

**INTRODUCTION** These instructions address the installation of Mannington's Rubber Tile.

ColorScape/ ColorSpec Rubber Tile is available in 18 1/8" x 18 1/8" (460.38mm x 460.38mm).  
Audio Spectra Rubber Tile is available in 12" X 24" (304.8mm x 609.6mm).

**IMPORTANT** With respect to the type of concrete or other cementitious patching material used in the subfloor, responsibility for a warranty and performance of the subfloor belongs to the concrete or cementitious patching material manufacturer and the installer.

**RUBBER TILE INSTALLATION** Only Approved Adhesives Must Be Used For Mannington Warranty to Apply:

- MR-721 epoxy adhesive – solvent free
- MR-725 polyurethane adhesive – solvent free
- MR-911 Acrylic Adhesive – solvent free

- A. Check order for correct material, color, profile or texture and sufficient quantity.
- B. Store tiles off the ground and out of the elements. Do not stack skids, or stack other materials on tiles.
- C. If the tiles are to be re-stacked, the tiles must be stacked profile to profile and back to back to avoid mold release or wax transfer from the profile side to the back side.
- D. Prior to installation, the tiles and adhesive must be conditioned to an ambient temperature at the actual job site of not less than 65° F (18° C) to not more than 85° F (29° C) for at least 48 hours. In severe climates an 8 day conditioning period may be necessary.

**SUBFLOOR PREPARATION** For Additional Required Information, refer to ASTM F-710 – Practice for Preparing Concrete Floors to Receive Resilient Flooring.

- A. Concrete Subfloor  
On-grade and below-grade subfloors must have a suitable vapor barrier, as recommended in ACI 302.1 installed directly below the slab. New concrete subfloors should be allowed to cure a minimum of 6 weeks.

#### Moisture Testing

Mannington requires, before our rubber flooring is installed, that the concrete subfloor, regardless of age, be tested to verify that excess moisture conditions do not exist. Two tests are recommended, either ASTM F-1869 (Calcium Chloride) or ASTM F-2170 (Insitu % RH). The Mannington rubber flooring can be installed if the ASTM F-1869 test result is 3 lbs or below or if the % RH value per the ASTM F-2170 is 75 % or below. Test kits can be purchased from your local flooring supplies distributor. DO NOT INSTALL if moisture levels are above recommended levels.

1. Concrete Subfloor Condition: The concrete subfloor should be dry, clean, non-scaled and free of dust and flat to within 1/8" in 10 linear feet. The surface should also be finished to a texture similar to 100 grit sandpaper. If the concrete is glazed or very smooth, it must be thoroughly sanded or shot blasted to assure proper adhesion. Remove all dust by vacuuming.

#### Adhesion (Bond) Test

A bond test of at least 24 hour duration should be performed. Recommended to cut Mannington tile into 9"x 9" pieces and install them using the recommended adhesive. These test patches should remain in place for a minimum of 24 hours to determine if there is good bond to the subfloor and also to observe if there is sufficient transfer of adhesive both to the subfloor and to the back of the floor tile. Removing the test patches from the subfloor should be difficult with most of the cured adhesive remaining bonded to the subfloor. If proper bond is not accomplished, do not proceed with the installation.

2. Curing compounds, bond breakers or sealers will seriously inhibit the adhesion of the tile to the subfloor. They should be completely removed by scarifying, grinding (with a terrazzo grinder) or by shot blasting. For more information, contact U. S. Filter Blastrac blasting machine, Blastrac, is made by U.S. Filter Blastrac; (405) 478-3440; (800) 256-3440; [www.surfacepreparation.com](http://www.surfacepreparation.com).
3. Oil or Grease on the subfloor. Grease or oil stain must be thoroughly washed with a degreaser and thoroughly flushed. If the concrete subfloor is impregnated with oil or grease, do not attempt to install Mannington Rubber Tile.
4. Mannington Commercial does not warrant installation of Mannington Rubber Tile over old floor coverings (such as

## SUBFLOOR PREPARATION continued

vinyl tile), coatings and adhesives. Should the installer elect to install over old floor coatings or coverings such as tile, adhesives or paint, adequate adhesion may not be achieved. Old black asphalt "cut back" adhesives are harmful to a good bond and must be mechanically removed or properly covered with approved cementitious patching compound (see #9 below), such as Mannington MVP 2023 or equivalent. Mannington MR-725 polyurethane can be used over cut-back residue left after the bulk of it has been scraped off the floor. Do not use Mannington's MR-721 epoxy or contact adhesives over cut-back adhesive residue.

5. Installing Mannington Rubber Tile over ceramic tiles is not recommended. However, when the ceramic tile is well adhered and the the ceramic glaze is sanded thoroughly and when the grout lines are filled and leveled properly with a cementitious leveler, the installation may be successful. Over terrazzo subfloors adhesion is sometimes difficult due to waxes burnished into its very smooth surface. If installation over terrazzo is contemplated, the minimum preparation should be shot blasting or terrazzo grinding to remove all waxes. Remove all dust by vacuuming. An adhesive bond testing must be performed. Mannington Bond or Mannington MR-721 epoxy or MR-725 polyurethane adhesives are the best suited adhesives for good bond, but caution is recommended. Mannington does not warrant our products when installed over old floor coverings. A risk assessment must be made and agreed upon between Flooring Contractor, General Contractor, Architect and Owner before proceeding.
  6. Cracks, depressions, "saw-cut" construction joints (non-moving) and rough areas should be cleaned and filled with a top quality cementitious patching compound such as Mannington MVP 2023 or equivalent. If Mannington MR-721 epoxy is used as a crack filler, plow the epoxy well into the depression. Allow to cure completely. Sand the cured epoxy for better adhesion. Do not use gypsum based leveling or patching compounds under any circumstances. Use only cementitious based trowelable patching or self leveling compounds.
  7. No attempt should be made to lay Mannington rubber tile over an architectural concrete expansion joint that is designed to move. Instead, the tile should stop before the joint on both sides. The joint should be protected with a metal cap fastened on one side allowing the joint to move without restriction.
  8. Exposure to extreme heat from sun, blowers or radiant heat on the flooring during the adhesive cure will/can cause the tiles to expand and peak. During the period of 24 hours before installation and throughout the adhesive curing period, the subfloor temperature should be at 72° F (24° C) and must not be colder than 65° F (18° C) or warmer than 85° F (29° C). Refer to cure time chart in Section IV B.2. Direct sunlight should be blocked during installation and for the first 8–12 hours of adhesive cure time. Alternatively, the installation could be scheduled in the evening and during the night.
- B. Wood Subfloors
1. Wood subfloors must be double-layer construction plywood with a minimum total thickness of 1". Hardboard, Luan, MDF, chip boards or other engineered wood substrates, are not strong or stable enough and are not recommended.
  2. Wood subfloors will require ventilation when laid over concrete to avoid wet and dry rot. At least 18" of airspace and air circulation between an on grade or below grade concrete subfloor and the wood subfloor is mandatory.
  3. Planked wood floors used as a subfloor may "telegraph" through a Mannington Rubber Tile installation. It is best to install plywood over plank floors.
  4. Unevenness of wood subfloors should be planed or machine sanded. Remove all dust by vacuuming.
  5. Loose subfloor panels should be secured by nailing or refastening with screws.
  6. Protruding nails or screws should be leveled or removed. Holdfast or screw nails should be used.
  7. Dents, seams and holes may be leveled with the Mannington MR-721 epoxy adhesive or cementitious leveling compound. After cure, the surface adhesive must be sanded to roughen its smooth surface.
  8. Plywood subfloors should be screwed down, stapled or secured using flooring ring nails. Use a minimum of 1 fastener per 9 square inches of subfloor.

Note: The use of cement board such as Hardie Backer is acceptable. Be sure to smooth all points and dimples made by fasteners with a cementitious patching compound such as Mannington MVP 2023 or equivalent.

**SUBFLOOR PREPARATION continued**

- A. Sufficient light is essential. Lighting conditions must be bright enough to observe color consistency, registration and seaming quality during dry fit inspection.
- B. Dry fitting rubber tile is required. Dry fit an entire floor by sections, positioning the tiles point to point. Tile will display a raised location mark in one corner on the top surface. Position the tile so that the raised location marks are all in the same position. Line up the first row of Mannington tile with a chalk line. Lay a second row again point to point.

Audio Spectra 12" X 24" tiles may be installed in a running bond (ashlar fashion). Do not pressure-fit the joints in order to prevent peaking of seams. When the tiles have been dry-fitted, check the flooring for possible imperfections or defects including trim, thickness or color. Replace any such tiles prior to adhesion.

NOTE: Any defects in the tile, including color variation, registration, squareness etc. must be reported before the tile is adhered or the installer will be liable for replacement labor and material.

Only approved adhesives must be used for warranty to apply.

**TILE ADHESIVE DESCRIPTIONS AND PROCEDURES**

- A. Adhesive Descriptions
  - 1. Mannington MR-721 epoxy – solvent free. This is the standard Mannington Rubber Tile adhesive where solid strength but a flexible bond is required for heavy duty foot and vehicle traffic. Above, on or below grade concrete or wood subfloors, this adhesive has high water resistance to surface flooding.
  - 2. Mannington MR-725 polyurethane – solvent free. This adhesive will operate at temperatures down to 50° F (7° C). It can be used where some traces of asphalt or “cut back” adhesive remain in the pores of the slab after most of the “cut back” has been scraped off.
  - 3. MR-911 Acrylic Adhesive – For use with Mannington Rubber Tile, Rubber and Vinyl Stair Treads. MR-911 Acrylic Adhesive is a water-resistant, solvent free, high strength water based acrylic latex adhesive specially formulated for the installation of Mannington Commercial rubber flooring and vinyl and rubber stair treads on clean porous and nonporous surfaces. MR-911 is suitable for use on suspended wood floors, dry concrete floors and staircases above or on grade where concrete substrate moisture does not exceed manufacturer’s recommendations. Concrete substrate moisture must be tested by using either ASTM F-1869 Calcium Chloride Test Method with results not exceeding 3 pounds per 24 hours per 1000 square feet or ASTM F-2170 Determination of Relative Humidity within the Concrete (in situ) Test Method with results not exceeding 75%
- B. Two Part Adhesive Mixing Instructions
  - 1. Two Part Adhesive – The packaged units of epoxy or urethane are marked A or B. The A & B unit should be mixed together thoroughly and with a rotary motion while at the same time lifting from the bottom. Use an electric drill and paddle for thorough mixing. After mixing, the color of the adhesive must be uniform (i.e., no streaking). Never mix Parts A and B on the subfloor itself. Once the adhesive is mixed it must be removed from the container to slow its curing time – pot life ranges between 15 and 20 minutes for Mannington MR-721. The pot life for Mannington MR-725 polyurethane is 40 minutes.
  - 2. Temperature – The subfloor temperature affects the curing rate of two part adhesives. Curing will take place between 65° F (18°C) and 85° F (29° C). The ideal temperature for the adhesive cure is 72° F (24° C). This will normally take 8-12 hours. At 65° F (18° C) cure will take approximately three times longer for epoxy and about twice as long with urethane. At 85° F (29° C) cure will take approximately half the time. The chart below shows approximate temperature and appropriate cure times of Mannington’s epoxy and urethane adhesives:

Mannington MR-721	ACTUAL FLOOR TEMPERATURE		
Minimum Required Cure Time	65° F (18° C)	72° F (24° C)	85° F (29° C)
Heavy Rolling Stock	4 Days	4 Days	3 Days
Foot Traffic	12 Hrs.	7 Hrs.	6 Hrs.
Mannington MR-725	ACTUAL FLOOR TEMPERATURE		
Minimum Required Cure Time	65° F (18° C)	72° F (24° C)	85° F (29° C)
Heavy Rolling Stock	5 Days	4 Days	4 Days
Foot Traffic	16 Hrs.	7 Hrs.	6 Hrs.

**TILE ADHESIVE  
DESCRIPTIONS AND  
PROCEDURES  
continued**

3. Pour the entire mixed contents out of the can immediately onto the subfloor in the areas of application. Trowel the adhesive with a 1/16" x 1/16" x 1/16" square notched trowel. Yields: The average adhesive yield from a gallon unit of MR-725 epoxy will be approximately 100 square feet per gallon, depending on the smoothness of the subfloor. Coverage for MR-725 urethane adhesive will be approximately 135 square feet per gallon. Rough subfloor surfaces and improper or worn trowel notching will affect the adhesive spread rate. Do not apply adhesive to the tile.

Two part adhesive average working life is one hour at a temperature of 72° F (24° C). Tiles may be laid shortly after spreading as no open time is needed. However, if the spread adhesive is allowed to remain open 15–20 minutes the adhesive will develop more initial tack and will help reduce tile slipping.

4. Lay tiles point to point as per dry laying instructions (Section III). Audio Spectra 12" X 24" tiles may be installed in a running bond (ashlar fashion).
5. Roll the adhered tiles with a 100 lb. roller diagonally, slowly, in two directions. This should be done soon after laying the tile into the adhesive. Extra care should be given to rolling Audio Spectra. It must be rolled diagonally due to it's pronounced profile.
6. A second rolling should be done one hour after the first rolling. Weight corners with sand bags, or use duct tape on corners if necessary. Hand roll all seams with a narrow 2" hand roller to level the tile edges to one another. A third rolling may be advisable if the subfloor temperature is cool.
7. Sweep upon completion of laying to detect dropped or oozing adhesive. Remove any such adhesive with water or mineral spirits on a cloth. Do not use turpentine (see Section 1 of Maintenance Instructions). Note: Remove adhesive before it cures. It is nearly impossible to remove adhesive after it cures without damaging the tile surface.
8. An unsheltered but roofed installation should be protected from the heat of the sun or from wetness for at least 8-12 hours after installation. Lay a light colored opaque cover over the installation if necessary for adequate protection from the sun and wetness.
9. No pedestrian foot traffic should be allowed before at least 12 hours after laying and for a longer period if the subfloor temperature is below 72° F (24° C). These cure times can be doubled or tripled as the temperature approaches 65° F (18° C) (see adhesive cure chart on previous page). Scaffolding or wheeled conveyances must not be allowed for at least 4 days (see adhesive cure chart). Construction foot traffic is possible if plywood (one-inch plywood) is laid over the entire installation after the second rolling plus at least and after 8 hours. Traffic directly on the tile weakens or breaks the adhesive bond and will cause tiles to buckle or lift within one year of installation if traffic is allowed too soon.