

Installation Requirements for Signature® Wide Plank MRP® Engineered Hardwood Floors 20 mm (¾")

Signature Handcrafted European Hardwood Floors are crafted from authentic French and European Oak hardwood, supported by an engineered multi-layer Moisture-Resistant-Platform (MRP®). The top layer of French Oak is bonded to premium, moisture-resistant, multi-ply Baltic birch plywood, ensuring a dimensionally stable product that combines both aesthetic appeal and exceptional durability.

Before you begin, it is EXTREMELY IMPORTANT that you read and understand this information completely prior to starting, since improper installation can void the warranties.

Installer/Owner Responsibility

- Materials should be brought inside the building and inspected for completeness of order before installation.
- Signature® plank floor requires 10 days acclimation time in stable house living conditions prior to installation.
- Signature wide plank floor installation shall be the last step of any construction or renovation project.
- Warranties do not cover materials damaged during transport and or with visible defects once they are installed, whereby natural characteristics of wood cause variations in wood grain, figure, character marks, texture or color and are not covered under warranties.
- Transport damages should be reported on the delivery document directly during signing for delivery when possible and when not accepted as is, returned to the transporter.
- Provisions must be made to prevent the product from sliding or falling.
- The installer assumes all responsibility for the final inspection of product quality.
- This inspection of all flooring should be done prior to installation. Depending on availability, deliveries may contain non-standard lengths and non-standard packaging size.
- Carefully examine flooring for quality, finish and color before installing it.
- The installer must use reasonable selectivity and hold out or cut off pieces with deficiencies, whatever the cause.
- If material is doubtful as to grade, manufacture or factory finish, do not install it and contact your supplier immediately.
- The use of stain, filler or putty stick for the correction of minor defects during installation should be accepted as normal procedure.
- Even though our products are inspected many times, some grading deficiencies may occur (in up to 5% of the floor area).
- When flooring is ordered, at least 10% must be added to the actual quantity needed for cutting and grading allowance. For diagonal floor installations, a higher allowance may be necessary.

Necessary Tools and Accessories

All installations of Signature® wide plank flooring will require these items: dust mask, broom or vacuum, chalk line and chalk, (electric power) saw, eye protection, hammer, hand saw, or jamb saw, miter saw, table saw, moisture meter (wood, concrete or both), square, tape measure, utility knife, pry bar, adhesive trowel, carpenter pencil. When installing site finished products sanding and buffing equipment may be applicable as well as finishing components, such as stains and sealants.

Pre-installation and Jobsite Conditions

- The installer/owner is responsible for determining if the job site subfloor and job site conditions are structurally and environmentally acceptable for installation. The manufacturer declines any responsibility for floor failure resulting from or connected with subfloor, subsurface, job site damage, jobsite environmental deficiencies or deficiencies after hardwood flooring has been installed. All substrates must be dry, clean, structurally sound and flat.
- Use of appropriate products and methods for correcting subfloor voids should be accepted as a normal industry practice.
- Exterior grading should be complete with surface drainage offering a minimum drop of 150 mm (6") in 3000 mm (10 ft.) to direct flow of water away from the structure. All gutters and downspouts should be in place.
- All outside doors and windows must be in place. All concrete, masonry, plastering and other "wet" work must be thoroughly dry. The wall coverings should be in place and the painting completed except for the final coat on the base molding. When possible, delay installation of base molding until flooring installation is complete. Basements and crawl spaces must be dry and well ventilated.
- Signature® wide plank flooring products may be installed below, on or above grade level.
- Crawl spaces must be a minimum of 450 mm (18") from the ground to underside of joists. A ground cover of 6-8 mm polyethylene film is essential as a vapor barrier with joints lapped 200 mm (8") and taped. The

crawl space should have perimeter venting equal to a minimum of 1.5% of the crawl space square footage. These vents should be properly located to foster cross ventilation (see figure 1). Local regulations may prevail.

- The installation site should have a consistent room temperature of 15-24°C (59-75°F) and humidity of 35-50% at 14 days prior to installation to allow for proper acclimation and thereafter, to allow for proper acclimation. Room humidity should never exceed 50%. Keep in mind that if the relative humidity drops below 35% for extended periods, the flooring could shrink and expand causing surface crack, split, bow, crook or delaminating.
- The subfloor must be checked for moisture content by an appropriate testing method. Test results must be recorded.
- To ensure the warranty of Signature® wide plank French Oak flooring in areas exceeding 80 m² (860 ft²) with subfloor radiant heating, the installation of heat sensors is required. For detailed information and installation guidelines, please refer to the *Signature Radiant Heat Guidelines*.

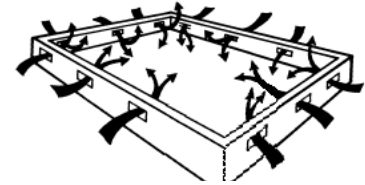


Figure 1

Note: Keep a record in your flooring passport of all your readings for later reference and warranty enquiries. We strongly recommend you keep a record of your moisture and humidity readings prior to and after installation. These measurements will be required by the supplier and manufacturer if there are any future problems.

Storage and Handling

Handle and unload with care. Signature® wide plank floor should be stored in a dry place, ensuring an air space under bundles of at least 100 mm (4”). If bundles are placed on concrete floors, the concrete must be flat, stable and located “on-grade.” The flooring should not be delivered until the building has been closed in with windows and doors creating a controlled interior environment and until cement work, plastering and all other “wet” work is completed and dry. The concrete should be at least 90 days old. The Signature® floor must be stored, in its packaging, in the environment in which it is expected to perform (stable house living conditions) for at least 10 days prior to installation. Provisions must be made to prevent the product from sliding or falling.

Subfloor Preparation and Recommendations for All Installations

Concrete Subfloors

Remove all transitions and wall-base then undercut all door casings with a hand or power jam saw using a scrap piece of flooring as a height guide. New concrete slabs require a minimum of 90 days drying time before covering them with Signature® wide plank floor. They must be fully cured. Concrete subfloors must be dry, smooth (flat within 5 mm (3/16”) in a 3000 mm (10 ft.) radius or 3 mm (1/8”) in 1800 mm (6 ft.) radius) and free of structural defects. To remove loose, flaky concrete, hand scrape or sand with a 20-grit # 3-1/2 open coat paper. Grinding high spots in concrete is recommended over using filling compounds. However, if a filling/leveling compound is used, it must be of a Portland base compound with a high compressive strength (min. 2000 N/cm² (3000 psi)).

Concrete must be free of paint, oil, existing adhesives, wax, grease, dirt, sealers, and curing compounds. These may be removed chemically or mechanically, but do not use solvent based strippers under any circumstances. Residual solvents can prohibit the satisfactory bonding of flooring adhesives. It is important to ensure a proper bond between the adhesive and the concrete and the flooring planks. Signature® wide plank floor may be installed on grade, above grade, as well as below grade where moisture conditions do not exist. To ensure a long lasting bond, make sure that the perimeter of the foundation has adequate drainage and a vapor barrier.

- Required Subfloor Primer/Moisture Barrier: Uzin® PE-414 Turbo | Pallmann® P-104 | Bona® R540
- Required Wood Floor Subfloor Adhesive: Uzin® MK-92S | Pallmann® P-5 Grip | Bona® R851
- Required Adhesive Trowel: 5/16” x 5/16” x 7/16” V-notch (Bona® 1500G) or equivalent

Lightweight Concrete that has a dry density of 1500 kg or less per m³ (under 3000 psi) is not suitable for Signature® floor. Many products have been developed as self-leveling toppings or floor underlayment. These include cellular concrete, resin-reinforced cement underlayment and gypsum-based materials. Although some of these products may have the necessary qualifications of underlayment for wood flooring installations, others do not. To test for lightweight concrete, scrape a coin or key across the surface of the subfloor. If the surface powders easily or has a dry density of 1500 kg or less per m³ (under 3000 psi), do not install Signature® floor.

Wood Subfloors

Wood subfloors must be securely fastened using nails or screws, which should be counter-sunk. The subfloor must be structurally sound, free from loose boards, vinyl, tiles, or loose OSB or plywood. It should be flat within 5 mm (3/16") over a 3000 mm (10 ft.) radius and have a moisture content not exceeding 10% before installation. For single-layer subfloors less than 15 mm (5/8") thick, a cross layer with a minimum thickness of 10 mm (3/8") should be added to achieve a total thickness of at least 25 mm (1") for added strength and stability. For glue-down installations, wood subfloors must be free from contaminants such as paint, oil, adhesives, wax, grease, dirt, urethane, or varnish. Sanding may be necessary to remove debris and ensure proper adhesive bonding. Underlayment-grade OSB is an acceptable subfloor material; however, particleboard is not suitable. When installing over existing wood flooring, the new flooring must be installed at right angles to the existing floor.

Required Subfloor Primer/Moisture Barrier: Uzin® PE-414 Turbo | Pallmann® P-104 | Bona® R540
 Required Wood Floor Subfloor Adhesive: Uzin® MK-92S | Pallmann® P-5 Grip | Bona® R851
 Required Adhesive Trowel: 1/4" x 1/4" x 7/16" V-notch (Bona® 1250G) or equivalent

Subfloor Moisture Check

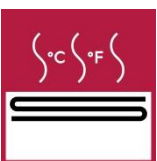
The required wood flooring adhesive must be used on all grade levels. All grade level applications are susceptible to moisture and should be tested for moisture prior to installation in several locations within the installation area. Acceptable conditions for above, on, and below grade installations are:

- Less than 1.25 kg (3.0 lbs.)/ 90 m² (1000 ft²)/24 hrs. in accordance with ASTM F - 1869 (calcium chloride testing for concrete).
- Less than or equal to 75% relative humidity in accordance with ASTM F - 2170 (testing for concrete).
- No greater than a reading of 4.5 on a Concrete Moisture Encounter (moisture meter) - Concrete Moisture Encounter meters should only be used as a method of searching out areas that may contain excessive moisture and should not be used to determine concrete readiness.
- Wood Substrates must have a moisture reading of less than 10% when using a Tramex, Delmhorst or equivalent moisture meter.

To correct any subfloor problems concerning moisture, either wait until the subfloor dries to meet specifications or use an appropriate moisture barrier.

Subfloors other than Wood or Concrete

NOTE: Perimeter glued resilient vinyl and rubber tiles are unacceptable underlayments and must be removed. Terrazzo, tile and any other hard surfaces that are dry, structurally sound and flat, are suitable as a subfloor for installation of Signature® products. As above, the surface must be sound, tight and free of paint, oil, existing adhesives, wax, grease and dirt. Terrazzo and ceramic tile must be sanded to assure adhesion. **WARNING!** Do not sand existing resilient tile, sheet flooring, backing, or felt linings. These products may contain asbestos fibers. Inhalation of asbestos dust can cause Asbestosis or other serious bodily harm. Check with local, state and federal laws for handling hazardous material before attempting the removal of these floors.



Radiant Heated Subfloors and Subfloor Cooling

Use of an in floor temperature sensor as well as a separate thermostat for the individual room is required. For more detailed information and instructions refer to Signature® *Subfloor Heating & Cooling*.

Preparation

Remove all transitions and wall-base and undercut all door casings with a hand or power jam saw using a scrap piece of Signature® wide plank floor as a height guide.

Racking the Floor

Whether you choose to install the floor by the glue down method, nail down method or both, start by cutting four to five planks in random lengths, differing by at least 600 mm (24"). As you continue working across the floor, be sure to maintain the 600 mm (24") minimum between end joints on all adjacent rows to ensure a random lay with no detectable pattern. (See Figures 2 and 3) Never waste material; use the left over pieces from the fill cuts to start the next row or to complete a row.

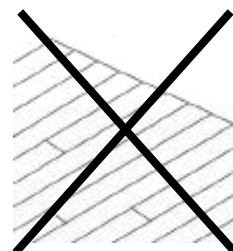


Figure 2

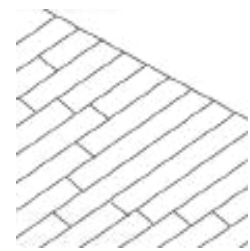


Figure 3

NOTE: When installing, be sure to blend the wood from several bundles to ensure a good grain and shading mixture throughout the installation. Allow for a 15 mm (5/8") expansion gap all around the room. Never strike the surface with a hammer or such, as this can damage the finish.

Recommended Subfloor Surfaces

Glue-down:

- Concrete slabs (primed with moisture barrier)
- Acoustic concrete - minimum 3000 psi (primed with moisture barrier)
- Suitable sound-reduction underlayment
- Ceramic, terrazzo, slate and marble (sanded)

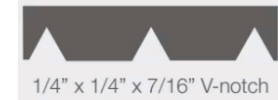
Required Adhesive Trowel:



Glue & Nail-down:

- 19 mm (23/32") plywood or OSB PS2 rated underlayment.
- Minimum: 15 mm (5/8") CDX grade plywood
- Existing solid wood flooring (sanded)

Required Adhesive Trowel:



Glue-down | Glue & Nail-down Installation Guidelines for Signature® wide plank 20 mm (3/4") thick floor

Additional tools and material needed:

Recommended V-notch Adhesive Trowel, approved Primer/Moisture Barrier for below and above grade applications; Clean white rags.

Optional for pre-finished floor: Polywater® Grime-Away Multi-Purpose Cleaning Wipes/ Adhesive Remover.

Below Grade Installation Guidelines

NOTE: A concrete slab is classified as below grade if any portion of the slab is situated below ground level, such as in the case of walk-out basements. All concrete slabs must be treated with an approved primer and a moisture barrier retarder in accordance with the adhesive manufacturer's installation guidelines. For below-grade concrete slabs, a double application of the moisture barrier retarder is required to provide comprehensive vapor protection.

Step 1 – Layout the Job

Select a starter wall. It is recommended to start on the longer wall in the room, but check for squareness and make adjustments as necessary. Where possible, lay the flooring at 90° angle to the floor joists. Measure out from the wall the width of two planks plus 9.5 mm (3/8") (this leaves a 15 mm (5/8") expansion space when the last board is installed) and mark at each end of the room and snap your chalk line. Secure a straight edge to the subfloor on the chalk line. The straight edge provides a stationary point to push against so flooring doesn't move during installation. This is a critical part of the installation. Please refer to the section titled *Large Surface Areas* for more information about installing Signature® wide plank French Oak flooring in large, open areas.

Step 2 – Spreading the Adhesive

Use the required trowel at a 45° angle (See Figure 4) to get the correct adhesive spread rate. This will ensure a proper and permanent bond. Improper bonding can cause loose or hollow spots. Spread adhesive from the straight edge out about 750 mm (3 ft.). Working in small sections is helpful as it will allow you to reach across the adhesive to install the flooring without putting any weight on it and will ensure proper transfer of the adhesive to the Signature® plank flooring.

NOTE: Change the trowel every 45 m² (500 ft²) due to wear down of the notches. This assures you always get the proper adhesive spread rate.



Figure 4

Step 3 – Install Your Starter Row

Install the first row of starter planks with the tongue side of the plank facing the straight edge and secure into position. Once the starter row is secure, continue with the installation. Never spread more adhesive than can be covered using the open time recommendation of the adhesive manufacturer.

Never lay Signature® plank flooring further than you can comfortably reach. Place tongue into groove and press firmly into adhesive. Put heavy weight on the glued surface for 24 hours after being glued into place using at least a 20 kg (44 lbs.) weight per m² (10 sf.). Never slide a Signature® flooring plank through adhesive. Test for proper bond by occasionally lifting a board and looking for good adhesive transfer (90%), and then replace it into the adhesive. Clean any adhesive off the flooring surface immediately, before it cures.

NOTE: Use caution when utilizing a rubber mallet to butt material together, as it can burnish the finish and cause marring. Avoid working on top of the Signature® plank flooring when installing with the glue-down method.

Step 4 – Job Completion, Final Touches

Once the last row is installed, allow the adhesive to dry overnight or per adhesive manufacturer's instructions. Remove the straight edge and install the two rows to the starting wall. The row closest to the wall will need to have the tongue removed and may need to be cut/adjusted to maintain the 15 mm (5/8") expansion space. Install the proper trim molding at the doorways for transition and along the walls to cover the expansion space. Vacuum to remove any dust or debris, and finish the floor with compatible products. Refer to the Signature® *Care & Maintenance Instructions* for further instructions.

Large Surface Areas

Expansion Joints in Building Structure

For glue down installation in projects with large surface areas it is always advised to accommodate the expansion joints in the building structure by allowing the same expansion space in the flooring. This space may be covered with a T-molding or filled with a flexible sealant.

Layout and Expansion Space

When the flooring area exceeds 10 meters (33 ft.) in width and/or 30 meters (100 ft.) in length, additional expansion space must be incorporated into the field, as well as at the perimeter and all vertical obstructions. For glue down installations it is recommended to use a center layout and add expansion in the field by inserting washers or plastic string between every 4 to 6 rows. Be sure to remove the washers or string when installation is complete.

Prevention Guidelines

In order to protect and keep your floor in good condition:

- Finish the floor using compatible products and professional equipment.
- Maintain indoor relative humidity between 35% and 55%. If this preventive measure is not kept, the Signature® wide plank flooring material can crack, split, discolour, crook, bow and delaminate.
- Use felt leg protector pads under all furniture legs.
- Replace narrow, hard furniture rollers with wide rubber ones.
- Always clean the floor in accordance with the *Signature® Care & Maintenance Instructions*.
- Wipe up spills immediately.
- Use a dolly, rolled over plywood when moving heavy objects.
- Apply (slip resistant) runners or area rugs on high traffic areas.
- Use (slip resistant) door mats, to keep abrasives as dirt, grit and sand off the floor.
- Protect the floor from direct sunlight.
- Move area rugs occasionally as they block sunlight and may give the appearance of discolouring under the rug.
- Don't allow water to stand on the floor.
- Don't walk on the floor with any hard and/or sharp object protruding from the sole.
- Don't use cleaning products that are abrasive or contain alkaline, ammonia, bleach, soap or citrus.
- Don't let furniture stand on the floor on small hard legs.
- Don't use a steam mop or any machine as you risk damaging the finish of the Signature® hardwood floor.
- Use of any tape on unfinished or prefinished floors is strictly prohibited; this will void the finish warranty.

CE Signature® wide plank floor platform is produced in Europe in accordance with the European conformity mark.

All Signature® products fulfill the CE requirements according EN 14342.

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EN 14342 Multilayer parquet, Engineered flooring	Signature® MRP® French Oak unfinished flooring 20 mm (3/4")
Density (kg) /(lb)	650kg / 1433lb
Reaction to Fire	Cfl-s1
Emission of Formaldehyde	E1
Content of Pentachlorophenol	Not Detectable
Breaking Strength	5.4 kN (60 cm) 6.2 kN (40 cm)
Thermal Conductivity	0,17 W/m K
Biological Durability	Class 1



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