

Eco Tile™ by Matter Surfaces

Installations Instructions

1 GENERAL

Eco Tile™ must be installed by professional flooring installers experienced at installing commercial resilient floor covering products. Installers must have sufficient professional liability insurance coverage (aka Errors and Omissions Insurance) for the project.

Training programs such as the International Standards & Training Alliance (INSTALL), The International Certified Floorcovering Installers Association (CFI), and Flooring American University are recommended. If this is your first project installing Matter Surfaces Eco Tile™ or if it has been several months since you last installed it, please call Matter Surfaces Technical Support at 781-344-1536 to review installations recommendations.

These have been developed to offer the best opportunity for proper and successful flooring installation and any deviation may result in failure. Installation instructions, all Safety Data Sheets (SDS) and label instructions must be read, fully understood and followed. For all situations that are not covered in this document, please contact Matter Surfaces

Because 90% of all dirt in a building comes in on footwear, Matter Surfaces strongly recommends installing and maintaining entrance matting (preferably permanently installed) at all outdoor entrances (20-30 linear feet for major entrances; less for infrequently used entrances). Doing this will improve indoor air quality, reduce maintenance costs, and lengthen the life of your floors.

Unless stated otherwise, follow the specific requirements of *ASTM F710 – Standard Practice for Preparing Concrete Floors to Receive Resilient Flooring*. Please visit www.astm.org for copies of any ASTM document.

The General Contractor (or owner) must provide a structurally sound subfloor; new concrete slabs must conform to *ASTM C33/C33M – Standard Specification for Concrete Aggregate*. When concrete slabs have or are suspected of having Alkali Silica Reaction (ASR) present, do not proceed and contact Matter Surfaces. All on and below grade concrete subfloors require a confirmed effective vapor retarder. The vapor retarder must have a low permeance (≤ 0.1), having a minimum thickness of 10 mils, or meeting *ASTM E1745 requirements – Standard Specification for Water Vapor Retarders Used in Contact with Soil or Granular Fill under Concrete Slabs*. Confirm it was placed directly underneath the concrete, above the granular fill. If this is not possible, use a topically applied moisture mitigation system that conforms to *ASTM F3010 – Standard Practice for Two-Component Resin Based Membrane-Forming Moisture Mitigation Systems for Use Under Resilient Floor Coverings*. It must be applied following the manufacturer's written instructions. Chemical adhesive removers must not be used. Do not install where hydrostatic pressure can occur; contact Matter Surfaces. Also the concrete

subfloors must not be subject to shrinking, curling, cracking or moving in any way. Matter Surfaces accepts no liability for a failure or complaint due to slab movement of any kind.

To minimize the chance of damage, proper glides must be used on chairs and other furniture that may slide directly across the floor. They must have glides that are a minimum of 1 inch in diameter. Heavy objects such as equipment, appliances, fixtures and heavy furniture must not be moved directly across the floor. Using protective boards will reduce the chance of damage.

Direct sunlight can cause UV damage (fading or bleaching) to most interior finishes, so Low E glass should be selected that will reduce the UV transmission to less than 1%. If glass without sufficient UV protection has already been installed, apply 3M™ protection film (or similar) on the windows to reduce the UV transmission to less than 1%. Please contact the film manufacturer for specific recommendations and application instructions. Do not use outside.

Protect all materials and maintenance products from extremes of temperature during shipping. Do not stack pallets. These instructions supersede any verbal or written instructions from Matter Surfaces representatives, and must be followed for the warranty to remain in effect.

It is possible that certain rubber tires and wheels may stain the tile (and many other types of flooring). This is a result of a chemical reaction that occurs between the anti-oxidant that is used in some rubbers and the plasticizer used in vinyl. The stain/reaction is brown in color so is less visible in certain colors of tile (dark grey, terracotta and black). We recommend that if your application is susceptible to staining from tires, hair dyes and other harsh chemicals, you consider the application of an anti-color/anti-stain 2 part solvent-free waterborne polyurethane sealer. Please contact us for further information.

Consider the following: Eco Tile™ may be installed either loose laid or adhered. It can be installed over most hard smooth surfaces and in most situations will not require gluing. We do however recommend gluing all installations with the following situations:

- Areas of direct sunlight. It is advisable to glue the tiles in areas subject to direct sunlight such as glass fronted entrance foyers, shop fronts, south facing loading bay doors etc. It is possible that the tiles in direct sunlight will get very hot and expand at a faster and higher rate than the remainder of the floor.
- Heavy trucks and/or tight turning circles. Certain fork lift and pallet truck designs, heavy trucks with small wheels, and especially electric trucks where the battery is located over the main drive wheel can cause a problem. If you use this type of vehicle we strongly advise you to test the tiles with the trucks before making a decision on which thickness to use (7mm or 10mm) and/or consider gluing the tiles.
- External heat sources. Ovens, furnaces and catalytic converters can make the floor extremely hot and may cause the tiles to expand. To avoid this problem glue the tiles in the area in front of the oven or where the catalytic converter will sit when the car is parked.

2 INSTALLATION TOOLS CHECKLIST

- Electric jig saw with a medium or rough wood blade, Table saw or Band saw with a medium or rough wood blade, Magnum shear / guillotine and/or Utility knife and concave blades
- Non-marking rubber mallet
- Chalk line
- Straight edge and pencil
- Tape measure

3 MOISTURE TESTING and ADHESIVE

Moisture testing is mandatory for all areas that do not use an effective mitigation system that conforms to *ASTM F3010*, following the protocol of *ASTM F2170 – Standard Test Method for Determining Relative Humidity in Concrete Slabs using in situ Probes*, regardless of grade level or whether the concrete is freshly poured or classified as an older slab. It is the responsibility of the General Contractor/End User to have the concrete subfloor tested for moisture. It is the responsibility of the Flooring Contractor to request the moisture test results prior to installing the flooring or they may wish to perform the testing themselves. It is also recommended that an International Concrete Repair Institute (ICRI) Tier 2 Certified Technician performs the moisture testing. If for any reason you are unable to drill into the subfloor, contact Matter Surfaces

The test results must not exceed the maximum acceptable relative humidity for the adhesive. If test results exceed the maximum relative humidity, the installation must not proceed until either the subfloor dries to an acceptable level or an effective mitigation system that conforms to *ASTM F3010* is installed following the manufacturer's written instructions.

Test methodology, results and photographs must be documented and provided to the Flooring Contractor, General Contractor, owner and/or architect. Providing all of the test results are acceptable, the installation may proceed.

Acceptable Adhesive:

MI 1000:

Acceptable for dry, interior areas only.

ASTM F2170 (in-situ relative humidity) limit 90%RH.

Coverage ~ 150 - 175 sq. ft. / gallon, depending on substrate.

Working Time ≤ 2 hours after its dry-to-the-touch, depending upon conditions.

1/16 inch x 1/16 inch x 1/16 inch V-notched trowel (ATC).

Note: pH testing is not required for this adhesive.

4 HANDLING and STORAGE

Upon receipt of the flooring at the project, immediately remove from the pallet in the properly conditioned area. If packaging is damaged, take photos and mark shipping documents as such before signing for the shipment. Contact shipper and/or Matter Surfaces, and report the damage.

Store rolls standing up in the area (pre-acclimatized) for a minimum period of 72 hours with capped end down to prevent distortion and compression. If material is distorted or otherwise damaged during storage or transportation, do not install it.

5 SITE CONDITIONS

Areas must be enclosed weather tight and properly conditioned at a constant ($\pm 5^{\circ}\text{F}$) service temperature that is between 60°F and 80°F with an ambient relative humidity between 35% - 65% for a minimum of 72 hours prior to commencement of installation, during the installation and 72 hours after the installation.

The substrate surface must be at least 5°F above dew point. Example: If the ambient conditions are 70°F and 65%RH, the dew point is 57°F and you must not proceed unless the surface temperature is at a minimum of 62°F . Dew point calculators are available on the web.

Areas of the flooring subjected to direct sunlight, for example through doors or windows, must be covered using blinds, curtains, cardboard or similar materials for 24 hours before, during, and 72 hours after the installation to allow the adhesive to cure.

Note: If installation has to take place at a temperature below 60°F , firstly allow tiles to acclimatize to the ambient temperature of the room. We are unable to warranty installations that have taken place at temperatures below 60°F .

6 SUBSTRATE PREPARATION

When cleaning the substrate, use only dustless vacuum cleaners to remove all dirt and debris.

a. Concrete Substrates:

All subfloors must be permanently dry, clean, smooth and structurally sound per *ASTM F710 — Standard Practice for Preparing Concrete Floors to Receive Resilient Flooring*. Concrete subfloors must be free of dust, solvents, paint, wax, varnish, oil, grease, asphalt, old adhesives and other extraneous materials that may interfere with the bond or void the warranty of the flooring. These must be completely removed by mechanical means only. Dustless diamond grinding is one method to remove contaminants and bond breakers and it also helps to smooth the concrete.

No expansion joint or moving joint can be covered over or filled. Use a suitable industry standard expansion joint assembly system as required. All substrates should be both smooth (ridge free) and with a minimum flatness tolerance of $\leq 3/16^{\text{th}}$ inch over 10 feet. Irregularities in the substrate must be repaired using only commercial-grade leveling compound or patching compounds that have a minimum compressive strength ≥ 3000 psi. All leveling compounds must be fully warranted by the manufacturer for the use of the project including the moisture conditions, priming, etc. When dry, sand the surface smooth using a 36 grit sanding disc, screen or similar on a single disc rotary machine with a suitable

dust control, and then vacuum clean the floor. Permanently dormant control joints and cracks must be properly cleaned out to remove all dirt and debris or contaminants and filled to a smooth finish using a suitable commercial-grade underlayment, following the manufacturer's written instructions.

- **Warnings:** All local, state and federal regulations must be followed. Do not sand, dry sweep, dry scrape, drill, saw, shot-blast or mechanically chip or pulverize existing resilient flooring, backing, lining felt, asphalt "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 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. Various local, state and federal government agencies have regulations governing the removal of in-place asbestos-containing material. If you contemplate the removal of a resilient floor covering structure that contains (or is presumed to contain) asbestos, you must review and comply with all applicable regulations. Do not use any chemical adhesive removers. The RFCI's (Resilient Floor Covering Institute) "Recommended Work Practices for Removal of Resilient Floor Coverings" is a defined set of instructions that addresses the task of removing all resilient floor-covering structures, including adhesive and adhesive residues. For more information, contact RFCI directly at www.rfci.com or 706-882-3833. **Note:** Occupational Safety and Health Administration (OSHA) has amended its existing standards and determined that people exposed to respirable crystalline silica at the previous permissible exposure limits face a significant risk of material impairment to their health. For more information go to <https://www.osha.gov/silica/>.

b. Wood Substrates:

All wooden subfloors must be a total minimum thickness of 1-1/4th inch and overlaid with overlapping joints using APA (American Plywood Association) underlayment-grade plywood, installed per *ASTM F1482 — Standard Practice for Installation and Preparation of Panel Type Underlayments to Receive Resilient Flooring*.

Wooden substrates must not be in direct contact with concrete subfloors, even if built on sleepers. All suspended wood floors must have adequate under floor ventilation and a permanent, effective vapor retarder or membrane placed directly on the ground beneath the air space.

Do not install over lauan panels, plywood with knots, OSB, hardwood flooring, treated wood (i.e. CCA, fire-rated plywood, or other coated wood), particle board, chipboard, flakeboard, fiberboard, Masonite™, pressboard, or other hardboard underlayment, or other uneven or unstable substrates.

c. Gypsum Substrates:

Gypsum substrates are not suitable for any "wet" areas; however for areas that will remain dry, they can be acceptable. They must meet the requirements of *ASTM F710* including the smoothness/levelness and having a minimum compressive strength of 3000 psi. They must

also be fully warranted for the use of the project including the relative humidity (%RH) content of the subfloor, unless an *ASTM F3010* compliant mitigation system is also used, and have a written, project specific confirmation from the Gypsum manufacturer.

The manufacturer's written instructions must also be followed including the amount of mixing water used, the drying time and any requirements for priming (typically before application). Dry sand the surface smooth using a 36 grit sanding disc, screen or similar on a single disc rotary machine with a suitable dust control, and clean the floor.

d. Other Subfloors

Please contact Matter Surfaces directly for specific recommendations for all other types of subfloors/substrates.

7 LAYOUT

After substrate is prepared properly, the area must also be kept free of any other trades or traffic (protect if necessary) and clean. When cleaning the substrate, use only dustless vacuum cleaners to remove all dirt and debris.

The material layout should be decided by the architect, designer or end user. Lay all sheets in the same direction. Measure and mark your starting lines perpendicular to each other using a chalk line. Take care in planning so you do not have small cuts at the perimeter.

Leave 3/16th inch around the perimeter and any fixed point and / or incorporate an expansion gap in the floor every 30 feet (in length or width).

8 INSTALLATION

Note: It is essential for both designs that the tiles are kept square to each other at all times. We strongly recommend that you use a chalk line; laser line or carpenters square to set out the site and to ensure that the tiles are kept at right angles to each other.

Great care is taken to properly label and inspect materials for defects at all phases of manufacturing and handling by Matter Surfaces. However, in the rare case where the wrong product or material with visible defects is shipped, these products must not be installed. Careful inspection of the product before installing is the responsibility of the installer. Installation of the product denotes acceptance of the product. Matter Surfaces will not honor any warranty complaints for materials installed in the wrong color, with visible defects or other damage.

Following the design plans, after you have identified your starting point and created your straight lines it's time to start installing the tiles. First loose lay the tiles out on the floor as this will allow

them to settle. Connect the tiles together by lining up the corner of the tile and ensure the joints are in line. Starting from the corner and using your rubber mallet, gently tap the joints together. **HINT:** If the joints don't fit together easily, chances are you are doing something wrong. The first sign of trouble will always be if the tiles do not connect together with a simple tap of the hammer. This will indicate that the tiles are not lined up correctly or are going out of square.

The correct pattern for installing the tiles is as follows. Start from as close to the center of the room as possible.

Important Note: Ensure that you allow at least a 3/16th inch expansion gap between the tiles and any fixed point. With metal doorframes, cut the flooring material to within 5mm & then caulk around the frame.

