

WFS ENGINEERED HARDWOOD FLOORING INSTALLATION GUIDELINES

INSTALLER / OWNER RESPONSIBILITY—VERY IMPORTANT

INSTALLATION CONSTITUTES ACCEPTANCE of flooring material, subfloor/substrate, the jobsite itself including the ambient temperature and relative humidity at the time of installation, moisture content of the subflooring and flooring, and all site variables that may affect a wood floor. It is the responsibility of both the installer and owner to inspect and approve each piece of flooring prior to installation. **IF THE FLOORING AS SUPPLIED WILL NOT SATISFY THE CUSTOMER IN FULL, DO NOT PROCEED TO INSTALL.** The decision not to proceed must be made within the first 10% or 100 square feet of flooring opened, whichever is less. Industry standards allow a variance from grading and manufacturing tolerances of 5%.

Note to Installers: Protect your business. Your hard work testing moisture conditions is lost if you can't document it on request. It is recommended you photograph moisture readings from two meters, including in the photos the location, date, and initials on the subfloor in permanent marker. This may help protect you if you are ever challenged to prove you did your job completely and correctly.

Many important decisions must be made at the installation site, and therefore must be the sole responsibility of the installer/owner. These include but are not limited to proper storage and handling, complete evaluation of site conditions including moisture testing of the subfloor and flooring, acclimation of flooring to appropriate conditions, subfloor preparation, flooring layout, milling, grade, color and gloss, scraping, proper installation methods, sufficient quantity on hand to complete the job, and jobsite cleanup. **For best results, we suggest installation be done by a National Wood Flooring Association (NWFA) Certified Professional.**

Site Conditions, Handling, and Storage (NWFA Installation Guidelines, Sec. I): WFS engineered hardwood flooring may be installed above, on, or below grade. Engineered hardwood flooring should be installed only after all work that may affect the flooring is completed. Drywall, paint, and all "wet work" should be thoroughly cured. Moisture testing should be performed before delivery of flooring to confirm the flooring will not be adversely affected by job site conditions. When handling bundles/packages avoid damage to the finished face and milled ends/edges of the flooring.

HVAC systems must be in operation before, during (except radiant heat), and after installation (refer to NWFA Installation Guidelines, Sec I, Ch. 1, Part 1). A temperature of 70 degrees F +/- 10 degrees and a relative humidity between 30-50% is recommended. Heating units or ductwork adjacent to the flooring or under the subfloor may cause "hot spots" which must be eliminated prior to installation. Keep flooring dry, flat, and maintain good air circulation in storage. **RECORD SUBFLOOR AND FLOORING MOISTURE CONTENT UPON DELIVERY AND AT TIME OF INSTALLATION, AND RETAIN THESE RECORDS.** Acclimate WFS Flooring to controlled site conditions; acclimation is not a period of time, but a set of

conditions based on moisture testing. Refer to NWFA Installation Guidelines, Sec. I, Ch. 2 for detailed information.

Radiant Heat: WFS engineered hardwood is not warranted of radiant heat systems

Moisture Testing is Critical (refer to NWFA Installation Guidelines, Sec. I, Ch. 3 and Sec IV, Apx C).

Confirm proper drainage exists around the structure. In crawl spaces, exposed earth must be fully covered with minimum 6-mil polyethylene sheeting. Crawl space vents must remain open at all times, and must equal at least 1.5% of the total square footage of the crawl space. Basements must remain dry.

Subfloor Types And Conditions (NWFA Installation Guidelines, Sec. II):

General:

The subfloor must be clean, dry, flat (within 3/16" in 10'), and structurally sound. Panel joints must be flush. Correct any squeaks before installation of hardwood flooring.

Wood/panel subfloors: (NWFA Installation Guidelines, Sec. II, Ch. 4).

CD Exposure 1 plywood and OSB Exposure 1 subfloor panels are appropriate subfloor materials (grade stamped US PS1-95). Solid board subfloors should be 1" x 6" nominal, Group 1 dense softwoods, #2 Common, KD. Minimum single layer panel subfloor thickness is 5/8" plywood or 23/32" OSB on 16" o.c. joists (APA Sturd-I-Floor stamped). The flooring must run perpendicular to the floor joists, or 1/2" additional subfloor thickness is required. See NWFA Installation Guidelines, Sec II, Part IV for information on other joist spacing and panel thickness requirements, engineered flooring systems, etc. Wood subfloor should not exceed 12% m.c. (Sec IV, Apx C).

Concrete subfloors (NWFA Installation Guidelines, Ch. 3, Part III, also Apx C).

Concrete should be minimum of 3000 psi, cured a minimum of 30 days, between 7-9 ph. Concrete must be tested for moisture.

Many methods and products exist for testing concrete moisture, both qualitative and quantitative. For more details see NWFA Ch 3, Part III, C.; and ASTM F-2170. The installer is responsible to be sure moisture conditions are compatible with the adhesive of choice.

Installation (NWFA Installation Guidelines, Sec. III):

Preparation

Allow 1/2" expansion between the wood flooring and any walls or obstructions. Undercut doorjamb, casings, etc. as needed so flooring has adequate expansion space.

Layout

Establish a primary working line, realizing the room is not square and no wall is perfectly straight. The best appearance is usually parallel to the length of the room, but always install perpendicular to the floor joists (wood subfloors) unless the subfloor meets special qualifications (see wood panel subfloors

section). Always rack out the entire job before installing to avoid clustered joints or patterns, and to achieve a good color blend.

Installation with Mechanical Fasteners (Cleats/Staples):

Over the subfloor, install a layer of #15 building felt (or product with equivalent perm rating), overlapped 4" at the seams. See NWFA, Sec. III, Ch. 8, Part 4 for more detail on acceptable moisture barriers. Use caution to avoid edge and face damage during installation. Special footer plates are available for flooring nailers to protect factory finished flooring from nailer damage. Use a tapping block as required. Fasten a backer board of minimum 1/2" plywood to establish straight working lines. Backer boards should be secured to the subfloor and carefully aligned with the primary line.

Use flooring fasteners (NWFA Installation Guidelines, Sec. IV, Appendix F) designed for engineered flooring (staples—minimum 1" long, maximum 3/8 crown, or cleats—1" to 1 1/4"). Air pressure and tool settings should allow the fastener to seat properly in the nail channel, not split the wood, and not "dimple" the face. Fastening schedule should be every 3-4" (staples) or 4-6" (cleats), with a fastener 1-2" from each end, minimum two fasteners per piece. **DO NOT USE TOOLS OR FASTENERS DESIGNED FOR 3/4" SOLID FLOORING.**

Face nail only as required with 1" (4d) finish nails or cleats, 1/2" from the groove, pre-drilling the nail holes to prevent splitting. Face nails should be countersunk and filled.

Adhesive Installation:

Many quality adhesives are available that are compatible with WFS engineered hardwood flooring. Refer to the adhesive container label regarding storage, proper ventilation, trowel notch size/pattern, spread rate, open time, safety procedures and equipment, cleanup and cure time. Avoid allowing adhesive residue to contact the face of the flooring. Some adhesive manufacturers recommend products/methods for removing adhesive residue; others may not. The installer is responsible for removing any residue.

Floating Installation:

WFS engineered flooring may be floated over a structurally sound subfloor, using a quality tongue & groove glue (must remain elastic when cured) applied in a continuous bead along the bottom of the grooves (both edge and end groove). A quality floating floor underlayment pad should be installed between the subfloor and the flooring installation. Pay careful attention to expansion spaces around each room including room-to-room transitions such as door/hallways; these transitions require expansion space with an appropriate molding. An expansion joint may be required where any dimension exceeds 30'.