Rubber Tile

Installation Guidelines

General Information

All recommendations are based on the most recent available information. The information in these sheets provides general guidelines. All instructions and recommendations must be followed for satisfactory installation. These installation specifications address the installation of ColorScape and ColorSpec rubber tile.

Good preparation is essential for a trouble-free installation. Do NOT install Mannington Rubber tile until job site testing and subfloor preparations are finished and the work of all other trades is complete. Site conditions must comply with relevant building codes and local, state and national regulations.

Material Recieiving Handling and Storage

- Careful and correct preparation of the subfloor is a major part of a satisfactory floor covering installation. Roughness Product must be inspected prior to installation for proper style, color and potential defects.
- No claims will be honored if rubber tile is installed with visible defects, gage variances etc. Report discrepancies immediately to Mannington at 800.241.2262 ext. 2 (claims).
- Store all material in a weather-tight enclosure. Do not stack skids, or other materials on tiles. 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.
- Protect the materials from the sunlight during storage, conditioning before and after installation.
- Read all instructions prior to beginning installation.
- Rubber tile is recommended for use over properly prepared concrete, suspended wood, metal and other suitable substrates.
- Rubber tile is not suitable for external installation or unheated locations.
- Prior to installation the tiles and adhesive should remain at a temperature between 65°-85°F with ambient humidity between 50-80% for 48 hours before, during installation and at least 48 hours after installation. In severe climates an 8-day conditioning period may be necessary.

Job Site Testing

- Before job site testing, the building envelope must be sealed (walls, roofing, windows, doorways, etc. installed).
- The installation area and materials to be installed shall be maintained at a minimum of 65°F (18.3°C) and a maximum of 85°F (29.4°C) for 48 hours before, during and after completion of the installation. Relative humidity level extremes should also be avoided. General recommended humidity control level is between 35-55%. If a system other than the permanent HVAC source is utilized, it must provide proper control of both temperature and humidity to recommended or specific levels for the appropriate time duration.
- Test sites must be properly prepared and protected for the duration of testing to achieve valid results. Surface flatness for all Subfloors: The surface shall be flat to 3/16” (3.9mm) in 10’ (3050 mm) and 1/32” (0.8 mm) in 1’ (305mm). To check flatness, place a 10’ straight edge, string, laser level or another suitable method on the surfaceand measure the undulation.

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- Moisture Testing: Perform either the preferred In-situ Relative Humidity (RH) Test (ASTM F2170) or the acceptable Moisture Vapor Emission Rate (MVER) Test (ASTM F1869). For acceptable moisture limits, please refer to the specifications of the adhesive choice.
- Alkalinity: Must test surface alkalinity (ASTM F710). A 7.0 to 9.0 pH is acceptable.
- Record and file site conditions, test results and any corrective action(s) taken. It is important to maintain this documentation throughout the warranty period.

Moisture Suppressant System

Concrete subfloors that exceed adhesive specifications will require a Moisture Suppressant System. Due to complexities associated with moisture vapor transmission, emissions and movement of soluble salts (alkalinity) in concrete subfloors, we do not offer, recommend or warranty a specific solution for excess moisture in concrete slabs. However, there are many companies that offer solutions with warranties for excess moisture in concrete slabs.

Mannington suggests that you reference the current ASTM F710, “Standard Practice for Preparing Concrete Floors to Receive Resilient Flooring” and ASTM F301 Standard Practice for Two Component Resin Based Membrane Forming Moisture Mitigation Systems for Use Under Resilient Flooring Systems. Contact one or more of the following or other moisture suppressant system suppliers for assistance:

- Ardex (724) 203-5000 www.ardex.com
- Koester American Corp. (757) 425-1206 www.koesterusa.com
- Mapei (800) 426-2734 www.mapei.com
- Uzin Ltd. (800) 505-4810 www.ufloorsystems.com
- Schönox (855) 391-2649 www.hpsubfloors.com

Subfloor Preparation

Careful subfloor preparation is vital for an excellent floor appearance and good sheet adhesion. The subfloor must be smooth, firm, flat, clean, dry, free from defects and fit for purpose. A suitable smoothing compound should be used to ensure that no irregularities show through to the surface of the finished floor. In all cases, the subfloor must meet the moisture and pH requirements before installation.

A. Concrete Subfloors

- Below and on-grade concrete subfloors must have a suitable vapor retarder properly installed directly beneath the slab. Always follow manufacturer’s written recommendations for the use and installation of their appropriate surface preparation materials. New concrete subfloors should be allowed to cure a minimum of 6 weeks (45 days).
- Concrete subfloors must be finished and cured, free of all sealers, coatings, finishes, dirt, film forming curing compounds or other substances that may prevent proper bonding of the flooring materials.
- Randomly check concrete subfloor for porosity using the drop water test. Place a 1” diameter drop of water directly onto the concrete subfloor. If the water droplet does not dissipate within 60-90 seconds, the subfloor is considered non-porous.
- Concrete subfloors must have a minimum compressive strength of 3,000 psi. Concrete subfloors shall not consist of light weight concrete or gypsum.

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- Subfloor must be clean (free of dirt, sealers, curing, hardening or parting compounds or any substance that may stain or prevent adhesion), smooth, flat, sound, fit for purpose and free of movement, excessive moisture and high alkalinity.
- Slick surfaces such as power-troweled concrete shall be abraded or profiled to allow for a mechanical bond between the adhesive and subfloor.
- Remove all existing floor coverings and adhesives/residues, marking paint, permanent markers, crayons, and all other potential stains from the concrete surface before installing new flooring. Never mark the back of the flooring. Removal of old adhesives must be performed by mechanical means: scraping, scarifying, grinding, shot/bead blasting, etc. The use of adhesive removers or solvents in the abatement or removal of existing or old adhesives is prohibited and will void all warranties.
- **WARNING: ASBESTOS & SILICA - Refer to the current Resilient Floor Covering Institute (RFCI) document "Recommended Work Practices for Removal of Existing Resilient Floor Coverings" for guidance (www.RFCI.com).**
- Perform corrective actions necessary for elevated moisture or high alkalinity conditions.
- Expansion joints, isolation joints, or other moving joints are incorporated into concrete floor slabs in order to permit movement without causing random cracks in the concrete. These joints must be honored and not be filled with underlayment products or other materials, and floor coverings must not be laid over them. Expansion joint covering systems should be detailed by the architect or engineer based upon intended usage and aesthetic considerations.
- Surface flatness for all subfloors: The surface shall be flat to 3/16" (3.9 mm) in 10 ft. (3050 mm) and 1/32" (0.8 mm)
- in 1 ft. (305 mm). Bring high spots level by sanding, grinding etc. and fill low spots. Smooth surface to prevent any irregularities or roughness from telegraphing through the new flooring.
- Leveling and patching: For concrete subfloors, use only high-quality Portland cement-based materials (minimum 3000 psi compressive strength according to ASTM C109 or ACI). Mix with water only; do not use latex. **Caution:** Do not lightly skim coat highly polished or slick power-troweled concrete surfaces. A thin film of floor patch will not bond to a slick subfloor and may become a bond breaker, causing flooring to release at the interface of the subfloor and patching material. If in doubt, perform a bond test prior to installation.
- Always follow manufacturers' written recommendations for the use and installation of the appropriates surface preparation material.

B. Wood Subfloors

All wood substrates must be primed with Mannington Premium Universal Primer.

1. Wood subfloors require an underlayment (double layer construction) with a minimum total thickness of 1" (25mm). Use minimum ¼" (6 mm) thick APA rated "underlayment grade" plywood with a fully sanded face or other underlayment panel that is appropriate for the intended usage. Install and prepare panels and seams according to the manufacturers' instructions.
2. Wood Subfloors and underlayment panels shall have the moisture content tested using a suitable wood pin meter. Readings between the wood subfloor and underlayment panel should be within 3% and have a maximum moisture content of 14% or less.
3. Many times, wood panel subfloors are damaged during the construction process or are not underlayment grade. These panels must be covered with an appropriate underlayment. Underlayment panels are intended to be used to provide a smooth surface on which to adhere the finished floor covering. Underlayment panels cannot correct structural deficiencies.

4. Panels intended to be used as underlayment should be specifically designed for this purpose. These panels should have a minimum thickness of ¼". Any panels selected as an underlayment must meet the following criteria:

    - Be dimensionally stable
    - Have a smooth, fully sanded face so graining or texture will not telegraph through
    - Be resistant to both static and impact indentation
    - Be free of any surface components that may cause staining such as plastic fillers, marking inks sealers, etc.
    - Be of uniform density, porosity and thickness
    - Have a written warranty for suitability and performance from the panel manufacturer or have a history of proven performance

5. Any unevenness at the joints between panels must be sanded to a level surface. Gaps between panels, hammer indentations, and all other surface irregularities must be filled and sanded.

6. Particleboard, chipboard, construction grade plywood, any hardboard and flake-board are not recommended as underlayment. All have inadequate uniformity, poor dimensional stability, and variable surface porosity.Mannington rubber sheet will not accept responsibility for adhered installation over these subfloors. If the surface of the subfloor is not smooth, a ¼" underlayment should be installed over the subfloor. In all cases, the underlayment manufacturer or underlayment installer is responsible for any underlayment warranties.

C. Other Subfloor Types

Any subfloor surface must be smooth, level, clean, and secure prior to installing Mannington floor covering products. To achieve maximum product performance, it is always best to remove existing floor covering and prepare the substrate before installing new products.

- Wood floors must be smooth and level. If floor is uneven, an approved underlayment may be required. Plywood sheets must be solid and secure. Plywood seams may need to be sanded smooth. Dust must be thoroughly vacuumed. Fire-retardant plywood is not recommended.
- Wood subfloors and underlayment panels shall have the moisture content tested using a suitable wood pin meter. Readings between the wood subfloor and underlayment should be within 3% and have a maximum moisture content of 14% or less.
- Wooden plank flooring should be covered with plywood as detailed above as stable, flat, and suitable for installation.
- Terrazzo / Marble. Level all grout lines with a latex based Portland cement patching compound. Glossy surfaces must be sanded for adhesive bond.
- **Do not install rubber tile over any existing floor covering.**

Installation Procedure

Before starting the Rubber flooring installation, ensure the following are satisfactorily completed.

1. Acclimation: The installation area and materials to be installed shall be maintained at a minimum of 65°F (18.3°C) and a maximum of 85°F (29.4°C) for 48 hours before, during and for 48 hours after completion of the installation. Relative humidity level extremes should also be avoided. General recommended humidity control level is between 35-55%. If a system other than the permanent HVAC source is utilized, it must provide proper control of both temperature and humidity to recommended or specific levels for the appropriate time duration.

2. Flooring materials: Check that the quantity of Mannington Rubber and adhesive are sufficient for area to be installed. Check material for visual defects before installation. Installation of flooring acknowledges acceptance of materials. Report discrepancies immediately to Mannington at 800.241.2262 ext. 2 (Claims), as installation of products installed with visual defects, mixed production runs or incorrect style will notbe honored.

3. Expansion joints, isolation joints or other moving joints are incorporated into concrete floor slabs in order to permit movement without causing random cracks in the concrete. These joints must be honored and not filled with underlayment products or other materials, and floor coverings must not be laid over them. Expansion joint covering systems should be detailed by the architect or engineer based upon intended usage and aesthetic considerations.

4. Surface cracks, grooves, depressions, control joints or other non-moving joints, and other irregularities shall befilled or smoothed with high quality Portland cement-based patching or underlayment compound for filling orsmoothing, or both. Patching or underlayment compound shall be moisture, mildew, and alkali-resistant, and shall provide a minimum of 3000 psi compressive strength after 28 days, when tested in accordance with ASTMC109 or ASTM C472, whichever is appropriate.

5. Subfloor preparation: Make sure all surfaces to be covered are completely clean, dry and smooth and that all necessary subfloor preparation has been properly completed and documented.

6. Inspect substrate: Perform final acceptance inspection of substrate.

7. Adjacent surfaces protection: Protect adjacent work areas and finish surfaces from damage during product installation.

8. Flooring protection: Mannington flooring should be the last material installed to prevent other trades from disrupting the installation and adhesive set-up or damaging the floor.

Start of flooring installation indicates acceptance of current subfloor conditions and full responsibility for completed work.

Layout

Installation methods are at owner's discretion. Mannington will not be responsible for what is visually acceptable to the end user. Some installation patterns such as herringbone are difficlut to align and may not be acceptable The following conditions must be given consideration when determining how rubber tiles will be installed:

• Dry fitting rubber tile is required.

• Lighting conditions must be bright enough to observe color consistency, registration and seaming quality during dry fit inspection.

• Dry fit an entire floor by sections, positioning the tiles point to point.

• Lay all tile in the same direction. Use sanding direction to determine tile position.

• Line up the first row of Mannington tile with a chalk line.

• Lay a second row again point to point.

• All installations: spread only the amount of adhesive that can be covered withing the working time specific to the adhesive being used.

NOTE: When all preparatory work is satisfactorily completed, including dry-fitting rubber tiles, proceed with installation. Inspect each rubber tile for visual defects before installing. Installation of the flooring implies acceptance of materials. It is the installer's responsibility to inspect the dry laid installation and notify the appropriate authority on any imperfection, or irregularities prior to final installation.

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Adhesives

Mannington adhesives are specifically formulated to be fully compatible with our products and chemistry and to maximize the performance of Mannington products. Using substitutes or failing to use Mannington adhesives as recommended can cut short product life and cause installation failure.

Mannington **MR-721 adhesive**: is a two-component, solvent-free epoxy adhesive specifically formulated for the installation of rubber tiles. It cures to a tough, flexible film. Can be used on concrete slabs with high vapor emissions rate, recommended for high-traffic areas where superior indentation resistance and performance are required. Use on clean porous and non-porous substrates. The maximum moisture level is 8 lbs. MVER, 90% relative humidity and a pH of 10. Trowel size. For most substrates use a 1/16” wide x 1/16” deep x 1/16” square notch trowel. Spread rates approximately 100 sq. ft. per gallon.

Mannington **MR-725 adhesive**: is a two-component, solvent-free polyurethane adhesive specifically formulated for the installation of rubber tile. It cures to a tough, flexible film. Use on clean porous and non-porous substrates. The maximum moisture level is 5 lbs. MVER, 85% relative humidity and a pH of 9. Trowel size. For most substrates use a 1/16” wide x 1/16” deep x 1/16” square notch trowel. Spread rates approximately 125 sq. ft. per gallon.

Mannington **MR-911 adhesive**: is an acrylic based adhesive specifically formulated for the installation of rubber tiles. Use on clean porous and non-porous substrates. The maximum moisture level is 8 lbs. MVER, 90% relative humidity and a pH of 10. Trowel size. For porous substrate use a 1/16” wide x 1/16” deep x 1/16” square notch trowel. Spread rates approximately 125-150 sq. ft. per gallon. For non-porous substrate use 1/16” wide x 1/16” deep x 1/16” “V” notch trowel. Spread rates approximately 150-185 sq. ft. per gallon.

WARNING: ANY EXCESS ADHESIVE THAT COMES UP BETWEEN SEAMS OR AROUND THE PERMIETER OF PARTS, MUST BE CLEAN UP IMMEDIATELY WITH WATER OR RUBBING ALCOHOL AND A RAG. IF THAT EXCESS ADHESIVE HARDESN ON YOUR FLOORING IT WILL PRACTICALLY IMPOSSIBLE TO CLEAN OR REMOVE WITHOUT DAMAGING THE TILE OR TREADS.

Mannington will not assume responsibility for floor covering failure due to hydrostatic pressure or moisture vapor emission. The final responsibility for determining if the concrete is dry enough for installation of the flooring lies with the floor covering installer. The adhesives are designed to be moisture resistant to accommodate the water of hydration contained in new slabs or initial mixing; they are not to be considered remedial solutions to concrete subfloors with a history of moisture problems.

Important: Temperature directly affects adhesive working and setting times. Warmer temperatures shorten working times and colder temperatures lengthen working times of adhesive. Follow instructions on container for proper application.

Adhesive Application

Follow the instructions on the adhesive labels.

- Use a trowel with appropriate notch size. Do not use worn trowels.
- Spread adhesive evenly with proper trowel held at 60-degree angle, avoiding skips and excessive adhesive application.
- Only spread sufficient adhesive that can be covered with in the adhesive working time. Do not apply adhesive to the tile.
- Rubber tiles must be placed into adhesive as specified. (See Label)

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- Lay all tile in the same direction. Use sanding direction to determine tile position. Lay tiles point to point as per dry laying instructions.
- Roll the adhered tile with a 100 lb. roller diagonally, slowly, in two directions. This should be done soon after laying the tile into the adhesive.
- A second rolling should be done one hour after the first rolling. Weight corners with sandbags or use duct tape oncorners 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.

Cautions and Miscellaneous

- Sweep upon completion of installation to detect dropped or oozing adhesive. Remove any such adhesive with water of mineral spirits on a cloth. **NOTE:** Remove adhesive before it cures. It is nearly impossible to remove adhesive after it cures without damaging the tile surface.
- 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.
- Following installation, foot traffic should be minimized for 24 hours, point loads and rolling traffic for 48 hours and utilize minimal wet cleaning for 5 days.
- 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) Scaffolding or wheeled conveyances must not be allowed for at least 4 days. Constructions 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 tile to buckle or lift within one year of installation if traffic is allowed too soon.

Special Considerations

- Radiant Heat: Mannington Rubber can be installed over Radiant heating (hydroponic) systems. The maximum temperature of the subfloor surface must not exceed 85°F (29°C). Before installing flooring products over newly constructed radiant-heating systems, operate the system at maximum capacity to force any residual moisture from the cementitious topping of the radiant-heating system. The heat must be turned off 48 hours before, during and 48 hours after installation on new and existing systems.
- Direct Sunlight: Installations in areas where there is direct sunlight exposure for long periods of time should utilize window treatments prior to and during the installation, and for 48 hours after the installation.
- Protecting New Installations: New Installations should be protected from all construction or trade dust and debris with proper floor protection.