ColorFields Smooth Rubber Sheet Flooring Installation

PRODUCTS

Mannington's ColorFields Sheet Rubber Flooring

Because Mannington Commercial Rubber Sheet Flooring products are intended for use in high-traffic areas, underfloor selection and preparation are especially important. In most cases, remove all existing floor coverings before installing these commercial products. (You must strictly follow all federal, state, and local regulations regarding the removal of existing flooring.) Furthermore, all concrete under floors must be tested for moisture before starting the installation. Mannington requires that the concrete be tested for moisture using either the anhydrous calcium chloride test following ASTM F 1869 procedures and or the in-situ relative humidity test following ASTM F 2170. Maximum permissible MVER are determined by product construction and adhesive type.

NOTE: While either of the industry accepted moisture-testing methods may be used, the results are not exchangeable, if both tests are performed they must both be in the acceptable range to be considered valid.

HANDLING INSTRUCTIONS

It is imperative to maintain the material, adhesive, and job site at a minimum temperature of 65°F and a maximum temperature of 85°F for 48 hours before, during, and after the installation. To acclimate properly, the flooring material must be unrolled and allowed to relax overnight before proceeding with the installation. Remember; maintain the adhesive, floor covering, and job site between 65°F and 85°F for a minimum of 48 hours before, during, and after the installation.

SUBSTRATE CONSIDERATIONS AND PREPARATION

Concrete Subfloor Requirements:

The General Contractor must provide a finished concrete subfloor ready to receive Mannington's ColorFields Rubber Flooring. Subfloors must be smooth and level within a tolerance of 1/8" (3 mm) in a 10' (3.05 m) radius.

Minor surface cracks or grooves must be filled with a good quality Portland cement based patching or leveling compound with a minimum compressive strength of 3,500 psi. High spots, bumps and peaks must be repaired prior to installation.

Concrete subfloors must be dry, sufficiently porous, smooth, clean and free of paint, wax, dust, oil, sealers, grease, curing agents, surface hardeners, old adhesives and any other contaminants that could inhibit or reduce bond strength. Concrete surfaces that are powdery or scaly are not acceptable.

Although a smooth, flat concrete surface is required, a shiny, slick, nonporous surface is to be avoided. To roughen up a concrete substrate, remove sealers and increase the porosity of the substrate, mechanical abrasion options are recommended. A "shot blaster "or "blast track machine" using a No. 275 shot is recommended. Also, scarifiers, of various descriptions, are also acceptable. Nonporous surfaces must be mechanically roughen or "opened" up. Chemical methods, of any description, are not recommended.

An over-porous surface is to be corrected with a Portland cement based patching or leveling compound with a minimum compressive strength of 3,500 psi.

As a general rule, a Concrete Surface Profile (CSP), as defined by the American Concrete Institute, of about 1 is recommended.

Mannington requires that the concrete be tested for moisture. The use of the anhydrous calcium chloride test, following ASTM F 1869 procedures, is acceptable. The test should generate results not exceeding 3 pounds of moisture transpiration for 1,000 Sq. Ft. within 24 hours. In-situ relative humidity tests following ASTM F 2170 is also acceptable and should generate results not exceeding 75 percent.

Never execute moisture tests until the building's HVAC has been operational for at least 7 days. It is imperative that the site conditions (temperature and humidity) are constant in the building and reflective of in-service conditions.

Adhesion (Bond) Test

- Adhesive Bond Tests should be performed as a final and authoritative "real world" check.
- A bond test of at least 24-hour duration should be performed.
- ColorFields Rubber Sheet Flooring can be cut into 9"x 9" sample sizes.
- Install samples using the recommended adhesive and procedures.
- After 24 hours, removing the test samples should be difficult.
- Most of the cured adhesive should remain bonded to the subfloor.
- If proper bond is not accomplished, do not proceed with the installation.

NOTE: If the flooring contractor elects to install new floor covering over an existing floor covering, the flooring contractor assumes all responsibility as to the suitability and continued performance of the existing floor covering. If removal of existing resilient floor covering is required, follow all recommended Resilient Covering Flooring Institute (RFCI) work practices at www.rfci.com. Please be aware that installing ColorFields Rubber Flooring over existing floor covering may reduce its excellent indentation and wear resistance and will negate its warranty.

WARNING: Do not sand, dry sweep, dry scrape, drill, saw, bead blast, or mechanically chip or pulverize existing resilient flooring, backing, lining felt, paint, asphaltic "cutback" adhesives, or other adhesives. These products may contain asbestos fibers or crystalline silica. Avoid creating dust. Inhalation of such dust is a cancer and respiratory tract hazard. Smoking by individuals exposed to asbestos fibers greatly increases the risk of serious bodily harm. Unless positively 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. The Resilient Floor Covering Institute (RFCI) document "Recommended Work Practices for Removal of Resilient Floor Coverings" should be consulted for a defined set of instructions addressed to the task of removing all resilient floor covering structures. For more information visit the Resilient Floor Covering Institute at www.rfci.com.

PATCHING / LEVELING COMPOUNDS

The use of latex / Portland cement based trowelable patch or self-leveling products are recommended for repairing or leveling concrete subfloors. The minimum psi rating developed should be a 3,500 pounds. Do not use gypsum or mineral based patching compounds in commercial applications under any circumstances. The responsibility for a warranty and the performance of the substrate patching and, or leveling products belongs to the concrete or cementitious patching material manufacturer and the installer.

CUTTING AND FITTING

Mannington's ColorFields Sheet Rubber Flooring is dynamic and flexible. It is easy to cut and fit. The installer can achieve good results using freehand knifing techniques.

If the job site layout or general design is complex and requires a precise fit, use pattern-scribing techniques. The material may also be fit using direct scribing techniques.

Before starting any installation, verify the product for type, size, thickness, color, visual imperfections or color variations and notify Mannington of any apparent defects. No claims will be accepted after the material has been cut or installed.

Allow all adhesives and flooring materials to acclimate to job site temperature and humidity conditions prior to dry lay, fitting and cutting.

To acclimate properly, Mannington ColorFields Rubber Flooring must be unrolled and allowed to relax for a minimum of 12 hours in an ambient temperature range between 65°F and 85°F before proceeding with the installation.

- Unroll the rubber sheet flooring lengths in the same direction.
- Do not use the "reverse roll" method when laying out lengths of sheet rubber flooring.
- Cut the sheets to the required lengths.

Double Cutting the Colorfields Sheet Rubber Seams is not normally necessary. The Sheet Rubber rolls are manufactured with precision cut edges on both sides of the roll. However, if job-site conditions, or design plans require custom layouts, use the following recommendations.

- All seams are to be double-cut and must have a minimum 1 1/4 inch overlap.
- In places, some sheets may have a slight taper near the edge of the sheet.
- When present, tapered edges are to be on the bottom side of the overlap.
- To "double cut seams," start with a long, true straight edge to be used as a guide.
- Position the straight edge about 1/2 inch from the top edge of the overlap.
- Use a straight blade utility knife. Hold the utility knife as vertical as possible.
- Double cut through the top sheet, and about 3/4 of the way through the bottom sheet.
- Remove material from the bottom cut by pulling it back, under itself, parallel to the cut.
- Double cut seams must have a close, gap free quality of cut without burrs or tears.
- Do not pressure fit poorly cut seams together for a "passable fit."

Dry lay and "cut to fit" all material prior to adhesion. This includes all perimeters, casework, columns, doorways, et cetera, that are contained within the space.

- Once the material has been fit, it is necessary to re-roll or "lap back" half of the sheet to expose the underfloor for adhesive application.
- Take care when folding the material back. Always fold the material in a wide radius to avoid sharp kinks and creases, which may cause breaks in the product.

RECOMMENDED ADHESIVE

Only approved adhesives must be used for warranty to apply.

A. Adhesive Descriptions:

1. 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 surfaces only. 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. Apply MR-911Adhesive with a 1/16" X 1/16" X 1/16" square-notched trowel. Coverage is approximately 100 sq. ft. per gallon.
2. 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. Apply MR-721 with a 1/16" x 1/16" x 1/16" square-notched trowel. Coverage is approximately 100 -125 Sq. Ft. per gallon.
3. 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. Apply MR-725 with a 1/16"x1/16"x1/16" square-notched trowel. Coverage is approximately 125-150 Sq. Ft. per gallon.

A. 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.

APPLYING ADHESIVES

Fully adhere Mannington ColorFields Sheet Rubber Flooring to a properly prepared substrate as described previously.

- After the rubber sheet flooring has been trimmed to fit the room, re-roll or "lap back" the material to expose the concrete substrate.
- Vacuum or sweep the floor to clean up any debris that may telegraph after installation.
- Trowel edges wear after about 700 Sq. Ft. Replace to maintain proper spread rate.
- Spread adhesive over 100% of the concrete substrate, leaving no gaps or puddles.
- Open time varies based on subfloor porosity and atmospheric conditions.
- After the adhesive has started to tack-up, roll the sheet forward into the adhesive.
- Roll the sheet into the adhesive; do not drop or flop the material into the adhesive.
- Carefully rolling the sheet prevents trapping air bubbles that are hard to remove.
- Use a 100 lb. (or heavier) three-section flooring roller.
- Consider using conduit handle extensions on the roller to avoid walking on the sheet.
- Roll the floor in multiple directions for proper adhesive transfer to the flooring material.
- Roll the floor to eliminate any air entrapment or bubbles.
- After the first half of the sheet has been adhered and rolled, fold back the second half and repeat the procedure.

CAUTIONS:

- Monitor the adhesive's open time, do not permit the adhesive to "skin over" or dry.
- Too much open time will result in poor adhesive transfer and bond failure.
- Re-roll the flooring after 2 to 3 hours.
- Wait 72 hours before starting recommended maintenance procedures.
- The flooring must be installed for at least 12 hours before heat welding.

HEAT WELDING SEAMS

Required tools:

- Special joint cutter, and or joint suitable milling machine
- Suitable heat welding gun and trim plate
- Proper skiving knife, or a Mozart trimming knife with the 0.7mm spacer

Directions:

- Pre-heat the welding gun to 662°F - 752°F (350°C - 400°C). It is recommended to practice welding on a piece of scrap flooring material to determine the heat setting and speed.
- Cut a length of Heat Weld Rod sufficient to weld the entire length of the seam, plus approximately 6 inches extra.
- Weld the seam starting at the wall and apply slight pressure to the gun nozzle to force the
- Weld rod into the groove. Properly inserted, the heat weld rod will have a slightly flattened portion on either side.
- Allow the rod to cool to the touch.
- Begin the trimming or "skiving" to remove the excess weld.
- To help prevent scratching or scuffing the floor surface during skiving, use a 1 part liquid soap to 10 parts water solution.
- Apply the solution to the weld rod and to an area of 1" on either side using a clean cloth.
- Using the trim plate and skiving knife, make the first cut of the weld rod.
- Alternatively, a Mozart trimming knife with the 0.7mm spacer claw can be used.
- To finish, use only the skiving knife, and finish trimming the remainder of the weld.
- The finished weld should be smooth and on the same plane as the floor covering.
- Occasionally, there may be excess weld rod left after the final trim.
- It will be necessary to remove the excess by using the "melting" technique.
- After heating up a non-sharpened metal putty knife, gently glide the putty knife along the seam weld. Excess weld material will collect on the knife and result will be a smooth and flat seam weld.

HEAT WELDING RECOMMENDATIONS

- To achieve good sealing results, knowledge of proper heat welding procedures is important.
- Heated stop / start method will produce rough uneven seams, creating an unpleasant appearance.
- Temperature setting is critical to the success of any heat welding application. If the welding gun is set too hot or applied too slowly, the flooring is likely to burn, char, or craze the surface next to the weld rod. If welding gun is not hot enough or applied too quickly, the weld may have poor fusion. Follow all Mannington temperature requirements to achieve an even seam with good bond strength and integrity.
- After waiting 24 hours for the adhesive to dry, use a power-grooving machine to cut a groove the entire length of the seam. Adjust the machine so the depth of the groove is about two thirds of the product's thickness. Stop machine grooving several inches away from the wall.
- Extend the groove to the wall using a hand-grooving tool.
- Prior to heat welding, allow the flooring adhesive to completely dry. Preheat welding gun and determine proper temperature setting and router depth by practicing on scrap pieces of flooring. Make certain the speed nozzle is clean and free of obstructions.
- Insert welding rod into the speed nozzle allowing approximately 3" to extend out. Arrange welding rod in such a manner that it will not interfere with the application. Be careful when inserting the welding rod because the nozzle is extremely hot.
- Pull the gun along the length of the seam toward your body while maintaining a downward pressure. Keep the gun perpendicular to the floor. Weld the seam at a constant, even speed.
- Stop and change direction of the weld when you are near the back wall. Pull the gun out of the groove and cut the weld rod.
- Remove the urethane coating before heat welding inside corner by grooving or sanding. Performed metal corner caps may also be used.
- Allow welded rod to cool, and then groove the installed rod with a hand-grooving tool. Grooving the rod makes it possible to achieve complete seam coverage when you start seaming from the opposite direction to finish the job.
- Reposition yourself and your tools at the back wall and continue welding into the grooved rod you just made so there are no missed spots in the seam. It is important to achieve a smooth, continuous coverage of the rod into the seam.

After the welded rod shrinks and cools for approximately 30 minutes, trim down the excess by using the following two steps:

- Remove approximately two thirds of the exposed welded rod. Use a spatula trim knife and trim plate to trim off the top layer. There should be about 1/32" excess weld rod projected above the surface of the resilient.
- The second step is to trim the welded rod level until it is flush with the surface of the resilient sheet. Use an extremely sharp spatula knife without the trim place at a 5° to 10° angle to the floor surface. Keep the sharpened side down against the welded rod. Be careful not to cut or dig into the resilient surface. Inspect the finished seam carefully and remove any missed high spots with a spatula knife. If there are low spots, the seam weld may require a rod reapplication.

FLASH COVING COLORFIELDS SHEET RUBBER

All Mannington rubber sheet goods can be installed using the flash coving method. This edging technique, often preferred by hospitals and other health care facilities, is a process of extending the resilient flooring up the wall to create a wall base. Normally, the floor covering is extended up the wall to a height of 4" to 6". Coving is popular with end users because it eliminates the need for a floor/wall juncture and it is also easy to maintain.

As with all resilient installations, proper preparation of the work area is critical to the success of the installation. Clean the underfloor carefully and make certain it is structurally sound. The juncture of the floor and wall also needs special preparation before beginning a coved installation. Follow the instructions below to install the cove cap and the cove stick (cove fillet strip).

- Measure desired height for the cove caps at each corner and strike a chalk line.
- Attach aluminum or vinyl cove caps at this height using flathead nails with a hammer or brad pusher, or use contact cement.
- Always miter inside and outside corners in the cap. When mitering the outside corners, file the ends of the cap smooth. Use a specially designed miter tool with interchangeable die sets to make corners on the cove cap. This tool eliminates sharp edges at the outside corners.
- Cove sticks support the resilient flooring as it is flashed up the wall, eliminating the chance of puncturing the resilient flooring. Firmly secure plastic or wood cove sticks where the floor meets the wall with adhesive or nails.
- Use nonstaining nails and set the flush with the stick. The stick should have a minimum radius of 1 1/8" and be precisely mitered at all inside and outside corners.
- Provide a smooth transition in the door casings and other areas where the coving ends by cutting back to the cove stick.

Tack the scribing felt to the wall with brad type nails before beginning to scribe it. Use a combination square, a small metal ruler, or a 1" piece of resilient to pattern scribe the felt.

- Fit the scribing tool up inside the cove cap and scribe the felt by sliding the tool along the cap as you mark the felt with a pencil.
- Scribe and cut the outside corners of the felt using a utility knife and the inside corners of the felt, using dividers.
- After scribing the entire work area, position the pattern squarely on the resilient sheet flooring and transcribe the pattern with pencil dividers. Be careful when cutting the material on the inside and outside corners.
- Dry fit the material. Inside corners should fit snug, but not be forced into position. Make sure to always position the shorter side first and then the longer side.
- Gently pull material away from the wall. Apply the appropriate adhesive to the floor, wall, cove cap, and cove stick.
- Allow the appropriate amount of open time. Fit the material back into place. Remember to always position the shorter side first.
- Roll the flooring with the appropriate size roller (use a hand roller on coved areas). Apply the appropriate seam sealer at all seams, following the recommended directions for the resilient floor being installed.
- The most demanding aspect of a coved installation is forming the outside corners. Fill outside corners with a "boot" type plug, rather than a V-type plug, on the least visible wall. The plugged corner fill piece should extend back at least several inches from the corner. The seam of the floor should be below the cove stick. Using an underscriber, scribe the back of the plug at the corner. This will mark the pattern of the corner on the plug.
- Cut along the scribed line at a 45° angle with a curved trim knife or a utility blade while holding the plug steady with a metal ruler and your other hand. When cutting, leave the face of the plug longer than the back.
- Check the fill piece for accurate fit. Make any minor adjustments to the plug as necessary to fill the space correctly. Remove the fitted fill piece and apply the appropriate adhesive. Reposition the fill piece and apply seam sealer.

  Note: Preformed metal corner caps may also be used.