KNOWN

COLLECTION

Wood Floor Specification Sheet

ENGINEERED FLOORING INSTALLATION INSTRUCTIONS

Read all of these instructions thoroughly before beginning installation. In addition to these instructions, we recommend that the installer follow all installation guidelines set forth by the National Wood Flooring Association (www.nwfa.org). Where these instructions differ from the NWFA guidelines, this document takes precedence.

PRIOR TO INSTALLATION

It is the installer's responsibility to ensure that all of these General Conditions are met prior to installation and that all specific installation instructions below for the installation method you have chosen (Glue Down, Nail Down, or Floating Floor plus, when applicable, Radiant Heat Systems) are followed carefully. When installed according to these instructions, our custom engineered hardwood flooring is approved for use above, on, and below grade. When installing below grade, use the Floating Floor installation method.

It is the installer's responsibility to inspect the flooring for proper color, grade, gloss, visible manufacturing defects, damage, or otherwise unsatisfactory appearance. **Do not install damaged or visibly unsatisfactory material. Installing a plank constitutes acceptance of its appearance.** If necessary, contact your local retailer, distributor regarding any unsatisfactory material PRIOR TO INSTALLATION.

If installing over radiant heat, read the 'Radiant Heat Systems' section below before finalizing product selection or beginning installation. Careful adherence to these guidelines is required for a successful and fully warranted installation. Certain wood species are not warranted for installation over any type of radiant heat. We do not offer a warranty on ANY flooring installed over electric radiant heat systems. Only hydronic (water) systems may be approved. 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.

NOTE: when nailing wide-plank flooring to a wood subfloor, we recommend both nailing and gluing to prevent potential squeaks in the floor, although gluing is only required when nailing down planks wider than 8". (See below under 'Nail + Glue Installation Instructions' for details.)

GENERAL CONDITIONS — ALL INSTALLATION METHODS

ENVIRONMENTAL CONDITIONS

When wood absorbs moisture it expands and when it expels moisture it contracts. To help minimize moisture-related expansion and contraction, verify the following conditions prior to installation:

- All exterior walls, windows, and doors must be in place and the building envelope closed during acclimation and installation.
- All wet work such as painting, drywall, masonry, and concrete must be completed and dry.
- Basements and crawl spaces must be dry and well ventilated. Crawl spaces must be a minimum of 18" high from the ground to the bottom of the joist. Dirt floors in crawl spaces should be covered with a 6-10 mil black plastic to reduce moisture migration. Seams should overlap and be sealed with waterproof tape. Perimeter crawl space cross-ventilation should equal 1.5% of the square footage. Vents must remain open year-round.
- Exterior grading should be complete and drainage should move away from the building structure with a minimum drop of 3" in 10'.

ACCLIMATION

Ensure that the flooring has been properly acclimated to the site conditions prior to installation. Permanent HVAC should be on and operational and maintained between 60-75°F with a relative humidity of 35%-55% for a minimum of 7 days prior to delivery, as well as during and after installation of the flooring. Humidity levels below 35% may cause movement in the flooring, including gapping between pieces and possible cupping and cracking in the face. The use of a humidification/dehumidification system may be required to maintain proper humidity levels, particularly over radiant heat.

The flooring must be delivered to the job site and the packages opened a minimum of 5 days prior to the start of the installation. Additional special requirements apply when installing over radiant heat. See below under 'Radiant Heat Systems' for details.

SUBFLOOR CONDITIONS MUST BE:

- **Clean** – Subfloors must be scraped clean and free of debris. Sweep and /or vacuum all debris from the subfloor. Debris on the subfloor may cause over-wood and uneven surfaces in the finished floor, the poor fit between planks, and poor adhesive bond in glue-down installations.
- **Flat** – Subfloors must be flat to within 3/16" over any 10' radius and 1/8" over any 6' radius. Check the flatness using a straight edge, laser line, or string line. Grind, scrape, sand or shim all high or low spots. On concrete subfloors, grind all high areas and fill low areas using a quality cementitious leveling compound. Ensure that all fasteners securing the subfloor are set flush.
- **Dry** – Check and record all moisture and temperature conditions prior to installation. Visually check the job site for potential moisture problems. Look for signs of water intrusion around windows and doors. Check for mold or fungus on walls and all other areas. Water intrusion may necessitate structural repairs and/or create conditions unsuitable for flooring installation.

    - Plywood and composite subfloors should be checked using a calibrated moisture meter. Be sure to use the correct moisture meter setting for the species being checked. Carefully follow the moisture meter manufacturer's operating instructions. Moisture readings should not exceed 10% in any location and the moisture variation between the subfloor and the flooring should not exceed 2% at the time of installation.
    - Concrete subfloors must be fully cured, at least 60 days old, and should have a minimum 6-mil polyfilm between the concrete and ground. Lightweight concrete can hold more moisture and may take longer to dry out to acceptable moisture content.
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    - NOTE: These tests give a snapshot of moisture conditions at the time of the test, but do not reflect the permanent year-round condition of the substrate. If Gluing Down on concrete that is on or below grade, it is highly recommended to use a concrete sealer approved by the manufacturer of the adhesive you have chosen, even if you believe the concrete is dry. A concrete slab on or below grade that measures dry today may become moist in the future and cause floor failure. We are not responsible for site related moisture issues.
    - More stringent requirements regarding the dryness of the subfloor apply when installing over radiant heat. See below under 'Radiant Heat Systems' for details.
- **Structurally Sound** – Wood subfloors must be well-fastened. Use screws every 6" and replace subfloor panels/boards as necessary to eliminate all movement and squeaking.

ACCEPTABLE SUBFLOOR TYPES:

- CDX plywood – at least 5/8" thick for joist spacing up to 16" on center, minimum 3/4" thick for joist spacing greater than 16" on center (19.2" maximum). Plywood subfloors installed over concrete must be installed in accordance with the guidelines set forth by the National Wood Flooring Association (NWFA) – www.nwfa.org).
- OSB – at least 3/4" thick, PS 2-92 rated or PS 1-95 rated.
- Existing hardwood flooring over a suitable subfloor as outlined above. The existing floor must be well-fastened, smooth, and for Glue Down installations, unfinished.
- Underlayment grade particleboard (minimum 40 lb. density) – Glue Down/Floating Floors only.
- Concrete slab – Glue Down/Floating Floors only. Concrete must be at least 3000 lbs. density for Glue Down installations.
- Lightweight concrete (gypcrete) – Floating Floors only. Gluing to concrete that is less than 3000 lbs. density is NOT WARRANTED. We provide no guarantee that lightweight concrete or gypcrete will remain structurally sound during the life of the floor. Separation of the flooring from the subfloor caused by deterioration or fracturing of the substrate will not be considered a product failure.
- Ceramic tile – Floating Floor only. The tile must be well-adhered and flat to 3/16" over any 10' radius.
- Resilient tile & sheet vinyl – Glue Down/Floating Floors only; for glue-down, tile/vinyl must be new and non-urethane-coated.

PREPARING THE PERIMETER

Undercut door trim, jambs, and casings to the thickness of the flooring plus any adhesives or underlayments you plan to use.

LAYOUT

On wood subfloors, if the subfloor is fastened to joists or trusses, the flooring should be installed perpendicular or at a 45° angle to the joists/trusses. If possible, use an outside wall as the starting wall.

GENERAL TOOLS AND RECOMMENDED ACCESSORIES

- Pencil
- Tape Measure
- Broom and Dust Pan
- Shop Vacuum (Optional)
- Safety Glasses
- Utility Knife
- Moisture Meter
- Hammer
- Shim Wedges
- Tapping Block
- Rubber Mallet
- Carpenter square
- Pry-bar or pull-bar
- Wood Filler
- Scraper
- Dust Mask
- Rags
- Chalk Box & Chalk
- Recommended Saws: power miter saw, table saw, jamb saw

Once all of these General Conditions are met, continue the installation using the instructions for the type(s) of installation you have chosen (Nail-Down, Glue-Down, Nail + Glue, Floating Floor, and Radiant Heat Systems).

NAIL DOWN INSTALLATION INSTRUCTIONS

Known Collection Custom Floors Engineered Wood Flooring can be nailed to plywood, OSB and existing wood flooring meeting the requirements outlined above under ‘Subfloor Conditions.’ Nail down installation is for engineered planks up to 8” wide (If nailing down planks wider than 8”, follow the ‘Nail + Glue Installation Instructions’ below:

1. If possible, use an outside wall as the starting point. Measure out from the starting wall the width of one flooring plank plus the appropriate expansion space for that thickness of

flooring. Mark two points toward each end of the starting wall and snap a chalk line along the full length of the wall through the marks.
2. Lay the tongue side of the first row of flooring along the chalk line. Face nail (top nail) the first row of flooring in place. Place the fasteners approximately 3/4" from the wall side (groove side) of the flooring board every 4" to 6". Continue the first row installation blind/edge nailing every 4" to 6" along the tongue and every 2" to 3" from every end joint. Note: Blind/edge nailing of the first row may require the installer to use 6-d finish nails or the pneumatic finish nailer along the tongue.
3. Continue the installation across the room, blind/edge nailing every 4" to 6" and 2" to 3" from each end joint. Stagger end joints by at least 8". Avoid creating "H" patterns (where an end joint is adjacent to another end joint in the second to last row installed).
4. Trim the last row of flooring to maintain the minimum expansion space at the far wall. Use the trimmed piece to start a subsequent row. Discard any trimmed ends shorter than 8".
5. Face-nail the last two or three rows at the far (finish) wall. The last row or two of flooring may need to be pulled together using a pulling bar.
6. Complete the installation by reinstalling or installing new base moldings.

GLUE DOWN INSTALLATION INSTRUCTIONS

Known Collection Custom Floors Engineered Flooring can be glued down to concrete, plywood, OSB, underlayment grade particleboard, and existing wood floors meeting the requirements outlined above under General Conditions/Subfloor Conditions. Known Collection Custom Floors Engineered Flooring can also be glued to other surfaces such as well-adhered sheet vinyl, vinyl tile, ceramic, etc., but the performance of the adhesive is the responsibility of the adhesive manufacturer and careful adherence to the adhesive manufacturer's installation instructions for that particular subfloor surface is crucial. Known Collection Custom Floors does not warrant the adhesive bond between the subfloor and the Known Collection Custom Floors Engineered Wood Flooring.

1. If possible, use an outside wall as the starting point. Measure out from the starting wall the width of the flooring plus the appropriate expansion space for that thickness of the flooring. Mark two points toward each end of the starting wall and snap a chalk line along the full length of the wall through the marks.
2. Install backer boards as guides along the wall side of the chalk line. Anchor the backer boards in place with screws or finish nails. Over concrete subfloors, anchor the backer boards with concrete screws or concrete nails. These boards will be removed later.
3. Lay the first row of flooring, but do not glue into place. Align the tongue side of the flooring boards against the backer board. Dry lay the next two rows of flooring in place, sliding the tongue into the groove. End joints should be staggered by at least 8". Pull the rows of flooring boards out away from the backer board approximately 24" to allow for the glue to be spread.
4. Trowel spread the adhesive on the subfloor along the backer board wide enough to allow the first three rows of flooring to be installed. Follow the adhesive manufacturer's recommendations for wet lay times before proceeding to the next step.
5. Install the first row of flooring, pressing the tongue to the backer board. Slide the tongue of the next row of flooring into the groove of the first row and continue until the first three rows are done.
6. Trowel spread adhesive and continue the installation across the room. Trim the last row of flooring to maintain the minimum expansion space at the far wall. Be careful not to move

the installed flooring out of position. Using knee-boards can help prevent movement. Some flooring boards may need to be tapped or pulled into place with a tapping block or pull bar.

7. Most adhesives require that the installer clean the adhesive off the flooring boards during the installation. Follow the adhesive manufacturer's recommendations for this procedure.
8. Once the room is finished, remove the backer boards at the starter row.
9. Dry lay the first row of flooring to replace the backer board. Trowel spread the adhesive on the back of the flooring boards (not on the subfloor) and install the flooring, sliding the groove onto the tongue of the already installed starter row. Doorways and other openings may require installation of the flooring the same way. Slide the flooring boards under the previously cut door trims and casings.
10. Complete the installation by reinstalling or installing new base moldings.
11. Do not allow foot traffic on the floor for 24 hours after installation is complete.