



## GLUE DOWN APPLICATION INSTRUCTIONS

## 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 conditions are environmentally acceptable and that the subfloor system is acceptable for the installation of wood flooring. Pioneer Millworks declines any responsibility for wood floor failures or problems associated with or resulting from subfloor/subsurface structural or environmental deficiencies or jobsite damage after the hardwood flooring has been installed.

The following instructions comply with all recommendations as outlined in Installation Guidelines and Methods published by the National Wood Flooring Association (NWFA). For questions regarding additional application information contact NWFA at [www.NWFA.org](http://www.NWFA.org).

## I. SITE CONDITIONS:

Wood is hygroscopic and will absorb or expel moisture based on environmental conditions. Gain and loss of moisture corresponds with an increase or decrease in size and occasional warping. Pioneer Millworks' engineered wood flooring is dimensionally stable due to the multi-ply construction but it is not immune to these dimensional changes. For the best results we recommend that all flooring materials be stored in the controlled environment in which it will be installed for 5–7 days prior to installation, or until the moisture levels in the Pioneer Millworks' engineered wood flooring and that of the subfloor are within the tolerances noted below.

A. The building must be closed in with all outside doors and windows in place. The wall coverings must be in place and the painting completed except for the final coat on the base molding. If possible, delay installation of base molding until flooring installation is complete. All concrete, masonry, framing members, drywall, paint and other "wet" work must be thoroughly dry. Basements and crawl spaces must be dry and well ventilated.

B. Exterior grading must be complete. To direct flow away from the structure grading should offer a minimum drop of 3" in 10'. Do not obstruct the drainage with landscaping materials. All gutters and downspouts must be in place.

C. Crawl spaces must be a minimum of 18" (46 cm) from the ground to underside of joists. A ground cover of 6–20 mil black polyethylene film should be installed as a vapor barrier with joints lapped and sealed with moisture resistant tape. 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. *NOTE: Unvented crawlspaces are acceptable when following qualified local regulations.*

D. Pioneer Millworks' engineered wood flooring may be installed below, on or above grade level. Wood flooring is not recommended for applications in areas where excessive humidity is present such as full baths, hot tub enclosures or wine cellars.

E. Permanent air conditioning and heating systems must be in place and operational. The installation site should have a consistent room temperature of 60–80°F (16–27°C) and humidity of 35–55% for 14 days prior, during and after installation.

F. Radiant Heat Applications must meet or exceed all of the requirements in section II and:

Before installation: The heating system must then be run at 2/3 of maximum output for a minimum of 2 weeks to allow any remaining moisture to evaporate, attaining its final moisture content without causing damage. Three or four days before installation, the heating system must be reduced to a suitable temperature (about 18c/64f).

After Installation: Approximately 2 days after installation is complete, gradually (over a period of 1 week) raise the temperature of the heating system to its desired operating level.

Life Cycle: Surface Temperature of flooring must never exceed 81 degrees F/27 degrees C. Exceeding this temperature will void any related warranty by the flooring manufacturer. Most under-floor heating systems **DO NOT** have a humidification system. Add humidification as necessary to maintain humidity levels between 35–55%.

## II. SUBFLOOR REQUIREMENTS:

The following minimum standards must be met before beginning the application of any Pioneer Millworks products. The subfloor must meet the following minimum requirements. See additional requirements specific to the installation method.

A. LEVEL/FLAT: within 3/16" in 10' (5 mm in 3 m) and/or 1/8" in 6' (3 mm in 2m).

B. CLEAN: Free of debris, loose materials or materials that may release with age such as paint and dry wall materials.

C. DRY: Check and document moisture content of the subfloor using the appropriate moisture test. Concrete subfloors must be a minimum of 30 days old before testing begins. Concrete must not exceed 4.5 using a Tramex Moisture Encounter meter. Calcium Chloride test results should not exceed 3# 24hr/1000 ft<sup>2</sup>. Wood subfloors must not exceed 12% and there must be no more than 4% difference between the Pioneer Millworks engineered wood flooring and the wood subflooring material. If the subfloor has excessive moisture apply a suitable moisture retardant that is compatible with the adhesive being used. Contact the adhesive supplier for their recommendation and warranty.

D. STRUCTURALLY SOUND: The attachment methods used for the installation of Pioneer Millworks wood flooring **ARE NOT** designed to stiffen existing subfloors. If the subfloor has excessive deflection before installation of the flooring it is unlikely to improve with the addition of any wood flooring. Excessive deflection may cause premature finish wear and the floor to become noisy with age.

Wood subfloors: Wood panels must have an adequate fastening pattern, glued and screwed or nailed as system requires using the acceptable fastener and pattern. Typical: 6" (15 cm) along bearing edges and 12" (31 cm) along intermediate supports. Flatten any swollen or raised edges as necessary by sanding or scraping. Nail or screw any areas that are loose or squeak. Replace any water damaged swollen or delaminated subflooring or underlayments. Best results occur when the subfloor has a minimum thickness of 1/2".

Concrete subfloors: Concrete must have a minimum compressive strength of 3000 PSI. If the concrete is less than 3000 PSI, i.e. easily scratched with a nail, install the floor using a floating system. Remove all loose or broken concrete and fill/flatten as necessary using cementitious leveling materials of 3000 PSI or more.

## III. GLUE-DOWN INSTALLATION OF PIONEER MILLWORKS' ENGINEERED WOOD FLOORING:

Pioneer Millworks' engineered wood flooring can be installed over most structurally sound subfloors or existing permanently bonded flooring materials. Wood, concrete, sheet vinyl, vinyl tile, ceramic, are all acceptable subfloors provided they meet the standards outlined in section II.

## A. PREPARATION AND LAYOUT:

1. Inspect all door casings and wall molding. Where necessary cut the moldings to allow the wood flooring to slide beneath them. This can be done with a jamb saw or by placing a piece of flooring (face down) next to the molding. Using a carpenter's saw laying flat on the flooring saw through the casing. Remove the waste material and sweep away all debris.
2. Plan the layout for the best visual appearance of the finished wood floor. Measurements must be made to allow for the width of the flooring plus 1/2" expansion space and must allow for the width of the tongue.
3. Place a mark approximately 18" from the corners of the starting walls and the width of the flooring plus 5/8" to allow for expansion and the tongue. Example: When installing a 4" face width plank, place the mark approximately 18" from each end wall and 4-5/8" from the starting wall. Strike a chalk line through these two points the length of the room to the end walls. This line is the **WORKING LINE**.

## B. INSTALLATION:

1. Measure the distance between the **WORKING LINE** and the wall the full length of the starting wall. If the wall is badly out of line (crooked) it may be necessary to rip boards to follow the irregularity in the wall.
2. Using no adhesive install a sacrificial row on the **INSIDE** edge (closest to the wall) of the chalk line. This row may be of any straight wood material or the narrowest width of Pioneer Millworks' engineered wood flooring. Flooring should be installed with the groove side facing the line (tongue towards wall). Make certain each of the sacrificial boards is in perfect alignment with the **WORKING LINE**. When satisfied, attach the board to the subfloor using finish nails or concrete nails. This sacrificial row is to minimize movement of the flooring during installation and will be removed once the floor is complete.
3. Read the label on the adhesive container. Using the trowel recommended by the adhesive supplier spread an area that can be covered with wood within the working time of the adhesive (as noted on pail). An average spread is an area 14–25" deep and the length of the room.
4. Install the first board making certain that the **TONGUE** side is tight against the sacrificial board. Installation can be from the left or right. Best speed is usually accomplished by installing from the left if right-handed and from right if left-handed.
5. Insert the end of the next board into the adjoining tongue or groove and force the board tightly against the sacrificial board and the end of the adjoining first board.
6. After three or more boards have been installed in the first row installation of the second row can begin.
7. Select a board for the second row that will allow at least 6" of difference between it and the length of the board in the first row. Continue installing in this manner until three or more boards have been installed. Continue adding rows, extending each as necessary until all of the adhesive has been covered. Avoid close alignment of joints in all rows throughout the installation, always attempting to get the maximum spacing available with a minimum of 6". Avoid alignment of joints in opposite rows, which may create an "H" pattern in the floor.

8. Cut to length a board that fits at the end of each row always allowing for 1/2" expansion space at the wall. *TIP: Do not cut short boards to finish a row. The leftover materials will be used for future starter boards. Short lengths cannot be used and will become waste.*

9. Once the first section has been completed inspect it closely, tightening all end and side gaps as necessary. Clean all adhesive from the surface immediately. **DO NOT** wait to clean the surface until completion of the job, as the adhesive may not be removable. If necessary use blue painter's tape to hold the joints tightly together until the adhesive cures. Strap-type clamps may be used to bring flooring together tightly. **DO NOT** use masking tape as the adhesive residue may affect the factory finish or bond of the finish if the materials are unfinished.

10. Spread a new working area and proceed as above. Use the cut ends of the boards from the previous section as starter boards when possible. Avoid lengths shorter than 4" as they are hard to keep in alignment and are easily displaced. Continue in this manner until all rows are complete.

11. Measure the final row. Rip the boards (parallel cut) to fit the final wall allowing for 1/2" expansion. Use blue painter's tape to hold the final row in place.

12. Remove the sacrificial row being careful to not damage the adjoining boards. If 1/2" expansion is not available because of a bow in the wall cut rip the boards to allow the required spacing. Apply adhesive to the back of each board and gently press in place. Pull the boards tightly to the previously installed row and hold in place with blue painter's tape.

#### C. COMPLETING THE JOB:

1. Remove all tape from the floor starting from the area in which the wood was first applied. Inspect for gaps, chips and adhesive residue while removing the tape. Remove all adhesive residue, touch up chipped areas and fill with the appropriate filler as necessary. Use colored latex filler for factory finished products and a stainable filler if the floor is to be sanded and finished.

2. Install/reinstall all moldings and clean the floor with the appropriate cleaner. Use a premium quality cleaner for urethane wood floors if the product is factory finished or the compatible cleaner (if required) if the floor is to be sanded and/or finished.

3. If required by the adhesive manufacturer roll the floor with the appropriate weight roller.

4. First use of the floor varies from one adhesive manufacturer to another. Generally the floor can have light foot traffic after the adhesive has cured for 18–24 hours with furniture being **LIFTED** into place after 24 hours.

5. If the flooring is **UNFINISHED** adequate curing time **MUST** be allowed prior to finishing of the floor. If the adhesive used was water based it is best to wait 5 days to allow all residual moisture to dissipate and the adhesive to fully cure. If the adhesive is a urethane or solvent based adhesive 72 hours is usually an adequate amount of time to achieve full-cure. **DO NOT** attempt to finish the floor before the adhesive has had an adequate period of time to cure and dissipate all solvents or moisture as this will affect the final appearance and performance of the finish and floor.



800.951.9663

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