MILLBROOK TIMBERS INSTALLATION GUIDE

Millbrook Timbers Multi-Layer Engineered Wood flooring can be installed over most properly prepared subfloors and are suitable for installation on all grades where adverse moisture conditions do not exist.

General Information

- **CAUTION WOOD DUST WARNING**: Drilling, sawing, or machining of wood products can expose you to wood dust, a substance known to the State of California to cause cancer. Avoid inhaling wood dust or use a dust mask or other safeguards for personal protection. For more information go to **www.P65Warnings.ca.gov/wood.**
- This product should be stored in conditions between 60°F and 80°F (15.5°C and 26.7°C) and transported and stored in a neatly stacked fashion on a smooth, flat surface.
- This product should only be installed after other trades have finished and the jobsite has been cleaned and cleared of debris that could potentially damage a finished plank installation.
- The heating and cooling system must be installed and activated for a minimum of two week prior to installation and the rooms to be installed should be between 60° and 80°F (15.5°C and 26.7°C) with a relative humidity between 35% and 55% for a minimum of 5 days prior to delivery of the flooring. The rooms must be maintained at these conditions for the life of the product.
- This product MUST be allowed to acclimate to the temperature and humidity of the room(s) for a minimum of 48 hours prior to installation. The flooring should be stored flat. Remove any plastic wrap that may have been used to ship the material and open the ends of the cartons. This is especially important if you live in a very humid or dry climate. When installing Millbrook Timbers, you need to keep the flooring a minimum of 1/2" (13 mm) away from the walls and all vertical obstructions including cabinetry, stone fireplaces, doorways, etc. Larger installations require additional expansion space. Add 1/16" (2 mm) expansion space for every 3 feet the installation exceeds 25 feet. **This applies to all installation methods and not just floating floors.**
- The manufacturers warranties do not cover natural expansion and contraction which results in separation between planks, or damage caused by excessively low or high humidity. Expansion and contraction will be minimized if climate control is consistently maintained year-round. Seasonal gapping is not considered a manufacturing defect.
- It is the responsibility of the installer and owner to ensure that job site environmental, sub-floor and subsurface conditions involved meet or exceed all requirements as outlined in installation instructions prior to installation. The manufacturer declines all responsibility for product performance or installation failure due to sub-floor, substrate, environmental deficiencies, or other jobsite conditions.
- Inspect flooring for damage, defects, or shading issues before installation; claims for visual defects will not be accepted after cutting and/or installation. It is the duty of the person installing the floor to inspect all flooring before installation. If during inspection the installer or buyer feels the floor is the wrong color, improperly manufactured, is off-grade, or is the wrong gloss level, he/she should NOT install the flooring. Please immediately contact the retailer from which the flooring was purchased. No claims will be accepted for flooring which is visibly wrong if such flooring is installed. Installed flooring is deemed to be visibly acceptable.
- Do not install in full bathrooms or powder rooms.
- Mix and install planks from several different cartons during installation to achieve desirable plank blend/variation. Do not install undesirable pieces.
- Wood is a natural product and contains characteristics such as variations in color, tone, and graining. This flooring is manufactured in accordance with industry standards, which allows manufacturing and natural defect tolerances up to 5% of the total installation.
- Flooring should be protected from prolonged direct exposure to sunlight to reduce fading and thermal expansion.
- Only floating installations are approved for underfloor warm water radiant heating systems. Direct glue down and nail down installations are NOT RECOMMENDED. It is highly recommended the radiant heat system be designed specifically to accept hardwood flooring. Radiant heat systems designed for floor coverings with a higher resistance to heat transfer will damage wood flooring. Use of an in-floor temperature sensor as well as a separate thermostat for the individual room is required. The temperature of the floor surface must not exceed 85°F at any point in time. The underfloor heating must be turned off for 24 hours before, during and after installation. When turning the underfloor heating back on, raise the temperature incrementally, not exceeding a change of more than 5°F per 24 hours. **Note:** When radiant heat is installed in concrete, mortar beds, or gypsum cement, it is very important to operate the radiant heat system until these are completely dry before you install your hardwood flooring on top. This may take several weeks.
- This product is not suitable for outdoor use or in rooms that may be exposed to flooding.

Hints for Measuring: Measure the length and width to determine the square footage of the room. Alcoves or offsets should be measured separately. Next Floor recommends purchasing at least 10% extra to cover waste, trimming, and for future replacement needs.

Tools and Materials Needed:

- Safety glasses and dusk mask
- Painters tape
- Hammer
- Tape Measure
- Pry bar
- Moisture meter
- Hand Saw
- Miter saw
- Table saw
- Drill
- 6 mil polyethylene moisture barrier (floating installation)
- Tongue and groove adhesive (floating installation)
- Urethane wood adhesive (nail/staple installation)
- Pneumatic nailer/stapler (nail/staple down installation)
- Flooring adhesive and trowel (glue down installation)
- Adhesive remover (glue down installation)
- 150 lb roller (glue down installation)
- Taping block
- Carpenters square
- Broom

- 1/2" spacers
- Wood filler
- Cloth towels
- Transition moldings and baseboards

Subfloor General

Millbrook Timbers planks can be installed over a variety of subfloor surfaces including concrete on all grade levels, wood, and many existing hard surface floors. The subfloors must be clean, smooth, flat, solid (no movement), structurally sound, dry, and free from all existing adhesive residues and/or other deleterious material that might cause harm or damage to the flooring. Residual adhesives should be mechanically removed. Do not use chemical adhesive removers or solvents. Do not install planks over floors that are sloped for drainage, or over expansion joints or other moving joints in the substrate. Any uneven areas greater than 3/16” (5 mm) in a 10-foot (3 m) radius and/or 1/8” (3 mm) in a 6-foot (1.8 m) radius must be leveled with a Portland cement based patching compound. An uneven subfloor can contribute to multiple problems, including assembly of planks and post installation gapping of planks. The moisture content of the subfloor MUST be measured as noted below and recorded for future reference if required.

Concrete Subfloors

Concrete subfloors must be dry, smooth, structurally sound, and free from dust, solvent, paint, wax, grease, oil, asphalt sealing compounds, adhesive residues and all other extraneous materials that may prevent proper adhesion. The surface must be hard and dense, and free from powder or flaking. Any uneven areas greater than 3/16” (5 mm) in a 10-foot (3 m) radius and/or 1/8” (3 mm) in a 6-foot (1.8 m) radius must be leveled either by grinding or with a Portland cement based patching compound. Newly poured concrete floors must cure for a minimum of 90 days. Curing agents, surface hardeners and other additives may cause adhesive bonding failure on glue down installations. These should be removed by sanding or grinding. A minimum 6 mil polyethylene moisture barrier must be used with all below and on grade concrete subfloors if the flooring is installed as a floating floor. All concrete slabs must be checked for moisture before installing material. Moisture emission from the subfloor cannot exceed 3 lbs. per 1,000 sq. ft. per 24 hours as measured with the calcium chloride test (ASTM F1869). Alternatively, relative humidity of the slab can be tested according to ASTM F2170. A result of up to 75% is acceptable per ASTM F2170. Note: Although initial moisture tests may indicate a dry slab, the moisture content of slabs may increase due to seasonal fluctuation or weather patterns. Next Floor will not assume responsibility for floorcovering failure due to hydrostatic pressure or moisture vapor emission greater than the numbers above. Holes, grooves, and other irregularities must be filled and troweled smooth and feathered even with the surrounding surface. New construction must have an intact moisture vapor retarder (minimum 10 mil polyethylene membrane) present between the ground and the concrete. The final responsibility for ensuring any moisture or alkalinity issues are resolved prior to installation and for determining if the concrete is level enough for installation lies with the floor covering installer. Millbrook Timbers Engineered Hardwood flooring should only be installed as floating over lightweight or acoustical concrete floors.

Wood Subfloors

Wood subfloors must be dry, smooth, flat, level, structurally sound and free from dust, solvent, paint, wax, grease, oil, asphalt sealing compounds, adhesive residues and all other extraneous materials that may prevent proper adhesion. The subfloor must be flat within 3/16” (5 mm) in a 10-foot (3 m) radius and/or 1/8” (3 mm) in a 6-foot (1.8 m) radius. Any unevenness outside of this tolerance must be repaired before installation. Wood subfloors must be suspended at least 18" above the ground. Wood subfloors over a crawl space require adequate cross-ventilation must be provided, and the ground surface of the crawl space must be covered with a suitable vapor barrier. The moisture content of the subfloor and the moisture content of the flooring should not differ by more than 2% at the time of installation.

Panels intended to be used as underlayment should be specifically designed for this purpose. Subfloor panels must have a minimum thickness of 5/8" and underlayment panels must have a minimum thickness of 3/8”. Any panels selected as a subfloor or underlayment must meet the following criteria: • Not exceed 12% moisture content • Be dimensionally stable • Have a smooth, fully sanded face so the graining or texturing will not show through • Be resistant to both static and impact indentation • Be free of any surface components that may prevent proper adhesion or cause staining such as plastic fillers, marking inks, sealers, etc. • Be of uniform density, porosity, and thickness • Have a written warranty for suitability and performance from the panel manufacturer or have a history of proven performance.

Underlayment panels are intended to provide a smooth surface on which to adhere the finished floor covering. It must be understood that underlayment panels cannot correct structural deficiencies. Particleboard, chipboard, construction-grade plywood, any hardboard and flakeboard are not recommended as underlayment. All have inadequate uniformity, poor dimensional stability, and variable surface porosity. Next Floor will not accept responsibility for installation over these subfloors. Many times, wood panel subfloors are damaged during the construction process or are not of underlayment grade. These panels must be covered with an approved underlayment. Wood subfloors must be covered with a minimum 3/8" or heavier underlayment rated panel to assure successful finished flooring installation. Subfloor or underlayment panels over joists spaced greater than 16” on center require additional fasteners to prevent panel movement and/or squeaking. Wood subfloors directly on concrete or installed over sleeper construction are not satisfactory. Whenever possible, install flooring perpendicular to the floor joists for maximum stability. If the flooring is installed parallel to the floor joists, then the subfloor may require reinforcement to reduce subfloor sagging. In all cases, the underlayment manufacturer or underlayment installer is responsible for all underlayment warranties.

Note

Avoid subfloors with excessive vertical movement or deflection because subfloor movement will telegraph through to the finished installation. Indications of excessive deflection are uneven finish wear, fastener release, squeaking, compromised or damaged locking systems, sectional contours such as bowing or dipping in floors and uneven flooring material. Nail or screw subfloor panels to secure planks with excessive vertical movement or deflection. If the subfloor has excessive vertical movement (deflection) before installation of the flooring, it is likely it will also have excessive vertical

movement (deflection) after installation of the flooring is complete. Our warranties DO NOT cover any problems caused by inadequate substructures or improper installation of said substructures. DO NOT install this product over a foam underpad or underlayment. Doing so will void the product's warranties.

Existing Flooring

Millbrook Timbers floor planks can be installed over a variety of finished floors including single layer resilient sheet flooring/tile, ceramic, marble, and terrazzo. The surface must be in good condition, free from all surface contaminants (wax, finish etc.) and show no signs of excessive moisture conditions, and the existing flooring must be well bonded to the substrate below. Large grout joints should be leveled so they are flush with the flooring surface. Ceramic, marble, and terrazzo must be scuffed to assure adhesion. Heavily cushioned vinyl floors, or vinyl floors consisting of multiple layers are NOT a suitable subfloor for installation.

WARNING: Do not sand, dry scrape, bead blast or mechanically chip or pulverize existing resilient flooring, backing, lining felt, asphaltic "cutback" adhesive or other adhesive. These products may contain asbestos fibers and/or crystalline silica. Avoid creating dust. Inhalation of such dust is a cancer and respiratory tract hazard. Unless positively certain that the product is a non-asbestos-containing material, you must presume it contains asbestos. Regulations may require that the material be tested to determine asbestos content. For current information go to www.rfci.com

Planning The Job

- Remove all existing transitions, quarter round and/or baseboard molding or cover base and undercut all door jambs/moldings the thickness of the flooring plus 1/16" (2 mm) prior to beginning installation.
- Determine how you want the flooring to run, remembering that for wood subfloors ideally you want to install the planks perpendicular to the floor joists. If the chosen direction is not perpendicular to the flooring joists, then the subfloor may require reinforcement to reduce subfloor sagging.
- Determine your starting wall. Exteriors walls are often straighter than interior walls. If the starting wall is out of square, it will be necessary to scribe the first row to match the wall, allowing the opposite side of the row to present a true square base for the rest of the floor.
- To avoid narrow plank widths or short plank lengths near the walls/doors, it is important to do some pre-planning. Using the width of the room, calculate how many full planks will fit into the area and how much space remains that will need to be covered by partial planks. The width of the border planks at the walls should ideally be the same on both sides of the room, however no planks should ever be less than 2" wide.
- If the flooring installation is to be floating over an on or below grade concrete subfloor, install the required moisture barrier as noted above.
- It is recommended to work from a minimum of 3 cartons to achieve a maximum color and shade blend.
- When installing Millbrook Timbers, you need to keep the flooring a minimum of 1/2" (13 mm) away from the walls and all vertical obstructions including cabinetry, stone fireplaces, doorways, etc. Larger installations require additional expansion space. Add 1/16" (2 mm) expansion space for every 3 feet the installation exceeds 25 feet. This applies to all installation methods and not just floating floors.
- Stagger all plank end joints a minimum 8" apart, avoiding stair step and/or H patterns. This will help to ensure the overall strength and integrity of the floor.

Dry lay the first several rows

- After completing the planning steps noted above, dry lay the first several rows without gluing or nailing.
- For floating and nailing installation the groove side of the planks should face the starter wall, and for glue down the tongue side of the planks should face the starting wall.
- Start with the first plank in the right-hand corner and connect the second plank at the end joint, sliding the end groove of the second plank over the end tongue on the first plank (or the tongue into the groove if glue down). It is recommended to always choose a longer plank as the first plank, provided this does not result in a short plank at the end of row. Depending upon your calculations that you made during your planning, the first row may or may not be a narrow plank.
- Continue this process until you reach the end of the first row, cutting the last plank to fit, remembering to place your expansion spacers at both ends of the row before cutting the last plank. You can often use the leftover piece from the end of first row to begin the second row. This piece must be at least 12" long.
- Add the next few rows plank by plank in the same manner, working from right to left and sliding the long edge groove of the second-row plank over the tongue of the first-row plank (or the tongue into the groove if glue down), and again remembering to allow for the appropriate expansion space before cutting your last plank of each row.
- After several rows have been dry laid, step back and have a look at the rows to ensure that you are happy with the plank blending and that the end joint staggers are appropriate. As noted previously all end-joint staggers should be a minimum of 8 inches and should not be stair stepped or H-patterned. This will help to ensure the overall strength and integrity of the floor.
- If everything looks good, then you are ready to proceed.
- Note: Proper alignment is critical in the first few rows. Misaligned starter rows can cause side and end gaps to appear in later rows, so be sure to keep an eye on your rows as you proceed to ensure that nothing shifts out of place. Use a tapping block if necessary to close the planks together until the tongue and groove is flush and tight and no gaps are present between adjacent planks. Never use a rubber mallet or hammer directly on the flooring to engage the edges as doing so can damage your flooring.

Floating Floor Installation (Floating means that the planks are glued/locked together, but not attached to the wall or the subfloor)

Step 1: Gluing

- Gently disengage the planks that you dry laid so that you can begin gluing.

- Working from the right corner, take the second plank of the first row and apply a continuous bead of tongue and groove adhesive down the groove of the end joint that faces the first plank.
- Lock the end joints of the first and second plank together where you have placed the adhesive.
- Continue doing the same down the entire first row, remembering to place expansion spacers along the starter wall and at both ends of the row to maintain the expansion space.
- Always wipe away excessive adhesive immediately with a clean dampened cloth. Do not allow the adhesive to dry on the face of the flooring.
- For the second row, go back to the right side of the room. Take the first plank of the second row and run a continuous bead of tongue and groove adhesive along the groove of the long side that's facing the first row. Lock its long groove into the first row.
- Then take the second plank of the second row, apply a bead of tongue and groove adhesive down the groove of both the end joint and the long side, and connect it to the first plank of the second row and to the first row.
- Continue the entire process down the entire second row, remembering to place expansion spacers at both ends of the row.
- After the second row, move on to the subsequent rows. Continue to install the floor working right to left, repeating the process until the floor is complete.
- Continue to use spacers on all vertical obstructions to ensure the proper expansion space and to place strips of painters tape to keep the flooring from shifting.

Step 2: Fitting the last row and doorways

- The last row will most likely require cutting to width as you planned above before starting. Remember to place expansion spacers along the wall before measuring for your cut.
- Install cut planks and pull into place with a pry bar. Then place spacing wedges between the planks and wall to prevent the floor from shifting.
- In doorways less than six feet wide, you'll need a transition piece.

Step 3: Finishing

- Sweep up scrap material and any loose debris.
- Clean any wet adhesive from the surface of the flooring material with a clean cloth dampened with water.
- Allow the floor to dry for a minimum of 24 hours before removing the any of the spacing wedges and the painters tape and permitting foot traffic. Keep heavy rolling loads off the floor for a minimum of 48 hours.
- Replace/install all moldings, baseboards etc. ensuring that they are nailed into the wall not the floor, and that they not pinched tight to the flooring.
- Install appropriate transition moldings at the doorways, allowing ½" (12.7 mm) expansion space.
- Furniture should be moved onto the newly installed floor using an appliance hand truck over hardboard runways.
- Do not place heavy items on newly installed floor covering for at least 48 hours after completion of the installation. Heavy furniture should be equipped with suitable non-staining, furniture casters. Non-staining felt protectors are recommended for table and chair legs to help protect the flooring.

Nail / Staple down Installation

NOTE: Our products are not warranted against squeaking, popping, or crackling when using staple-down or nail-down installation methods. Some squeaking, popping, or crackling is normal and possible when using staple-down or nail-down installation methods. These symptoms may be aggravated in arid areas or during dry conditions. If squeaking, popping, or crackling is a concern, then for planks with width of 6" and wider it is recommended that this installation method be supplemented using adhesive. The adhesive may be trowelled or applied in a bead using a cartridge or sausage adhesive. If trowelling, spread rows of adhesive perpendicular to the plank direction no more than 12" apart. If applying a bead, apply in a serpentine pattern in the direction of the planks. Always read follow the adhesive manufactures recommendations with respect to usage and cleaning of the adhesive. Note: Do not use premium construction or similar adhesives. These adhesives cure rigid and will not allow expansion and contraction of the planks.

Step 1: Nailing / Stapling

- Gently disengage the planks that you dry laid so that you can begin nailing / stapling.
- Install the first row of planks along the starter wall remembering to place expansion spacers along the starter wall and at both ends of the row in order to maintain the expansion space.
- Drill pilot holes through the face of the plank every six inches, preferably in the dark grain, approximately one inch from the back edge of the board and secure planks with finishing nails.
- Countersink nails and fill with appropriate colored wood filler, removing excess filler from the surface.
- If using adhesive, always wipe away excessive adhesive immediately. Do not allow the filler or adhesive to dry on the face of the flooring.
- Blind nail at a 45-degree angle through the tongue of the plank one to two inches from the end joints and every six inches in between along the length of the starter planks.
- Continue across the room with additional rows, applying adhesive and blind nailing in the same manner, placing expansion spacers as you go.
- It is recommended to initially set the pneumatic nailer at 80 to 85 psi and adjust the pressure as needed to properly set the fasteners and keep them from going through or breaking the tongues. Improper fastening techniques can cause squeaks in the floor. It is recommended to use a scrap piece of flooring to test and set the tool properly before beginning installation.

Step2: Fitting the last row and doorways

- The last 1-2 rows will need to be face nailed when wall clearance does not permit blind nailing. Pre-drill the holes, apply construction adhesive, nail, countersink and fill the holes as previously noted.
- The last row will most likely require cutting to width as you planned above before starting. Remember to accommodate for the expansion space along the wall before measuring for your cut.
- Install cut planks and pull into place with a pry bar. Then place spacing wedges between the planks and wall to prevent the floor from shifting.
- In doorways less than six feet wide, you'll need a transition piece.

Step 3: Finishing

- Sweep up scrap material and any loose debris.
- Clean any wet wood filler and/or construction adhesive from the surface of the flooring material with a clean cloth dampened with water.
- Replace/install all moldings, baseboards etc. ensuring that they are nailed into the wall not the floor, and that they not pinched tight to the flooring.
- Install appropriate transition moldings at the doorways, allowing ½" (12.7 mm) expansion space.
- Furniture should be moved onto the newly installed floor using an appliance hand truck over hardboard runways.
- Heavy furniture should be equipped with suitable non-staining, furniture casters. Non-staining felt protectors are recommended for table and chair legs to help protect the flooring.

Glue Down Installation

Step 1: Gluing

- Use an adhesive that is recommended by the adhesive manufacturer for use with this product, and follow the adhesives manufactures recommendations regarding trowel notch and spread rate. Replace any trowel that has worn teeth to maintain an even spread rate over the entire installation.
- Hold the recommended trowel at a 45-degree angle to ensure the proper spread rate of adhesive.
- Apply pressure to allow the trowel to leave ridges of adhesive on the substrate with little adhesive left between the ridges.
- Spread the adhesive from the starting wall out to approximately the width of two planks.
- Install the first row of starter planks along the starter wall, working from right to left with the tongue facing the starter wall. Remember to place expansion spacers along the wall and at both ends of the row to maintain the required expansion space and secure into position with the tongue facing the starter wall. When gluing over a wood subfloor the first row can be top nailed with finishing nails to secure it in place. When doing so counter sink the finishing nails and fill with an appropriate filler.
- Place the tongues of the next plank to be installed plank into the grooves of the installed planks and press into the adhesive.
- Maintain an eight-inch minimum stagger between end joints as you proceed.
- When the first two rows are straight and secure, spread the adhesive two to three wide across the length of the room. Don't spread more adhesive than can be covered in 30 to 45 minutes. If the adhesive skins over remove the dried adhesive and trowel new adhesive.
- Continue to install the planks in this same manner across the room until the room is completed.
- Remove adhesive from the surface of the planks as you work with a cloth dampened with warm water or the adhesive manufacturers recommended adhesive remover. Note: Do not use water to remover to remove urethane adhesives and do not allow the adhesive to cure on the surface of the planks.

Step 2: Fitting the last row and doorways

- The last row will most likely require cutting to width as you planned above before starting. Remember to place expansion spacers along the wall before measuring for your cut.
- Install cut planks and pull into place with a pry bar. Then place spacing wedges between the planks and wall to prevent the floor from shifting.
- In doorways less than six feet wide, you'll need a transition piece.

Step 3: Finishing

- Sweep up scrap material and any loose debris.
- Clean any wet adhesive from the surface of the flooring material with a clean cloth dampened with water.
- Roll and cross roll the floor with a 150 lb roller at the end of installation to ensure proper adhesive transfer.
- Allow the floor to dry overnight before permitting foot traffic. Keep heavy rolling loads off the floor for a minimum of 48 hours.
- Replace/install all moldings, baseboards etc. ensuring that they are nailed into the wall not the floor, and that they not pinched tight to the flooring.
- Install appropriate transition moldings at the doorways, allowing ½" (12.7 mm) expansion space.
- Furniture should be moved onto the newly installed floor using an appliance hand truck over hardboard runways.
- Do not place heavy items on newly installed floor covering for at least 48 hours after completion of the installation. Heavy furniture should be equipped with suitable non-staining, furniture casters. Non-staining felt protectors are recommended for table and chair legs to help protect the flooring.

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