



Artisan™: Chesterfield Maple 3/4” Solid Hardwood Installation Instructions

Beautiful, exotic hardwood floors are natural products and as a result are not perfect. All of the floors Artisan™ manufactures are in accordance with industry standards, which allow a defect tolerance (natural or manufacturing) not to exceed 5%.

OWNER/INSTALLATION TECHNICIAN RESPONSIBILITIES:

- When the flooring is ordered, a minimum of 5% (recommended 7% - 10%) must be added to the actual square footage to allow for overage (cutting) and selection (grading) allowance (recommended 15% for diagonal installations).
- Before any hardwood flooring is installed, the installer must make sure that the job-site environment and the condition of the sub-surface involved meet or exceed the standards and recommendations as outlined in the SUB-FLOOR and JOB SITE PREPARATION sections below.
- The owner/installation technician assumes final responsibility for inspecting product quality. Carefully examine each board for quality, color, and finish prior to installation – using reasonable selectivity to hold out or cut off pieces with defects. If an individual piece is doubtful as to grade, color, or finish, the installer should not install that piece. Artisan™ is not responsible for boards/floors installed with visible defects.
- Correcting a minor defect during installation using filler, stain, or a putty stick is a normal procedure.

TOOLS AND/OR ACCESSORIES NEEDED: NAIL/STAPLE-DOWN INSTALLATION

WARNING: Artisan™ is not responsible for damage caused by negligent installation practices or misuse of installation tools. It is **CRITICAL** to use the proper adapters as well as the right nails, staples and/or cleats. If the wrong machine, fastener, or air pressure is used, it can severely damage the flooring.

- Broom
- Pencil
- Tape Measure
- Moisture Meter
- Safety Equipment (Goggles and Mask)
- Circular or Hand Saw; Miter or Table Saw
- Hand/Jamb Saw (for undercutting door trim)
- Chalk Line and Chalk
- Hammer; Rubber Mallet (Light Colored...Dark Colored Mallets damage paint on walls)
- Pry Bar

- Nail Punch
- Utility Knife
- 15 lb. Asphalt Saturated Felt
- 6 mil Polyethylene Film (if installing over a concrete subfloor using screed/sleeper system)
- Duct Tape
- Pneumatic Brad-Nailer with 1-1/2" brads OR Drill Bit 6d-8d Screw Shank Nails
- 1-1/2" Glue Coated Staples
- 3/4" Stapling Machine (or other machines suited **SPECIFICALLY** for 3/4" Solid Floors)
- Some specific recommended machines:
 - Power Nailer #445 Pneumatic, #45 manual 2" cleat nail
 - Power Nailer 50P (18 gauge 2" Power Cleat)
 - Primatech Pneumatic Floor Nailer Model P210 with 2" Power Cleat
 - Primatech Manual Nailer Model H300 or H330 with 2" Power Cleat
 - Stanley-Bostich Pneumatic Floor Nailer MIIIFN with 2" Power Cleat
 - Stanley-Bostich Pneumatic Floor Stapler MIIIFS (16 gauge 2" Staple with 1/2" crown)
 - Porta-Nailer Manual Floor Nailer Model 401 with 2" Power Cleat
 - Porta-Nailer Manual Face Nailer Model 501 with 2" Power Cleat
- Hardwood Flooring Cleaner

INSTALLATION INSTRUCTIONS: NAIL/STAPLE-DOWN METHOD

STEP 1: Pre-Installation Jobsite Inspection

Prior to installation, the building must be structurally complete and enclosed. All exterior windows and doors must be installed. Any "wet" work inside the house (masonry, drywall, and paint) must also be complete – allowing adequate drying time to eliminate unnecessary moisture content within the building. Concrete should be at least 60 days old, but preferably 120 days old (it takes 4 months generally for a newly poured concrete slab to completely dry out).

Permanent HVAC (heating/air conditioning) systems must be operating for at least 14 days before installation, **maintaining a constant room temperature between 60-75 degrees Fahrenheit and a relative humidity of 35%-55%.**

Exterior drainage – including gutters and downspouts, must be in place and drain away from the building.

Artisan™ Chesterfield Maple 3/4" Solid Maple can only be installed **on** or **above** grade and is not recommended in full bathrooms.

Basements and crawl spaces must be dry. Crawl spaces must be a minimum of 24" from the ground to the underside of the joists. A vapor inhibitor (6- 8 mil black polyethylene film) must be put in crawl spaces with joints overlapped and taped.

Sub-floors must be checked for moisture content using the appropriate metering device for concrete or wood. Examples of concrete moisture meters that work very well: the Delmhorst Moisture Meter Model G and the Tramex Concrete Encounter.

Performing Moisture Tests:

WOOD SUBSTRATES: Test the moisture of the wood sub-floor using a calibrated moisture meter approved for testing wood moisture according to the meter manufacturer. The reading should not exceed 14%, or read more than 5% different than the moisture content of the product being installed.

CONCRETE SUBSTRATES: There are multiple ways to test for excess moisture in concrete.

- Use an approved, calibrated moisture meter such as the Delmhorst Moisture Meter Model G or the Tramex Concrete Encounter. On the Tramex Concrete Encounter Meter, moisture readings should not exceed 4.5 on the upper scale.
- Perform a Polyfilm Test. Tape down 2' x 2' polyfilm squares (a clear garbage bag or plastic drop cloth will do) in several places on the floor. Wait 24-48 hours, then check for the appearance of condensation on the inside of the bag or plastic and for a darkening on the concrete in that area. Either occurrence signals the likely presence of excess moisture, requiring a mandatory Calcium Chloride Test.

Once you have determined the moisture content and if excess moisture is indeed present, a Calcium Chloride and pH Alkalinity Test must be performed to determine moisture emissions and alkalinity from the concrete slab.

- Perform a Calcium Chloride test (these can be found in flooring retail stores or online at www.moisturetestkit.com). The maximum acceptable reading is 3 lbs./24 hours/1000 sq. ft. for moisture emissions.
- Perform a pH Alkalinity Test (a 3% Phenolphthalein in Anhydrous alcohol solution). Chip the concrete at least 1/4" deep (do not apply directly to the concrete surface) and apply several drops of the solution to the chipped area. If any color change occurs, further testing is required. Using the number method on the test, a pH reading of 6-9 on a pH scale of 1-14 is considered acceptable.

If the tests results exceed this number, the concrete slab should be sealed with an appropriate sealer, such as Bostik's MVP4 (Moisture Vapor Protection) Sealer, prior to installation. **Artisan™ is not responsible for Hydrostatic, Hygrostatic, or Thermal dynamics resulting from an improper concrete slab installation.**

STEP 2: Storing the Material Prior to Installation

Once the building meets the above conditions, the material can be delivered to the site. Handle and unload the flooring with care and **store within the area in which it is expected to perform.**

Flooring stored on concrete floors should be elevated at least four inches to allow circulation under the cartons. Cartons **must** be stored horizontally (parallel to the ground). **Never** store them standing on end. **Leave all boxes SEALED while they are acclimating (this way all boards will acclimate within the boxes at the same rate).**

Artisan™ Chesterfield Maple 3/4" Solid Hardwood **must** acclimate for 72 hours prior to installation.

STEP 3: Recommended Sub-floor Types (Wood and Concrete)

Nail/Staple-Down:

- Minimum: APA Approved 5/8" (15mm) CDX Grade Plywood; minimum 40 lb. density
- Preferred: 3/4" (19mm) CDX Grade Plywood or 3/4" (23/32") OSB Underlayment Grade (PS2 Rated)
- Plywood sheets should be laid with grained outer plies at right angles to joists; adjacent rows staggered four feet and nailed every 6" along each joist with 7d or larger nails. When installing directly over old wood or strip floor, sand any high spots, re-nail old floor to eliminate squeaks or loose boards, and install new planks at right angle (perpendicular) to the old floor, or over lay old floor with 1/4" plywood underlayment. Leave a 1/8" gap at the edges and nail with 7d or larger nails every 6" at the edges and every 12" in both directions and through the interior of each sheet of plywood.
- Existing wood floors (installed perpendicular to new floor)

- Resilient Tile or Vinyl
- Nailing over concrete: Must have a minimum of 3/4" plywood installed as a screed/sleeper system with a minimum of 6 mil polyethylene film vapor inhibitor secured to the slab. All concrete sub floors should be tested for moisture content.

WARNING: Do not nail/staple over particle-board or radiant heat sub-floors!

WHEN NAILING/STAPLING: Using improper adapters and pressure settings can cause severe damage to the flooring while using a nail/staple-down installation. Using the correct adapter and pressure will set the nail/staple correctly in the tongue. It is vital that the tool is adjusted properly so the nails/staples/cleats are being positioned at the proper angle. Air pressures set too high can cause damage to the tongue, putting blisters on the face of the flooring and making it difficult to install adjoining boards. Perfect PSI on the compressor is usually around 80 PSI. A good test is to set the pressure initially at 70 PSI and adjust it until the staple properly sets in the tongue. Test the nailer/stapler on a scrap piece of material first. Basically, if the tongue is being damaged when nailing/stapling, or the nail/staple/cleat is driving too deeply into the nail channel, lower the pressure. If the nails/staples/cleats do not set deep enough, raise the pressure. Artisan™ is not responsible for damage caused by mechanical fasteners.

If you need to remove a nail/staple/cleat that has gone in crooked, do not pull straight up from the tongue. This will damage the surface of the board. Instead, pull out the staple from the tongue at the front of the board with all pressure from the hammer's head directed into the sub-floor.

Again, Artisan™ is not responsible for damage caused by negligent installation practices or misuse of installation tools.

STEP 4: Preparing the Sub-floor

All Sub-floors must be:

- CLEAN: scraped, sanded, or swept; free of wax, grease, paint, oil, and other debris.
- SMOOTH/FLAT: within 3/16" in 10' and/or 1/8" in 6'. Sand high areas or joints. Fill low areas (no more than 1/8") with a cement type filler.
- STRUCTURALLY SOUND: Replace any water-damaged, swollen or delaminated sub-flooring or underlayment, as they are unable to properly hold staples or fasteners. Plywood sheets should be laid with grained outer plies at right angles to joists; adjacent rows staggered four feet and nailed every 6" along each joist with 7d or larger nails. When installing directly over old wood or strip floor, sand any high spots, re-nail old floor to eliminate squeaks or loose boards, and install new planks at right angle (perpendicular) to the old floor, or overlay old floor with 1/4" plywood underlayment. Leave a 1/8" gap at the edges and nail with 7d or larger nails every 6" at the edges and every 12" in both directions and through the interior of each sheet of plywood. It is normal for mechanically (staple/nail/cleat) fastened floors to make minor occasional noises such as popping, squeaking, or crackling which can change as environmental changes occur. **This is not a manufacturing defect.** You can help reduce popping, squeaking, or crackling by being sure that the subfloor is secured properly (as explained above) and is structurally sound, that there is no loose joists or decking, and is swept very thoroughly prior to installation.
- DRY: Moisture content of sub-floor must not exceed 14% prior to installation of wood flooring. All moisture testing must be done before wood has been acclimated 72 hours and job-site requirements met.

STEP 5: Installing the Floor

GENERAL TIPS:

- Open several different cartons and mix the pieces to maximize the color and shade variations.
- Install the product parallel to the longest wall to provide the most appealing visual effect.
- Stagger the ends of the boards at least 6" in adjacent rows for a more appealing overall look.

- Allowing for a 3/4" minimum expansion gap around all vertical obstructions is CRITICAL! Wood expands and contracts with changes in humidity. Wood will buckle and/or cup if an adequate expansion space is not allowed for. **ALWAYS** allow for expansion space when making cuts around or beside vertical objects (i.e. walls, pipes, etc.).

DOORWAY/WALL PREPARATION:

- Undercut or notch-out door casings 1/16" higher than the thickness of the floor being installed.
- Remove existing base and shoe molding on wall as well as doorway thresholds. These can be reapplied after the installation is complete.

ESTABLISH A STARTING POINT: NAIL/STAPLE-DOWN INSTALLATION

An exterior wall is usually the straightest and best reference line to start the installation from. If possible, the direction of the flooring being installed should be at right angles to the floor joists. Establish a starting line by leaving a minimum 3/4" expansion gap around all vertical obstructions. In at **LEAST 2** places, measure out equal distances from the starting wall. It is recommended to measure 3-1/8" out from the starting wall and 12" – 18" in from the corners. Mark these points and snap a working chalk line parallel to the starting wall allowing the required expansion space between the starting wall and the edge of the first row of flooring. Plan the floor layout (width-wise) so you don't have to rip (which is cutting the board lengthwise to make it narrower) the last row **NARROWER** than 1". You may have to rip the **FIRST** row to ensure that the **LAST** row is at **LEAST 1"** wide. **Also, when installing a floor that is more than 40 feet in length, an expansion joint is required. The simplest and most effective way of providing the required expansion joint is to install T-Molding in that area.**

INSTALLING THE VAPOR INHIBITOR: NAIL/STAPLE-DOWN INSTALLATION

- Install 15 lb. Asphalt Saturated Felt Paper on the wood sub-floor prior to installation – roll out the material in the same direction as the flooring will be installed; allowing the Felt Paper to extend 3" – 4" up the walls.
- Position the Felt Paper so that the chalk line can be seen clearly (you may need to cut the Felt Paper back from the wall just enough to see it).
- Staple or tape at the corners to hold the Felt Paper in position.
- Overlap the Felt Paper by 1' and duct tape the seams.

NOTE: While 15 lb. Asphalt Saturated Felt Paper is an excellent vapor inhibitor, it is **NOT** considered a moisture barrier. If a moisture barrier is needed (only if nailing over concrete using the screed/sleeper system), a 6 mil polyethylene film is required – with the edges overlapped 18" and taped.

INSTALLING THE FIRST ROWS: NAIL/STAPLE-DOWN INSTALLATION

- Make sure to use the straightest, longest boards available when installing the first two rows.
- **REMINDER: Take boards from multiple boxes while installing. Do not install 2 pieces from the same box in a row – mix the colors and shades while installing to get a more favorable overall look. Also, remember to stagger the end-joints of adjacent rows at least 6" to create a more appealing look for the floor.**
- Line up the tongue of the first row with the starting point chalk line. **The groove of the boards should be facing the starting wall.**
- Using a pneumatic brad nailer, face-nail the groove side of the boards (first row only) 1/2" from the edge at 6" intervals and 1" – 2" from each end; then at a 45 degree angle down through the nailing pocket on top of the tongue. Another option is to pre-drill the face-nail holes 1/2" from the groove edge of the first row, 1" – 2" from each end, and at 6" intervals. Pre-drill at the same intervals at a 45 degree angle down through the nailing pocket on top of the tongue. Face-nail the groove side where it is pre-drilled. When the face-nailing is complete, blind-nail at a 45 degree angle using 4d or 6d nails. Countersink all nails to ensure the next boards install smoothly. Make

sure to use a nail set to countersink the nails – failure to do so can damage the surface of the wood. Keep blind-nailing the following rows until the stapler can be used.

- As listed above in General Tips, make sure the end-joints of adjacent rows are staggered at least 6” to have a more appealing overall look (which is called a “stair-step” pattern).

INSTALLING THE REST OF THE FLOOR: NAIL/STAPLE-DOWN INSTALLATION

- Make sure you are using the correct nail/staple gun, adapter, fasteners, and PSI setting on the compressor. If using the wrong setting or fastening devices, you may see “dimpling” on an installed board.
- Practice installing on an extra piece of wood. Check for any damage to the board (surface damage, tongue damage, dimpling, etc.). Make any adjustments and corrections **BEFORE** you start installing the rest of the floor. Once you have made your adjustments, destroy the “practice” board.
- **REMINDER:** Use several different cartons at the same time – mixing the colors and shades while installing to get a more favorable overall look. Also, remember to stagger the end-joints of adjacent rows at least 6” to create a more appealing look for the floor.
- Begin installing with several different rows at a time, securing each board with at least two fasteners. To avoid splitting the board, put the fasteners 3” – 4” apart and 1” – 2” from the ends. Make sure you press firmly together before fastening to eliminate gaps between the boards.
- The last one or two rows will need to be installed similar to the first two rows. They will need to be face-nailed where blind-nailing is not possible. Brad-nail or pre-drill and face-nail on the tongue side matching the nailing pattern used in the first row.
- The final row should be ripped to size and face-nailed. If it is less than 1” wide, it should be glued to the previous row **BEFORE** that row is installed and the two joined pieces should be face-nailed as one board.

COMPLETING THE INSTALLATION: NAIL/STAPLE-DOWN INSTALLATION

- After the hardwood is completely installed, thoroughly clean the floor using a hardwood cleaner.
- Re-install any moldings, door trim, end caps, etc. to complete the job. Make sure to nail any moldings into the wall – do not nail molding into the floor!
- To prevent surface damage to the floor avoid rolling heavy appliances and furniture across it. Use cardboard, plywood, or airlifts if possible.
- If further construction is necessary after the hardwood is installed, you can protect the installed floor by laying a quality paper or other material (such as cardboard) that allows the floor to breathe, taping it to the baseboards. **NEVER** use plastic, solid rubber, rosin/resin paper (which sucks the moisture out of the hardwood), or polyethylene film to cover the installed floor since they both trap moisture and will damage the installed hardwood (creating cupping, swelling, or splitting issues).

GENERAL TIPS: FLOOR REPAIR

- If the floor does become scratched or dinged, it can be repaired with a putty, filler, or touch-up kit. If a board is severely damaged, it may need to be replaced, which can be done by a qualified flooring technician.

GENERAL TIPS: HARDWOOD AND SEASONS

Once the floor is installed it is critical to keep them well maintained. Artisan™ is not responsible for improper maintenance of the floor. Wood floors will be slightly affected by varying levels of humidity within your building. **To make sure the floors are protected for as long as possible, it is VITAL**

for you to keep the relative humidity levels between 35% - 55%. Below are some recommendations on how to achieve that in the different seasons:

- Wet/Humid (wood expands): Heaters are not generally used during these months. Therefore the floor holds in the humidity and expands. To maintain a proper humidity level, use a dehumidifier or air conditioner. You can also turn on your heater every once in a while during the summer months – this will help lower the humidity in the building. Make sure the expansion space is not blocked in any way!
- Dry (wood contracts/shrinks): Wood-burning stoves and electric heating systems are used a lot during winter months – creating very dry conditions indoors. The low humidity causes the wood to contract and shrink – leaving gaps between individual boards. To prevent this, use a humidifier to keep the humidity level between 35% - 55%.

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