

### INSTALLATION GUIDE FOR TUNGSTON FLOORS

#### Installer/Owner Responsibility:

Hardwood flooring is a beautiful product of nature with inherent variations in appearance. Tungston unfinished floors are manufactured to meet high quality standards and in accordance with accepted industry standards. **PLEASE REFER TO YOUR PRODUCT SPECIFICATIONS FOR EXACT DEFECT ALLOWANCE. NOTE: Higher grade unfinished flooring allows for less allowances than lower grades.** The defects may be of a manufacturing or natural type, and this stated defect allowance is not valid under the Tungston warranty. Please note: Tungston unfinished floors are not to be installed over in-floor radiant heat systems.

Prior to installation, the installer and/or owner of a Tungston floor assumes responsibility to carefully inspect the flooring as to grade, manufacturing, color and finish. The owner's responsibility also applies during his/her absence from the installation site. If the flooring is not acceptable, do not install it and contact BuildDirect immediately. Once a board has been nailed, it is deemed accepted by the installer and/or owner. The manufacturer denies any responsibility for judgment errors and/or for poor installation quality of its products. Tungston will not be responsible for any labor, installation and other associated costs.

#### Tools and Accessories Needed for Nail Down Installation:

- Power Miter saw
- Tenon-saw, circular saw or handsaw
- Claw hammer and nail punch
- Straightedge
- Measuring Tape
- Moisture meter (wood, concrete or both)
- Chalk line and chalk
- Level and leveling compound
- #20 grit sandpaper
- Rubber Mallet and Tapping Block
- Pry Bar
- Filler stick and touch-up marker
- Utility knife
- Broom and dust pan
- Vacuum cleaner
- Ear plugs, safety glasses and dust mask
- Power nailer or stapler
- Electric drill and bits
- Hardwood flooring nails (nails or cleats)
- Finishing nails
- Flooring screws
- 15 lb Asphalt Paper

#### Temperature, Humidity, Storage and Handling:

Hardwood is a living material which reacts to changes of relative humidity. It absorbs or releases humidity according to seasons. To allow for proper acclimation, the heating/air-condition system must be operational for least 14 days prior to installation and thereafter

at a temperature of 65° - 75°F to reach desired humidity level. The relative humidity level at home should be controlled between 35% - 55% at all times prior, during and subsequent to installation. In summer, when humidity is high, hardwood absorbs the humidity in the air and expands. The expansion causes the strips/planks of wood to push against each other. Severe humidity levels will cause cupping. These variations can be minimized with proper ventilation and dehumidifying. On the other hand, in winter, the relative humidity level at home is much lower due to the usage of heating system. The lower humidity level results the wood releases its humidity and the strips/planks contract or shrink. It is then recommended to use a humidifier to minimize extreme shrinkage effects.

Hardwood flooring must be stored in a controlled environment within the above mentioned temperature and humidity. In order to meet minimum installation requirements for moisture content, materials should be delivered 72 hours prior to installation or as long as necessary for the hardwood flooring to acclimate. Acclimation within a closed carton may not be adequate due to lack of air movement. Handle and unload with care. Store the flooring in a dry place and provide air space under cartons. Do not unload or transport flooring during wet conditions (i.e. rain, sleet or snow) because the wood will absorb moisture, which will cause it to swell. The swelling of the wood will cause problems, because eventually the wood will shrink back to its normal moisture content, and the resultant shrinkage may produce gaps in the finished flooring. Ensuring that your floor is properly acclimated is an extremely critical aspect for proper installation.

**NOTE: To ensure proper installation, you should when possible always utilize a professional installer**

### **Job Site Requirements:**

The building must be completely closed in with all outside doors and windows in place. All "wet" work (such as concrete, masonry, framing members, drywall, paint, etc.) should be thoroughly dry. The wall coverings and painting should be completed before the installation of the hardwood flooring. In order to avoid damage caused by moisture, make sure basements and under-floor crawl space are dry and well ventilated. Plastering and concrete work must be completely dry with minimum of 90 days curing time. Freshly poured concrete slabs emit many gallons of moisture as water vapor, therefore no concrete should be poured after the flooring is installed. Exterior grading should be complete with surface drainage offering a minimum drop of 3" in 10' to direct flow of water away from the structure. All gutters and downspouts should be in place. Solid hardwood flooring only can be installed on or above ground level with a plywood subfloor. **Do not install hardwood flooring in bathrooms or over in-floor radiant heat systems.**

Crawl spaces must be a minimum of 24" from the ground to underside of joists. A ground cover of 6-8 mil polyethylene sheeting is essential as a vapor barrier with joints lapped six inches 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. Where necessary, local regulations must be met. Crawl spaces must be dry and well ventilated. Use a moisture meter to check the plywood (subfloor) moisture content. **Delay the installation if the moisture content of the plywood (sub-floor) exceeds 12%.** Using the moisture meter, check the moisture content of the Tungston flooring to ensure that it is within the Tungston acceptable moisture range of 6% to 9%. **The installer and/or owner have full responsibility for moisture testing the wood or concrete subfloor and the Tungston flooring prior to installation. Failure to adhere to this may result in the warranty being voided.**

### **Required SubFloor Surfaces and Conditions:**

- Preferred ¾" CDX grade plywood with minimum of 5/8" CDX grade plywood over joists subfloor
- Existing wood boards over joists subfloor

**Note: particle board or other similar type products are not suitable subfloors.**

Subflooring must be clean, smooth and free of wax, paint, oil, sealers, adhesives, curing agents and other debris. Subflooring must be straight, flat and leveled. Make sure to properly sand high areas or joints. Flatten low spots with layers of builders felt, plywood or shims (not leveling compounds). Subflooring must be structurally sound. Nail or screw any loose areas that squeak. Replace any damaged, swollen or delaminated subflooring. Subflooring must be completely dry and meet with moisture content requirements. Subfloor preparation is a very critical step prior to the installation of your new floor. The hardwood floor is only as good as what is underneath it. Laminated rosin paper or construction paper acts as a moisture retarder and may be used to reduce movement caused by changes in subfloor moisture. Therefore it may reduce cupping and warping. It may also reduce sound transfer, and to prevent noise caused by minor irregularities and debris.

### General Instructions Prior to Installation:

- It is recommended that the flooring be installed at a 90 degree angle to the joists for wood subfloors. An additional 7% - 10% flooring must be added to the actual square footage needed for cutting and grading allowances. A professional installer is best qualified to estimate the exact waste factor.
- Plan out the installation determining an appropriate color match of boards. Floor should be installed from several cartons at the same time to ensure good color and shade mixture.
- Remove any existing base molding, other moldings, door sills and old floor covering where applicable. Using a hand saw, undercut the bottom of door frames 3/4" to slide hardwood board beneath.
- Do not use flooring pieces with obvious defects. It is the installer's/owner's responsibility to ensure that the conditions of the flooring are acceptable prior to installation. The manufacturer declines any responsibility for flooring which is installed with obvious defects and/or flooring which is installed under improper jobsite conditions.

### Nail or Staple Down Installation Guidelines:

- **Ensure** that all the above subfloor conditions and general instructions have been met. Mark the locations of joists on perimeter walls so that the starting runs and finishing runs, which require face nailing, can be nailed into joists. Staple down 15 lb. asphalt paper over the subfloor, lapped 2"-4" at seams. This helps prevent moisture from below, and helps prevent squeaks in dry seasons.

Note : some squeaking and crackling of the floor is normal when using the nail or staple down method, and is not considered a defect.

- **Direction** of the flooring should be installed at a 90 degree (right) angle to the floor joists. Expansion gaps of 3/4" are required between flooring and all walls in room.
- **Determine** a starting wall. When possible, always begin the layout from the straightest wall, which usually tends to be an outside wall. Measure out from this wall at each end the width of one board (including the tongue) and then add an additional 3/4" for expansion. At these measured locations, mark a chalk line parallel to the starting wall. The chalk line is the starting line for the placement of the first row of the floor.
- **Face Nail 1st Row:** Install the first board along the chalk line, making sure that the tongue side of the board is facing away from the starting wall (i.e. tongue side is facing you). Drill holes through the face of the board at 6" intervals, with the drill holes located approximately 1" from the back edge. Secure the starter board to the subfloor with 1" long finishing nails, by driving the nails until the heads are just above the board, then sink the nails with a nail set. Fill nailed areas with appropriate colored wood filler to match the flooring.
- **Blind Nail:** Drill pilot holes along the tongue side of the board, using an appropriately sized drill bit for the nails. Set the bit in the corner formed by the tongue and edge of the board, angled at 45 degrees. Drill pilot holes approximately every 6" through the

board, and up to 2" from each end. Do not drill within 2" from each end. Drive a 1" finishing nail into each pilot hole and sink the nail below the surface with a nail set.

- **Install** the remaining boards of the first row following all the instructions outlined in Steps 4 (Face Nail) and 5 (Blind Nail). Ensure that the end tongues and grooves fit together snugly.
- **Subsequent Rows:** Ensure that the first board of the each subsequent row is at least 6" longer or shorter than that of the prior row to maintain a staggered appearance. Securely fit the groove of the new board into the tongue of the previous row. If necessary, use a rubber mallet and tapping block to achieve a snug fit. Blind nail the boards as described in Step 5. It is highly recommended that the first few rows be nailed by hand rather than with a power nailer or stapler because of the vertical wall obstruction. Once there is adequate space, subsequent rows may be installed using a power nailer or stapler, which eliminates the need for pilot holes. Follow all the manufacturer's instructions when using the power nailer or stapler and continue to nail/staple the tongue side of each board at a 45 degree angle and at 8" intervals, but do not nail/staple within 2" from the end of each board. As you approach the end of each row, ensure that a long board is selected as the last board of the row, so that the cut portion of the last board can be used as the starting board of the next row to minimize waste.
- **Last rows:** Due to the end wall proximity, installation of the last 4 to 5 rows will need to be done manually following the instructions for blind nailing outlined in Step 5. The end row may have to be rip-sawed to leave the required 3/4" expansion gap along the end wall. The end row must be faced nailed in place, by drilling holes through the face of the board at 6" intervals, with the drill holes located approximately 1" from the back edge (i.e. 1" from tongue side). Secure the end board with 1" long finishing nails, by driving the nails until the heads are just above the board, then sink the nails with a nail set. Fill nailed areas with appropriate colored wood filler to match the flooring.

### Complete the Installation:

- At completion of the installation, vacuum thoroughly and clean the floor with proper wood flooring cleaner on a soft, cloth mop. Then wipe the surface clean to remove loose dirt or soil. The use of any non-recommended cleaner may damage your floor and result in any warranty being voided
- Reinstall all base and/or quarter round moldings. Nail the moldings into the wall, not the floor.
- Install any transition pieces that may be required, such as reducers, T-moldings and stair nosing.
- Keep several spare boards from the installation in the event of future repairs.