

## Installation Instructions for Bolon® Tiles: BKB & Eight

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

### Delivery

- 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. Tile cartons shall be stacked no more than five cartons high, and shall be stored flat and parallel.
- Store material – underlayment panels, patching or leveling compounds, floor covering, adhesive, chemical welding liquid, 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 to the manufacturer 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: Bolon resilient flooring tiles
- Adhesive: Perma-Bond Release-Bond is recommended. Release-Bond should be used only if you plan to swap out specific tiles due to traffic path wear on a regular basis; otherwise, use Perma-Bond. These adhesives, which are solvent-free and acrylic-based, shall be used for substrates compliant with ASTM F710 and ASTM F1482 specifications. Trowel and coverage guidelines for both adhesives are the same:

	Porous substrates*	Non-porous substrates*
1 gallon pail	160-180 sq. ft	220-260 sq. ft
4 gallon pail	640-720 sq. ft	880-1,040 sq. ft
Trowel type	1/16" x 1/16" x 1/16" square notch	1/32" x 1/32" x 1/32" 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.

- **Sealer:** We strongly recommend that indoor installations only be sealed with Bolon Project Sealer (BPS) to make a more dirt-resistant and long-lasting surface. **Any installations of a light color, or in heavy duty areas such as hotel and office corridors, retail stores, food service, and break rooms must be sealed with BPS.** BPS comes in two sizes: a 1 liter bottle treats approximately. 160 sq. ft; a 4 liter bottle treats approximately. 640 sq. ft.

### 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 Perma-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  
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 Bolon 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, which will be 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 Bolon 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 85°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.

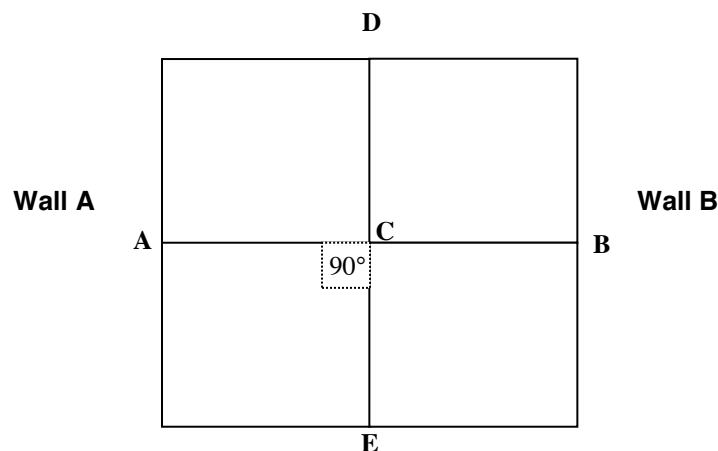
- Because some materials used during installation may be flammable, make sure no sources of ignition or open flame exist near the use of those materials.

### 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 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 Bolon 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

1. Thoroughly sweep the substrate to remove all dirt and debris.
2. Measure and mark guidelines 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.



3. Starting at center point C, measure out the length and width to the walls to make sure you will have at least a half of a tile at the border. Adjust lines A-B and D-E if necessary.
4. Strictly follow the adhesive manufacturer's instructions (for Perma-Bond or Release-Bond, follow instructions on the adhesive pail label). Do not spread adhesive in an area larger than the tiles 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. Normally, unless there has been a conscious design decision to do otherwise, the tiles shall be installed in alternating directions (quarter turned, 90°). Start from the center of the room (point C), 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 guidelines. 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.
  - In corridors and small areas, it may be simpler to work lengthwise from one end, using the center line as a guide.
  - When installing on stairs, the steps shall be fitted with moldings to protect the edge of the flooring tiles.
6. When the field of full tiles is complete, scribe and cut the border tiles before the adhesive is spread. When fitting is complete, spread adhesive in the border area and install the border pieces.
7. After installation, using a 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.
8. In some cases, tiles can be installed loose laid following the above procedure.

### **Sealer Application Instructions**

9. Seal the floor with Bolon Project Sealer (BPS) directly after installation. Site conditions (see p. 4 of these instructions) shall be maintained. If the floor is dirty, clean the floor following the Initial Cleaning instructions.
10. Pour BPS into a new or clean rolling pan. Spread an even layer over the floor using the specially developed roller and tools shipped with BPS. The roller, when used properly, ensures an even layer of BPS on the floor. The roller can be cleaned with water.

**Do not walk on the floor for 2 hours after treatment. The time may vary due to temperature and humidity. Do not place heavy furniture on the floor for 24 hours after treatment.**

As needed: In rare instances, an application may require two coats of sealer, for example when a light color is chosen. For an even surface, apply the first coat in one direction and the second coat in the opposite direction.

### **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. A mild solvent such as denatured alcohol may also be used. **Mineral spirits are not recommended.**
- 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 72 hours before doing initial cleaning or allowing rolling traffic or furniture on the floor
  
- 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.

### **Actions not to take**

To ensure the long life and beautiful appearance of your Bolon 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.

- Do not use soft chair caster wheels, including polyurethane wheels, on office chairs. Wheels must be hard polyamide or similar (wheel type H per EN 12529) so that they will roll easily, preventing unnecessary wear and tear on the flooring.
- Do not drag furniture across the floor. 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 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.

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