Heterogeneous Sheet Flooring Installation Instructions

GENERAL INFORMATION

All recommendations are based on the most recent available information. These installation specifications are for fully adhered installations of Mannington Commercial heterogeneous product, Entwined™ Collection, Paradigm™ Collection, Realities®, and Vivendi™ II Collection.

1. Cut order pieces should be rolled face out on a core to take to the job site. Otherwise, the roll will flatten or "oval," making it difficult to get the floor covering to lay flat when unrolled.
2. The floor covering, adhesive, and room temperature must be kept at a minimum temperature of 65°F with a maximum of 90°F for at least 48 hours before and during, and 48 hours after installation.
3. All subfloor patching on and below grade must be done with a non-shrinking, water-resistant Portland cement patching compound.
4. Never install Mannington sheet goods over residual asphalt-type (cut back) adhesive. It can bleed through the new floor covering. Residual asphalt type adhesive must be removed or isolated from the finished flooring.
5. Must be adhered using Mannington V-82, V-88, V-95 or XpressStep. See adhesive section or spec sheet for appropriate adhesive selection.
6. All seams must be sealed by either using Mannington Commercial MLG-33 chemical seam sealer or heat welded with Mannington solid color weld rod.

SUBFLOOR INFORMATION

Careful and correct preparation of the subfloor is a major part of a satisfactory sheet floor covering installation. Roughness or unevenness of the subfloor will telegraph through the new floor covering, resulting in an unsightly surface and excessive wear on high spots. Proper subfloor selection and preparation are essential for a trouble-free job.

Wood Subfloors

1. GENERAL

   All wood floors must be suspended at least 18" above the ground. Adequate cross-ventilation must be provided and the ground surface of a crawl space must be covered with a suitable vapor barrier. Wood subfloors directly on concrete or installed over sleeper construction are not satisfactory for the installation of Mannington Resilient flooring products.

   Wood subfloors must be covered with a minimum ¼" or heavier underlayment rated panel to assure a successful finished flooring installation.

2. UNDERLAYMENT

   Many times wood panel subfloors are damaged during the construction process or are not of underlayment grade. These panels must be covered with an approved underlayment. Underlayment panels are intended to be used to provide a smooth surface on which to adhere the finished floor covering. It must be understood that underlayment panels cannot correct structural deficiencies. Particleboard, chipboard, construction grade plywood, any hardboard and flakeboard are not recommended as underlayment. All have inadequate uniformity, poor dimensional stability, and variable surface porosity. Mannington Resilient Floors will not accept responsibility for adhered installation over these subfloors. In all cases, the underlayment manufacturer or underlayment installer is responsible for all underlayment warranties.

3. UNDERLAYMENT REQUIREMENTS

   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 the graining or texturing will not show 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.
   - Any unevenness at 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.

Concrete Subfloors

1. Concrete subfloors must be dry, smooth, and free from dust, solvent, paint, marker, wax, grease, oil, asphalt sealing compounds and other extraneous materials. The surface must be hard and dense, and free from powder or flaking.
2. New concrete slabs must be thoroughly dry (90 days) and completely cured. Curing agents, surface hardeners and other additives may cause adhesive bonding failure. These should be removed by sanding or grinding.
3. All concrete slabs must be checked for moisture before installing material. Follow ASTM F-1869 recommendations for performing calcium chloride test or ASTM F-2170 for relative humidity. If both tests are performed, the RH test is the qualifying standard.
4. Mannington Commercial heterogeneous flooring products must never be installed where hydrostatic pressure or excessive moisture vapor emissions may exist.
5. The final responsibility for determining if the concrete is dry enough for installation of the flooring lies with the floor covering installer.
6. Concrete floors with a radiant heating system are satisfactory, provided the temperature of the floor does not exceed 85°F at any point.
7. Holes, grooves, and other depressions must be filled with Portland cement based patching and leveling compound, troweled smooth and feathered even with the surrounding surface.
8. All marking paint, permanent markers, crayons and all other potential stainants must be removed by grinding from the concrete surface before installing the flooring. Never mark the back of the flooring as well.

INSTALLATION

Existing Resilient Floor Coverings

To achieve maximum product performance, Entwined™ Collection, Paradigm™ Collection, Realities®, and Vivendi™ II Collection should not be installed over existing resilient floor coverings. In the rare cases where removal of the existing resilient floor covering is not an option, the existing flooring must be covered with Portland Based Embossing leveler or other appropriate porous underlayment.

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.

NOTE: Consult the Recommended Work Practices brochure from the Resilient Floor Covering Institute for specific instructions on removal of old resilient floor covering. Visit www.rfci.com

WARNING: Do not sand, dry sweep, dry scrape, drill, saw, beadblast, 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.

Cutting And Fitting

- It is imperative that the material, adhesive and job site be maintained at a minimum temperature of 65°F or a maximum of 90°F 48 hours before, during and 48 hours after installation.
- If the material has been stored at colder temperatures, it will be necessary to unroll the material and allow it to relax over night before proceeding with the installation.
- If the job site is complex and requires a precise fit, traditional pattern scribing techniques should be used.

- The material may also be fit using direct scribing techniques. Once the material has been fit, it will be necessary to tube or lap half of the sheet back to expose the underfloor for adhesive application.
- Care should be taken 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.

ADHESIVE

1. **Mannington Commercial V-82 Adhesive**: Solvent-free, acrylic adhesive for use on porous substrates including concrete that is dry per ASTM F-1869 3 lbs maximum MVER or ASTM F-2170 75% maximum relative humidity. Maximum pH of 9. V-82 should be applied with a trowel 1/16 wide x 1/32 deep and spaced 1/32 apart. Spread rate approximately 150 – 200 sq ft per gallon. See adhesive label for details.
2. **Mannington M-Guard V-88 Adhesive**: Moisture resistant transitional pressure sensitive adhesive is recommended for higher moisture tolerance of 10 lbs maximum MVER or 95% relative humidity. Maximum pH of 12. M-Guard V-88 adhesive will not correct pre-existing moisture problems in older concrete subfloors. V-88 should be applied with 1/16 wide x 1/32 deep and spaced 1/32 apart U notched trowel for porous substrates and a 1/16 wide x 1/32 deep and spaced 5/64 apart U notched trowel for non-porous substrates. Porous spread rate approximately 250 sq ft per gallon. Non-porous spread rate 350 sq ft per gallon. For non-porous substrates adhesive must dry completely. See adhesive label for details. **NOTE: When installing heterogeneous sheet flooring using V-88, it is recommended to trowel the adhesive then back roll with a short-nap paint roller to minimize the possibility of trowel ridge telegraphing.**
3. **Mannington Commercial V-95 adhesive**: Solvent-free two-component, epoxy for use on non-porous substrates, under hospital beds, operating room tables, heavy rolling loads, areas subject to standing water, topical moisture or where high performance is needed. Moisture limits are per ASTM F-1869 3 lbs maximum MVER or ASTM F-2170 75% maximum relative humidity. Maximum pH of 9. V-95 should be applied with a 1/16 wide x 1/32 deep and spaced\ 1/32 apart. Spread rate approximately 185 – 245 sq ft per gallon. See adhesive label for details.
4. **XpressStep Spray Adhesive**: Water based spray adhesive recommended for the installation over porous and non-porous substrates. May be used under hospital beds, operating room tables or under heavy rolling loads. Moisture limits are 10 lbs MVER or 95% relative humidity. Maximum pH of 11. Spread rate approximately 150 – 185 sq ft per can.

Adhesive Application

After the material has been trimmed to fit the room, it should be tubed or lapped back to expose the underfloor.

- On porous substrates, V-82 adhesive should be applied with a 1/16" wide, 1/32" deep spaced 1/32" apart notched trowel.
- M-Guard V-88 can be used on both porous and non-porous substrates. When installing homogenous sheet vinyl, it is recommended to trowel the adhesive then back roll with a short-nap paint roller to minimize the possibility of trowel ridge telegraphing.
- V-95 two-component epoxy adhesive must be used on all non-porous substrates and in areas demanding high performance.
- V-95 must be used over non-porous substrates, under hospital beds, operating room tables, heavy rolling loads, areas subject to standing water, topical moisture or where high performance is needed.
- V-95 has low initial tack, it may be necessary to apply weights, particularly in the seam area, until adhesive sets.
- When using V-95, the flooring should be rolled with a 100 lb. floor roller within one hour after the flooring is installed.
- The adhesive must be spread over 100% of the exposed subfloor, leaving no gaps or puddles. Uniform coverage can be maintained by keeping the trowel clean and properly notched.
- After the adhesive has been applied, roll the sheet forward into the adhesive to eliminate trapping air.
- When using XpressStep Spray Adhesive proper floor prep and correct spray pattern rekey for best performance. See detailed instructions on the can.
- Do not drop or flop the material into the adhesive.
- Roll the floor covering with a three-section 100 lb. or heavier floor roller in both directions.
- After the first half of the sheet has been adhered and rolled, fold back the second half and repeat the procedure.
- Wait 1–2 hours then re-roll again to insure full contact and to remove any trapped air.

CAUTION: When providing open time, do not permit the adhesive to "skin" over or dry. Too much open time will result in insufficient bonding.

Important note: Mannington adhesives are specifically formulated to be fully compatible with our product chemistry and to maximize the performance of Mannington flooring. Using substitutes or failing to use Mannington adhesives as recommended can cut-short product life, cause installation failure, and/or lead to a chemical reaction, such as hydrolysis, which will permanently damage the product and will void all applicable warranty coverage.

Seaming

Entwined™ Collection, Paradigm™ Collection, Realities®, and Vivendi™ II Collection are available in 6', 9' and 12' widths. Choose product width to eliminate unnecessary seams and minimize waste. When seaming is required Relay® RE should be positioned Reverse Sheets for seaming. Entwined™ Collection, Paradigm™ Collection, Realities®, and Vivendi™ II Collection should be Do Not Reverse for seaming.

The construction of heterogeneous flooring requires that the seams be cut using the trace cutting technique.

- The selvage edge of one sheet should be straight-edged approximately 3/8" from the edge.
- Position the sheets in such a manner that the straight-edged top sheet will overlap the untrimmed bottom sheet and maintain the pattern match.
- Carefully trace along the edge of the top sheet with a utility knife with a sharp blade or a cutting tool designed for this purpose.
- Remove the trimmed selvage edge of the bottom sheet.
- Once the seams are cut, weigh the sheets and tube or lap back the sheets to expose the underfloor.
- Apply the appropriate Mannington adhesive using the correctly notched trowel over 100% of the exposed underfloor.
- After providing sufficient open time for the adhesive, lay the straight-edged sheet into the adhesive first and then lay in the second sheet.
- Roll the adhered areas to within about 6" of the seam line with a 100 lb. three-section floor roller.
- Roll the seam area with a hand seam roller to bring the seam edges level. Re-roll the entire adhered area with the 100 lb. floor roller.
- Thoroughly clean the seam area and wipe dry.

Heat Welding Heterogeneous Flooring

- Seams may be heat welded using coordinating solid color weld rod.
- Wait at least 24 hours after initial installation to allow the adhesive to cure before grooving the flooring product to receive the heat weld rod.
- Proper temperature of the heat welding tool is critical to the success of this process. Heat welding is always dependent on speed of application and temperature. Practice on a scrap piece of material to determine optimum speed and temperature.
- Use a 4mm round narrow pre-heat speed nozzle (tip) designed for welding urethane finish flooring.
- After the weld rod has cooled, trim the applied weld rod in two steps. Always use a trim plate with a sharp spatula trim knife for the first pass. Trim weld rod flush with the spatula knife, being careful to not gouge the vinyl surface.
- Mannington Commercial Heat Weld Rod is color coordinated for use with Entwined™ Collection, Paradigm™ Collection, Realities®, and Vivendi™ II Collection. Contrasting colors may be used if so desired.

Chemical Seam Sealing Heterogeneous Flooring

Seams may be sealed using the chemical seam sealing method.

- The seams will be sealed with MLG-33 and the VST–96 professional applicator tip.
- Before sealing the seams, make certain all seams are clean, dry and free of adhesive contamination.
- Fill the VST-96 applicator bottle at least 2/3 full of sealer. Tightly screw on the applicator tip.
- Before using, check the flow through the applicator on a scrap piece of flooring.
- Insert the fin into the seam cut and lightly squeeze the bottle to apply a uniform bead of sealer approximately 1/8" wide, centered on the seam cut. It is crucial that the seam sealer penetrates the full thickness of the seam cut to insure a proper chemical bond.
- Do not wipe the sealer from the surface of the flooring.

Seam Coater Pen

The Quantum Guard™ HP Pen is a quick and easy way to provide topical protection to heat welded and chemically welded seams in Mannington Commercial sheet vinyl products that have the patented high performance urethane Quantum Guard™ HP wearlayer. Before use shake vigorously to blend the ingredients, remove the cap, daub the felt tip marker a few times to begin the flow of the floor finish and then coat over the seam area with a thin, even application In high traffic areas it is a good

practice to apply two or even three coats of finish from the Quantum Guard™ pen. Just be certain that the finish is thoroughly dry before applying additional coats. Each Pen will cover approximately 300 lineal feet of seam. The Quantum Guard™ HP Pen coating is not intended to provide additional seam strength or integrity. It is a "coating" that helps retain seam appearance initially and when in service.

FLASH COVING

All Mannington Commercial sheet flooring can be integrally self or flash coved at the wall line. Flash coving is the procedure in which the flooring material is continued up the wall to the height of 4 or 6 inches. This coving technique eliminates the floor-wall juncture and provides for easy maintenance.

When flash coving is required, follow these recommendations:

- Prepare the area by installing a cove fillet strip and a cove cap (either aluminum or vinyl).
- The cap should be firmly attached to the wall at the designated height. Outside corners in the cap should be notched and formed rather than mitered. This eliminates a sharp edge at the corner.
- Cove fillet strip is available in both plastic and wood. The fillet strip should have a minimum 1 1/8" radius.
- The cove stick should be precisely mitered at all inside and outside corners and firmly secured into the floor or the wall.
- Best results can be obtained by pattern or template scribing Mannington Commercial Sheet flooring when flash coving is required. Traditional pattern scribing techniques should be followed.
- Inside corners should be cut net, with no fullness or gaps. Outside corners must be filled using "boot" plugs. Preformed metal corner caps may also be used.

FINISHING THE JOB

- Cover all exposed edges.
- Use wood molding or vinyl cove base along all walls, cabinet toekicks, etc.
- Use metal strips in doorways or where new flooring joins another floor covering.
- Caulk along tubs, toilet bowls, etc.
- Do not wash the floor for 48 hours after installation.
- After 48 hours, damp mop to remove residual surface dirt.
- Follow appropriate maintenance schedule for heterogeneous flooring products.

CAUTIONS AND MISCELLANEOUS

- Do not place heavy items on newly installed floor covering for at least 48 hours after completion of the installation. Heavy furniture should be equipped with suitable non-staining, wide-bearing casters.
- Furniture should be moved onto the newly installed floor using an appliance hand truck over hardboard runways.
- Floor covering subjected to excessive heat and light exposure is subject to thermal degradation. Use appropriate precautions to minimize potential affects on the floor covering.
- Oil or petroleum-based products can result in surface staining. Do not track asphalt driveway sealer or automobile oil drips onto the vinyl floor covering.
- Use non-staining walk-off mats at building entrances to remove excess dirt and grit from foot traffic—rubber can discolor vinyl floor covering.