

Installation Instructions Pg. 1

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ATTENTION - RESPONSIBILITY OF USER / INSTALLER / OWNER

The Bellagio Collection's engineered hardwood floorings are products of nature that give a warm, beautiful and lasting comfort to any home, office or business location. It is due to these natural origins that occasional imperfections or defects may appear. Inspect **ALL** materials carefully **BEFORE** installation. Oregon Lumber upholds the highest possible standards for its products, within the limitations of the natural materials. These natural defects may arise from the natural wood materials, and/or any process/manufacturing defects that may occur due to working with this specific type of material. Some variation in color is to be expected in a natural wood floor. Oregon Lumber Company has selected and graded all the materials and products before, during and after manufacturing, within its maximum capabilities.

It is the User/Installer/Owner's responsibility for final inspection of the products for surface-finish, manufacture, color, quality, & grade, as well as the criteria of the job-site and sub-surface conditions **ALL PRIOR** to installation. The responsibility is also applicable during Their (User / Owner / Installer) absence from the location of the installations. **NEVER** install any damaged or defective boards. Once the products have been permanently installed, they would have been deemed acceptable by User / Owner / Installer.



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If any questionable board(s) have been installed, Oregon Lumber Company's (OLC) maximum liability is limited to the replacement of the board(s), plus maximum 5% extra-footage – *Limited to the material only*. OLC is not liable for any other cost(s) related to installation, labor, glue or nails, sub-floor and any other consequential costs or losses. OLC is not liable for any mistakes in judgment or errors in the installation of the flooring. If proper procedures are not followed, they may jeopardize any Warranty covering the product. Please refer to the Warranty section for this information.

PURCHASING, HANDLING & STORAGE

When calculating the footage requirements for any installation, an allowance of 10% extra footages should be added to cover all cutting wastes and losses during the actual installation. Handle and unload Oregon Lumber flooring with care. **Open the box only just before the beginning of the installation.** Boxes must be stored in a protected and dry place. Allow a minimum of 1/2" under pallets or cartons for air space and circulation. ***Particularly during winter months flooring in its original, unopened boxes must be acclimatized to the room temperature for at least 48 hours prior to installation.***

PRODUCT SPECIFICATION

Oregon Lumber's ready-made flooring is engineered in a 3-ply construction with: Sawn-cut face layer, lumber or waterproof plywood middle layer, and rotary-cut balancing veneer at the back. Depending on product type, installation can be done by floating-system, glue-down system or nail-down system. Please refer to the following table for product details, types and usage. Refer to subsequent information for all details and the do's & don'ts about installations.

OLC ENGINEERED FLOORS

PRODUCT NAME: Bellagio

DESCRIPTION: Full 1 whole piece face pattern, including Micro Line.

MIDDLE-LAYER: Lumber

INSTALLATION: Floating, glue-down or nail-down

RE-SANDING: At least 2-3 times

STANDARD PACKAGING

Products are packed in either bundles or cartons protected by plastic shrink-wrapping under the following standard units:

PRODUCT NAME: Bellagio

DIMENSION (mm): Varies

DIMENSION (in): Varies

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SF / CARTON: Varies

SF / PALLET: Varies

(standard packaging may be changed from time to time for improvements, without prior notice)

PRE-INSTALLATION PROCEDURES

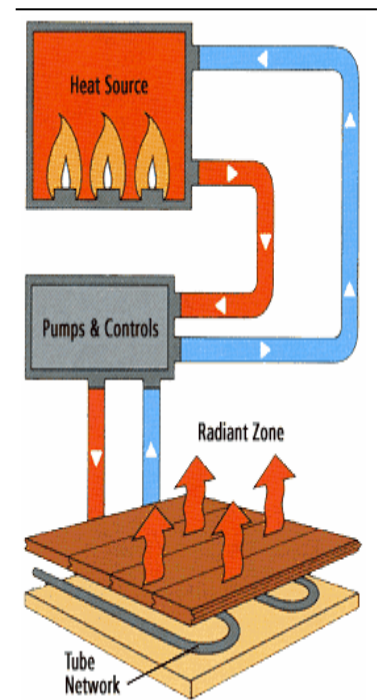
Inspection & Preparation

- The Building where the flooring will be installed must be completed, including all moisture or water-related works such as masonry, plastering, wall painting, gutters, plumbing, etc.
- The building should be completely closed with all doors, windows and roof in place.
- Ready made wood flooring should be one of the last items delivered and installed in the building.

RADIANT FLOOR REQUIREMENTS

- If a radiant floor system exists, it must be operated continuously for 2 weeks at $\pm 60\%$ of maximum capacity to drive away any remaining moisture away prior to installation.
- The radiant floor system should then be reduced 3 to 4 days before initial flooring installation. Installation temperature should be a constant 70°F (21°C). The maximum surface temperature should never exceed 83°F (28°C).
- ***Beech, Maple, Brazilian Cherry, Kempas, Caribbean Rosewood, Southern Chestnut or Caribbean Cherry*** species floorings are not recommended for installation over radiant heating systems, and doing so may cause problems not covered by the Limited Warranty.

Oregon Lumber flooring must be installed and maintained within environmental preconditions in



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RADIANT FLOOR REQUIREMENTS cont.

which they are expected to perform. The User/Installer/Owner are fully responsible to test and measure all the moisture content, humidity & temperature to be within the correct ranges specified.

SURFACE PREPARATION

- All sub-floors must be clean, structurally sound, flat to within 3/16" of a straight edge in a 10' radius and without any abrupt height differences. Scrape and smooth any debris off of the surface. Sand high areas or joints. Fill low areas and cracks with proper compounds.
- Prepare all doorways and walls. Undercut all door casings. Remove all moldings.
- Concrete sub-floor must be completely cured and dried (8-12 weeks old) with minimum surface temperature of 60°F (15° C) and maximum of 3 lbs, based on a Calcium Chloride Test. The ideal relative humidity in the room should be 55%. For concrete sub floors above 3lbs, we recommend sheet vinyl, Bostic's or Franklin's Moisture Barrier Systems.
- Wood sub-floors need to be well secured with screws or ring shank nails. It should not exceed 14% moisture prior to installation.

GENERAL INSTALLATION GUIDELINES

- Open boxes JUST before installation begins.
- Each floorboard MUST be checked carefully prior to installation - **NEVER** install damaged boards.
- Determine which part of the sub-floor surface to begin with. It is recommended that the direction of the flooring is parallel to the longest wall in the room; length-wise installation along a corridor has to be ensured.
- Visual differences may be more pronounced from board to board, so it is HIGHLY RECOMMENDED to open multiple boxes at once to judge the most pleasant color blend and balanced appearance of boards. Always work out of several boxes alternately, and always begin installation with the groove side of the floorboard facing to the closest wall. Ideally, installation should start from the right corner of the room.

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- Allow a minimum 1/2" (12 mm) distance between flooring edges and the wall on all sides to accommodate for any expansions. Use temporary spacing wedges for this purpose. Remember to remove all spacing wedges once installation is complete.
- Place floorboards alongside each other staggering their joints at least 500 mm (20 inches) apart. To minimize waste, use boards leftover from the previous row to begin the next row whenever possible.
- Installing a moisture barrier between the sub-floor and the wood flooring can reduce expansion and contraction of flooring.

TYPES OF INSTALLATION

In this guide you will find instructions for the various types of hardwood flooring installation:

- Floating
- Glue-Down
- Nail Down

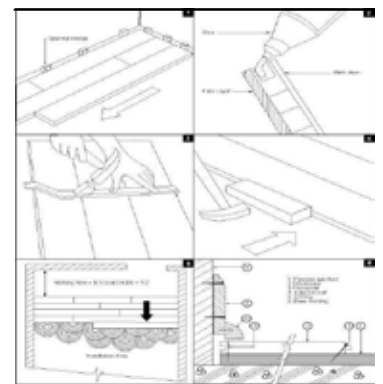
For these methods of installation, carefully follow all the detailed instructions provided by the adhesive manufacturers for the usage and the application of their product, including all the recommended tools to do the job. Do not hesitate to seek professional advice whenever required.

Lightweight concrete should have engineered wood flooring installed using the floating method - be sure to use an underlayment.

FLOATING INSTALLATION

Spread and unroll the required polyethylene cushioning underlayment parallel to the longest wall (they can be trimmed after the installation has been completed). Allow sufficient overlap on all joints with the next sheets; use double adhesive tape to fix the joints. Complete until the whole surface is covered with the underlayment. Pick the first floorboard and align it with the closest wall, groove side facing the wall. The installation should begin from the right corner of the room.

Use 1/2" (12 mm) temporary spacing-wedges to create the



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FLOATING INSTALLATION cont.

necessary gaps from the walls. Pick the second board, apply 1/8" (3 mm) glue bead at the inner topside of the groove at the board end, and start jointing the board in the row. **Never apply glue onto the tongue.** Continue the same steps until the first row is completed. Use a specially designed crowbar to push all the joints tight at the same time. Use the special crowbar to tighten joints from the sides and use clamps whenever necessary to ensure tight and square joints. Never fail to wipe off any excess glue immediately. Repeat all processes and install the rest of the floor. The last row is usually narrow and it may be necessary to rip floorboards lengthwise to fill in this row. Measure the remaining space and cut the boards accordingly, ensuring a 1/2" (12 mm) gap to the wall at all sides. Use the special crow bar to pull these last floorboards into place and to tighten their joints. Drive the 1/2" (12 mm) spacing wedges in afterwards. Allow the finished floor to be free from load and traffic for at least 8 hours before all temporary spacing wedges can be removed. Install all the skirting/moldings the next day. Make sure that all skirting or moldings are fixed onto the adjacent wall only, and **not directly fixed onto the floor.**

GLUE DOWN INSTALLATION

This method of installation requires fans to create airflow and to help speed up the drying time of the adhesives. Sufficient cross ventilation should also be provided during installation and up to 24 hours after its completion. Also, Concrete sub floors should have at least 3000-PSI compression strength. This type of installation does not need any cushioning underlayment.

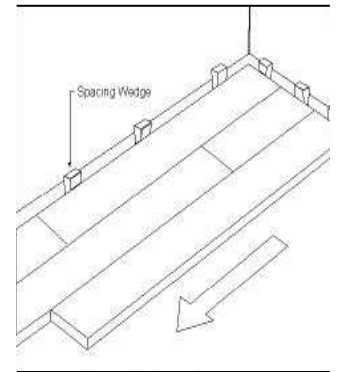
Step 1 - Determine the working area to begin the installation in and the longest wall in the room with access. Draw a straight line on the floor parallel to that wall, by a distance of (6 X width of 1 floorboard plus 1/2"). For example when installing flooring with 5" (127 mm) width, the distance of the line should be 30.5"(6 X 5" plus 1/2") from the wall. The area formed between the wall and the line will be the working area; the rest of the room will be the installation area; and the line itself will be the starting line. Depending on the width of the room, the working area may need to be adjusted, in order to avoid a very narrow cut on the last floorboards for the final row. Make a test and lay floorboards beforehand, if necessary. A starting block is recommended to help the initial floorboard placement. Nail the starting block down firmly along the starting line, within the working area to help hold the first row of the installed floorboards firmly in place.

Step 2 - Once the working area and the installation area have been established, the adhesive spreading on the installation area can begin. Use only urethane based adhesives/mastics, such as Bostic Best or Franklin 811. **DO NOT USE water-based adhesives/mastics.** Follow all directions and recommendations from the adhesive manufacturer and use all the proper recommended tools. The adhesive should be used sparingly over an area that can be laid

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GLUE DOWN INSTALLATION cont.

with flooring within 3 hours, depending on the curing speed of the adhesive used. Pick the first floorboard and align it with the starting line (starting block) along the groove's edge. The installation should ideally start from the right side. Lay the first floorboard and ensure that a 12mm (½") gap from the adjacent wall is provided. *(Use spacing wedge or nail the floorboard down if necessary).*



Continue the same steps with the next floorboard and complete the first row. Cut the last piece to allow 1/2" (12 mm) gap to the wall. Use a specially designed crow bar to pull the last board into place. Push joints tight and drive spacing wedges in. Clean any excess glue from the joints immediately. Begin the second row by either using board left over from the first row or fresh board. Cut the board, if necessary, to create staggered joints at least 20" (480mm) apart. Repeat steps similar to the first row and complete the second row. *Note that unlike the floating installation method, longitudinal tongue and groove gluing (along the edge of each row) is not compulsory with this glue down method.*

Tighten all joints and use soft rubber mallets to speed up the process, if needed. Make periodic checks of adhesive transfer during installation by inspecting the back of a floorboard. Adhesive transfer must cover at least 80% of the area behind the floorboard. Add more adhesive with roller brush if needed. Insufficient adhesive transfer may cause poor results. To prevent movement, tape flooring down every 3 completed rows across the face together using temporary-adhesive masking tape (i.e., 3M 2090 Blue Mask™ tape). ALWAYS wipe off excess glue from all joints immediately. Repeat all processes and install

Step 3 - Every 2 to 3 hours and upon completion, roll the floorboard surface with a 100-150 LB (50-70 kg) roller to ensure all boards are flat and in perfect contact with the adhesive. Wrap the roller with cloth (or thin foam pad) to avoid scratches or dents on the floor surface. The final row is usually narrow and may require ripping floorboards lengthwise to fill in this row. Measure remaining space and cut the boards accordingly, ensuring a 1/2" (12 mm) gap to the walls at all sides. Use the special crow bar to pull these last floorboards into place, and to tighten the joints. Then drive the 1/2" (12 mm) spacing wedges in. Add more spacing wedges around the perimeter of the installed floor if necessary to keep all joints tight. the rest of the floor within the installation area.

Step 4 - Cover the remaining, uncovered working area. Remove the starting block and spread the adhesive in the same manner as described before. Install flooring the same way as the first stage, making sure to put glue beads on the inner topside of the groove at each board's

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GLUE DOWN INSTALLATION cont.

end before jointing the floorboards. Work from the area away from the access "backward" toward the access. Clean any excess glue from the joints immediately. Tape down rows and roll floorboard surfaces. Complete the installation and spare 1/2" (12 mm) expansion space to the wall. Put additional spacing wedges wherever required around the perimeter. Remove all adhesive tape from the first stage area and clean the surface thoroughly. Repeat the process afterward on the remaining area. Allow the finished floor to be free from load & heavy foot traffic for at least 24 hours after completion. Do not cover the surface. Allow the flooring to breathe.

Step 5 - The next day, remove all temporary spacing wedges and install all the skirting/ moldings. Still avoid heavy foot traffic. *Make sure that all skirting/moldings are fixed onto the adjacent wall only, not the floor.*

NAIL DOWN INSTALLATION

This method of flooring installation may give some advantages over the other methods such as speed, reduced labor materials and more immediate "use" of the floor. However, the process is more difficult and some professional assistance may be required. It is necessary to use a 3/4" (18 mm) minimum thickness plywood sub floor with this method of installation to reach the degree of surface flatness as specified in "SURFACE PREPARATION". Gaps for expansion space between plywood boards and around the perimeter of the installed plywood sub floor must be provided in accordance with the manufacturers specifications. The moisture content of the plywood must be ensured to meet what is specified under "INSPECTION & PREPARATION".

Step 1 - Locate the longest wall in the room by which the direction of the flooring should follow. Depending on the type of floorings used, draw a starting line on the plywood sub floor parallel to that wall, by a distance equaling the width of the floorboard chosen + 1/2"). For instance, when installing flooring with 3.5" (90 mm) width, the distance from the wall should be 4" (3.5" + 0.5"). The additional 1/2" space is meant to create space for expansions. It is vital to ensure the line is totally straight and that installation begins with a perfectly straight and square start.

Step 2 - Pick the first floorboard and align it along the start line, with the groove side facing the wall. The installation should ideally begin from the right side of the room. Alignment must be done between the outer edge of the floorboard and the start line – NOT between the tip of the tongue and the start line. Use spacing wedge, if necessary, to create the 1/2" (12 mm) expansion gap. Once the floorboard is aligned perfectly, face nail the board with the nail perpendicular to the surface. Place nails as close as possible to the wall, so that after completion, when the base molding is fixed, the head of the nail will be concealed under the

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NAIL DOWN INSTALLATION cont.

base molding. Nailing the other long side of the floorboard on the tongue for this first row has to be done with the nail slightly inclined and the nail head driven flush with a nail punch. **Care must be taken on the placement of the nails.** The nails should be spaced every 10 – 12 cm (every 4 – 5") apart, and should be more than 2" (5 cm) from either end of the floorboards. Use 1 – 1.5" finishing nails depending on the thickness of the floorboards installed. Continue the same step until the first row is completed. Remember to cut the last floorboard in the row to create the needed expansion gap of 1/2" (12 mm) from the wall. Start the second row in the same manner. Use the remaining board from the first row or use fresh floorboard. Cut the board if necessary to create staggered joints that are at least 20" (480mm) apart. From the second row on, nailing is done on the tongue side only. The first and last rows must be nailed down by hand because they are closer to the wall. Continue to install all the remaining rows. *(Use a nailing machine if necessary to speed up the job). If nailing machine must be used, it is important to sacrifice some floorboards to test & adjust the machine. Hardwood varies in its density between one species and the next. The machine has to be adjusted from time to time to suit each particular job. The base plate of the machine must be clean, smooth and free from any nicks and scratches to avoid damages to the flooring surfaces. Do not put machine directly on floor surface; always use protective cardboard or mats. Do not hesitate to seek professional assistance whenever required.*

Step 3 - The final row of flooring is usually narrow and it will likely be necessary to rip floorboards lengthwise to fill in the row. Measure the remaining space and cut the boards accordingly, ensuring a 1/2" (12 mm) gap at all sides. Nail down this last row in the same manner as the nailing of the first row, and complete the installation. Once the nail down work is completed, install all the skirting and moldings. Make sure that all skirting/moldings are fixed onto the adjacent wall only, NOT directly to the floor. Clean the surface and refer to "CARE AND MAINTENANCE" for additional information.

ADDITIONAL INFORMATION

Oregon Lumber Company has specialized in custom flooring for the past thirty-nine years. Our growing list of prestigious clients around the world reflects our commitment to dedicated customer service. Please feel free to email or call us if you would like more specific literature, including photographs, pertaining to any of our products or if you would like samples sent to you.

OREGON LUMBER COMPANY

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