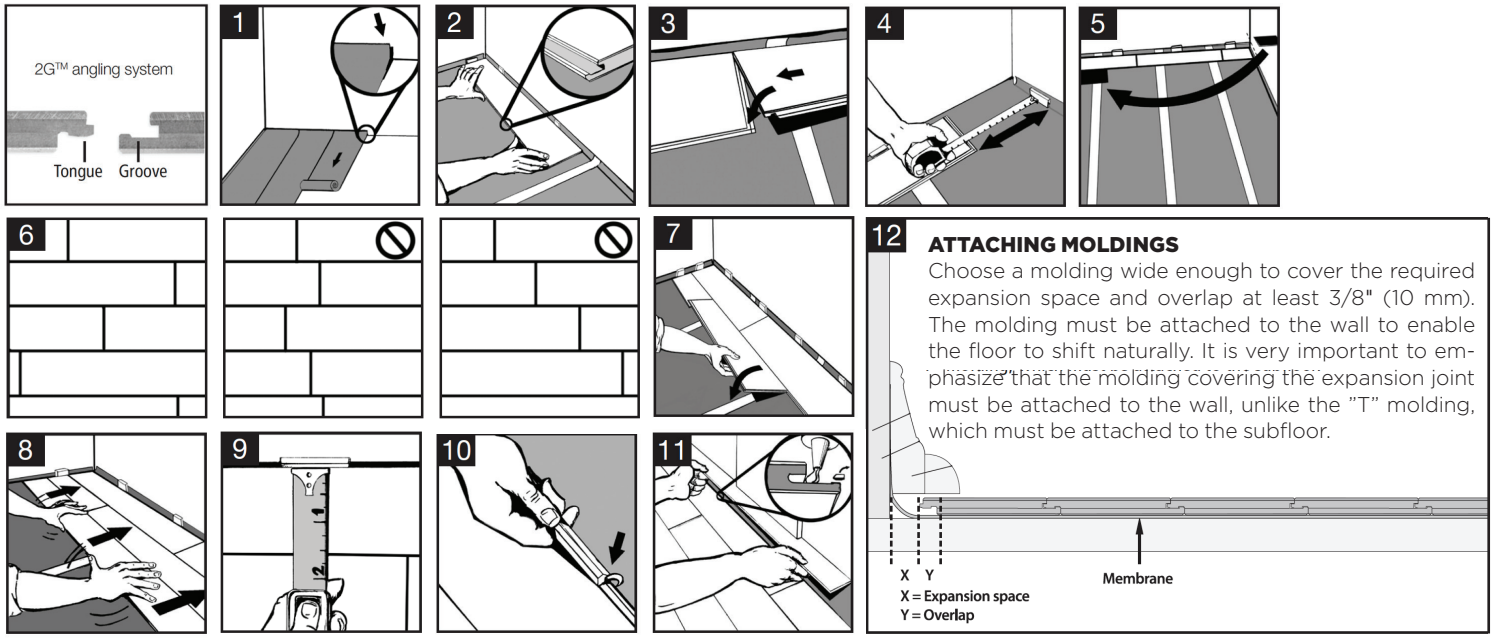
5 | FLOATED INSTALLATION for 4-5/16" and 5" widths

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

PROCEDURE

1. 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. Use waterproof tape to attach the strips on the short side. (**Consult the documentation that comes with the recommended membrane for installation instructions.**)
2. 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**.
3. 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.
4. 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**.
5. 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.
6. 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.
7. 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.
8. 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.
9. 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.
10. If an obstacle prevents the last board sliding into place, cut the latch of the groove's locking system with a chisel.
11. 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 *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 **mirage**floors.com.

5 | FLOATED INSTALLATION for 6-1/2" widths

HELPFUL ADVICE

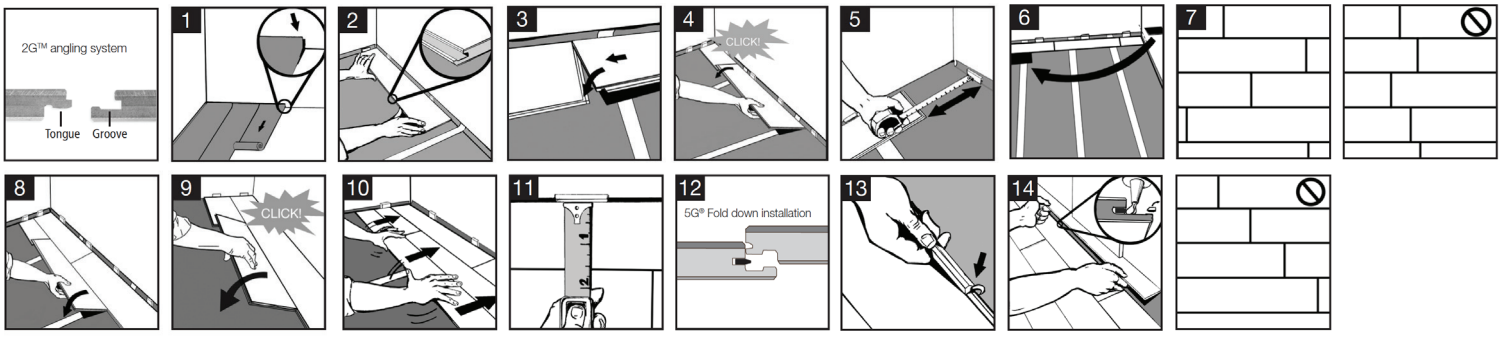
It is very important to start off straight and square. Use the chalk line to draw a line parallel to the starting wall and perpendicular to the adjacent wall. Leave the boards in their original packaging until ready for use. To enhance the floor's look, use several boxes at once and mix boards to ensure 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 a security equipment and maintain a safe environment at all times.

Plank Removal

If a board installed in the middle of the row needs to be removed you have two options. The first option is to rotate the entire row and then drag the boards between them to make the change of the problematic board. The second option is to use the UnLocKey tool to release the 5G® locking mechanism located on the short side of the board.

PROCEDURE

1. 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. Use waterproof tape to at-tach the strips on the short side. **(Consult the documentation that comes with the recommended membrane for installation instructions.)**
2. 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**.
3. Moving right, put the next board in place. Moving vertically, insert the end tongue into the end groove of the first board and fold the plank into a single movement.
4. Press at the short end just installed; you should hear a click sound as the short end locking system engages. Continue this way until it is time to cut the last board to finish the first row.
5. 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**.
6. 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.
7. 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.
8. Insert the tongue at the side of the board into the groove of the first row at a 45° angle. Make sure the planks are tight against each other during and after this step.
9. Set the board down and apply slight pressure to the left to the short end of the previous plank to lock 5G® in place (refer to #4 above to see how to proceed).
10. 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.
11. 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.
12. Remove the locking tongue before cutting a board longitudinally.
13. If an obstacle prevents the last board sliding into place, cut the latch of the groove's locking system with a chisel.
14. Apply wood glue to the long side 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 #15). 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 *Klean by mirage* Hardwood Floor Cleaner on a terry cloth mop and clean the floor.

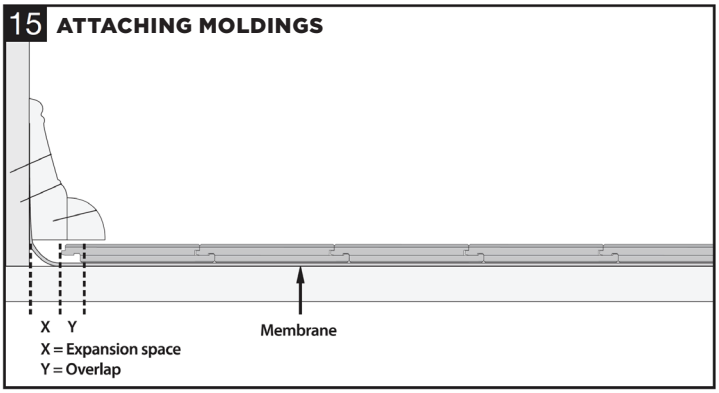
For more information on floor care, consult the **Mirage's Residential Maintenance** on our website **mirage**floors.com.



5 | FLOATED INSTALLATION for 6-1/2" widths

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 subfloor.



To know how to remove a 6-1/2" Lock board, refer to Technical Newsletter #35 in the Guides and support section at **mirage**floors.com.

6 | GLUED DOWN INSTALLATION for 4-5/16" and 5" widths

GLUED DOWN INSTALLATION INSTRUCTIONS (illustration #16)

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

Step 1: Starting Point

- Using a chalk line, draw a line parallel to the starting wall Ⓑ and perpendicular to the adjacent wall.

Step 2: Adhesive application

- For optimal adhesive application, work trowel Ⓐ 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 wall Ⓑ (please refer to illustration #2 from the section 5 Floated installation for 4-5/16" and 5" widths) down into adhesive.
- Install subsequent boards , Ⓒ proceeding from left to right until ready to trim first-row end board.
- To minimize trim waste, select boards 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.
- 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 from the section 5 Floated installation for 4-5/16" and 5" widths).
- 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.
- 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.



6 | GLUED DOWN INSTALLATION for 4-5/16" and 5" widths

Notes:

- When used, acoustic underlayment must be glued down over subfloor prior to gluing down boards using the recommended adhesive.
- Row to row installation requires that no glue seeps into grooves.
- Avoid getting adhesive on hands to minimize clean up. Wipe any adhesive from floor right away, using solvent and wipes. Use paint thinner or lighter fluid to remove stubborn adhesive spills.
- 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.

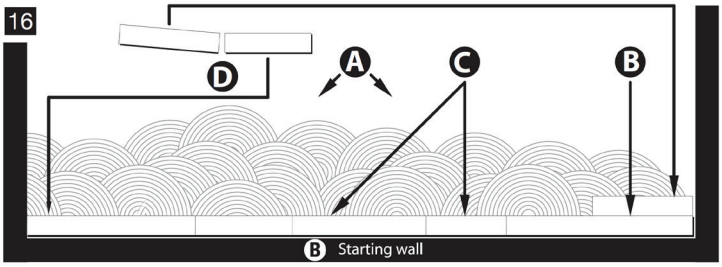
Step 4: Accessories installation

- 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 **mirage**floors.com.





GLUED DOWN INSTALLATION INSTRUCTIONS (illustration #16)

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

Step 1: Starting Point

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Step 2: Adhesive application

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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. Remove the locking tongue before cutting a board. (illustration #5)
- Laying from working area, leave 1/4" (6 mm) gap alongside left wall which is perpendicular to starting line, prop **tongue side against wall** Ⓑ (please refer to illustration #12 from the section 5 Floated installation for 6-1/2" widths) down into adhesive.
- Install subsequent boards , Ⓒ proceeding from left to right until ready to trim first-row end board.
- Moving vertically, insert the end tongue into the end groove of the first board and fold the plank into a single movement. Make sure the planks are tight against each other.
- Press at the short end just installed; you should hear a click sound as the short end locking system engages. Continue this way until it is time to cut the last board to finish the first row (please refer to illustrations #3 and #4 from the section 5 Floated installation for 6-1/2" width).
- To minimize trim waste, select boards 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.
- 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 #8 from the section 5 Floated installation for 6-1/2" widths).
- 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.
- Set the board down and apply slight pressure to the left to the short end of the previous plank to lock in place, you should hear a click sound as the short end locking system engages. Continue this way until it is time to cut the last board to finish the first row.
- 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. (Illustration #13 from the section 5 Floated installation for 6-1/2" width).
- Apply wood glue to the groove and insert the last board.

Notes:

- When used, acoustic underlayment must be glued down over subfloor prior to gluing down boards using the recommended adhesive.
- Row to row installation requires that no glue seeps into grooves.
- Avoid getting adhesive on hands to minimize clean up. **Wipe any adhesive from floor right away**, using solvent and wipes. Use paint thinner or lighter fluid to remove stubborn adhesive spills.
- 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.

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