



## **Installation Instructions for Solid Wood Flooring**

PLEASE READ THESE INSTRUCTIONS IN THEIR ENTIRETY BEFORE BEGINNING THE INSTALLATION.

### **Installer's / Owners Responsibility**

As a natural product, hardwood contains inherent variations in color, grain and appearance and other visual imperfections. Crestwood Flooring is manufactured in accordance with industry standards which permit a defect tolerance not to exceed 5%. These defects may be the result of manufacturing or naturally occurring characteristics of the material. It is recommended that a 5% cutting or grading allowance be added to the total sq footage when calculating the quantity of the flooring required.

It is the sole and joint responsibility of the installer and owner to conduct a quality inspection of all the flooring prior to installation. All pieces of flooring should be examined for quality of manufacture, finish and color. If the product quality is deemed unacceptable, it should not be installed. Flooring that has been installed will be deemed to have been inspected and accepted by the installer and owner.

It is the sole responsibility of the flooring installer to ensure that the job site, subfloor and installation tools and materials meet or exceed industry standards. Crestwood Flooring voids all responsibility for problems arising from incorrect or improper site preparations or installations procedures.

### **Site Preparation:**

Prior to installing a wood floor, make sure of the following;

- The building is completely enclosed with all outside doors and windows are in place and secured.
- All concrete, masonry, plastering, drywall, texturing, painting and other wet work is complete and has been allowed to cure and dry completely.
- Basements and crawlspaces are dry. Crawlspaces must have no standing water and have a vapor barrier installed in accordance with local building codes.
- Exterior surface drainage is directing water away from the house.
- Interior heat and humidity levels can be controlled and maintained at recommended levels for the duration of the acclimatization and installation period.
- Subfloor is properly prepared for installation.

### **Flooring Acclimatization and Climate Control**

Climate control at the job site must be maintained with the temperature between 68-72°F and humidity at 40-60% before, during and after the installation. These conditions should be maintained for the one week prior to installation. Following installation, these conditions should be maintained at all times to ensure proper performance of the floor.

Flooring material should not be delivered to job site until the site has been acclimatized as detailed above. After delivery, the flooring must be allowed to acclimatize on the job site for 72 hrs prior to installation. Opening boxes or box ends is acceptable but must be acclimated to “normal living conditions.”

### **Subfloor Preparation**

**NOTE: The moisture content of the subfloor and wood flooring should be checked by an appropriate method. There should be no more than 2% moisture content difference between properly acclimated wood flooring and subflooring materials.**

The installer and customer are jointly and solely responsible for ensuring that the subfloor is suitable for the flooring application and properly prepared for installation.

All subfloors must be clean, dry structurally sound and flat to within 1/8” in 8’. All subfloors must be tested for moisture content according to NWFA guidelines.

Plywood subfloors must meet local building code requirements. They must be secure to the joists, free of squeaks and protruding fasteners. Subfloor moisture content must not exceed 12% and the variance in moisture content between the subfloor and the flooring boards must not exceed 2%.

### **Expansion Space**

Hardwood flooring will expand and contract with changes in ambient temperature and humidity. To allow for this, during installation leave a 3/4” expansion space around the entire perimeter of the floor between the flooring and the walls. Also leave a 3/4” expansion space where the flooring will meet a vertical obstacle, such as stairs, pipes, door sills, tiles, cabinets, etc.

Note: In climates with extreme variations in humidity, it may be necessary to leave a larger expansion space.

### **Nail Down Installation**

**PLEASE NOTE: WHEN INSTALLING 3/4”/18MM SOLID FLOORING, A SPECIALIZED NAIL OR STAPLE GUN DESIGNED FOR INSTALLING 3/4” SOLID WOOD FLOORING IS REQUIRED. A MANUAL OR PNEUMATIC 3/4” NAIL GUN OR PNEUMATIC 3/4” STAPLE GUN MUST BE USED WHEN INSTALLING THIS PRODUCT.**

Ensure plywood subfloor is suitable and properly prepared. Verify moisture content is within allowable guidelines. A layer of 15 lb roofing felt or building paper should be laid over the entire subfloor to help retard moisture and minimize flooring noise.

Select your starting wall and snap a guideline parallel to it to set your first row. Allow 3/4” expansion space along all walls.

### **Color Racking & Installation**

Real hardwood contains natural color variations, and in any quantity of hardwood flooring there will be noticeable variations in color between the boards. In order to prevent color “grouping” in the finished floor, it is recommended that boards be racked (visually sorted) before installation to create a satisfactory and pleasing color arrangement. Immediately prior to installation, unpack 4 or 5 cartons to get a sense of the range of color variation and arrange the boards to achieve a satisfactory appearance. Leave the rest of the packages sealed and only open them as needed.

When racking, inspect all boards for visible manufacturing defects. Boards with manufacturing defects in excess of industry standards (5% of total quantity) may be replaced by the dealer under the terms of the product warranty. Once installed, boards will be considered to have been accepted by the customer and will not be eligible for replacement.

After inspecting and racking the boards, set the first row in place with the groove side facing the wall. For the first one or two rows, proximity to the wall will hinder use of the nail gun, and these rows will have to be fastened using other tools.

Top nail along the length of the board parallel to the starting wall, 3/4" in from the edge of the board (these nails will be covered with molding). Use a pneumatic finish nailer with 18 gauge brad nails. Alternatively, drill pilot holes and set 2" finishing nails with a hammer.

"Blind nail" along tongue edge of the first row using 2" finishing nails driven through the tongue at a 45° angle. Set nails every 6 to 8 inches along the length. Ensure a nail is set 2 to 3 inches in from each end of the board, but to prevent splitting do not set nails less than 2 inches from the end of the board. Countersink the nails to ensure the heads do not protrude and impede the fit of the tongue and groove joint. At the end of the row, cut a board to fit, ensuring board length is not less than 8", and ensure every board is secured by at least two nails along its tongue edge. Allow 3/4" expansion space to end wall.

Sort and lay the next row along the first. (You can use the offcut from the first row to begin the second, if desired.) Stagger all joints by a minimum of 6". Gently set the tongue and groove joint by tapping against the tongue side of the new row with a white rubber mallet or a hammer and wood tapping block. (Never hit the edge of the board directly with a hammer.) Blind nail along the tongue edge as before.

By the third row, you should have room to use the nail gun. A MANUAL OR PNEUMATIC 3/4" NAIL GUN OR PNEUMATIC 3/4" STAPLE GUN DESIGNED FOR INSTALLING SOLID WOOD FLOORING MUST BE USED WHEN INSTALLING THIS PRODUCT. Set the joint as before, and blind nail the row into place using 2" flooring cleats or staples driven through the tongue at a 45° angle. Space nails every 6" to 8" along the length of the board. Ensure a nail is placed 2" to 3" from each end of each board, but to prevent splitting do not set nails less than 2" from the board ends.

Continue with subsequent rows. Do not use boards of less than 8" in length, stagger all joints by a minimum of 6", and ensure every board is secured by at least two nails. Ensure 3/4" expansion space is maintained at all perimeter walls and other vertical obstacles.

In the last couple of rows, resort to hand nailing as there will not be space to use the nail gun. Use the same procedure as before, blind nailing through the tongue with 2" finishing nails. For final row, rip boards to required width (allowing expansion space at far wall) and top nail into place using a pneumatic finish nailer with 18 gauge brad nails. Alternatively, drill pilot holes and set 2" finishing nails with a hammer.

Install moldings and transitions as required. Ensure baseboard moldings are affixed to the wall, not the floor.

The floor may be used immediately.

## **IMPORTANT INSTRUCTIONS FOR 5+” PLANK FLOORING:**

It is strongly recommended that an appropriate wood adhesive be used in addition to the proper nailing schedule when installing 5” and wider solid plank flooring. Follow the installation procedure recommended by the adhesive manufacturer, which includes subfloor moisture content, spread rate, trowel size, open time, working time and flash time as necessary. Also avoid allowing adhesive residue to dry on face of the flooring. If this does happen special cleaners are available to remove residue.

**DO NOT** begin installing flooring 5” or wider until the jobsite and wood have reached their ECM%(Equilibrium Moisture Content), this is in accordance to the jobsites geographical location. Plank flooring NOT acclimated to the seasonal EMC% at the time of Installation, will result in extreme expansion and contraction movements causing Gaps, Cupping and other stability issues.

In Geographical areas with significant weather variations Crestwood also recommends a humidifier to help stabilize the environment and minimize any issues with your flooring.

Hardwood flooring must be installed over a proper subfloor. Tongue and grooved flooring MUST be blind nailed.

Wood Flooring Type	Fastener to be used	Fastener spacing
Solid Strip T&G ¾" x less than 3"	1½"-2" fastener, or 6d-8d casing or finish nails. On slab with ¾" underlayment, use 1½" fastener	Blind fastener spacing along the lengths of the strips, minimum two fasteners per piece near the ends (1-3"). In addition, every 8-10" apart for blind nailing, 10-12" for face nailing.
Solid Strip T&G ½" x 1½", ½" x 2"	1½" fastener	Blind fastener spacing along the lengths of the strips, minimum two fasteners per piece near the ends (1-3"). In addition, every 10" apart. ½" flooring must be installed over a minimum 5/8" thick subfloor.
Solid Strip T&G ¾" x 1½", ¾" x 2"	1¼" fastener	Blind fastener spacing along the lengths of the strips, minimum two fasteners per piece near the ends (1-3"). In addition, every 8" apart.
Solid Strip T&G 5/16"	Narrow crowned (under 3/8") 1"-1½" staples or 1"-1¼" hardwood flooring cleats.	Space fasteners at 3-4" intervals for staples, 4-6" for cleats, and within 1-2 inches of end joints, or as recommended by the flooring manufacturer.
Solid Plank ¾" x 3" or wider	1½"-2" fastener, or 6d-8d casing or finish nails. On slab with ¾" underlayment, use 1½" fastener	Blind fastener spacing along the lengths of the strips, minimum two fasteners per piece near the ends (1-3"). In addition, every 6-8" apart for blind nailing, 10-12" for face nailing. To assist the nailing schedule, options are to screw and plug the ends of each board, or to apply adhesive.
Engineered wood flooring	Narrow crowned (under 3/8") 1"-1½" staples or 1"-1¼" hardwood flooring cleats designed for engineered flooring.	Space fasteners at 3-4" intervals for staples, 4-6" for cleats, and within 1-2 inches of end joints, or as recommended by the flooring manufacturer.
Subfloor over concrete	Hardened steel pins, 11/4 – 21/8	Minimum of 50% of fastener must penetrate concrete. Space fasteners one per square foot or as recommended by the fastener manufacturer.