

INSTALLATION GUIDE

Pre-finished Engineered Wood Floors



CONGRATULATIONS!

Thank you for purchasing our pre-finished engineered hardwood flooring. You made the right choice for the right product.

We manufacture only real hardwood flooring. Our timber is carefully selected and manufactured into highest quality products, using world's best available machineries with best known processes.

We spare no effort to ensure that our products are free from manufacturing defects. Following strict procedures, we meticulously inspect each individual floor board to make sure every piece belongs to the right product grade.

The beauty and uniqueness of wood is characterized by distinctive variations in grain and color. These natural variations are not flaws but are part of the natural beauty. However as natural material,

hardwood may reveal imperfections. The accepted standards in the industry allow a defect tolerance and grading variance not to exceed 5%, which may be of manufacturing or natural type.

A. OWNER/ INSTALLER RESPONSIBILITY

Inspection of all floor boards shall be done before installation. Products with unacceptable grade, color, finish, or manufacturing quality shall not be installed and shall be immediately reported to the seller. To get a uniform appearance across the complete floor, it is important to blend several cartons of flooring boards. We suggest retaining and storing a few boards in case a future repair or replacement is required.

Grade, color, finish and manufacturing quality of installed flooring remains the sole and joint responsibility of installer and owner, even if owner is absent at time of installation. Once installed in place, any floor board is deemed as having been accepted by installer and owner.

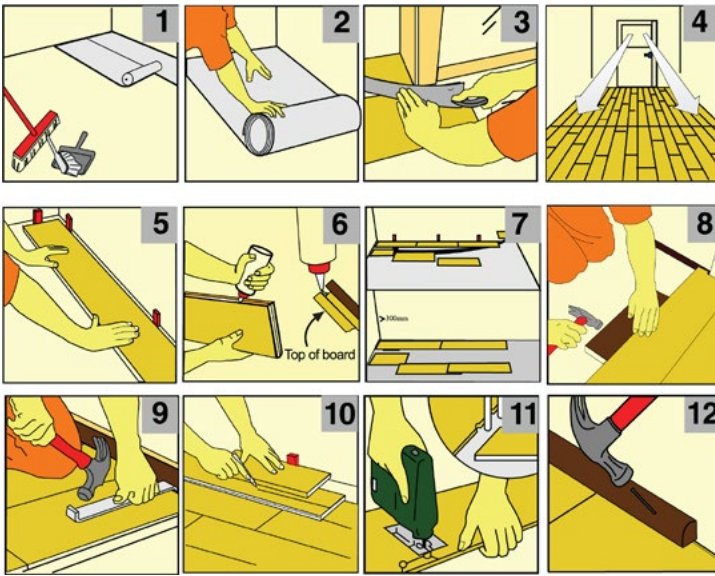
Installer must exercise reasonable judgment based on common sense, before and during installation. Floor boards showing visible defects or imperfections must be trimmed and installed in hidden places or not used at all. Use of stain, filler, or putty stick during installation shall be accepted as normal procedure. Individual pieces to be in doubt as to grade, finish, or manufacturing quality shall not be installed if unable to be trimmed or used in hidden places.

Prior to installation, installer must make sure that sub-floor and pre-installation inspections are carried out and all applicable standards and recommendations of the constructions and materials industries are satisfactorily met or exceeded. As manufacturer, decline any responsibility for job failures resulting from or associated with sub-surface or job site environment deficiencies.

When ordering hardwood flooring, it is a normal practice to add 5% to the actual square footage needed as allowance for trimming and color grade variation.

If any installed floor board must be replaced on a later date, our liability shall solely be limited to the replacement of defective products i.e., materials only in excess of the 5% industry accepted norm, excluding trimming waste allowance. In any case, we shall not be liable for installer's lack of judgment, quality of installation, labor, installation costs or any other consequential losses.

FLOATING INSTALLATION



- ½ in (7 mm) wall spacers
- Tapping block
- Pull bar
- Handsaw
- Electric saw with carbide blade
- Wood and/or concrete moisture meter
- Trowel for glued-down installation
- Recommended adhesive and adhesive remove
- Claw hammer
- Stapling or nailing machine for stapled-down in
- Recommended staples or nails
- Recommended hardwood flooring cleaner

Approved safety goggles or glasses shall be worn at all times.

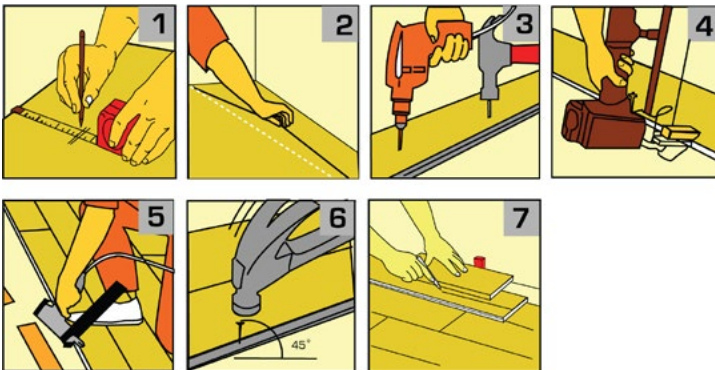
2. Pre-Installation Check List

- As a rule of thumb, pre-finished hardwood floor installation shall be the very last step performed on any construction or renovation project. Construction dirt e.g. from drywall can enter the pores and grain of the wood flooring wood floor and is NOT warranted.
- Make sure the sub-floor is dry, even and level.
- Engineered hardwood flooring may be installed in full bathroom. For below ground installation, make sure that foundations and concrete are thoroughly leak proof.
- To avoid moisture related damage, check the sub floor for moisture content using appropriate testing method.
- Air conditioning and heating systems shall be in place and operational. A consistent room temperature of 75° F (24° C) and relative humidity of 40% to 60% RH shall be maintained in the installation site for 14 days prior, during installation, and until occupied to allow for proper acclimation. Our floor boards can only be installed on a maximum 82° F (28° C) surface temperature.
- Keep the floor boards in its original unopened package for at least 48 hours in room temperature. Allow at least 4 in (10 cm) space under pallet or carton for air circulation. Package shall only be opened just before the start of the installation.

GLUE DOWN INSTALLATION



STAPLED INSTALLATION



B. INSTALLATION PROCEDURES

1. Recommended Tools, Material and Accessories

- Broom or vacuum cleaner
- Tape measure
- Level
- Chalk line and chalk
- Straight edge
- Carpenter square



3. Sub-floor Preparation

- The sub-floor must be clean, dry, flat and level, and free from any cracks. Irregularities must not exceed 1/8 in every 10 ft.
- Use leveling compound to level the sub-floor when necessary in accordance with the builder's recommendation.
- Concrete sub-floor must be completely cured and dried with maximum moisture content of 2% dry weight basis.
- For glued-down installation, make sure that concrete sub-floor has compression strength of at least 3,000 psi.
- For nailed-down installation, plywood sub-floor shall be provided with at least 3/4 in (18mm) thickness.

4. Floating Installation

1. After cleaning the sub floor, roll over the vapor barrier sheet with a minimum 8 in (20 cm) overlap. Unroll the sheet along the longest wall.
2. Underlayment may be used for sound insulation and/or for smoothing out slight irregularities of the sub-floor. Do not overlap the underlayment.
3. Lay a loose board upside down as a proper height guide against the door jamb. Cut the bottom of the frame off, leaving the required expansion gap allowance.
4. Boards shall run lengthwise against the longest wall. When possible try to run floor boards parallel to incoming sunlight or main light source.

T-molding is required for rooms exceeding 1,080 sq ft (100 sq m).

5. Begin laying from the left hand corner, tongue-side against the wall. Use spacers to maintain an even expansion gap allowance.
6. Apply a continuous line of bead of adhesive to the upper part of the grooves' inside edge. Immediately wipe off any excessive adhesive with damp cloth.
7. On starting the next row, always make sure to stagger the end joints by at least 12 in (30 cm). Try to use cut piece from previous row to start new row.
8. All joints shall have a tight fit. Use tapping block and hammer to tap any gapped joints as necessary Never hit the floor board directly with hammer.
9. Use pull bar and hammer to tap gapped joints at adjoining wall and door jamb.
10. To lay the last row, place a full length floor board directly on top of the last installed row. Measure and cut the correct width by putting a full width scrap board with spacers inserted against the wall"
11. On encountering pipes, ensure the position and diameter of the pipe; drill hole(s) with diameter 3/8 in (10 mm) larger. Cut off as shown in the figure and lay the board in place. Apply adhesive to the loose piece and fit it in place.
12. Make sure to remove all spacers once the laying procedure is completed.

Skirting boards or moldings shall be fastened to the adjacent wall by nail or screw, overlapping the expansion gap allowance.

IMPORTANT:

Please remember that floor boards in floating installation are not meant to be fastened in any manner. Obstruction to the floor's natural movement may cause severe damage and will void the warranty.

5. Glued-Down Installation

1. At each end of the starter wall, measure out the width of two boards plus the tongue and expansion gap allowance.
2. Snap a chalk line from these measured points, parallel to the starter wall and perpendicular to the adjacent wall. While most walls are not square, trim the boards to fit along the adjacent wall.
3. Firmly secure a straight edge along the chalk line as a guide.
4. Spread recommended adhesive using notched trowel, from the chalk line/straight edge to approximately the width of two boards.
Never spread more adhesive than can be covered in 30 minutes.
5. Lay the first row of starter boards along the chalk line/straight edge. Starting from the left corner, secure the boards into position with tongue-side facing the wall.
6. On starting the next row, always make sure to stagger the end joints by at least 12 in (30 cm). Try to use cut piece from previous row to start new row.
7. Use pull bar and hammer to tap gapped joints at adjoining wall and door jamb.
8. To lay the last row, place a full length floor board directly on top of the last installed row. Measure and cut the correct width by putting a full width scrap board with spacers inserted against the wall.

Once the remainder of the board has been installed, go back to the beginning part and remove the straight edge. Spread adhesive on the remainder of the open sub floor and lay the remaining boards to fully cover the room.

Keep foot traffic to absolute minimum to allow the adhesive to cure. Wait for at least 24 hours before moving furniture and resuming normal traffic on the floor.

IMPORTANT:

- The use of adhesive tapes on any type of finish may affect the floor's surface. Oregon Lumber Company does not recommend the use of such tapes. However, installers may prefer to use strips of adhesive tapes on narrow strips installation to hold the boards together to prevent minor shifting or gapping. To do so, please consult with the tape's manufacturer for

the appropriate type and its correct use. We shall not be hold responsible for any affected surface due to the use of adhesive tapes on our floors' installation.

- The performance of the adhesive used to install our floors in glued-down installation is the responsibility of the adhesive manufacturer and we do not warrant the adhesive bond between the wood flooring and the subfloor.

6. Stapled/ Nailed-Down Installation

1. At each end of the starter wall, measure out the width of two boards plus the tongue and expansion gap allowance.
2. Snap a chalk line from these measured points, parallel to the starter wall and perpendicular to the adjacent wall. While most walls are not square, trim the boards to fit along the adjacent wall.
3. Install the first row of starter board along the chalk line/straight edge. Secure into position with groove-side facing the wall. Drill pilot holes on the board's face near the chalk line and fasten with finish nail.
4. Engage the nailer onto the tongue-side of the board. Drive the nail no further than 1 in (2.5 cm) from each end of the board and 4 to 6 in (10 to 15 cm) from either sides of the center.
5. Make sure the starter row is straight and secure before continuing to staple the remaining rows.
6. The last rows will not allow the use of the stapler. Manual nailing has to be done on the tongue. Pre-drill pilot holes at 45° and drive finishing nail.
7. On the far wall, place a full length floor board directly on top of the last installed row. Measure and cut the correct width by putting a full width scrap board.

Once the remainder of the board has been installed, go back to the beginning and remove the straight edge. Install the remaining boards to fully cover the room.

SPECIAL NOTE:

Some squeaking, popping or crackling of the floor boards are inherent to all staple or nail down flooring installation. This is not a manufacturing defect and therefore is not covered under our warranty.

C. Attention!

This guide is a general instruction that covers our range of classic tongue and groove products. While specific product may require specific installation method, please consult our authorized seller or retailer for the right laying method for your new floor installation.

IMPORTANT:

For best result, products with UV Oil or Oxidative Oil finish shall be cleaned and re-oiled after installation.

Radiant Heat

For installation over radiant heat system, please observe the following important points to get maximum performance of both wood flooring and the heating system:

- Use hydronic (warm water) radiant heat system
- The heat system must be specifically designed for wood flooring and must have temperature control mechanism that will not allow the surface temperature to exceed 82°F (28°C).
- The system must be kept on and within 15°F (10°C) of normal operating temperature **AT ALL TIMES**.
- For concrete subfloors, conduct and document Calcium Chloride Tests per ASTM F1869. Test results must not exceed 2.0 lbs. per 1000 square feet per 24 hours (1.0 kg per 100 m² per 24 hours).
- For wood subfloors, use a pin type meter to document the moisture content of the subfloor. Moisture readings should not exceed 8% in any location and readings for the subfloor must be within 2% of the wood flooring at the time of installation.
- Relative humidity at the jobsite must be maintained between 40% and 60% at all times. Failure to maintain proper humidity levels will void all warranties.
- The radiant heat system must be on and operating at normal output a minimum of 14 days prior to the start of the installation.
- Wood flooring must be delivered to the jobsite and acclimated to room temperature in sealed cartons 48 hours prior to the start of the installation.
- Excessive heat, rapid heating, and/or failure to maintain humidity levels between 40% and

60% may cause cracking, cupping and other forms of failure and will void the warranty.

NOTE:

In wood flooring installations over radiant heat, moderate surface checking, cracking (especially at the ends of boards and around knots), shrinkage, gapping between planks, and slight cupping are all to be expected and do not constitute a product defect.

Beech and Maple expand and contract more than other wood species, giving greater risk of gaps to appear in floor. We do NOT recommend choosing these species for installation over under-floor heating system.

CAUTION: Wood Dust

Sawing, sanding and machining wood products produce wood dust. Airborne wood dust can cause respiratory, eye and skin irritation.

Precautions

Equip power tools with dust collector. Use appropriate NIOSH designated dust mask in high dust level environment. Avoid dust contact with eyes and skin.

First Aid Measures

In case of irritation, flush eyes or skin with fresh water for at least 15 minutes.

D. Care and Maintenance Tips

It is only natural that hardwood floors will show signs of wear over time. You can expect years of beauty from your floor by observing a few precautions and maintaining a regular cleaning and maintenance routines.

- Keep dirt, sand, grits and water off the floor by placing mats in front of all entrances to your home.
- Sweep or vacuum regularly to rid the floor of dust and grits that can scratch the finish.
- Maintain UV Oil or Oxidative Oil finished products with regular soap oil or cleaner and refresher/ maintenance oil coat. Consult our authorized seller or retailer for the recommended maintenance products.
- Remove shoes with spiked or damaged heel before walking on the floor to prevent scratches and dents.
- Keep pets' claws trimmed, paws clean and free of dirt or soil.

- Always apply felt pads under any furniture or chair legs to prevent scratches and to ease movement. Keep pads clean at all times and regularly check and replace as necessary.
- Protect the floor when moving heavy furniture or large appliances. Place on mat and slide smoothly over floor.
- Use rugs in high wear areas i.e. in heavily traveled spots and pivot points such as room entries and stair landings.
- Never flood or wet-mop the floor with water or any other liquid products. Severe damage may occur that void the warranty.
- Wipe-up spills immediately with damp cloth.
- Exposure to sunlight with its UV ray accelerates oxidation and aging of materials. This may change the color of the floor. Periodically rearrange the furniture will allow the floor to age evenly.

To maintain a consistent room temperature of 75° F (24° C) and relative humidity of 40% to 60% RH, air conditioning and heating systems shall be in place and operational at all times.

E. Limited Warranty

In addition to product durability, we offer a wide range of choices in wood species and an assortment of board constructions. You can choose the floor that is right for you, your life style, and your budget with our warranty back up.

Yet to have years of enjoyment of your new investment with peace of mind, you cannot rely on quality products and warranties alone. It is extremely important to observe that proper installation and maintenance is carried out, and also the specific relative humidity conditions within your home is well maintained.

Structural Lifetime Warranty

We warrant our engineered pre-finished hardwood flooring against any manufacturing defects caused by improper milling, assembly, grading, and finish coating. This warranty applies only to the original purchaser and installation site, and is not transferable. Structural Lifetime Warranty means that our engineered hardwood flooring products will remain free from delamination (separation between plies), buckling, warping, twisting, cupping or crowning in normal environmental conditions.

Normal environmental conditions mean that heating

and ventilation systems shall be designed to maintain interior relative humidity level between 40% to 60% RH all year round, to ensure best performance of your engineered hardwood flooring.

Whenever this warranty is applicable, our liability shall be limited to replacing, or repairing the defective flooring board(s) due to manufacturing defects in excess of the 5% accepted industry norm, material only. Damage due to transportation, storage, installation, extreme indoor conditions (heat, dryness, or moisture), extreme sunlight exposure, or any other causes are not covered.

Exposure to excessive heat, dryness or moisture may cause damage to your engineered hardwood flooring. It is natural that some minor contraction and expansion may occur due to the wood's inherent properties. These occurrences will self correct with seasonal climate change and/or when suggested normal environmental conditions are maintained. Over time, natural color change may also occur on your hardwood flooring, which is not considered as defect.

Finish Warranty

We warrant to the original purchaser, that the factory applied surface finish will not wear through or separate from the wood in the original installation site for a period of:

- **25 (twenty five) years** from the date of purchase, for UV Lacquer finish
- **3 (three) years** from the date of purchase, for UV or Oxidative Oil finish when used under normal residential traffic conditions

These warranties apply on the condition that regular and preventative maintenance have been carried out as recommended in this guide. (See special maintenance instruction for Oxidative Oil finish).

Our finish warranty excludes any indentations, scratches or surface damage caused by lack of proper maintenance, misuse, improper modification, negligence, accidents, erosion, spike heeled shoes, sand, grits, other abrasives, water spill, wet mopping, insufficient prevention and/or protection, and any normal deterioration due to wear and/or exposure such as fading due to sunlight exposure.

Surface wear is defined as readily visible wear on at least 10% of the surface area. Gloss reduction is not considered as surface wear.

The application of floor care products other than those especially recommended for use on our pre-finished flooring may damage your floor and void the warranty.

To obtain Warranty Service, the end-purchaser shall contact our authorized seller or retailer within 30 (thirty) days after defect is discovered. Original proof-of-purchase, Bill of Sale or other original documents must be retained and can be presented when demanded. To find list of our sellers or retailers within your area you can contact us at the following address:

Oregon Lumber Company

9111 North Denver Ave.

Portland, OR 97217

phone: 1-800-824-5671

mail: sales@oregonlumber.com

website: www.oregonlumber.com

All warranties implied by state law including the implied of merchantability and fitness for a particular purpose are expressly limited to the duration of the limited warranty set forth above. Some states do not allow limitation on how long an implied warranty lasts, so the above limitation may not apply to you. With the exception of any warranty implied by state law as hereby limited, the foregoing express warranty is exclusive in lieu of all other warranties, guarantees, agreements and similar obligations of manufacturer or seller with respect to the repair or replacement of any product, in no event shall seller be liable for consequential or accidental damages. Some states do not allow the exclusion or limitation of the incidental or consequential damages, so the above limitation may not apply to you.

No person, agent, distributor, dealer, retailer or other company is authorized to change, modify or extend the terms of these warranties in any manner whatsoever. The time within which an action must be commenced to enforce any obligation arising under this warranty or under any statute or law of the united states or any state thereof is hereby limited to 1(one) year from the date you discover or should have discovered the defect. This limitation does not apply to implied warranties arising under the state law. Some states do not permit limitations of the time within which you may bring an action beyond the limits provided by the state law, so the above provisions may not apply to you. This warranty gives you specific legal rights, and you may also have other rights, which may vary from state to state.

This warranty may also be applicable from country to country where such is practicable and admitted and if such does not contradict or overrule in any way against the local laws of the country pertaining to the subject.