



## INSTALLATION PROCEDURES

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FOR: SILHOUETTE CLASSIC, SILHOUETTE FSC CERTIFIED,  
SILHOUETTE NOSTALGIC, AND SILHOUETTE EXOTIC

### OWNER INSTALLER RESPONSIBILITY:

Hardwood flooring is a natural product; therefore, each piece of wood will have its own unique grain texture, color and irregularities. **SILHOUETTE** hardwood flooring is manufactured in accordance with recognized standards, which permits a natural or manufacturing defect tolerance not exceeding 5%.

The purchaser/owner/installer assumes full responsibility for the inspection of this product; inspection should be done prior to installation. Inspection should include color factory finish and grade. If the product is not acceptable, do not install it. Contact your supplier immediately for assistance.

Before commencing installation, the purchaser/owner/installer of this product must certify that the area/environment planned for installation is suitable for hardwood flooring and that all sub-flooring requirements are met.

The purchaser/owner/installer must allow for defects and accordingly plan an additional 5% of material for cutting, waste and grading allowance. When in doubt a questionable piece of wood should not be installed. Pieces of wood with noticeable defects are traditionally used for installation in non-visible areas such as closets or areas covered by furniture.

The use of putty, stain and filler to hide or correct defects is considered as normal and accepted procedure.

If your installation is for a newly built home and construction, ensure that all windows and doors are installed and that wall and floor boards are completely dry. It is recommended that hardwood flooring be the last stage in a construction project.

### PREPARATION: STORAGE AND HANDLING

Handle and unload with care. Store the flooring in a dry place making sure to provide at least four-inches (10cm) of air space under the cartons, which are being stored upon "on-grade" concrete floors. Flooring should not be delivered until the building has been closed in with windows and doors in place until cement work, plastering and all other "wet" work is complete and dry. It is best to store it in the environment in which it is expected to perform prior to installation for at least 24 to 72 hours.

## JOB-SITE CONDITIONS

- The building should be closed in with all outside doors and windows in place. All concrete, masonry, framing members, drywall, paint and other “wet” work should be dry. The wall coverings should be in place and the painting should be complete except for the final coat on the base molding. When possible, delay installation of base molding until flooring installation is complete. Basement and crawl spaces must be dry and well ventilated.
- Exterior grading should be complete with surface drainage offering a minimum drop of 3” in 10’ (8 cm in 3 m) to direct flow of water away from the structure. All gutters and downspouts should be in place.
- **SILHOUETTE** flooring may be installed on or above grade level. Do not install in full bathrooms.
- Crawl spaces must be a minimum of 18” (45cm) from the ground to underside of the joists. A ground cover 6-10 mil black polyethylene film is essential as a vapor barrier with joints lapped six inches (15cm) 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. When necessary, local regulations prevail.
- Permanent air conditioning and heating systems should be in place and operational. The installation site should have a consistent room temperature of 65-80 ° F (16-24 ° C) and ideally relative humidity between 37-50% for 14 days prior, during and until occupied.

## SUBFLOOR CONDITIONS

- When installing your **SILHOUETTE HARDWOOD FLOORING** insure that the surface is clean, level, flat and structurally sound.
- **CLEAN** – Subfloor must be free of wax, paint, oil, sealers, adhesives and other debris.
- **LEVEL/FLAT** – Within 3/16” in 10’ (5mm in 3m) and/or 1/8” in 6’ (3mm in 2m). Sand high areas or joints. When nailing the floor down, flatten low spots with layers of #15 builders felt, plywood or shims (not leveling compounds). Leveling materials must provide a structurally sound subfloor that does not affect the holding power of the fastener.
- **DRY** – Check moisture content of the subfloor with an appropriate moisture meter. The moisture content of the subfloor must never exceed 13%.
- **STRUCTURALLY SOUND** – Nail or screw any areas that are loose or squeak. Wood panels should exhibit an adequate fastening pattern, glued/screwed or nailed as system requires using an acceptable nailing pattern. Typical: 6” (15cm) along bearing edges and 12” (30cm) along intermediate supports. Flatten edge swell as necessary. Replace any water-damaged, swollen or delaminated subflooring or underlayments.

**NOTE:** Avoid subfloors with excessive vertical movement. Optimum performance of hardwood floor covering products occurs when there is little horizontal or vertical movement of the subfloor. If the subfloor has excessive vertical movement (deflection) before installation of the flooring it is likely it will do so after installation of the flooring is complete. As flooring manufacturers are unable to evaluate each engineered system. Spacing and spans as well as engineering methods are the responsibility of the builder, engineer, architect or consumer, who is better able to evaluate the expected result based on site-related performance.

## TOOLS AND ACCESSORIES NEEDED

### ALL INSTALLATIONS

-Recommended ¾” flooring nailer along with 2” flooring cleats (when installing - Broom - Tape Measure - Hammer - Chalk Line and Chalk - Hand Saw or Jamb Saw - Recommended Hardwood Flooring Cleaner - Electric Power Saw - Eye Protection - Moisture Meter - Transition and Wall moldings -

### \* SUBFLOOR / UNDERLAYMENT REQUIREMENTS

#### Recommended subfloor

Wood subfloor, wood structural panels and underlayment

Fully adhered existing wood floors

Fully adhered vinyl sheet, resilient tile, cork flooring and linoleum

### **Wood Subfloors and Underlayment**

General: The wood sub-flooring materials must not exceed 13% moisture content. Measure the moisture content of both subfloor and wood flooring to determine that proper moisture content exists. Utilize a reliable wood moisture meter. The difference between the moisture content of the wood subfloor and the wood flooring must not exceed 4%. When installing parallel to the floor joists it may be necessary to stiffen the subfloor by installing a minimum of 3/8" (10mm) approved underlayment. Applicable standards and recommendations of the construction and materials industries must be met or exceeded.

### **Solid Wood Subfloors**

- Minimum 3/4" (19mm) thick with a minimum width of 6" (15mm) installed at a 45° angle to the floor joists.
- Group 1 dense softwood (Pine, Larch, Douglas, Fir etc.) No 2 Common. Kiln dried with all board ends bearing of joists.

### **Wood Structural Panel Subfloors and Underlayment**

Structural panels/underlayment must be installed sealed side down. When used as a subfloor; allow 1/8" (3mm) expansion space between each panel. If spacing is inadequate cut in with a circular saw. Do not cut an expansion space on tongue and groove panels.

- Plywood: Must be minimum CDX grade (exposure 1) and meet US Voluntary Product Standard PS1-95 performance standard or Canadian performance standard CAN/CSA 0325-02-92. The preferred thickness is 3/4" (19mm) as a subfloor (minimum 5/8" (16mm)) or 3/8" (10mm) as underlayment.
- Oriented Standard Board (OSB): Conforming to US Voluntary Product Standard PS2-92 or Canadian performance standard CAN/CSA 0325-0-92 construction sheathing. Check underside of panel for codes. When used as a subfloor the panels must be tongue and groove and installed sealed side down. Minimum thickness to be 23/32" (18.5mm) thick when used as a subfloor or 3/8" (10mm) as underlayment.
- Wafer board and chipboard: Conforming to US Voluntary Product Standard PS2-92 or Canadian performance standard CAN/CSA 0325-0-92. Must be 3/4" (19mm) thick when used as a subfloor.
- Particleboard: Must be a minimum 40-LB density, stamped underlayment grade 3/4" (19mm) thick.

### **Existing Engineered Wood Flooring**

- Existing engineered flooring must be well bonded. When gluing over existing wood flooring of any thickness the finishing materials must be abraded or removed to foster an adequate bond. When flooring is to be nailed-down to the existing engineered wood flooring must be a minimum 3/8" (10mm) thick installed over approved wood/wood composite underlayment that has been properly fastened. When installing over engineered flooring that is glued to concrete the minimum thickness of that flooring must be 1/2" (13mm) to allow for the length of the fastener.
- Existing solid wood flooring that exceeds 6" (15cm) in width must be covered with 3/8" (10mm) approved underlayment and fastened as required. Do not install over flooring attached to the concrete.

### **Vinyl, Resilient Tile, Cork Flooring and Linoleum**

- Make sure the floor covering materials are well bonded to the subfloor/underlayment with full-spread adhesive and are no more than two layers thick not to exceed 3/16" (5mm).
- If vinyl or tiles are loose, broken, or in poor condition, install a 3/8" (10mm) approved underlayment directly over the flooring materials.
- Cork floors - Always check for adequate adhesive bond.

- Do not install over floors that exceed one layer as the thickness of the flooring materials will prevent an adequate mechanical bond.
- Make certain that the subflooring materials meet minimum requirements.
- Some tile products may be brittle for staple penetration. Always test an area for breakage before proceeding.

## **INSTALLING THE FLOOR**

### **NAIL-DOWN METHOD**

#### **General Installation Tips (Nail-Down)**

- Although these floors can be stapled, it is best if cleats are used.
- Floor should be installed from several cartons at the same time to ensure good color and shade mixture.
- When possible, pre-select and set aside boards that blend best with all horizontally mounted moldings to assure a uniform final appearance. Install these boards adjoining the moldings.
- Be attentive to staggering the ends of boards in adjacent rows at least 4-6" (10-15cm) when possible. This will help ensure a more favorable overall appearance of the floor.
- Always allow a minimum ¼" (6mm) expansion around all vertical obstructions.

#### **STEP 1: Doorway and Wall Preparation (Nail-Down)**

- Undercut door casings and jambs. Remove any existing base, shoe mold or doorway thresholds. These items can be replaced after installation. All door casings and jambs should be undercut to avoid difficult scribe cuts.

#### **STEP 2: Establish a Starting Point (Nail-Down)**

- Installation parallel to the longest wall is recommended for best visual effects; however, the floor should be installed perpendicular to the flooring joists unless subfloor has been reinforced to reduce subfloor sagging.
- When possible, always begin layout or installation from the straightest wall, generally an outside wall.
- In at least two places and at least 18" (45cm) from the corner, measure out equal distance from the starting wall and snap a chalk line. The measurement must be a multiple of the width of the flooring plus an additional 1/2" (12mm) to allow for ¼" (6mm) expansion space and the width of the tongue.

#### **STEP 3: Installing First and Second Rows (Nail-Down)**

- Use the longest, straightest boards available for the first two rows. For random and alternate width products, use the widest plank for the first row. Align tongue of first row on chalk line. The groove should be facing the starting wall. Pre-drill ½" (13mm) from back (groove) edge, 1-2" (25-50mm) from each end, and at 6" (150mm) intervals when possible. Fasten using 4 or 6d finishing nails or 1" (25mm) pneumatic finish nails. Countersink the nails.
- Pre-drill and blind-nail at a 45° angle through the tongue of the first row every 1-2" (25-50mm) from the ends and spaced in 3-4" (75-100mm) intervals. Countersink nails to ensure flush engagement of groove with the following row(s). Continue blind nailing using this method with following rows until a nailer can be used. Alternatively use a pneumatic finish nailer and install nails/brads at the same intervals with a minimum length of 1" (25mm).
- End-joints of adjacent rows should be staggered a minimum of 4-6" (100-150mm) when possible to ensure a more favorable overall appearance.

#### **STEP 4: Installing the Floor (Nail-Down)**

- Always use a recommended ¾" nailer that drives minimum 1½" cleats. Fasten 2-3" from the end of every board and every 8-10" along their length.
- Set compressor at 70 PSI (480 kPa). If tongue damage occurs, lower air pressure.
- Fasten several sacrificial boards to the floor. At least two boards, stapled side by side, must be used to indicate proper machine adjustments.
- Check for surface damage, air pressure setting, tongue damage, edge blistering, etc., before proceeding. Make all adjustments and corrections before installation begins. Once proper adjustments have been made, removed and destroy the boards.

- For the final few rows pre-drill and face-nail or pneumatically nail on the tongue side following the nailing pattern used for the first row.

**STEP 5: Complete the Installation (Nail-Down)**

- Clean floor with the recommended wood flooring cleaner. (See adhesive container for specific information).
- Install or re-install any transition pieces that may be needed, such as Reducer Strips, T-moldings, or Thresholds.
- Install or re-install all baseboards and/or quarter round moldings. Nail moldings into the wall, not the floor. Inspect the floor, filling all minor gaps with the appropriate blended filler.
- If the floor is to be covered, use a breathable material such as cardboard. Do not cover with plastic.
- Leave warranty and floor care information with the owner.
- To prevent surface damage avoid rolling heavy furniture and appliances on the floor. Use plywood, hardboard or appliances lifts if necessary. Use protective castors/castor cups or felt pads on the legs of furniture to prevent damage to the flooring.