



UNFINISHED ENGINEERED FLOORING

INSTALLATION

GENERAL NOTES

Inspect all materials carefully before installation. Warranties do not cover materials with visible defects once they are installed. It is the responsibility of the installer/owner to determine if the jobsite sub floor and jobsite conditions are environmentally and structurally acceptable for wood flooring installation. Grafhäus Flooring declines any responsibility for wood floor failure resulting from or connected with sub floor, subsurface, jobsite damage or deficiencies after hardwood flooring has been installed. *Please refer to the NWFA Technical Manual or your Grafhäus Flooring Distributor for installation support.

JOBSITE CONDITIONS

Wood flooring is one of the last jobs of any construction project. Prior to delivery of the wood flooring a site evaluation should be done. Check for the following:

- The building should be completely enclosed.
- All outside doors and windows must be in place and have latching mechanisms.
- Surface drainage should direct water away from the building.
- All concrete, masonry, plastering, drywall, and other wet work should be completed and thoroughly dry.
- All texturing and painting primer coats should be completed.
- In warm months, the building must be well ventilated each day.
- Be sure the flooring will not be exposed to extremes of humidity or moisture.
- Interior environmental conditions must be near the average for the geographical area.
- Basements must be dry.
- Crawl spaces must be dry.

ACCLIMATION

Allowing wood moisture content to become at equilibrium with the environment in which it will perform is crucial to quality installation. Acclimation of solid $\frac{3}{4}$ " flooring depends on geographic location, interior climate control and time of year. * Grafhäus Flooring engineered flooring does not need to be acclimated to the job site unless the flooring will be transported from one extreme temperature to another. If there is a severe temperature difference, make sure to condition the wood flooring 24 hours before the installation.

Wood is hygroscopic. It will absorb and expel moisture based on its environment. Grafhäus Flooring Engineered Plank is constructed with all natural hardwoods and is not immune to these changes. Although the floor's multi-ply construction will greatly reduce these changes, we recommend that the flooring be stored in a controlled environment prior to installation.

GLUE-DOWN INSTALLATION

PREPARATION

Make sure you remove all foreign material from the concrete. To remedy any surface irregularities, #3-1/2 grit open coat paper may need to be used to grind a concrete floor. This will loosen any dirt, loose concrete or contaminants. Thoroughly sweep and vacuum and make sure that all previously or existing glue or adhesives are removed before installing new hardwood flooring. Any irregularities and undulations may cause any wood flooring to develop hollow spots between the flooring and the sub floor. Keep in mind that these hollow spots are not the result of any manufacturing defect in the flooring and are not covered by the Grafhäus Flooring warranty.

INSTALLATION {MAKE CERTAIN BUILDING INTERIOR AND SUBFLOOR ARE DRY}

When to Install: Lay only after sheetrock and tile work are thoroughly dried and all but the final woodwork and trim have been completed. The building interior should have been dried and seasoned to a comfortable living environment and installation should be done in a similar, comfortable working environment. As part of your sub floor preparation remove any existing base, shoe mold or doorway thresholds. These items can be replaced after installation, but should be replaced in such a way as to allow room for expansion around the perimeter of the room. All door casings should be notched out or undercut to allow for expansion and to avoid difficult scribe cuts. This is easily done by placing a piece of the engineered product on the sub floor as a height guide for your handsaw or jamb saw.

Interior walls should be dry enough to be painted and a room temperature as required by adhesive manufacturer with a relative humidity of 30-50% should be provided before any installation begins. To determine if a concrete slab is suitable for hardwood flooring, please follow the NWFA guidelines to perform a Calcium Chloride test. If excessive moisture is present, do not lay flooring. Check floor in several locations.

Concrete sub floors must be clean, flat and sound and of sufficient compression strength (3000lbs PSI) being sure that the surface is not slick. Sections not flat such as waviness, trowel marks, etc. are to be eliminated by grinding or the use of an acceptable leveling compound. Especially along the walls, the sub floor flatness must be checked and, if necessary, improved. Flat to 1/8" in an 8' radius. In addition to concrete sub floors, these products can be installed over dry, flat wood sub floors, such as plywood. If plywood is used as an overlay over an existing sub floor, the thickness of the overlay material must be such as to yield a total 3/4" sub floor thickness.

New wood type sub floors should also be checked for moisture using a moisture meter. In general, wood or plywood sub floors should not exceed 12% moisture content or 4% moisture content difference between wood flooring and sub floor.

WET LAY INSTALLATION

When using this method, flooring is placed into "wet" adhesive and workers do not walk on wood. Do not walk on fresh laid flooring. Proper humidity must be controlled between 30-50% for successful performance during and after installation.

ADHESIVE

Grafh us Flooring recommends the following or equivalent:

-Bostik's Best Urethane Wood Flooring Adhesive with 3/16" W x 5/32" D V-groove Trowel / Bostik's #9 Trowel.

-Franklin 811 Plus Urethane Wood Flooring Adhesive and Titebond Advantage Urethane Wood Flooring Adhesive with 3/16" W x 1/4" D x 1/2" V-notch Trowel / Franklin 811 Trowel.

INSTALLATION

Flooring should be installed from several boxes at the same time to achieve a uniform look. Install tongue into groove. To ensure a random pattern, make sure butt joints are at least 6" from the butt joint of the prior row. Proceed until you have come to the final row to complete the room. When you have reached the final row, you will need to measure the width of the final planks. You may need to rip the planks to match the width of the space remaining. The tongue of the final row will need to be removed for a clean fit. Use a "Last Board Puller" to snug the last row of planks with the completed second row. Lift a plank periodically to check for adhesive transfer (approx 80% glue to flooring). It is recommended to roll and/or weight floor as required after installation to insure glue transfer and proper adhesion.

Please refer to the NWFA Technical Manual, your Grafh us Flooring Distributor, and/or the adhesive manufacturers for installation support.

NAIL/STAPLE INSTALLATION

PREPARATION

Evaluate the job site. Always check the job site for satisfactory conditions. The sub floor must be clean, dry, firm and flat. Refer to the NWFA Technical Manual for required conditions. When you are ready to begin, open the cartons and inspect each plank for quality. Do not install planks that are not of the quality or grade purchased.

INSTALLATION

Choose a wall to start on. Place expansion shims against the entire perimeter of the room. Lay the first with the groove against wall. Nail or staple tongue in the nail pocket of the first row. Nailing pattern should be every 6" or closer. You may want to face nail the first row close to the wall so the base molding will cover when finished.

After the first row is secure, engage the planks, one at a time to start the second row. Nail/staple each plank in the tongue nail pocket as you go to secure into position. Proceed by sliding each individual board into place making sure both the tongue and groove are tight, along with the butt joints. To ensure a random pattern, make sure butt joints are at least 6" from the butt joint of the prior row. Proceed with this procedure until you have come to the final row to complete the room.

When you have reached the final row, you will need to measure the width of the final planks. You may need to rip the planks to match the width of the space remaining. Make sure the expansion shims are in place and take the shim width into consideration when ripping the final row. The tongue for the final row will need to be removed for a clean fit. Use a "Last Board Puller" to snug the last row of planks with the completed second to last row. You again will need to face nail close to the wall to secure. Make sure you nail close enough to the wall so that the base molding will cover nails.

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