

Installation Information for Wood Concepts Engineered Flooring

Attention

Inspect all materials carefully before installation. Warranties do not cover materials with visible defects once they are installed. The natural characteristics of wood cause variations in color, grain, etc. Even though our products are inspected many times, some grading deficiencies may occur (in up to 5% of our boards).

Owner/installer responsibility

- The installer assumes all responsibility for the final inspection of product quality. This inspection of the flooring should be done prior to installation. 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 installer/owner is responsible for determining if the job 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 after hardwood flooring has been installed. All substrates must be dry, clean, structurally sound, and flat.
- When flooring is ordered, at least 5% must be added to the actual square footage needed for cutting and grading allowance.
- Use of appropriate products for correcting subfloor voids should be accepted as a normal industry practice.

Tools & accessories needed

All installations

Breathing protection, broom or vacuum, chalk line & chalk, electric power saw, eye protection, hammer, hand saw or jamb saw, moisture meter (wood, concrete or both), square, tape measure, utility knife, protective paper & masonite etc. Do not use masking tape directly applied to the face of the product after installation

Add for glue-down

Urethane Flooring Adhesive (Bosticks Best adhesive or better) Bosticks recommended trowel or equivalent, Bostick MVP moisture primer or better for below grade applications.

Add for nail-down

Pownail Model 50M or 50P, 1 3/4" 18 gage cleats (for 20mm), 1 1/2" - 1 3/4" gage cleats (for 15mm). Nylon/plastic tapping block, Moisture barrier of 30/30/30 laminated kraft paper or 15lb felt paper.

Add for floating installation

PVAC glue (Titebond T&G), wood or plastic spacers 15mm (5/8"), moisture barrier of 30/30/30 laminated kraft paper or 15lb felt paper for wood subfloors or 6-8mil Polythene for concrete subfloors (0, 15mm (6-8 mil), resilient underlayment (option).



Job site inspection

Exterior grading should be complete with surface drainage offering a minimum drop of 150mm (6") in 3000mm (10') to direct flow of water away from 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. Wood Concepts flooring products may be installed below, on or above grade level.

Crawl spaces must be a minimum of 450mm (18") from the ground to underside of joists. A ground cover of 6-8 mil polythene film is essential as a vapor barrier with joints lapped 200mm (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. Local regulations may prevail.

When installing Wood Concepts boards in full bathrooms the finishing should be no less than two layers of lacquer. After installing the boards should have no possibility to move. The sides (mould or wall) have to be glued watertight. Abundant water on the installed boards should be avoided at any time.

The installation site should have a consistent room temperature of 15-24° C (59-75° F) and humidity of 40-65% 14 days prior to installation to allow for proper acclimation and for ever after installation, to allow for proper acclimation. Room humidity should never exceed 40-65%. Due to possible shrinking or expanding it could crack, split, bow, crook or even delaminate.

The sub-floor must be checked for moisture content by an appropriate testing method. Test results must be recorded.

Storage and handling

Handle and unload with care. Store in a dry place being sure to provide at least a 100mm (4") air space under bundles, which are stored upon "on-grade" concrete floors. Flooring should not be delivered until the building has been closed in with windows and doors in place and until cement work, plastering and all other "wet" work is completed and dry.

Concrete should be at least 60 days old. Wood Concepts flooring products must be stored in the environment in which it is expected to perform for at least 72 hours prior to installation.

Subfloor preparation and recommendations for all installations

Concrete subfloors

New concrete slabs require a minimum of 60 days drying time before covering them with a wood floor. (They must be fully cured) Concrete subfloors must be dry, smooth (flat within 5mm(3/16") in a 3000mm (10') radius or 3mm (1/8") in 1800mm (6') radius and free of structural defects. Hand scrape or sand with a 20-grit #3 3-1/2 open coat paper to remove loose, flaky concrete. Grinding high spots in concrete is recommended over using filling compounds. However, if a filling/leveling compound is used it must be Portland base compound (min 2000 n/cm2. (3000 psi) with a high compressive strength. 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

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adhesive and the concrete and the planks. Wood Concepts flooring products may be installed on grade, above grade, as well as below grade where moisture conditions do not exist. To ensure a lasting bond, make sure that the perimeter of the foundation has adequate drainage and vapor barrier.

Lightweight concrete

Lightweight concrete that has dry density of 1500kg or less per m³ (2000 psi) is not suitable for Wood Concepts flooring products. Many products have been developed as self-leveling toppings or floor underlayments. These include cellular concrete, resin-reinforced cement underlayments, 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 dry density of 1500kg or less per m³ (2000 psi), do not install Wood Concepts flooring products.

Wood subfloors

Wood subfloors need to be well nailed or screwed with screws. Nails and screws need to be counter sunk. The wood subfloor needs to be structurally sound (meaning subfloors without loose boards, vinyl, tiles, or loose OSB board or plywood), flat 5mm (3/16") in 3000mm (10') radius. They should not exceed 12% moisture prior to installation. If the sub-floor is single layer, less than 15mm (5/8") thick, add a single cross layer for strength and stability (minimum 10mm (3/8") thick for a total 25mm (1") thickness). For glue down installations wood sub-floors must be free of paint, oil, existing adhesives, wax, grease, dirt and urethane, varnish etc. Underlayment grade OSB is also a suitable subfloor. Particleboard is not an acceptable subfloor for nail down or glue down installation, but can be used as a subfloor in floating installations. When installing over existing wood flooring, install at right angles to the existing floor.

Subfloor moisture check

The recommended wood flooring adhesive may be used for above, on, and below grade applications. All grade levels 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 applications are:

- Less than 1.25kg (3.0lbs) / 90m² (1000 sq ft) / 24 hrs. on a calcium chloride test.
- No greater than a reading of 4.5 on a Tramex Concrete Moisture Encounter (moisture meter).
- Wood substrates must have a moisture reading of less than 12% 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, as described above, are suitable as a sub floor for installation of Wood Concepts flooring 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 that are not readily identifiable. 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.

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Radiant heated subfloors and subfloor cooling:

For more detailed information and instructions please refer to the separate documentation from Wood Concepts and the NWFA about subfloor heating.

Preparation

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

"Racking the Floor"



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Whether you choose to install the floor by the glue down method, nail down or floating, start by cutting four to five planks in random lengths, differing by at least 600mm (24"). As you continue working across the floor be sure to maintain the 600mm (24") minimum between end joints on all adjacent rows. Never waste material: use the left over pieces from the fill cuts to start the next row or to complete a row.

Note: When installing be sure to blend the wood from several cartons to ensure a good grain and shading mixture throughout the installation. Allow for a 15mm (5/8") expansion gap all around the room.

Recommended subfloor surfaces

Glue-down

- 18mm (11/16") plywood or OSB
- Acoustic concrete minimum 2000 psi
- Acoustic cork underlayment
- Ceramic, terrazzo, slate and marble
- Concrete slabs
- Existing solid wood flooring
- Preferred: 18mm (11/16") CDX grade plywood or 18mm (11/16") OSB PS@ rated underlayment, minimum: 15mm(5/8") CDX grade plywood

Nail-down

- 18mm (11/16") plywood or OSB
- Existing solid wood flooring
- Preferred: 18mm (11/16") CDX grade plywood or 18mm (11/16") OSB PS2 rated underlayment, Minimum: 15mm (5/8") CDX grade plywood

Glue down installation guidelines

Radiant heat sub-floors

For instructions please refer to the separate documentation from Wood Concepts and to NWFA guidelines about subfloor heating.

Below grade?

A concrete slab is considered below grade when any part of the slab is below ground level, for example, walk-out basements are below grade! Treat with Sika Primer MB or Bostik MVP first.

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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 15mm (5/8") (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 chalkline. 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 section 'large surface areas' for more information about installation in large areas.

Step 2 – Spreading the adhesive

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

Note: Change the trowel every 185 (2000 ft2) to 275m2 (3000 ft2) due to wear down of the notches. This assures you always get the proper adhesive spread rate.

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 planks further than you can comfortably reach. Place tongue into groove of planks and press firmly into adhesive. Never slide planks through adhesive. Test for proper bond by occasionally lifting a board and looking for good adhesive transfer (90%), then replace it into the adhesive. Do not allow any adhesive onto the surface of the boards. Use caution when using a rubber mallet to butt material together, as it can burnish the finish and cause marring.

Note: Never work on top of the 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 manufacturers 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 scribed to maintain the 15mm (5/8") expansion space. Install the proper trim molding at the doorways for transition and along the walls to cover the expansion space. Complete the job by vacuuming & dry mopping the floor. If installing a floor with wax or tung oil finish a new coat of finish may be applied AFTER the floors are uncovered.

Nail down installations

Wood Concepts flooring products may be installed over wood subfloors using nailing cleats. When installing Wood Concepts flooring products by nailing, it is necessary to use the proper type of flooring nailer and gage of cleat. The flooring nailer must be adjusted to insure the cleat penetrates the board at the point of the 90o angle formed by the tongue (insertion point). Use a scrap piece of flooring to adjust the nailer before beginning installation. If you are using a pneumatic nailer set the compressor to the recommended pressure. Test by driving a few fasteners, check and adjust the pressure to insure the fasteners are properly seated but are not driven so deeply to split or break the tongue.

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Step 1 - Layout the job

Select a starting wall. It is recommended to start on the longer wall in the room, but check for squareness and make adjustments as necessary. Measure out from the ends of your starting wall, the width of one board plus a 15mm (5/8") expansion space. Snap a chalk line. Where possible, lay the flooring at 90° angles to the floor joists. Install a moisture barrier of 30/30/30 laminated kraft paper or 15lb felt paper over the sub floor. This will retard moisture from below and may help prevent squeaks. Keep in mind there is no complete moisture barrier system for nail down installations.

Install the moisture barrier parallel to the direction of the flooring and allow a 75mm (3") over run at the perimeter. Make sure each run overlaps the previous run by 150mm (6") or more. Staple the moisture barrier to the subfloor to prevent movement. Cut a couple small openings in the barrier to expose the chalk line and transfer the line on top of the moisture barrier. Please refer to section 'large surface areas' for more information about installation in large areas.

Step 2 - Beginning installation

Place the planks with the tongue facing away from the wall and along your chalk line. It may be necessary to scribe the starting row to maintain the expansion space for walls that are out of square. Use 38-50mm (1 1/2" -2") finishing nails to secure the first starter row along the wall edge 25-50mm (1"-2") from the ends and every 200-250mm (8"-10") along the side. Counter sink the nails and fill with a filler that blends with the flooring installed. When possible, place the nails in a dark grain spot in the board. Next, blind nail the starter row at a 45° angle through the tongue. It



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will be easier if you pre-drill the holes in the tongue. Nail 25-50mm (1"-2") from the ends and every 200-250mm (8"-10") along the sides. It will be necessary to blind nail the next row. An 18 gauge finish nailer with 38-50mm (1 1/2"-2") brads can also be used to blind nail and no predrilling is needed. Continue the installation using the recommended engineered wood flooring nailer and cleats. Nail the flooring 25-50mm (1"-2") from the end and every 200-250mm (8"-10") along the side.

Step 3- Job Completion, Final touches

The final 1-2 rows next to the wall will have to be nailed by hand or with the finish nailer. The last row must be face nailed. It will need to be ripped and possibly scribed to maintain the 15mm (5/8") expansion space. When possible, place the nails in a dark grain spot in the board and countersink and fill with matching filler. Install the proper trim molding at the doorways to achieve the transition and along the walls to cover the edges of any gaps along the wall due to irregularity. Complete the job by vacuuming & dry mopping the floor. If the flooring being installed has a wax or tung oil finish, an additional coat may be applied, per manufacturers instructions, AFTER the flooring is uncovered.

Nailed Installation directly over joists (only applies for flooring with 20mm (3/4") thickness) Wood Concepts flooring products can be nailed directly over joists, provided that the joists are not further apart than 400mm (16") center to center.

Large surface areas

Expansion joints in Building structure

For both glue down and nail 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') in width and/or 30 meters (100') in length, additional expansion space must be incorporated into the field, as well as at the perimeter and all vertical obstructions. For glue down and nail 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. For floating installations allow 6.5mm (1/4 ") expansion for every 3 lineal meters (10') of flooring in either direction, but never less than 15mm (5/8"). Example: 9 meter (30') x 9 meter (30') room requires 19.5mm (3/4") expansion at all edges.

NOTE: If the installed floors are being covered with paper & masonite etc, we recommend not applying the final coat of finish (if required) until floors are uncovered and the job is near completion.