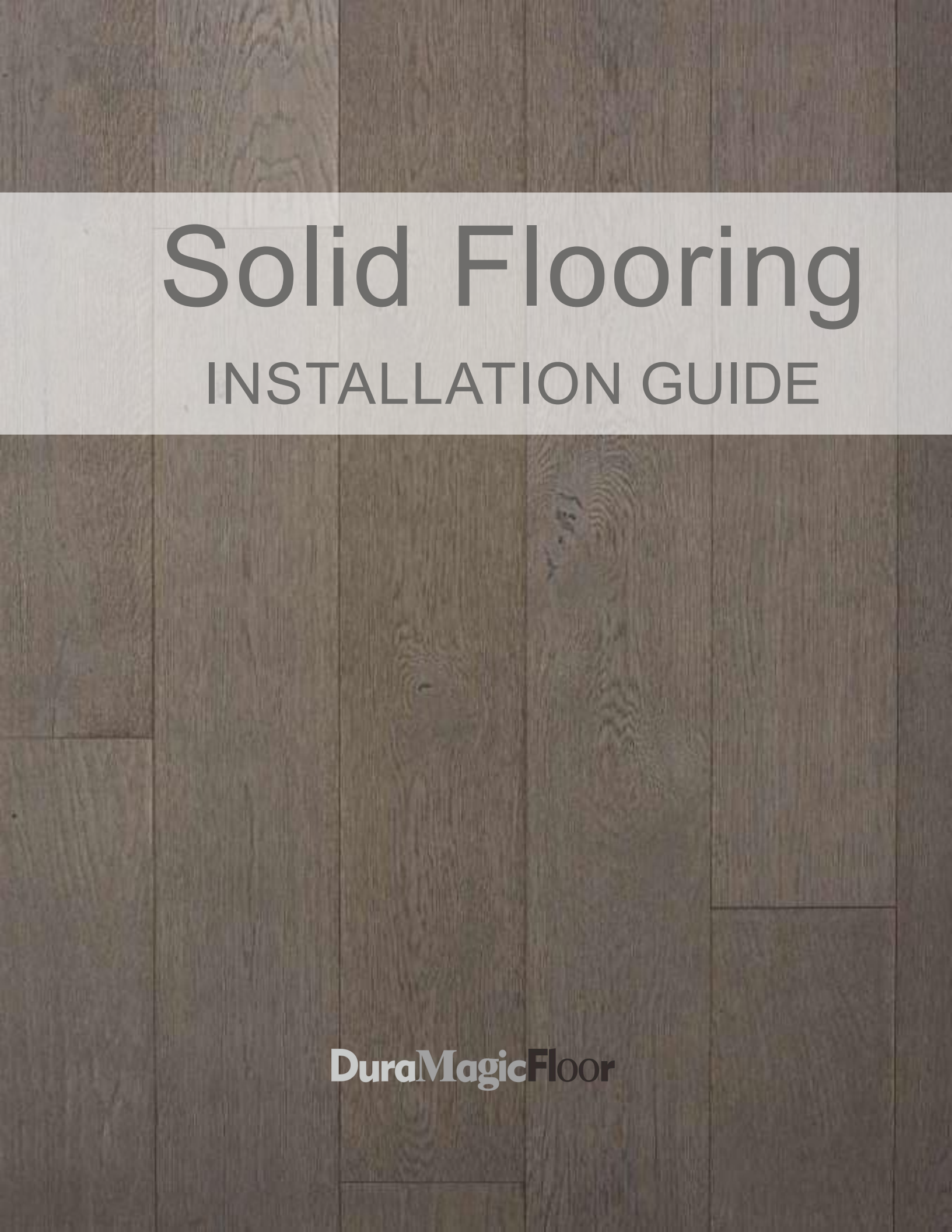


Solid Flooring

INSTALLATION GUIDE

DuraMagicFloor

It is important to read the Installation Guides, Maintenance Guide and the Limited Warranty document prior to the installation of your DuraMagicFloor product. **Installation that does not respect the instructions and procedures may void your warranty.**

For questions concerning the installation process, please contact your authorized DuraMagicFloor retailer or info@DuraMagicFloor.com.

Our installation instructions take precedence over NWFA installation guidelines. However in situations not specifically covered by our installation guide NWFA guidelines are recommended.

About your DuraMagicFloor solid hardwood product

The solid hardwood boards including the finishing stages, such as sanding and the finishing, are entirely factory performed under ideal conditions. These pre-varnished boards are ready to be used immediately following their installation. Each board consists entirely of 3/4" thick solid wood; there is, therefore, no gluing or laminating required. Rather the installation method for solid flooring is exclusively stapled or nailed.

DuraMagicFloor solid hardwood flooring may be installed on grade or above grade where conditions meet the requirements outlined in this guide and in the DuraMagicFloor Warranty.

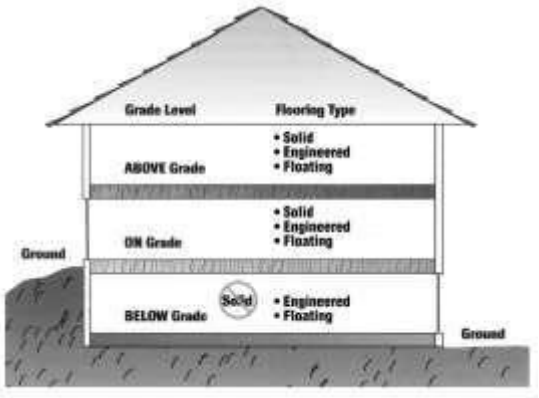


Figure from NWFA Installation guidelines

Recommended Use

Ground Floor: Yes

Second Floor: Yes

Basement: No

Note: Solid hardwood products are not recommended for installation on a floor equipped with a radiant heating system.

For Materials and Tools Required: See Annex one.

Owner and installer responsibility

Prior to laying the floor, the contractor/installer and/or the owner must make sure that the installation site and subfloor comply with the conditions specified in this document. The installer and the buyer have the responsibility to inspect the wood boards prior to their installation. DuraMagicFloor's products meet stringent quality standards and comply with the standards in force in the wood flooring industry. These allow a rate of imperfection not exceeding 5% of the quantity of the purchased boards. This rate includes both the natural imperfections of the wood, manufacturing defects and selection of the grade.

If the installer doubts the grade selection, the manufacturing or finishing quality and cannot place the board in a less conspicuous place, nor eliminate imperfection, he/she should not install it and contact their retailer. Once the board is installed, it shall be considered as having been accepted by the installer and the owner, even if the latter is absent at the time of installation.

According to the site and the type of installation, control of the hardwood boards should provide 3 to 5% additional covering to compensate for the loss caused by the cuts. DuraMagicFloor will only replace products with a defect rate exceeding the acceptable 5% rate (excluding the 3 to 5% cutting loss). DuraMagicFloor cannot be held liable for improper installation of its products or poor judgment by the installer.

Warranty

For more information about our warranty, consult our Limited Warranty in the documents section of our website.

Prior to Installation

- Ensure that the customer approves the consistency of the species, color, grade, size, and quality of the product, as well as the intended layout.
- Ensure that the space has a relative humidity within the warranty range of 35-55% and the temperature between 60-80F (16-27C) for 14 days prior to installation, as well as during and after installation.
- Rack out and **acclimate flooring for 48 hours prior to installation**. Never store flooring in an unsuitable location, such as a shed, unheated garage, or basement.
  - **It is important to note that an acceptable humidity variation between your subfloor and wood flooring is 3 percent.**
- Be sure to plan the layout for the best visual appearance of the finished wood floor.
- If installing on a subfloor over joists, verify joist orientation prior to beginning. Flooring should be laid perpendicular to the floor joists for greater stability.
- Basements and crawls spaces must be well ventilated. Crawl space should have 1.5% of open venting per 1,000 s/f (92.90 sq. meters) of floor area. Vents must be properly located to foster cross ventilation. For more information on basements and crawl spaces, see Annex two.
- Insulate overheating and un-insulated heat ducts to prevent hot spots.
- Ensure that any drainage is directed away from the building.
- Inspect all door casings and wall moldings. Where necessary, use a jamb saw laid on an upside down piece of flooring to cut the door casings to allow the wood flooring to slide beneath them.
- Use a utility knife to scribe along the top edge of the base moldings before removing to prevent tearing paint or drywall.
- Remove all existing base molding.
- Remove the waste material and sweep away all debris.

Important Notes about Installation

- Never rip-off the box ends to prevent exposure to moisture.
- Do not cut short boards to finish a row. The leftover materials will be used for future starter boards. Short lengths cannot be used and will become waste.
- Ensure that staple plate is clean and free from nicks.
- Follow the maintenance guide provided by your stapler/nailer manufacture.
- When stapler/nailer is not used, never place directly on the hardwood floor.
- Check air pressure: different subfloors and engineered flooring require different pressures.
- We recommend you keep extra boards on hand in case you need to repair or replace boards in the future.

Solid Installation Guide

Installing over Existing Floors

Vinyl

- Nail-down applications may be successful over existing sheet vinyl or vinyl tile if fastener penetration is not significantly diminished and the subfloor meets minimum requirements.
- Fasteners must penetrate a proper subfloor by at least 5/8".
- Please be cautious with vinyl flooring as some flooring (prior to approximately 1972) contained Asbestos and must be removed by a professional who understands the risk involved. Contact your state or provincial Department of Health.

Existing Wood Floor

- Sand off old finish and high spots on existing wood floor and prep to clean, dry, sound, flat subfloor. Repair, re-nail or replace loose flooring products.
- When installing new wood flooring parallel to an existing solid nail-down floor, add a minimum of 3/8" underlayment over the existing floor to increase stability.
- When installing new wood flooring at a 45- to 90-degree angle to an existing solid nail-down floor, additional underlayment is not required.
- The flooring must not show signs of cupping or it may transfer to the new flooring.

Particle Board

Particle board is not an acceptable underlayment due to lack of stability.

Installing on Wood Subfloors

1. The floor must be level. Level is within 3/16" in 10' (5 mm in 3 m) and/or 1/8" in 6' (3mm in 2m).

2. For each joist spacing arrangement there is a recommended plywood or OSB to ensure that the flooring is properly supported and to prevent movement and noise.

3. With new & existing subfloors ensure that no creaking, loose edges, sags etc. exist. Repair them as necessary before starting installation.

4. The panels can be laid on the diagonal or perpendicular with the joists, with 1/8" spacing between panels to allow for expansion.

5. Fasten panels down at least every 6" and glue them to the joists to form a minimum grid pattern.

6. OSB and plywood must be APA rated and maintained in a controlled environment. DuraMagicFloor installed on OSB carries no warranty against noise. Creaking is generally due to a subfloor issue. Plywood is the preferred choice for a wood subfloor. Furthermore, cleats are preferred to staples as mechanical fasteners in all media as they ensure greater retention and cause less noise. In addition, a pull test should be performed to check the holding power of the substrate prior to installation.

7. Solid board subflooring should be nominal 1" x 6" group one #2 common softwood boards installed at a 45 degree angle with all board ends having full bearing on the joists and fastened with minimum 8d resin-coated or equivalent nails.

8. Wood subfloors should not exceed 12% relative humidity and there should result in less than a 2% humidity difference between the flooring and the wood subflooring material. If the subfloor has a higher humidity level, it is better to put off installation to a later date. The source of the humidity must be located and the situation resolved before proceeding. For more information about acceptable moisture barriers, see Annex three.

9. Use a vapor retarder with a 0.7 to 1 perm rating in all cases. We recommend using an **Aquabar B** vapour retarder membrane.

10. Installing flooring perpendicular or at a 45 degree angle to the joists is preferred.

On truss/joist spacing	**Size and fastening method**	**MINIMUM REQUIREMENT**
16" (406 mm) o/c or less	4' X 8' sheets, glued and mechanically fastened	• nominal 5/8" (19/32", 15.1 mm) CD exposure 1 plywood subfloor panels • nominal ¾" (23/32", 18.3 mm) OSB exposure 1 subfloor panels
more than 16", up to 19.2" (488 mm) o/c	4' x 8' sheets, glued and mechanically fastened	• nominal ¾" (23/32", 18.3 mm) T&G CD exposure 1 plywood subfloor panels • nominal ¾" (23/32", 18.3 mm) OSB exposure 1 subfloor panels
more than 19.2" (488 mm) o/c up to a maximum of 24" (610 mm).	4' X 8' sheets, glued and mechanically fastened	• nominal 7/8" T&G CD exposure 1 Plywood subfloor panels • nominal 1" OSB Exposure 1 subfloor panels • For double-layer subfloors, the first layer should consist of nominal ¾" (23/32", 18.3 mm) CD Exposure 1 Plywood subfloor panels (CDX) or a nominal ¾" (23/32", 18.3 mm) OSB Exposure 1 subfloor panels. The second layer should consist of nominal ½" (15/32", 11.9 mm) CD EXPOSURE 1 plywood subfloor panels. The ½" plywood should be offset by ½ panel in each direction to the existing subflooring. The panels may also be laid on a diagonal or perpendicular to the existing sheets, always with 1/8" spacing between sheets.

Nail or Staple Installation

NOTES

Check stapler/nailer prior to starting installation as the installer will be responsible for damage caused by the machine. Never place the machine directly on the hardwood as it may dent or scratch the flooring. Check the plate on the machine before and during installation and replace it if damaged in order to avoid scratches. Ensure that the base sits flat on the floor and the top of the tongue. Verify that proper hose and air compressor for the model is used. When using a pneumatic gun, set and check air pressure regularly ensuring the nail/staple enters at a 45 degree angle and that the nail or staple is flush with the tongue of the flooring because if not properly set it can cause dimples or break the tongues.

Do not use another piece of wood to tap wood into place as it can cause damage to the finish, use a rubber tapping block instead.

1. All starting rows and ending rows that cannot be installed using the pneumatic nailer should be installed with a serpentine bead of polyurethane adhesive on the back for greater holding power. These rows will be nailed directly to the subfloor without a vapor retarder.

2. Strike a chalk line parallel to the starting wall the width of the flooring plus 3/4" from the starting wall to allow for expansion and the tongue. This is the starting line.

3. Measure the distance between the starting line and the wall the full length of the starting wall. If the wall is badly out of line (crooked), it may be necessary to rip boards to follow the irregularity in the wall.

4. Install the first board making sure that the tongue side aligns with the starting mark with the groove facing the wall. It is very important to start straight and square.

5. Using 6d finish nails and a pneumatic finish nailer, nail the first board every 6-8" approximately ½" from the groove edge parallel to the starting wall. Nail the edge and not the ends. Maintain 3/4" expansion space at all times. Ensure that nail heads are close to the wall so they are hidden by the baseboard and quarter round.

6. "Blind" nail every 3-4" within the tongue side nail pocket at a 45· angle. Use 1¼"- 1½" fasteners.

7. Insert the end of the next board into the adjoining tongue or groove and force the butt ends tightly together. Fasten as above until all boards in the row are complete.

8. Cut to length a board that fits at the end of each row always allowing for 3/4" minimum expansion space at the wall.

9. Continue adding rows in this manner, blind nailing the tongue side only until enough rows have been installed to make room for the pneumatic floor nailer/stapler.

10. Use the machine to install the flooring according to the fastener spacing described below. Avoid close alignment of joints in all rows throughout the installation, always attempting to get the maximum spacing available with a minimum of 6". Avoid alignment of joints in opposite rows, which may create an "H" pattern in the floor.

11. Working from several cartons, "rack" an area of the floor by loosely laying materials side by side in a pleasing pattern avoiding close joints.

12. Install the area using cut pieces from the end as starter boards for the next rows to reduce waste. Continue in this manner until the entire floor that can be installed with the flooring nailer is complete.

13. Using 6d finish nails, blind nail and face nail the final rows or install using an appropriate full spread urethane adhesive to glue them to the subfloor and blue 3M or Norton tape to hold rows in place. After 24h remove the tape.

14. Measure the final row. Rip the boards to fit the final wall allowing for 3/4" expansion.

15. Inspect for gaps, chips and adhesive residue while removing the tape. Touch up chipped areas and fill with the appropriate colored latex filler as necessary.

16. Install/reinstall all moldings and clean the floor with the appropriate cleaner. Use only DuraMagicFloor multisurface cleaner. Check maintenance guide for further details.

Fastener Schedule

WOOD FLOORING TYPE	FASTENER TO BE USED	FASTENER SPACING
¾" thick less than 3" width	1 ½" -2" fastener 16 gauge L cleats	Blind fastener spacing every 8-10'' along lengths of the strips, two fasteners per piece minimum, no closer than 2'' from board end and no more than 3'' from the end. For face nailing every 10-12" fastener spacing.
¾" thick more than 3" width	1 ½" -2" fastener 16 gauge L cleats	Blind fastener spacing every 6-8'' along lengths of the strips, two fasteners per piece minimum, no closer than 2'' from board end and no more than 3'' from the end. For face nailing every 10-12" fastener spacing.

Repairs

Wood is a natural product. If repairs are needed during and after installation, it is normal. Using a touch up marker, wax filler, or putty filler to fix imperfections in the flooring is standard practice. In addition, for the larger repairs, a board replacement is a normal procedure during and after installation.

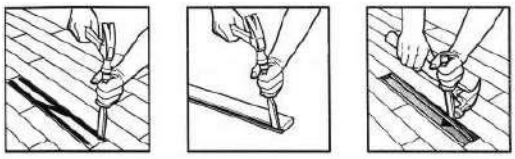
Board Replacement

Step One: Board replacement selection

Individual wood flooring boards can be replaced in solid and engineered prefinished flooring products without affecting adjoining boards. Prefinished boards should be selected for gloss and color match as well as to resemble the grain pattern and look of the original board.

Step two: Removing damaged boards

- Make sure you have a replacement board. Set a circular saw to the depth of the thickness of the board to be removed.
- Make one cut inset 1/2”from groove side running from end to end on the board to be removed.
- Make a second cut inset 1/2” from tongue side running from end to end on the board to be removed.
- Make a third cut across the center of the board at a 30-45 degree angle from first long cut to second long cut.



- With a chisel cut completely through both ends at cut lines and lift out center of the board. The groove side piece can now be easily removed.
- Carefully remove nails or staples and side tongue piece. Avoid damage to adjoining boards.

Step three: Board replacement

- Clean all debris and old adhesive from the work area.
- Repair subfloor if necessary. Measure the opening and cut replacement board to size.
- Measure the opening and cut replacement board to size. Carefully test the new board against the opening for precise fit.
- From the back side of the replacement board, chisel off or cut lower half of its groove side and end match so that it will fit over the tongue of the adjoining boards in the replacement area.
- Carefully dry fit the replacement board. When well situated, coat tongue and groove with glue. If available, use a polyurethane adhesive suitable for hardwood flooring to coat the back of the board to avoid the use of nails (described below) in the repair. If glue is used, board must be placed in contact with the subfloor or glue compatible membrane.
- Insert tongue, then drive it into place, using a wood block and mallet. If adhesive has not been used to secure the board (as described above) to the subfloor drill pilot holes for nails at each end of board and along sides of long boards. Make holes smaller than the size of the cement coated nails.
- A fifty-pound weight should be placed on top of the clean board for 24h post replacement.
- Sink nail heads with a nail set. Use color putty to fill holes and joints.

Annex one – Materials and Tools Required for Installation

Install	Nail or Staple	
Tools	X	Hammer or rubber mallet
	X	Measuring tape
	X	Utility knife
	X	Tapping block
	X	Chalk line
	X	Straight edge
	X	Carpenter square
	X	Pencil
	X	Moisture meter
	X	Pry bar
	X	Drill
	X	Hand saw, table saw, circular saw or band saw
	X	Jamb saw
	X	Air compressor and hose
	X	Recommended flooring stapler/nailer
	X	Level
	X	Wood filler
	X	1 ½"- 2" fasteners
	As needed	Moldings, reducers, stair nosing
	X	Pneumatic finish nailer 1 ¼ " – 1 ½ fasteners or 6D nails
	X	Vapor retarder / barrier
	X	Broom or Vacuum
	X	DuraMagicFloor Multi-surface floor cleaner
	X	Towel for cleaning tools
	X	Safety glasses
	X	Dust mask

Annex two – Basements and Crawl Spaces

Basements and crawl spaces must be dry. Crawl space should be a minimum of 18" (457mm) from ground to underside of joists.

An earthen crawl space (or thin concrete slab) should be covered on 100 percent of its surface area by a vapour retarder of black polyethylene (minimum 6 mil) or any recommended C-class, puncture-resistant membrane, meeting ASTM D-1745.

If it is a new construction please ensure that the basement has cured and is not emitting high levels of moisture this can be checked with a hygrometer to see the relative humidity in the air.

Annex three – Acceptable Moisture Barriers

Installation of a vapour retarder reduces the potential for moisture or vapour related problems, but does not guarantee elimination of moisture or vapour related problems. Installation of a vapour barrier is recommended by DuraMagicFloor Flooring.

- An acceptable vapour retarder for wood subfloors is a vapour resistant material, membrane or covering with a vapour perm rating of greater than or equal to .7 and less than or equal to 50 when tested in accordance with ASTM E-96 Method A.
- Overlap seams a minimum of 4 inches.
- Over a wood subfloor, do not use an impermeable vapour retarder material with a perm rating of .7 or less, such as some 6 mil polyethylene film or other polymer materials, as it may trap moisture on or in the wood subfloor.
- Do not use common red rosin or building paper, which is not asphalt saturated.

	Solid	**Engineered**
Below Grade	NO	YES
Glue down install	NO	YES
Floating	NO	NO
Over Radiant Heat	NO	YES