

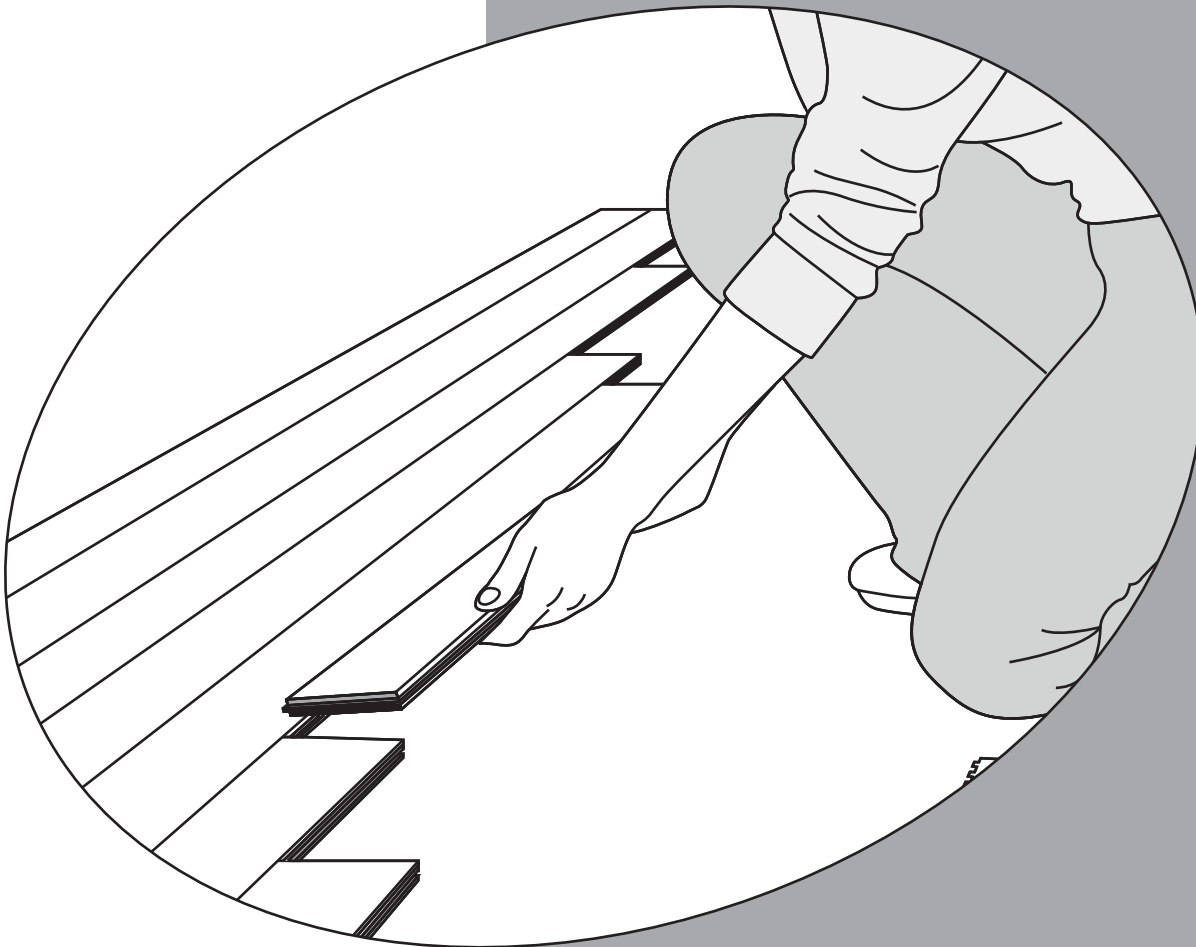
FER·MA[®]



American & Exotic Collection

Installation Guide

Engineered Hardwood / Bamboo



INSTALLATION INSTRUCTION FOR ENGINEERED FLOORING

FERMA WOOD FLOORING ("FERMA") recommends installation by experienced professionals who subscribe to installation standards as set forth by NOFMA, NWFA ...

CAUTION: WOOD DUST

Sawing, sanding or machining of wood products can cause respiratory, eye and skin irritation. The International Agency for Research on Cancer has classified wood dust as a nasal carcinogenic in humans. If using power tools, a dust collector is recommended, as is a dust masks NIOSH approved. Avoid contact with the eyes or skin when in proximity to wood dust. Se of a protective device for the eyes is also recommended.

PURCHASER/INSTALLER RESPONSIBILITY

The purchaser/installer should inspect all of the flooring before installation. Being a natural product, hardwood rarely will be perfect. Industry standards of manufacture allow for grading deficiencies up to 5%. This 5% may be composed of natural or manufacturing deficiencies. The purchaser/installer should carefully examine the flooring for color quality and finish. **DO NOT INSTALL IF THE PRODUCT IS NOT ACCEPTABLE.** Seller should be contacted immediately. Installation of flooring denotes acceptability.

It is noted that stain-putty filler is an accepted part of the installation procedure throughout the industry.

It is the purchaser/installer's responsibility to determine the suitability of the job site environment and sub-surfaces involved. (See below) Installation must follow recommendations of the construction industry and the material's manufacturer as well as local codes.

FERMA declines any responsibility for job failure or non-acceptability from or associated with subfloor/substrates or job site environmental deficiencies.

GENERAL INFORMATION

FERMA recommends three methods of installation for its engineered products: staple down, full spread glue down and floating system. The two basic acceptable subfloors are wood (plywood, OSB) and concrete. These will be addressed separately.

FERMA does not recommend installing engineered floors over particle board, MDF, wafer board, masonite or luan underlayment or and radiant heat system.

FERMA engineered flooring is machined to exacting tolerances. Its use is limited to on-grade or above grade applications. Full bath installations are not recommended because of moisture issues encountered there.

- Environmental conditions should be approx. 70F MOL and between 40%-60% relative humidity, 50% being the target goal. These conditions should be present for at least 7 days prior to delivery and maintained continuously.
- Moisture testing is required to qualify the job site and to insure warranty protection. Failure to follow FERMA's recommended procedures may void the warranty.
- Basements and crawlspaces must be dry and well ventilated. Crawlspaces must be a minimum of 24" from the ground to bottom of joists. A ground cover of 6-8mil poly should cover the soil in the crawlspace 100%. Seams lapped at least 12" and sealed. Edges should be lapped up the perimeter walls 3"-6" to divert moisture to the outside. This vapor barrier is REQUIRED.
- Perimeter venting is necessary to provide for cross ventilation. Minimum combined venting should be equal to at least 1.5% square feet of the crawlspace or exceed where applicable. Local codes prevail. No dead walls allowed impeding cross flow of air movement.
- Exterior grading must drop at least 3" in 10 feet or according to local codes. All gutters and downspouts must be in place and divert run-off away from structure.
- Wood grows with introduction of moisture. Expansion space is necessary to allow movement of flooring. The thickness of the floor should be used as the basis for this expansion space. Expansion space is necessary at all vertical surfaces.
- Acclimation of wood is necessary. Wood should be delivered only after the above listed job site conditions are met. (All moisture related work completed, home at near living environmental conditions). Moisture content readings will determine the length of time to acclimate the flooring.

INSTALLATION OVER WOOD and PLYWOOD SUBFLOORS

Sub floors should be flat within 1/8" in 6 feet or 3/16" in 10 feet. Wood subfloors must be clean, free of paint, sealers, adhesives, wax or any other debris.

If installing over existing hardwood floor, a layer of 5/8 plywood or OSB is recommended before proceeding. Plywood subfloor should meet APA-PS2-92 standards. Plywood should be tongue and groove. Plywood must be minimum 3/4" CDX.

Oriented strand board, OSB, when used must be tongue and groove, installed sealed side down, minimum thickness 23/32", must conform to US VOL product std PS2-92. OSB must be tongue and groove, exposure 1, preferably exterior grade. It must meet US VOL STD PSI-95 performance STD for 16" on center joist system.

Particle board or wafer board are not acceptable as a subfloor.

Wood flooring is manufactured at 6-9% moisture content. The tolerance between new hardwood floor and sub floor should not exceed 4% points maximum, preferably 2% points. All wet work should be completed before delivery of flooring. This includes but is not limited to, ceramic, masonry, painting, drywall work, patching, plaster work... Moisture content should not exceed 12% in the subfloor.

Check floor substrate for deflection. The formula in general is L/360. Nail or secure any loose areas. Any excess vertical movement must be corrected as this will affect long term performance. As manufacturer of specialty flooring, we are not able to evaluate each and every residence's engineered structural system. Spacing span lengths, subfloor thicknesses as well as their engineering methods are the responsibility of the builder, engineer, architect or consumer, who are better positioned to evaluate the expected end result based on the site related conditions.

When staple down method is used, a layer of 15lb. roofing felt is required between subfloor and hardwood floor. Fastener should be used 4"-6" apart or more as needed to secure product. Fasten each end 1-3" from end. Gluing ends of tongue and groove to minimize shrinkage. Be sure to experiment on a scrap piece first and adjust the compressor setting to avoid damaging the tongue.

If using the glue down method, the recommended trowel size is 1/4" V notch, spaced 1/2" on center. The recommended adhesive is Bostiks Best. Always check for proper bond. Glue down products must have a minimum 90% coverage preferably 100%. Pull up occasional boards and observe whether proper coverage is followed.

H Joints should be avoided. Ends should be staggered with at least 6" from preceding joint. Avoid a conspicuous stair step pattern. This helps to promote a pleasing over all appearance. PVA glue applied to end joints helps prevent longitudinal shrinkage. If using 3M blue tape to hold pieces in place, it must be removed before 24 hours. If left on longer it may affect the finish.

GLUE DOWN ON CONCRETE

Engineered product may be glued on concrete or installed with floating method. Please consult with manufacturer.

Concrete must be clean, free of wax, adhesives, anti freeze chemicals, paint, patching compound, curing compounds or sealers, admixtures that are hygroscopic. If in doubt, do not install.

Concrete testing on slab 30 days old is the minimum time frame allowable. Less than 30 days old is not a reliable indicator. Concrete must be a minimum of 60 days old before flooring can be installed. It may be necessary to test for moisture multiple times or until acceptable.

**Some self leveling cement compound used to correct concrete floor may have shorter curing time. Always check with the manufacture of the self leveling cement before proceeding with installation.

Concrete subfloors must be flat to 1/8" in 6ft or 3/16" in 10 ft. Concrete may have to be shot blasted, scarified, or ground down until acceptable.

Moisture testing is necessary by concrete moisture meter or calcium chloride test.

Moisture meters are used to qualify moisture content of wood flooring, subfloor, and concrete slab. Installer has the choice of many manufacturers of professional meters. Reading is not to exceed 4.5 on the meter scale. The use of calcium chloride test is also acceptable. Moisture emissions are not to exceed 3lbs per 1000sf. in a 24 hour time period.

PH testing is also recommended. A Ph factor of 5-9 is acceptable. 7 is neutral, above 9 requires corrective action. A high Ph factor may affect adhesive stability. Concrete must be at 30 days old before moisture content testing takes place.

Acoustic concrete and light weight concrete – Installer must check with concrete manufacturer for product compatibilities and any special needs to be addressed concerning installation/performance. FERMA does not accept responsibility for any problems resulting from failure to follow concrete/gypsum manufacturer's recommendations.

FERMA does not recommend its product to be used over any radiant heating systems.

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