

## Installation Instructions for Plank and Tile

These instructions supersede any verbal or written instructions from a manufacturer's representative, must be followed in order for the warranty to be in effect.

### General and Delivery

- The Product must be installed by an installer with a minimum of five years of proven experience in performing work similar to that required for the Product. Acceptable certifications include The International Standards and Training Alliance (INSTALL), The International Certified Floorcovering Installers Association (CFI), and Flooring American University. Without specific prior experience with this specialized product, an expert may be needed on site to consult on the installation. Please inquire for more information.
- Order materials in compliance with product supplier's ordering and lead time requirements, in order to take delivery at least 48 hours in advance of installation (to allow materials to acclimate to job site conditions).
- Accept delivery of materials only if they are in unopened, undamaged packaging that bears the name and brand of the manufacturer or supplier, project identification, and shipping and handling instructions.

### Storage

- Upon receiving floor covering, immediately remove from pallet. Cartons shall be stacked no more than eight cartons high, and shall be stored flat and parallel.
- Store material – underlayment panels, patching or leveling compounds, floor covering, adhesive, sealer, and maintenance products if ordered – in original packaging in areas that are enclosed and weather tight with the permanent HVAC system set at a temperature between 65°F and 80°F for a minimum of 48 hours prior to commencement of installation.
- The material shall be inspected before installation. **If material is distorted during storage or transporting, do not attempt to install it. Do not install flooring with visible defects.** Report any defects as soon as possible and in compliance with the warranty.

### Materials and Accessories Required

Consult the appropriate Material Safety Data Sheets (MSDS) for handling of accessories.

- Flooring: luxury resilient flooring tiles and/or planks
- Adhesive: EQ Bond is recommended and required for compliance with the MI Life Preserver™ Extended Warranty. This adhesive, which is Green Guard Certified, shall be used for substrates compliant with ASTM F710 and ASTM F1482 specifications. Trowel and coverage guidelines are below:

	<b>Porous substrates*-</b>	<b>Non-porous substrates*</b>
1 gallon pail	300-350 sq. ft	350-400 sq. ft
4 gallon pail	1,200-1,400 sq. ft	1,400-1,600 sq. ft
Trowel type	1/16" x 1/32" x 1/32" U-notch	1/16" x 1/32" x 5/64" U-notch

\*These are guidelines only. The final decision on which trowel to use will be determined by the substrate's porosity and is the responsibility of the installer.

Please consult with your consultant regarding adhesive substitutes. In order to comply with MI Life Preserver™ Extended Warranty, any substitute adhesive must be approved IN WRITING.

- **Sealer:** We strongly recommend that all installations be sealed with one of the following sealers to make a more dirt-resistant, low-maintenance, and long-lasting surface. Two coats are recommended for longer-lasting protection.

Sealer	Bottle Size (in liters)	Approximate Coverage (in sq. ft)
MI Sealer	5.5	1000-1,184 / 500-592 for 2 coats
MI Stop Slip Sealer	5.5	1000-1,184 / 500-592 for 2 coats
MI Stain-Shield Sealer	2.5	485-538 / 240-269 for 2 coats

### Substrate Preparation and Pre-installation Testing

#### All substrates

- The substrate must be sound, clean, permanently dry, perfectly smooth, and free of cracks and contaminants, including paint, old adhesive, curing compounds, oil, grease, wax, asphalt, or other contaminants that could negatively affect the performance of the adhesive. Any irregularities in the substrate will telegraph (show through) to the finished floor.
- Floor laying work shall not begin until the installer has assessed and approved the substrate and subfloor conditions.

#### Concrete substrates and subfloors

- Ensure that the general contractor has followed ASTM F710 Standard Practice for Preparing Concrete floors to receive Resilient Flooring. ASTM F710 includes requirements for moisture and pH testing, smoothness, flatness, concrete strength, and the presence of a vapor retarder under the slab. ASTM F710 requires that all concrete slabs be tested, regardless of age or grade level, using the Calcium Chloride test (ASTM F1869) and Relative Humidity test (ASTM F2170). No other test methods are acceptable. The General Contractor and installer shall both keep records of all tests related to ASTM F710 on file.
- Test procedures shall be followed exactly in order for test results to be valid. (Building shall be at in-service temperature and humidity, concrete shall be properly cleaned, etc.) See ASTM F2170 for details. It is recommended that a qualified, independent third party conduct the tests.
- Test result requirements using EQ Bond are:
  - ASTM F1869: maximum MVER of 5 lbs/1000 sq ft/24 hrs
  - ASTM F2170: relative internal humidity of 75% or less
  - pH test: pH between 7.0 and 10.0  
pH readings below 7.0 and above 10.0 can adversely affect resilient flooring or adhesives, or both.
- **If concrete moisture conditions are outside the above limits, do not commence installation.** To treat concrete slabs that do not meet the above limits, several companies have produced heavy-duty epoxy-based moisture control systems. The Manufacturer does not endorse or prefer any of these systems and provides the below list for information purposes only.
  - Ardex: 724.203.5000 ([www.ardex.com](http://www.ardex.com))
  - Bostik: 978.777.0100 ([www.bostik-us.com](http://www.bostik-us.com))
  - Koester/Koster: 757.425.1206 ([www.koesterusa.com](http://www.koesterusa.com))
  - Mapei: 800.426.2734 (1.800.42.MAPEI) ([www.mapei.us](http://www.mapei.us))

#### Wood subfloors

- For wood subfloor systems, ensure the subfloor conforms to the guidelines of ASTM F1482 Guide to Wood Underlayment Products Available for Use Under Resilient Flooring. Requirements include
  - Double layer construction of a wood subfloor/underlayment assembly, with a minimum total thickness of 1". The base layer shall be plywood over joist on center. The second layer shall be plywood underlayment.
  - A minimum of 18" of cross-ventilated air space beneath all wood subfloors. Use a moisture barrier to insulate and protect the crawl space.
- To cover unsuitable substrates in a wood subfloor system, use underlayment grade plywood (i.e. arctic birch panels, APA Group 1 exterior-grade A/C plywood). Do not install this product over lauan panels, plywood with knots, OSB, treated wood (i.e. CCA, fire-rated plywood, or other coated wood), particle board, chipboard, flakeboard, fiberboard Masonite™, pressboard, or other hardboard underlayment, hardwood flooring, or other uneven or unstable substrates.

#### Other subfloors

- To cover ceramic tile subfloors that are uneven, use a Portland cement-based leveling or underlayment compound. Strictly follow the manufacturer's instructions and ensure compliance with ASTM F710 for use of these compounds.
- Do not install product over:
  - Existing resilient flooring including sheet or tile products (as telegraphing of the existing flooring through the surface of new sheet vinyl is possible over time)  
Note: If removal of existing resilient flooring is required, strictly follow the Resilient Floor Covering Institute's paper on "Recommended Work Practices for Removal of Resilient Floor Coverings" available on [www.rfci.com](http://www.rfci.com). Also, be aware that existing floors and/or adhesives may contain asbestos. Various federal, state, and local government agencies regulate the removal of asbestos-containing material. Review and comply with all applicable regulations.
  - Surfaces containing any type of residual adhesive
  - Non-compatible substrates, such as asphalt, any bituminous or asphalt-saturated material, or floor coverings made of (or containing) rubber
  - On-grade or below-grade concrete that is subject to excessive moisture
  - Gypsum-based underlayments
  - Radiant-heated floors with surface temperatures over 82°F

#### Site Conditions

- The flooring shall be installed only after other trades have finished, and a permanent HVAC system is operational. Temporary heat is not acceptable.
- During installation
  - Maintain the room temperature between 65°F and 80° F. Relative humidity between 40% and 67% is preferable. Excessively high or low interior air relative humidity will influence curing of floor patching materials and adhesive open times.
  - Maximize fresh air ventilation by using exhaust fans, at point of use, and by opening windows and doors as necessary. Face fans out of the area where flooring is being installed, not into the area.
  - Because some materials used during installation may be flammable, make sure no sources of ignition or open flame exist near the use of those materials.

## Layout

- The flooring dealer or contractor shall provide a layout drawing to the architect or end user for the intended installation that contains the following information:
  - Date and scale of drawing
  - Location, swing, and clearance of all doors
  - Existing substrate/subfloor conditions
  - Notation identifying who is responsible for:
    - removal of existing floor coverings and/or underlayments
    - preparation of existing substrate
    - moisture and pH testing
    - removal of debris from new floor covering installation
    - protection of finished floor covering after installation
    - Initial maintenance procedures
  - Name of manufacturer, product style, and pattern to be installed
  - Product quantities required
  - Tile or plank layout
  - Location and type of all edge moldings and base required
- An effective entrance system that traps dirt and water shall be in place in applications where Plank and Tile is installed near entrances, and shall be shown as part of the layout. The Manufacturer recommends a permanently installed two- to three-part entrance system at all outdoor entrances (20-30 linear feet for major entrances; less for infrequently used entrances).
- The end user shall receive a copy of the layout drawing for approval prior to install.

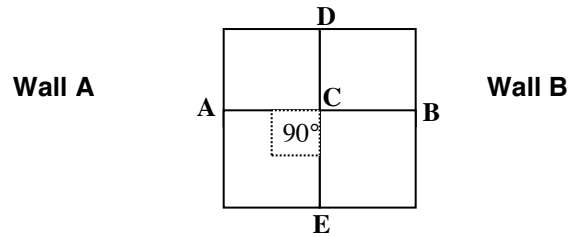
## Installation

Important: Expansion joints are incorporated into concrete floor slabs in order to permit movement without causing cracks in the concrete. These joints must not be filled with underlayment products or other materials, and floor coverings must not be laid over them. Expansion joint covers should be detailed by the architect or engineer based upon intended usage and aesthetic considerations.

1. Thoroughly sweep the substrate to remove all dirt and debris.
2. Tile or Plank:

2A. Follow the **TILE** layout specified by the end user, architect, or designer. Plank and Tile can be laid out to run either parallel or diagonal to the room or primary wall. Install product running in the same direction (block or staggered) or quarter turned (tessellated) as specified.

- Start from the center of the room (point C in the diagram on the next page), ensuring that the tile is laid exactly along the chalk lines. Work outward from the first tile in a pyramid fashion, until the first quarter is finished. Make sure that tiles do not run off the guide lines. Make sure that each tile is firmly butted to the prior tile(s) laid. Then make the first quarter of the floor. If the first few tiles are not installed correctly, it will affect the entire installation. **Never bend or force tiles into place.** In corridors and small areas, it may be simpler to work lengthwise from one end, using the center line as a guide.
- Establish center marks and determine start point to balance installation in room and have equal tile or plank widths on opposite sides of room. This can be done by dry laying tiles and marking guide lines on the floor in pencil or chalk.
- Draw the center line as illustrated in the diagram below: snap a chalk line from the middle of wall A to the middle of wall B. Find the center of line A-B (point C). Draw a perpendicular line through C using the 3:4:5 method to find line D-E.



- Starting at center point C, measure out the length and width to the walls to ensure you will have at least a half of a tile at the border. Adjust lines A-B and D-E if needed.
- 2B. Follow the **PLANK** layout specified by the end user, architect, or designer. Install product running in the same direction (staggered) or in precise patterns as specified
- Locate the wall that is the main line of sight in the room (this is usually the wall opposite the room's main entrance). Lay out a line of planks along this wall and use a T-square to make sure the planks are parallel to it. Mark a line on the floor using a chalk line or pencil. Lay a line of complete planks end to end the length of the room.
  - To stagger the planks, alternate each row with a full-length and a half-length plank. At the opposite end of the room you will need to install partial planks to finish off each plank row.
3. Wet-set application: All flooring shall be installed while staying off freshly installed tile or plank. This will minimize shifting, adhesive displacement, and wet adhesive from oozing up and getting on to the face of the tiles. This can be accomplished by creating work zones outlined with chalk lines to spread adhesive aligned with established guide lines. Create work zones that are no wider than the installer's comfortable arm reach and in multiples of the tile width.
4. Strictly follow the adhesive manufacturer's instructions on the adhesive pail label. **Do not spread adhesive in an area larger than the tiles or planks can be installed while the adhesive is in right condition.** Since it takes time to scribe and cut the border tiles, first spread the adhesive only where the full tiles will be laid.
- **Important:** adhesive open time depends on several factors such as substrate porosity (longer if the substrate is non-porous); room temperature (longer if room is too hot or cold); relative humidity (longer if higher); temperature of the adhesive (longer if cold); and amount of adhesive applied (longer if more used).
  - Never use fans or apply less adhesive than required to speed up set-up time. This will likely result in loss of adhesion (installation failure) within three to nine months.
5. When the field of full tiles or planks is complete, scribe and cut the border tiles before the adhesive is spread. Any time you make a cut, place that cut edge against a wall. Placing a cut edge against the uncut edge of another piece of flooring may not look natural. When fitting is complete, spread adhesive in the border area and install the border pieces.
6. After installation, using a 100-150-lb three-section floor roller, roll the adhered areas at least twice, once in each direction (horizontally and vertically) to ensure that the adhesive has transferred completely to the backing. Roll the floor as soon as conditions permit that will provide 100% uniform adhesive transfer (no visible trowel ridges) onto the back of the tile (and not cause adhesive to ooze up between tiles).

### Clean Up and Final Finish

- Maintain the room temperature between 65°F and 80° F for 48 hours after installation. Thereafter, maintain temperature at a minimum of 55°F.

- Check appearance of entire installation. Use a white cloth moistened with water to remove any adhesive on the surface of flooring or walls.
- Commercial vacuum to clear the area of debris and grit.
- Keep all traffic off flooring for 24 hours to prevent indentation while the adhesive sets.
- Wait 48 hours before doing initial wet cleaning or allowing rolling traffic or furniture on the floor (Initial cleaning shall follow the latest version of the maintenance instructions).
  
- Covering exposed edges of flooring is recommended.
  - Use product coving or cove base molding on the walls around perimeter of room and protective molding at doorways or areas where the new flooring will fit against existing flooring. Use cap molding on walls if the flooring will be installed as coved installation.
  - If the exposed edge of new flooring extends above adjacent existing flooring, a protective molding must be used.
- If work needs to be done in the room after the floor goes in (for example, painting), protect the floor from damage by covering the floor, which shall be clean and completely dry, with plastic, paper, felt, or other protective covering.
- To move furniture and equipment across the floor, use plywood or hardboard panels (smooth side down) as a runway, whether or not an appliance hand truck is used.
- Installing entrance matting systems at all exterior entrance ways is recommended to maximize the useful life and appearance of the flooring.
- Upon completion of the job, the end user shall sign a Job Completion Ticket.

### **Sealer Application Instructions (if sealer is being used to comply with MI Life Preserver™ Extended Warranty)**

1. After the initial wet cleaning (which should occur no sooner than 48 hours after the installation), seal the floor with one of the recommended sealers (see p.2) as specified by the architect or end user (“sealer”) directly after installation. Strictly follow the instructions on the label; they are summarized below for the MI Sealer. The floor surface must be clean, dry, free from dust, grease, oil, wax, and care product residues. If this is not the case, clean the floor following the Initial Cleaning instructions, using a green pad. Site conditions (see pp. 3-4) and a room and working temperature of 60°F to 75°F shall be maintained. **Higher temperatures considerably reduce the working time of the sealer.** During application and drying of the sealer, avoid exposure to drafts and strong sunlight and protect the surface from dust.
2. Shake up the canisters containing the sealer and the cross linker well. Add the cross linker to the sealer canister and thoroughly mix both components by shaking thoroughly. If partial quantities are to be mixed, always mix the sealer and cross linker in a ratio of 10:1 and by adding the cross linker to the sealer. Once mixed, the mixture is suitable for use for approximately 4 hours at the above required temperature range. In case of cold components, the mixing procedures cannot be performed with sufficient thoroughness. **Do not tightly seal the canister containing ready-mixed sealer** since the sealer/cross-linker mixture can, in the course of time, react even in the canister, resulting in the build-up of reactive gases.
3. Roll out the sealer mixture evenly over the floor using the special applicator that comes with the sealer. Commence work on the side with the most light (as a rule this is the side of the room where there is a window) and work away from the light source. In this way it will be possible to keep an eye on the floor during work and immediately correct any problems as they arise. Apply the sealer and

distribute with the roller, working in sections of a maximum of 10 feet in width at right angles to the incidence of light (i.e. parallel to the window wall) and then roll it out evenly towards the light. Avoid the formation of pools. After allowing it to dry for a sufficient period of time (at least 2 hours but still on the same day), apply a second coat of the sealer mixture. The second layer increases the level of protection of your Plank & Tile floor.

**Do not walk on the floor for a MINIMUM of 2 hours after treatment. The time may vary due to temperature and humidity. The protective film reaches its final level of hardness after approximately 7 days at room temperature.**

- Maintain the room temperature between 65°F and 80 °F for 48 hours after installation. Thereafter, maintain temperature at a minimum of 55°F.
- Covering exposed edges of flooring is recommended.
  - Use product coving or cove base molding on the walls around perimeter of room and protective molding at doorways or areas where the new flooring will fit against existing flooring. Use cap molding on walls if the flooring will be installed as coved installation.
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#### **Actions not to take**

To ensure the long life and beautiful appearance of your Centaur floor,

- Do not use or drag furniture with sharp edges (for example, desks, shelving units, and cubicle assemblies). Furniture should be fitted with stainless steel or Teflon pads. During a move-in day, floor protection should be used to prevent damage from movers, dropped furniture, or soiling from dirty moving equipment.
- Do not use soft chair caster wheels, including polyurethane wheels, on office chairs. Wheels must be hard polyamide or similar (wheel type W per DIN 68131) so that they will roll easily, preventing unnecessary wear and tear on the flooring.
- Unless you are using MI Stain Shield Sealer, do not use certain materials (for example in rubber feet, rubber mat, shopping carts) if they will be in contact with the floor for a long time, as they can cause discoloration that cannot be removed.

***Centaur***  
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