

Mats Inc. Installation Instructions for Floorazzo® Tile

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

1. INTRODUCTION

- 1.1 Floorazzo® Tile is a high quality terrazzo floor tile recommended for indoor use only.
- 1.2 Floorazzo® products shall be installed by experienced professional installers with a minimum of five years experience. Training programs such as those offered by Floorazzo® or the International Standards & Training Alliance (INSTALL) are recommended.
- 1.3 Substrate testing and preparation shall follow industry standards (quoted herein in italics) and the following installation guidelines. For situations that are not covered in this document, contact Mats Inc. directly.
- 1.4 Floorazzo® tile is a natural product and each tile is individually cast, no two tiles are exactly the same. For this reason, it may be necessary to dry lay the floor prior to installation to ensure that the visual properties will flow smoothly from one tile to the next. The installer shall dry lay at least 25 tiles, step back and review the appearance of the installation before proceeding. Tiles can be turned or rotated as necessary in order to achieve a more uniform look. It is advisable for the specifier and/or end user to be present during this process.
- 1.5 For situations that are not covered in this document, contact Mats Inc. directly.

2. MATERIAL HANDLING AND STORAGE

- 2.1 Upon receipt, inspect product for damage and mark shipping documents as such before signing for the shipment. Contact shipper and/or Mats Inc. to report damage. If material is distorted or otherwise damaged during storage or transportation, do not install.
- 2.2 Handle Floorazzo® tiles with care. Tiles can be broken if not handled carefully and placed on a flat substrate.
- 2.3 Protect all materials, including but not limited to, underlayment panels, patching/leveling compounds, floor covering, adhesive, and maintenance products from extremes of temperature during shipping. Some products must not be allowed to freeze. Store all products in areas on the job site where they are to be installed. Areas shall be enclosed and weather tight, at 65°F - 80°F for a minimum of 48 hours prior to commencement of installation.
- 2.4 Prior to installation, Floorazzo® shall be placed flat on the substrate in 3-inch stacks and allowed enough time to acclimate to the room temperature. It is possible to crack the tiles during routine handling if they have not been acclimated as recommended.
- 2.5 Inspection of materials: Great care is taken properly label and inspect materials for defects at all phases of manufacturing and handling by Mats Inc. However, in the rare case where the wrong product or material with visible defects is shipped, these products shall 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. Mats Inc. will not honor any warranty complaints for materials installed in the wrong color, with visible defects or other damage.

3. SUBSTRATE PREPARATION AND TESTING

- 3.1 All substrates must be sound, clean, permanently dry, smooth, and free of cracks and contaminants including paint, old adhesive, curing compounds, oil, grease, wax, asphalt, or other contaminants that could affect the adhesive bond. As a flexible product that conforms to the substrate beneath it, Floorazzo® requires special attention to substrate preparation. Any irregularities in the substrate or

improper substrate leveling and/or preparation may cause tiles to appear to be out of square or have unacceptable lippage (differences in elevation between adjacent tile edges). In addition to the general requirements stated in the following subsections regarding substrate preparation, successful installation of Floorazzo® requires a specific flatness tolerance of no greater than 1/8" in 10'.

3.2 Concrete Substrates:

3.2.1 Follow guidelines of ASTM F710 *Standard Practice for Preparing Concrete Floors to Receive Resilient Flooring**. ASTM F710 includes requirements for moisture testing, smoothness, flatness, concrete strength, and the presence of a vapor retarder beneath the slab.

3.2.2 *The installation of a permanent, effective moisture vapor retarder with a minimum thickness of 0.010 in. and a permeance of 0.1 y, as described in Specification ASTM E 1745 is required under all on- or below-grade concrete floors. The use of such a moisture vapor retarder, provided its integrity has not been compromised, reduces potential severity of water vapor penetration. Every concrete floor slab on- or below-grade to receive resilient flooring shall have a water vapor retarder (often improperly called a vapor barrier) installed directly below the slab.**

3.2.3 *Joints such as expansion joints, isolation joints, or other moving joints in concrete slabs shall not be filled with patching compound nor covered with resilient flooring**. Do not install Floorazzo® over expansion joints or other moving joints. Use an expansion joint cover or expansion joint profile; see section 6.4.1 for more information.

3.2.4 *All concrete slabs shall be tested for moisture, regardless of age or grade level.** The only acceptable test methods are the Calcium Chloride test (ASTM F 1869) and Relative Humidity test (ASTM F 2170). Moisture meters, plastic sheet test or other methods are not acceptable for determining the suitability of concrete slabs to receive resilient floor coverings. It is recommended testing be conducted by a qualified independent testing agency with experience conducting ASTM F 1869 and ASTM F 2170 testing. 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, and recommended number of tests shall be conducted. See ASTM standards for details.

3.2.5 Test methodology and test results shall be documented and provided to the flooring contractor, general contractor, owner and/or architect.

3.2.6 If concrete moisture conditions are outside the adhesive manufacturer's limits per section 5, do not commence installation. Allow the concrete to fully dry or apply a 100% solids epoxy Moisture Mitigation System. Although Mats Inc. does not endorse or prefer any manufacturer in particular, we provide the following list of leading Moisture Mitigation System manufacturers for information purposes.

Ardex: 724.203.5000 (www.ardex.com)

Bostik: 978.777.0100 (www.bostik-us.com)

Koester: 757.425.1206 (www.koesterusa.com)

Mapei: 800.426.2734 (www.mapei.us)

3.3 Wood Substrates:

3.3.1 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*. A typical wood subfloor system includes a joist spacing of 16" on center with a double layer subfloor/underlayment system - minimum one inch thickness.

3.3.2 Wood subfloor systems shall be suspended at least 18" above the ground. Crawl spaces shall have adequate cross ventilation and a moisture barrier shall be used on the ground to reduce humidity from ground moisture.

3.3.2 Do not install Mats Inc. products 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. To cover unsuitable substrates in a wood subfloor system, use underlayment grade plywood (i.e. arctic birch panels or A/C plywood).

3.3.3 Consult ASTM F 1482 or underlayment manufacturer for recommendations regarding plywood thickness, fastener selection and spacing and conditioning of panels.

3.4 Gypsum Substrates:

3.4.1 Do not install over trowel applied gypsum patching compounds.

3.4.2 Do not use poured gypsum underlayment over concrete slabs on or below grade

3.4.3 Compressive strength: Gypsum underlayment, *for commercial installations, shall provide a minimum of 3000 psi compressive strength after 28 days**. If the finished floor will be in a commercial use, this standard must be followed. Underlayment shall be mixed according to manufacturer's guidelines.

3.4.4 Drying Time: Manufacturer's recommended drying time and recommended testing method for dryness shall be followed. Usually a specific moisture meter is recommended by the manufacturer. The calcium chloride test method is not acceptable for testing gypsum underlayment.

3.4.5 Sealer/primer: After drying and prior to installing adhered floor coverings, Gypsum underlayment shall be sealed/primed per the underlayment manufacturer's instructions for covering the underlayment with adhered floor coverings. If the underlayment is not sealed, the surface will be overly porous and the floor covering adhesive will not work correctly.

3.4.6 Patching or "skimcoating" over gypsum substrates: There are a number of patching compounds that can be used over gypsum underlayment. Follow compound manufacturer's instructions for doing so. It may be necessary to prime the gypsum substrate prior to patching.

3.5 Do not install over existing resilient floor coverings.

3.5.1 Concrete Subfloors: Existing resilient floor coverings and adhesives over concrete shall be removed and the concrete shall be repaired using a cement based patching or leveling compound per manufacturer's guidelines. All adhesive residue must be removed prior to installing. Also remove any floor patch below the adhesive layer. **DO NOT USE CHEMICAL ADHESIVE REMOVERS.** Black asphaltic adhesive can be scraped to a thin, well-bonded residue and encapsulated with an approved patching or leveling compound per manufacturer's instructions. All other adhesives (carpet adhesive, VCT adhesive, epoxy, etc) shall be completely removed from concrete substrates.

3.5.2 Wood Subfloors: Existing resilient floor coverings and/or adhesive residue over a wood subfloor system shall be covered with a plywood underlayment per section 3.3.

3.5.3 NOTE: If removal of existing resilient flooring or adhesive is required, follow "Recommended Work Practices for Removal of Resilient Floor Coverings" available from the Resilient Floor Covering Institute at 706-882-3833 or www.rfci.com. Also, be aware that existing floors and/or adhesives may contain asbestos or lead. Various federal, state, and local government agencies regulate the removal of lead or asbestos containing material. Review and comply with all applicable regulations.

3.6 Poured Floors (Epoxy, Polymeric, Seamless): Floorazzo® tiles may be installed over most poured floors provided that the concrete substrate beneath the poured floor has been tested for moisture and meets the limits per section 3.2. Poured floors must also meet the following guidelines:

3.6.1 Poured floor shall be totally cured and well bonded to the concrete and free of any residual solvents and petroleum derivatives.

3.6.2 Loose or damaged areas and irregularities must be repaired with cement based patching compound.

3.6.3 The texture must be smooth. Sand or wet stone the surface to remove any grit and texture.

3.6.4 All waxes and finishes must be removed and rinsed with clean water and a pH test should be conducted to assure stripper residues have been removed.

3.6.5 After area has been properly prepared, adhesive bond tests must be conducted (and passed) with the flooring and adhesive that will be used on the job.

3.7 Other substrates such as terrazzo, stone, ceramic tile, metal: Cover with cement based underlayment compound per the manufacturer's instructions and ensure compliance with ASTM F 710 for use of these compounds.

3.8 Do not install over non-compatible substrates such as asphalt, any bituminous or asphalt-saturated material, or floor coverings made of (or containing) rubber.

3.9 Radiant Heat: Floorazzo® *can be installed on radiant heated slabs providing the maximum temperature of the surface of the slab does not exceed 85 °F (29 °C) under any condition of use.* * To allow proper adhesion of the adhesive to the subfloor, the radiant heating system should be lowered, or turned off for at least 48 hours prior to installation of the flooring material. The room temperature must be maintained at a minimum of 65°F prior to, during and after installation for 72 hours after which the temperature of the radiant heating system can be increased. When raising the floor temperature, do so gradually so that the substrate and the flooring material can adapt to the temperature change together. A rapid change could result in bonding problems.

4. SITE CONDITIONS

4.1 Install new floor coverings after all other trades have completed their work.

4.2 Protect areas where floor covering shall be installed from all traffic before, during and after installation.

4.3 Extremes of temperature and humidity can affect floor covering products and can alter the proper cure of patching compounds and adhesives. Building shall be between 65°F and 80°F for 48 hours before installation, during installation and for 48 hours after installation. Thereafter maintain minimum 55°F. Maintain relative humidity of 35% - 65%.

NOTE: If a system other than a permanent HVAC system is utilized, it must provide constant temperature and humidity control at specified levels for the specified time frame.

4.4 Maximize fresh air ventilation by using exhaust fans at point of use. Face fans out of the area where flooring is being installed, not into the area. Never force dry adhesives or patching compounds by using fans.

5. ADHESIVE AND ACCESSORIES

5.1 Floorazzo® is adhered using Mats Inc. Perma-Bond adhesive with a 1/16" x 1/16" x 1/16" square notched trowel. No substitutions. Coverage is approximately 160-200 square feet per gallon.

5.2 Concrete test requirements for installations using Mats Inc. Perma-Bond Adhesive:

ASTM F 1869: maximum MVER of 6 lbs/1000 sq ft/24 hrs

ASTM F 2170: internal relative humidity of 82% or less

5.3 Sanitary base or standard wall base – see section 9

6. INSTALLATION

6.1 See section 10 for Installation Tools Checklist.

6.2 Sanitary or “flash cove” wall base is installed before the floor tile is installed. If Sanitary or “flash cove” wall base is being used, see section 9.1 before proceeding with flooring tile installation. Standard wall base is installed after the floor tile is installed; see section 9.2 after completing flooring tile installation.

6.3 Thoroughly sweep or vacuum the substrate to remove all dirt and debris.

6.4 Layout: Follow the layout specified by the end user, architect, or designer. Floorazzo® can be laid out to run either parallel or diagonal to the room or primary wall.

6.4.1 If any of the following elements are specified or included as part of the design, please contact Mats Inc. directly before proceeding with installation.

6.4.1.1 Metal strips or metal expansion joint profiles - often used as an alternative to cover expansion joints or other moving joints in a concrete slab.

6.4.1.2 “Snap down” or “T” moldings - often used to transition between of floor coverings.

6.5.1 Prior to laying out the material, measure and mark control lines on the floor in pencil.

Floorazzo® tile is installed using conventional tile installation techniques. It is customary to start from the center of the room. In corridors and small spaces, it may be simpler to work lengthwise from one end, using the center line as a guide.

6.5.2 Installation Method: Floorazzo® can be installed using “Butt Joint” method or Floorazzo® FUSION™ grout method.

6.5.2.1 For “Butt Joint” method, install the tiles snugly against adjacent tiles. There should be no gaps between tiles.

6.5.2.2 For Floorazzo® FUSION™ grout method, use spacers to allow a 1/32” gap between the tiles. This space is then filled with the FUSION™ resinous grout.

6.5.3 Dry lay the floor prior to installation. The installer should dry lay at least 25 tiles, step back and review the appearance of the installation before proceeding. Tiles can be turned or rotated as necessary in order to achieve a more uniform look.

6.6 Tile Cutting: The best method for cutting Floorazzo® tile is using a wet saw. Other standard cutting techniques may be used at the discretion of the installer.

6.7 Spread Perma-Bond adhesive and follow “WET SET METHOD” instructions on adhesive label.

Apply adhesive in small areas at a time so that adhesive can be covered while still wet. Allow approximately 10 minutes open time before installing tile. Important Note: appropriate open time and trowel notch 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 in an effort to speed up installation. When using the “wet method” of installation use a finger to test the adhesive to see if it has “strings” and is moist to the touch before installing the floor covering. If there is no adhesive transfer to a finger, do not set material into adhesive; the adhesive has been open for too long. Remove the adhesive and spread new adhesive.

6.8 Install tile while staying off freshly installed tile. This will minimize tile shifting, adhesive displacement, and adhesive seeping up between tiles. Since it takes time to scribe and cut the border tiles, first spread the adhesive only where the full tiles will be laid. When the field of full tiles is complete, scribe and cut the border tiles before the adhesive is spread. Periodically lift tiles to make sure there is full transfer of adhesive to the back of the tile.

6.9 Immediately after placing the material into the adhesive, roll in both directions with a minimum 100 lb roller.



Place 2' x 4' panels using suction cups. For FUSION™ grouting, place 1/32" spacers between tiles.



Use a 100 lb floor roller as soon as tile is set.

6.9 FUSION™ grout application:

6.9.1 FUSION™ grouting can be done one hour after tile is installed. FUSION™ sets up more quickly than traditional tile grout so the process is not the same as tile grouting.

6.9.2 Tools required for FUSION™ mixing and application include elbow high protective gloves, wall grout float, 4" or 2" scraper and margin trowel for mixing.

6.9.3 The person mixing should install FUSION™ into tiles. Mix all of Part A (resin) with all of Part B (catalyst). Do not mix partial units. Mix thoroughly to a uniform consistency and color. Mix and apply the entire mixture and clean your tools before preparing a second mixture.

6.9.4 Apply the mixture to the tile joint using the margin trowel and use the grout float to force the

mixture into the joint. FUSION™ is a liquid and fills joints easily. Fill joints completely. Do not be concerned with seepage beneath the tiles.

6.9.5 Remove excess FUSION™ from surface of tile before it hardens. Use the scraper to remove all excess FUSION™ from the surface of the tile.

6.9.6 Immediately clean tools after each unit is mixed and applied. FUSION™ cannot be removed from tools once it cures, so it must be removed while still wet. Use denatured alcohol to make sure tools are completely clean.

6.9.7 After cleaning tools, mix additional batch of FUSION™ and proceed – overlap the previously fused section and double back over previous section if there are any low spots.



FUSION System™ resin and catalyst



Mix resin and catalyst



Stir thoroughly



Apply FUSION™ to joints



Remove excess FUSION™

6.9.8 Wait at least 12 hours then proceed to Wet Polishing, section 6.10 and then Sealing, section 7.

6.10 Wet Polishing: FUSION™ system installations must be wet-polished. If lippage (*differences in elevation between the edges of adjacent tiles***) is present in a “Butt Method” installation, wet-polishing will correct this condition.

6.10.1 Use a 17” Mastercraft Buffer or similar model with water tank and weight pin to add weights.



Mastercraft Buffer

6.10.2 Conduct Initial wet-polishing with 120 grit lippage plates. Lippage plates are designed to eliminate protruding high points using 25–50 pounds of additional weight on the buffer.

6.10.3 Once lippage has been eliminated from material, wet-polishing continues in stages using increasingly finer pads up to 400 grit. These stages will eliminate diamond scratches that are evident in brightly lit areas.

6.10.4 Once wet-polishing process is completed, immediately Seal the floor, see section 7.



Wet-polishing procedure to remove residue and eliminate lippage.

7. CLEAN UP AND FINAL FINISH

7.1 Sealing: Do not leave the floor unprotected without applying sealer. A penetrating sealer protects the floor and provides a base coat for the application of floor finish.

7.1.1 Remove all surface soil, debris, sand and grit by sweeping, dust mopping or vacuuming.

7.1.2 Scrub floor with a neutral pH (7-8.5) detergent, such as Diversey Stride, Hillyard Super Shine All, or equivalent.

7.1.3 Apply cleaning solution with a mop and bucket using as little water as possible. Do not saturate the floor.

7.1.4 Scrub with a rotary scrubber or automatic scrubber with scrubbing pad.

7.1.5 If necessary, remove cleaning solution with a wet-vac.

7.1.6 Rinse with clean water and allow floor to dry thoroughly. Surface must be completely dry before applying sealer.

7.1.7 Apply penetrating sealer, such as Hillyard Terrazine, with a clean finish mop or finish applicator. NOTE: Ensure the sealer gets into the tile joints.

7.1.8 Allow first coat to dry thoroughly (at least 30 minutes) before applying second coat.

7.1.9 Apply second coat of sealer in opposite direction of first coat.

7.1.10 Apply Floor Finish after second coat of sealer is completely dry, see section 8.



Apply cleaning solution with a mop and bucket, scrub, and remove remaining solution with wet-vac.



Apply two coats of sealer.

8. INITIAL MAINTENANCE

8.1 Floor finish such as Hillyard North Star can be applied immediately after the sealer. If the floor finish is not applied immediately after the sealer, thoroughly clean and rinse the floor before applying floor finish. Follow Floorazzo® maintenance instructions, available from Mats Inc.

8.2 If construction is to continue after the floor is installed, the floor must be protected from damage. After the floor is installed, polished and the final coat of sealer has completely dried, sweep or vacuum the floor and then cover with brown Kraft paper to protect. If floor will be exposed to rolling traffic, cover the Kraft paper with plywood or hardboard panels.

8.3 Entrance matting: Because 90% of all dirt in a building comes in on footwear, Mats Inc. 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 flooring maintenance costs, and lengthen the life of your interior floors.

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

8.5 Sunlight: Direct sunlight can damage most interior finishes so proper protection in the form of window coverings is recommended.

8.6 On-going Maintenance: For recurring maintenance, download Floorazzo® maintenance instructions at www.matsinc.com.

9. WALL BASE

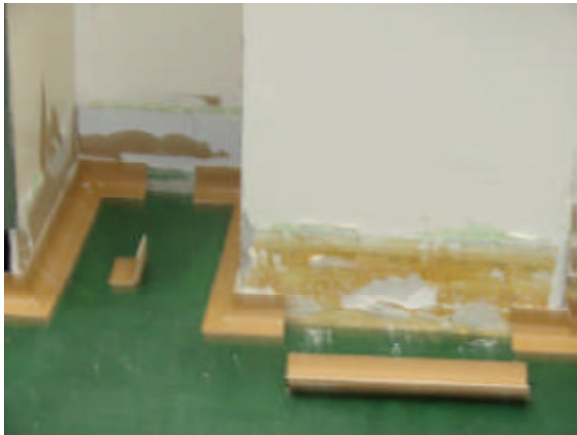
9.1 Installing Sanitary Base: Sanitary or “flash cove” base is installed before the floor tile is installed. Standard wall base is installed after the floor tile is installed. See section 6.2.

9.1.1 Sanitary Base and prefabricated inside and outside corners shall be laid out in place once substrate has been prepared. It may be necessary to heat the base to assist it in laying flat.

9.1.2 Install Sanitary Base using either Mats Inc. Perma-Bond adhesive or double sided tape.

9.1.3 Once all base has been installed, use masking tape to tape off the base joint 1/8". Tape shall be removed immediately after the joint is fused and shall not be left overnight.

9.1.4 Sanitary Base will be fused to the tile after the tile is installed by the fusion process.



Cut sanitary base to fit



Secure base into position with adhesive



Finished sanitary base

9.2 Standard wall base is installed after the tile is installed. See section 6.2.

9.2.1 It is preferred to use Floorazzo® precut bullnosed wall base, however, Floorazzo® tile can be cut to desired height and length and installed as a base.

9.2.2 Use Mats Inc. Perma-Bond adhesive with a 1/16" x 1/16" x 1/16" square notch trowel and the "contact" method for installation.

9.2.3 Spread adhesive on the wall and on the back of the wall base tile, allow it to dry completely. Carefully place wall base tile onto wall and roll with a hand roller.

10. INSTALLATION TOOLS CHECKLIST

___ Job site protection: Plastic, drop cloths, tape, etc

___ Personal Protection: Gloves, safety glasses, booties, suit, etc.

___ Cleaning: Mop, bucket, denatured alcohol, rags

___ Buffer/ Diamonds (120, 220, 440 grit)

___ Alpha Grinder

___ Wet/Dry Vacuum

___ Grout Float

___ Wet Saw

___ Angle Grinder

___ 100 lb floor roller

___ 1/16" Square notch adhesive trowels

___ 2" Putty knife

___ Cap snips

___ Suction Cups to lift tile

___ Caulk

___ Extension cords

___ Saw Horses and plywood for cutting surface

___ 10' and 8' straight edges

* ASTM Standard F 710 *Standard Practice for Preparing Concrete Floors to Receive Resilient Flooring*, ASTM International, West Conshohocken, PA, 2003, www.astm.org.

** ANSI (American National Standards Institute) standard A108.02.