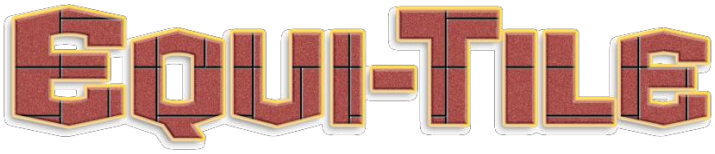
EMC
A Liberty Tire Recycling Company

INSTALLATION RECOMMENDATIONS



Prior to Installation:

The Equi-Tile pavers (also referred to as tiles) and transition pieces intended for this installation have been shipped to you on pallets with the mats shrink wrapped and strapped. Once the packing is removed, please inspect the exposed edges for any damage. Next confirm shipment to packing list and notify supplier of any damage or shipment discrepancies.

Equi-Tile pavers ARE NOT intended for playground application. Equi-Tile pavers have not been tested for compliance to ASTM F3351 or ASTM F1292 Standard Specification for Impact Attenuation of Surface Systems Under and Around Playground Equipment and should not be installed in applications requiring compliance with this ASTM standard.

Equi-Tile pavers are usually installed by fastening together with plastic dowels allowing some movement of the tiles. Equi-Tile pavers are rubber and will therefore contract in cold weather and expand in warm weather. Some gapping may occur over time due to this normal expansion and contraction. Such gaps should be closed during normal site maintenance.

Perimeter containment is recommended to minimize gapping due to thermal expansion and contraction and is the sole responsibility of the project owner.

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SECTION 1 - Tools and Equipment Necessary for Installation

Adhered Installation

- ✓ Rubber Gloves
- ✓ Safety Gloves
- ✓ Safety Glasses
- ✓ Utility Knife with heavy duty blades
- ✓ Two tape measures, 25 foot and 50 foot
- ✓ Chalk Line
- ✓ Carpenters Square
- ✓ 1/8 inch square notched trowels (2 minimum)
- ✓ Water Spray Bottles (if required)
- ✓ Sabre Saw and Blades (7-10 TPI wood type blades)
- ✓ Hole Saw (optional, to cut around equipment support posts if required)
- ✓ Weatherproof Silicon Sealant
- ✓ Caulk Gun
- ✓ One and 5 gallon paint stirrers

Mechanical Installation

- ✓ Safety Glasses
- ✓ Safety Gloves
- ✓ Utility Knife with Heavy Duty Blades
- ✓ Chalk Line
- ✓ Carpenters Square
- ✓ Dead Blow Hammer
- ✓ Trim or Framing Hammer
- ✓ Sabre Saw and Blades (7-10 TPI wood type blades)

SECTION 2 - Subsurface Requirements for Equi-Tile Paver

Equi-Tile pavers, when installed outdoors, are typically installed over concrete or asphalt. Indoor installations may be applied over concrete or wood sub-floors. Contact EMC with questions about other types of indoor sub-floors.

All outdoor subsurface' s should be properly excavated and installed to insure:

1. Subsurface drainage.
2. Non-Separation of concrete layers.
3. Prevention of Heaving due to freeze/thaw or unstable ground conditions.

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The stabilization of the subsurface is the sole responsibility of the installer and/or owner.

Subsurface installation should assure good drainage of the area by either a well-defined gradient of the surface (minimum 2% slope is recommended) or a well-placed drainage pipe in lower spots of the installation.

Concrete Surfaces

Concrete surfaces must be thoroughly cured and free from hydrostatic pressure before installing Equi-Tile pavers (minimum 28 days after pour.)

All surfaces should be clean, dry and contain no low spots that could pond water before applying adhesive for installation. A light broom finish is recommended for maximum adhesion.

The concrete surface should be free from paint, dirt, oil, or other surface contamination before applying Sure Stick adhesive.

Any separation of concrete layers, heaving, etc. may result in separation of the installed safety surfacing and is the sole responsibility of the installer and/or owner.

Assure good drainage of the area by either a well-defined gradient of the surface (2% slope is recommended) or well-placed drainage pipe in lower spots of the area.

Asphalt Subsurface

Asphalt subsurface should be hard, free of grease, oil, and other contaminants and contain no low spots which could pond water. Avoid installation on new asphalt until surface oil has had time to dissipate (minimum 30 days after compacting) and drainage can be evaluated. Avoid very coarse aggregates or those with high fines content. Aggregate sizes between 3/8 inch and ½ inch are recommended.

Any separation of asphalt or blacktop layers, heaving etc. may result in separation of the installed safety surfacing and is the sole responsibility of the installer and/or owner.

Insure good drainage of the area by either a well-defined gradient of the surface (a minimum 2% slope is recommended) or a well-placed drainage pipe in lower spots of the area.

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SECTION 3 SITE LAYOUT

1. Measure and mark the center points of two opposite sides of the proposed installation. Snap a chalk line between these center points. Measure and mark the center of this chalk line. From this point use a carpenter's square to establish a second line perpendicular to the first line. Snap a chalk line on this second perpendicular line. The intersection of these lines should be the center of the planned installation. The perpendicular chalk lines will be used to lay the first courses of tile. (Laying tile from the center outward will insure that the installation will be symmetrical, that is any trimming of edge tiles, if required, will be approximately equal on opposite sides of the installation.)

   If it is not possible to begin at the center of the installation (e.g. because play or other immovable equipment is on this spot), snap the chalk lines two feet, or in multiples of two feet, from the center of the installation. The first courses of tile should be laid from the intersection of these chalk lines, with subsequent courses of tile laid so that the use zone or tile area specified in the site plan is completely covered. (This may require laying different amounts of tile on opposite sides of the center point of the chalk lines.)

2. Use the right triangle method to check for squareness. Measure and mark one line 3 feet from the center point. Measure and mark a point on the perpendicular layout line 4 feet from the center point. Measure the (diagonal) line between these points. This distance should be exactly 5 feet. Make corrections (to squareness) if necessary.

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SECTION 4 – Installation

Adhered Installation

Adhered installation is recommended for all outdoor Equi-Tile installations and for all permanent indoor installations.

1. Insure that the base surface is clean, dry and contains no low spots which could pond water. Tiles must be dry. Equi-Tile pavers are not to be used for playground surfacing.

2. Check ambient air temperature. Recommended ambient temperature for tile installation is 60 to 90 degrees F.

EMC is not responsible for gapping or buckling may occur due to installation outside of recommended temperatures.

3. Equi-Tile pavers are shipped to the project on pallets. Tiles should be laid out individually to allow them to acclimate. Equi-Tile pavers are made with recycled rubber which will expand and contract with changes temperature and exposure to sunlight. Tiles may expand beyond the published dimensions in high temperature conditions. The installer may need to measure and hand select tiles during installation to maintain straight course lines.

4. The initial tile courses should be laid along the two perpendicular course lines established in Section 3 Site Layout. Additional courses follow (abut) these initial tile courses until all tile are installed.

5. Cut openings in any tile to be installed around equipment support posts with a sabre saw and/or hole saw using a shipping pallet as a cutting table. Cutouts should be approximately ¼" larger than support posts in all directions. Any gaps between the edges of the tile opening and equipment post can be filled with silicon sealant after tile are installed and adhesive has cured.

6. Wear rubber gloves and safety glasses when working with SureStick adhesive. After opening the SureStick adhesive, if necessary, gently stir the adhesive to insure a homogeneous mixture

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Apply the SureStick adhesive with a 1/8 in. square notched trowel to the substrate (concrete or asphalt) where the first course of tile will be laid, covering an area slightly wider than the width of tile. Coverage rate for SureStick is 40 to 50 square feet per gallon. In general coverage over asphalt is somewhat less than that over concrete. However installers should monitor adhesive application to insure that an adequate thickness of adhesive (minimum one millimeter/.04 inch thick) is always present. Set the tiles firmly into the adhesive. Continue this process with subsequent courses of tile until all tiles are installed.

7. If transition ramps are being used, install ramps after all tiles have been laid and after ramps have been miter cut (at 45^{o} angles) to finish corners. Install transition ramps with SureStick adhesive. Abut the ramps against the outer course of tiles. If drainage is a concern, allow a ¼ inch gap between each ramp piece for drainage.

8. Cutting tile edges should be avoided if possible. If cutting is required, for example to abut a wall or containment perimeter, tile may be cut with a sabre saw or utility knife and straight edge, again using a shipping pallet as a cutting table. Cut tile edges should **never** be left exposed or abutting another tile, but rather always being abutted to a containment perimeter or a ramp edge.

   If necessary ramps may also be cut using the procedure above.

9. The SureStick adhesive should cure within 24 hours if installed at recommended installation temperatures (60 to 90 degrees F) and at ≥ 50% relative humidity. Under very dry conditions a light mist of water (about 11 ounces per 100 sq ft of adhesive) can be applied to the adhesive prior to setting the tiles to facilitate curing.

10. After adhesive has fully cured any gaps between cut tile and equipment support posts should be filled with weatherproof silicone construction sealant.

11. Allow a minimum of 24 hours before allowing any traffic or activity on the tile surface.

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Mechanical Installation (Using SureKONNECT Dowels)

Mechanical installation is recommended only for indoor applications with stable ambient temperatures (i.e. varying less than 20 degrees F) and where a containment perimeter is present.

1. Insure that the base surface is clean and dry.
2. Equi-Tile pavers are shipped on pallets and must be laid out individually to allow them to acclimate prior to installation. Equi-Tile pavers are made with recycled rubber which will expand and contract with changes in temperature and exposure to sunlight. Tiles may expand beyond the published dimensions in high temperature conditions. The installer may need to measure and hand select tiles during installation to maintain straight course lines.

3. The initial tile courses should be laid along the two perpendicular course lines established in Section 3 Site Layout. Additional courses follow (abut) these initial tile courses until all tiles are installed.

4. Install dowels in each of the three dowel holes on adjacent sides of each towel. Tap the dowels slightly less than half their length (i.e. slightly less than 1 ½") into the holes using a trim or framing hammer.

5. Place one of the tiles prepared in 4 above at the intersection of the chalk lines with non-doweled sides facing the intersection of the chalk lines.

6. Join the next tile prepared in 4 above to the tile in 5 above, inserting the dowels in the original tile into the holes in the tile being joined. A dead blow hammer may be used to strike the tile close to the doweling point to join the tiles close together. A second installer will need to stand on the original tile to hold it in place during this operation *Do not use a steel head hammer for this purpose as this may damage the tiles.*

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7. Repeat the procedure in 6 above until all tiles in the initial course line have been assembled. Realign tiles as necessary to follow the chalk lines.

8. Prepare enough tiles for the second course using the procedure in 4 above.

9. Join the first tile in the second course to the first tile in the first course, inserting the dowels from the first course tile into the holes into the second course tile.

10. The second tile in the second course will be dowelled on two sides. First, dowel the tile to the tile just installed in 9 above, sliding the tile under the dowels projecting from the tile in first course. After this has been done and the tiles in the second course are fastened together, complete the last joint (with dowels above) by lifting both tiles and inserting one dowel at a time into the opposite dowel hole. Tightly butt the second tile to its adjoining tiles.

11. Repeat this procedure until all tiles and all courses have been joined tightly together and the outer courses of tiles abut the containment perimeter (e.g. wall or other stationary vertical surface.) If no wall or other stationary perimeter is present a tile/ramp perimeter must be installed following the instructions in 15 below

12. If necessary, tiles on the outermost perimeter (i.e. those abutting the containment perimeter) may be cut to fit between the adjacent tile course and containment perimeter. Tiles may be cut with a sabre saw or utility knife and straight edge, using a shipping pallet as a cutting table. Cut tile edges should **never** be left exposed or abutting another tile, but rather always being abutted to a containment perimeter.

13. If there is no existing containment perimeter, adhere the outermost courses of tile and abutting Equi-Tile transition ramps to the concrete or wooden subfloor using

SureStick adhesive. (Contact EMC for guidance on adhering to other subfloors.) If required, miter cut ramps (prior to adhering) at 45 degree angle to finish corners. Follow the instructions in paragraph 6 of the Adhered Installation method when applying adhesive.

14. Inspect the entire tile installation to ensure that all tiles are snugly abutted and that there are no gaps between tiles, or tiles and the containment perimeter. Close any such gaps as required.

SECTION 5 Disclaimer

These installation guidelines represent a typical installation and generally accepted installation practices should be followed. Use of trained installation professionals is recommended for best results.

EM Concepts ("EMC") does not warrant any installation work and specifically disclaims liability for any direct or indirect personal injury, property damage or other costs or losses resulting from incorrect or inadequate installations.

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