

Installation Guidelines

rEvolve® II and rEvolve® II Cushion Modular Carpet Installation Guidelines

GENERAL INFORMATION

Mannington Commercial adheres to basics of the Carpet and Rug Institute's (CRI) Installation Standard, which offers general minimum requirements. In addition to the minimums from CRI, this guide provides specific details required for Mannington Commercial products. Mannington Commercial's rEvolve II requires site and subfloor conditions like those for any carpet tile. Site should be fully enclosed with an HVAC system functioning to maintain temperature within a range similar to levels maintained when occupied as explained here. Each of the following steps is essential for a successful installation and is required to maintain full warranty coverage.

All recommendations are based on the most recent available information. The information on this sheet provides general subfloor guidelines. For complete details consult Mannington Commercial's General Installation Guide or visit our website at manningtoncommercial.com. All instructions and recommendations must be followed for a satisfactory installation. Good preparation is essential for a trouble-free installation. Do not install Mannington Commercial flooring 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.

ESSENTIAL FIRST STEPS

- **Check style and color.** Mannington Commercial requires the carpet be inspected prior to installation for proper style, color, and potential defects.
- **No visible defects.** No claims will be honored if modules are installed with visible defects.
- **Read instructions.** Read all instructions prior to beginning installation.
- **Confirm layout.** Each style of Mannington Commercial carpet tile will have a recommended layout or method for installation that will be specific to that style. Whether the layout is Monolithic, Horizontal Brick Ashlar, Vertical Ashlar, or Quarter-turn, the recommended layout will be listed in the brochure of the architect folder or website. Mannington Commercial evaluates each style in a range of layouts to help maximize seam appearance. Customer should evaluate a small mock-up of the recommended layout and tile direction prior to proceeding with full installation. Use of any other layout can compromise seam aesthetics. Mannington Commercial will not accept claims for carpet installed using a different layout than recommended. Diagrams are provided on page 5.
- **Site conditions.** Maintain temperature at 60-85°F with ambient humidity between 40-60% for 48-72 hours before, during installation, and at least 48-72 hours after installation. Maintain temperature between 55-90°F for product life.
- **Material conditioning.** Carpet tiles must be allowed to adjust to job-site temperature for a minimum of 48 hours prior to installation.
- **Subfloor testing.** Concrete subfloors must be tested to determine whether chemical pH and moisture emission levels are suitable. No Moisture Testing Required for rEvolve II backing when installed with Infinity 2 Adhesive provided the slab meets ASTM F710 including the presence of an intact moisture vapor retarder per ASTM E1745 (Class B Minimum), is in direct contact with the concrete slab, no standing water, no free liquids present, no evidence of moisture staining, and no hydrostatic pressure, for porous installations only. PH testing is required with a limit of 12. For all other condition's or when the above requirements are not met, therEvolve II backing limits are in situ relative humidity (maximum RH 95% per ASTM F-2170) and/or moisture vapor emissions (maximum 10 lbs./1,000 SF/24 hrs. per ASTM F-1869). Concrete must have a 12 pH (ASTM F-710). On-grade and below-grade concrete slabs must have an approved vapor retarder (ASTM E-1745) which is properly installed (ASTM E-1643).
- **Vapor retarder.** Concrete subfloors must have a suitable vapor retarder properly installed directly beneath the slab per ASTM E1745.

- **Adhesive.** Mannington's Infinity 2 Adhesive pressure-sensitive adhesive must be applied in a full-spread application using the correct notched trowel as detailed later in this guide.
- **Existing floor coverings.** To achieve maximum product performance it is always best to remove existing floor covering. Existing flooring can adversely affect the performance properties of the new flooring.

Important note: Mannington Commercial adhesives are specifically formulated to be fully compatible with backings chemistry and to maximize the performance of Mannington Commercial products. Using substitutes or failing to use Mannington Commercial 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 tile backing and will void all applicable warranty coverage. For Mannington Commercial's lifetime limited bond warranty, Infinity 2 Adhesive must be used. Mannington Commercial will not be responsible for adhesive bond where other adhesives have been used.

SUBFLOOR PREPARATIONS

Careful subfloor preparation is vital for an excellent floor appearance and good 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.

For porous subfloors (concrete or wood) that have a high pH and/or need a primer, use **Mannington's Universal Primer**.

Mannington's Universal Primer is an acrylic latex solution made to neutralize excess alkali and is also recommended as a primer to prevent over absorption of adhesive to ensure a better bond. Gypsum topped or patched areas must receive a full application of Mannington's Universal Floor Primer as well as any subfloor that is porous, gritty, chalky, or dusty. Porous subfloors with chemical pH above 9 may require a second application.

Mannington's Universal Primer can be applied by pouring directly on the subfloor and spreading evenly with a broom or paint roller. Primer can also be applied with a garden sprayer, airless rig, or similar spray equipment. Allow the primer to dry completely prior to second application or before applying adhesive. Primer is dry if there is no transfer when touched. Coverage is approximately 350-400 ft² per gallon.

CONCRETE

Before proceeding with installation on any concrete subfloor, please make sure:

- Levelness and finish meets or exceeds American Concrete Institute standards, ACI 301.
- Moisture and alkalinity levels meet requirements as detailed earlier.
- Curing compounds are mechanically removed. Many concrete curing agents can prevent adhesives or sealers from forming a proper bond, especially those with silicate compounds.
- Chemical agents are avoided for removal of curing compounds or old adhesives.
- Portland cement-based compounds are always used and mixed according to manufacturer's instructions when patching cracks and holes, and when leveling is required.
- Gypsum-based patching compounds are always avoided.
- Mannington's Universal Primer is used on any subfloor that is porous, gritty, chalky, or dusty.

OTHER SUBFLOOR TYPES

Any subfloor surface must be smooth, level, clean, and secure prior to installing Mannington Commercial floor covering products.

- **Wood.** 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.
- **Wooden planks.** 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.

- **VCT.** Tiles must be well secured to the floor or removed. Broken, damaged, or loose tiles must be replaced. Wax must be removed from VCT before applying adhesive.
- **Sheet vinyl.** Sheet is not a suitable substrate for rEvolv modular installation and should be removed.
- **Existing carpet.** Unsuitable substrate for new installation. Should be removed prior to installation. Any existing adhesive should be addressed as described here.

EXISTING ADHESIVES

As a rule, for any new installation, existing adhesives from previous installations should always be scraped flat and thoroughly encapsulated with a Latex Portland Based Patch or Mannington Assure. Otherwise, an adverse reaction could occur, voiding applicable warranty coverage and leading to installation or product failure.

- **Multi-purpose/pressure sensitive.** Use one of the following methods to prevent possible reaction between the existing adhesive and the new installation:
 - Scrape adhesive flat and encapsulate with Mannington Assure.
 - Thoroughly remove existing adhesive, sand away remaining residue, and then skim coat with a Portland cement-based patching compound.
- **Cutback.** Existing cutback adhesive must be thoroughly removed and fully encapsulated to prevent possibility of irreversible product damage, installation failure, and voiding Mannington Commercial's warranty coverage. Wet with a mixture of water and a small amount of liquid soap. Allow to soak for several minutes before scraping away adhesive. Encapsulate any remaining trace of adhesive residue with Mannington Assure.

PLAN AHEAD

To help assure a successful project and prevent unexpected surprises, the following are also important steps to consider prior to installing any Mannington Commercial carpet tile:

- **Sequencing.** The most uniform installation will be obtained by planning and sequencing carpet tiles in the order they were manufactured. Sequencing can be easily accomplished. Select pallets by numbers located on each carton of tiles starting with the lowest numbers first and progressing lowest to highest numbers. Each pallet should have tile cartons with a similar range of numbers.
- **Packaging.** Mannington Commercial's 24" x 24" and 12" x 48" carpet tiles are packaged 18 tiles, 8 yd² per carton. The 18" x 36" tiles are packaged 16 tiles, 8 yd² per carton. 12" x 36" tiles are packaged 16 tiles, 5.328 yd².
- **Accessibility.** Carpet tile provides easy accessibility to the subfloor and flat-wire or cable trenches. Flat-wire should be centered underneath modules.
- **Raised nosing for stairs.** On stairs, always use a raised nosing. Trim tile to fit nosing on both the step and riser.

ADHESIVE

To avoid long-term performance issues and for Mannington Commercial warranties to remain in full effect, rEvolv Carpet Tile must be installed in a full-spread application using adhesive as follows:

Infinity 2 Adhesive:

Use only Infinity 2 pressure sensitive adhesive when concrete subfloor is properly tested to show moisture emission rate and chemical pH are:

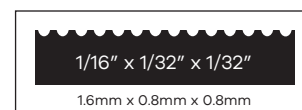
Intact Moisture Vapor Barrier

- 12 pH

All other slab conditions

- ≤ 95% RH
- 12 pH
- ≤ 10 lbs MVER

Apply a full spread of Mannington's Infinity 2 pressure sensitive adhesive using a 1/16" x 1/32" x 1/32" U-notch trowel as shown. Notches are 1/16" wide, 1/32" deep, 1/32" apart, for a spread rate of approximately 25 yd² per gallon. Allow adhesive to fully dry, so adhesive does not transfer when touched. Proceed with tile placement.

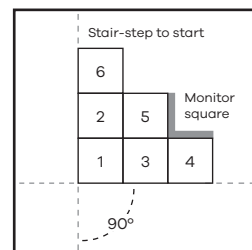
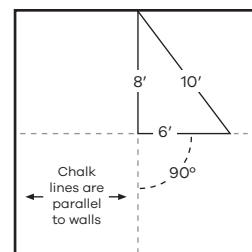


Note: Inadequate amounts of adhesive can cause modules to shift and move and will not be covered under warranty. Strictly adhere to recommended spread rate. Use a 1/16" x 1/32" x 1/32" U-notch trowel to achieve the proper coverage.

INSTALLATION

A proper start is essential to keeping a carpet tile installation tight and square throughout the installation. Please pay careful attention to these basics:

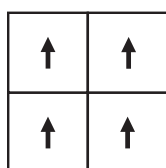
- **Establish center point.** Measure area to receive carpet and determine a center starting position by measuring from dominant walls or similar architectural features.
- **Adjust for cuts.** Initial placement of the center point may need to shift slightly to make sure perimeter tile cuts are at least half the tile's width (Example: 12" on a 24" x 24" tile).
- **Set perpendicular lines.** Establish two chalk lines that cross at adjusted central point and intersect at right angles. The base line should be the longest measurement in a rectangular area and parallel to a wall or architectural break point. Having four equal quadrants with perpendicular lines at the right angles will provide an essential guide to anchor the first tiles, to help keep the installation square, and to fit tile backings tightly together.
- **Establish a grid.** Keeping the installation tight and square requires creating a grid by establishing two perpendicular chalk lines, calculated at right angles on the area's center point, and then by anchoring first tiles installed snug against the two chalk lines. The two lines intersect to form a right angle and are "square" when two points, one at 8' vertically and one at 6' horizontally from center point, are exactly 10' apart. Use the 3', 4', and 5' formula as described above to set perpendicular chalk lines in smaller areas.
- **Stair-step tiles within grid.** Start by placing first tile backing snug into corner where chalk lines cross. Tile backing should align with chalk lines on two sides. Form steps by sliding each subsequent tile, backing first, into tight alignment with the previous tile. Avoid overly compressing backings or trapping yarn in seams. Second tile goes on top with one side on the vertical chalk line. The third tile goes against the right side of the first tile. Continue in the same manner, etc. Use a carpenter's square to spot check frequently. Please keep in mind that seams on any new carpet tile installation will be more obvious until the yarn has acclimated, relaxed, and blossomed with routine traffic and vacuuming. To facilitate seam blending it is recommended to tractor seams with a box tractor. Keep tiles square and tight to avoid gaps.
- **Check tightness.** Tightness or gain should be measured periodically to assure tile backings are snug and the installation is square. Determine the amount of gain or growth in the installation by measuring the total distance between 10 tiles in both directions. Ten 24" x 24" tiles have a net measurement of 240". The seam between each tile will always create some amount of gain or addition space in the installation. Measuring 10 tiles or 11 joints in either direction will provide enough seams to accurately represent the amount of gain. Whether the tile is 24" x 24", 18" x 36", or 12" x 48", the gain or space between tiles should never be more than 1/4" greater than a net measurement of 10 tiles or 11 joints. For instance, 10 tiles at 24" each should not exceed 240" in either direction. If the net measurement exceeds a gain of 1/4", the affected area(s) will need to be picked-up and re-installed tighter to stay on grid.
- **Cut / Trim tiles properly.** Carpet modules will require cutting at perimeters, floor electrical outlets, and door openings. Whenever modules are cut or trimmed, adhesive must be used. Loop pile modules may require some trimming or clipping of tufts. This is typical of this type of construction and is not a manufacturing problem. Small pieces of carpet tile should also have glue applied to the backing to help hold them in place.



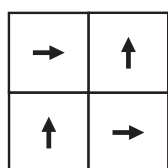
TILE LAYOUT

Mannington Commercial carpet tile may have a specific recommended installation method. Refer to brochure inside architect folder or website for installation recommendations. Please note that all patterns and colors may not be aesthetically acceptable with certain installation methods. Mannington Commercial evaluates each product and recommends the installation method for the best aesthetics. A mock up area is recommended for review before selection of an alternate method. Mannington Commercial cannot be responsible for seam aesthetics if the installation deviates from the recommended layout for a style.

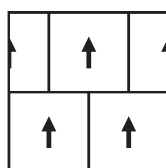
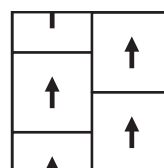
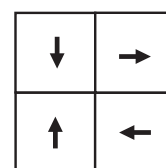
24" x 24" Installation Diagrams (Installation Methods are Style Dependent)



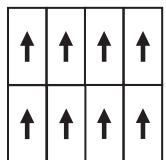
MONOLITHIC



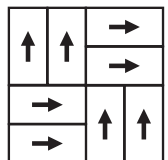
QUARTER-TURN

HORIZONTAL BRICK
ASHLARVERTICAL
ASHLARSHUFFLED/
RANDOM

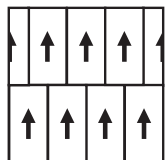
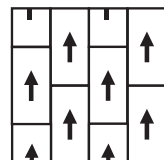
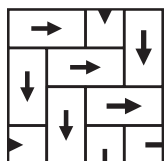
18" x 36" and 12" x 36" Installation Diagrams (Installation Methods are Style Dependent)



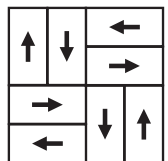
MONOLITHIC



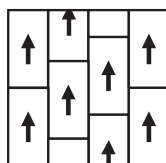
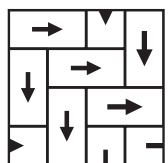
QUARTER-TURN

HORIZONTAL BRICK
ASHLARVERTICAL
ASHLAR

HERRINGBONE

SHUFFLED/
RANDOM

12" x 48" Installation Diagrams (Installation Methods are Style Dependent)

3-STEP VERTICAL
ASHLAR

HERRINGBONE

TRANSITIONS

All carpet products must be properly protected when transitioning to other floor covering or exposed stopping points. The use of a transition molding or protective strip covering the carpet edge at 1/2" is required. If a transition cannot be utilized the carpet nap must be level or slightly below the adjacent floor.

PROTECT INSTALLATION

Ideally, carpet should always be installed last in any construction or renovation project. The completed installation should be protected as finish trades complete the project, during customer move-in, or when heavy rolling carts are used.

- **Craft paper.** Bonded craft paper will protect the completed installation from construction dirt and spills while allowing floor covering primers, sealers, or adhesives to cure properly.
- **Avoid plastic sheeting.** Never use plastic sheeting to protect any installation.
- **Avoid sticky coverings.** Protective coverings with pre-applied adhesive or tackifiers can leave a sticky residue on the carpet face, cause rapid soiling, and should not be used.
- **Heavy rolling carts.** Masonite or plywood should be used in traffic lanes to prevent tile from shifting any time furniture is moved.

AFTER INSTALLATION

As the customer begins to enjoy their new installation of Mannington Commercial carpet tile, please also note the following:

- Roll entire job with a 75-100 lb roller.
- Chair pads are recommended for use under chairs with rolling casters. Chair pads can prevent premature wear even when carpet casters are used. If chair pads are not used, the appearance of the modules will decrease and maintenance and/or shifting of the modules may be required more frequently. Use only carpet friendly casters. Casters should be the flat round type with 5/8" to 1" width minimum.
- When loop pile carpet is cut into tile, some loops on tile edges will be cut in half. Vacuuming and routine use will expose those cut yarns that remained compressed and hidden during manufacturing or installation. This blossoming is easily remedied by clipping stray fiber exposed along tile edges.
- Some carpet styles require more attention from the installers during installation. Due to the light row, dark row construction of these products, dark lines may appear at the edges. **This is not a manufacturing defect.** These products will require shifting tiles around to avoid dark lines at the edges.
- On occasion, it may be necessary to replace damaged or heavily soiled modules. Modules can be replaced with new Mannington Commercial tiles from on-site inventory or from another area of the installation. A difference of appearance may be noticed when modules are replaced; this difference usually diminishes in a short time.
- Carpet module seams are usually noticeable on a new installation and do not typically have a seamless appearance like broadloom carpet. They are die cut from the face, which can create small gaps at the seams. Pile crush can occur from the bottom to the top of the pallets and may appear to have a color shade variance from tile to tile. Both conditions will improve considerably after a "walk-in" period. This allows the yarn to acclimate and respond to the crush from the stacked cartons on the pallets. Normal foot traffic and regular vacuuming will also improve seam appearance.
- To facilitate seam blending the use of a seam tractor can help blend the yarn. Pile lifting, and/or wet extraction can decrease the time needed for "walk-in" acclimation.

If there are any questions or doubts about performing a successful installation of Mannington Commercial's rEvolve II Carpet Tile or Mannington Commercial's adhesives, please stop immediately and call Technical Services at 800-241-2262, Ext. 3.