



3M™ Static Control Vinyl Floor Tile 8400 Series

Installation Tips



Notice to Installer

This Installation Tips document offers abbreviated installation tips for 3M™ Static Control Vinyl Floor Tile 8400 Series. For specific questions, please call Technical Service at 1-866-722-3736. The warranty for Static Control Vinyl Floor Tile 8400 Series will apply only if the installation instructions are followed.

Subfloor Condition and Preparation

- The subfloor must be clean, dry, free of contaminants like paint, oil, or wax, and free of defects like cracks, holes and projections; patch any defects or irregularities with latex-fortified cementitious underlayment material that meets floor load requirements.
- The subfloor must also be level to avoid misalignment of rows of tile during installation. If needed, level the floor with latex-fortified cementitious underlayment material that meets floor load requirements.
- Remove any mastic or adhesive left from previous flooring or cover it with at least 1/8 inch (3 mm) of cementitious underlayment material that meets floor load requirements.
- New concrete must be adequately cured; the product warranty does not cover problems or failures due to moisture. Ideal curing time for a new concrete subfloor is three months after the pour has been completed and the building enclosed. The key determinant for “full cure” is measurement of the MVTR (Moisture Vapor Transmission Rate) of the concrete.
- The surface of the concrete should be roughened to achieve optimum bond of the tile adhesive; mechanically shotblast or otherwise abrade all subfloor surfaces, old or new. The ideal surface texture is similar to that of 80- or 100-grit sandpaper.

Subfloor Moisture Considerations

Excessive moisture in or beneath the concrete subfloor can cause adhesion or appearance problems for any type of floor covering. Measure the MVTR of the concrete prior to tile installation, using industry-standard calcium chloridetype test kits (such as the 3M™ Moisture Test Kit 8405). Place one test kit for every 1,000 square feet of floor space, or three kits in any single room, whichever is greater.

The average of all MVTR test results must be less than 3 pounds per 1,000 square feet per 24 hours; for any single reading, the maximum allowable value is 3.5 pounds. Record the test results and keep them with the job file. Based on industry experience, floors on concrete that meet this guideline have a low probability of moisture-related problems. Contact 3M Technical Service at 1-866-722-3736 with any questions.

Conductive Adhesive

Use only a 3M-approved conductive adhesive to install 3M vinyl floor tile. Follow all instructions that come with the adhesive, including recommended trowel size, recommended spreadrate, and open time.

NOTE: Ambient conditions (temperature, humidity), subfloor surface condition and absorption rate (porosity), and applicator technique can all affect the proper application and function of the adhesive. The most important requirement is to achieve adequate adhesive transfer to the back of each tile after it has been laid into the adhesive and rolled, as per instructions on this sheet.

Throughout the installation, periodically lift an embedded tile and inspect the backside to ensure that at least 80-90% has been covered with the adhesive. This level of coverage will result in the proper adhesive bond and proper electrical conductivity. If the coverage is less than 80-90%, adjust the installation procedure accordingly.

Inadequate coverage on the back of the tile indicates that either:

- there is not enough adhesive being applied to the substrate (due to incorrect trowel size or improper troweling technique),
- the adhesive had begun to set up before the tile was laid, or
- the newly laid tile was not rolled properly or soon enough.

The correct trowel size is important. If the notches are smaller, too little adhesive will be spread, resulting in bond strength and conductivity below specification. If the notches are too large, excessive adhesive will be spread and may seep up between the seams, especially during rolling. Excessive adhesive can also cause the tiles to shift or “float.” Throughout the installation, routinely check for any changes in the notch size due to wear; replace or re-notch worn trowels.

Material Considerations

Precondition the tile and adhesive to the environment of the job site for at least 48 hours prior to installation. Store the materials in the ambient conditions of the installation location and at the recommended installation temperature (65°F to 85°F). Stack the cartons of tile upright, no more than 5-high. Check shade lot numbers before beginning the installation to ensure that like shade lot numbers are installed in an area.

Tile Installation and Grounding



Figure 1

CLEAN THE FLOOR OF DUST AND DEBRIS (Figure 1)

After properly preparing the application surface (as described in the first paragraph), sweep/vacuum/mop the area thoroughly. Any pieces of debris that remain can “telegraph” through the newly installed tile and be seen as bumps in the finished surface.

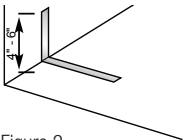


Figure 2

POSITION AND INSTALL COPPER GROUNDING STRIPS

Ground strips should be installed prior to application of the conductive adhesive and tile, which will be applied directly on top of the copper strips. Identify the proper locations for the strips, typically along the base of walls or at columns where there is access to a grounding point (e.g., electrical outlet). Install one (1) ground strip for each 1,000 square feet of floor area, with a minimum of two (2) in any individual room.

Peel the paper liner from the adhesive side of the copper foil strip. (CAUTION: The edges of the copper strips are very sharp.) Apply each strip as shown (Figure 2), using the adhesive side to stick about two-thirds of the strip to the floor surface and the remaining one-third vertically up the wall or column.

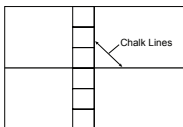


Figure 3

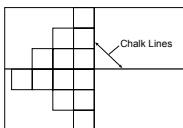


Figure 4

FLOOR TILE LAYOUT

Locate and mark the center of the room. Lay out the application pattern for the floor tile in sections, starting in the center and working outward. Mark the sections with chalk lines. To control the proper application of the adhesive, size each section to match the recommended spreadrate; for example, the typical spreadrate for 3M™ Conductive Floor Tile Adhesive 8403 adhesive is 135 square feet per gallon unit, so a section 3' x 45' would be appropriate. Commonly used layout patterns are straight line (Figure 3) or pyramid (Figure 4).

CONDUCTIVE ADHESIVE APPLICATION

Mix the adhesive thoroughly, following instructions on the container. Spread adhesive over the first marked section, using the designated trowel size. (For 3M™ Conductive Floor Tile Adhesive 8403, the proper notch size is 1/16" square notches on 1/16" centers.) (Figure 5) Allow the applied adhesive to sit for about 20 minutes before laying tile to allow any residual solvent to “flash off.” Spread the adhesive directly over any copper ground strips. Working time for the mixed adhesive is roughly one hour, but this time can vary with ambient conditions.

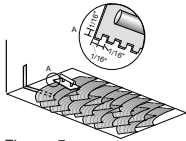


Figure 5

TILE INSTALLATION

Avoid kneeling on freshly laid tiles by working from the “dry side.” If it is necessary to work from on top of freshly laid tiles, use a kneeler board. Carefully “drop” each tile into place and press adjacent tiles firmly together; do not slide the tiles into place. Within 30 minutes after installation, roll each section of tile with a approximately 150 pounds (68 kg) sectioned roller to firmly embed the tiles into the adhesive. Roll the tiles twice in perpendicular directions. The goal is to get the adhesive to cover 80-90% of the backside of each tile. Throughout the installation, periodically lift pieces of tile to help ensure that this is being achieved.

ADHESIVE CLEAN-UP

Adhesive can ooze up through the seams and smear onto the tile surface. Immediately clean up any smeared adhesive with clean, soapy water and a clean rag. It is critical to rinse the rag thoroughly during use or to frequently use clean rags. Any adhesive not cleaned up immediately will be very difficult to remove after it cures.

CURING TIME

Newly installed tile can be walked on after the adhesive has had at least 24 hours to cure. Wait at least 48 hours before moving equipment or allowing rolling traffic onto the floor.

GROUND STRIP CONNECTION

(NOTE: This work should be done by a licensed electrician)

Connect the copper ground strips to ground. To ground in accordance with ANSI/ESD S6.1, use a #14 or larger copper wire with a ring tongue terminal at each end. Connect one ring terminal to a grounded receptacle and connect the other terminal to the exposed copper ground strip. (Fig. 6)

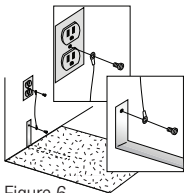


Figure 6

Maintenance for the 3M™ Static Control Vinyl Floor Tile 8400 Series

Never Wax Static Control Vinyl Floor Tile 8400 Series! Sweep or damp mop the entire floor and then clean it using a low-speed buffer (150-350 rpm) with a 3M™ Red Buffer Pad 5100 and a neutral-pH cleaner (3M™ Neutral Floor Cleaner or 3M™ Twist 'n Fill™ Chemical Management System #3). If ground-in dirt or scuff marks remain, use a 3M™ Blue Cleaner Pad 5300 with the cleaner.

Note: A trigger-spray bottle of 3M™ TroubleShooter™ Stripper may also be useful for spot removal of small, heavily soiled areas or scuff marks. Once the floor has been cleaned and allowed to dry, use a clean, dry Red Buffer Pad 5100 to buff the tile to its natural sheen. (The floor care products mentioned above are available from 3M Building and Commercial Services Division. Call 1-800-852-9722 for a supply location near you.)

Handling and Safety Precautions

Read all Health Hazard, Precautionary, Personal Protective Equipment and First Aid statements found in the Material Safety Data Sheet (MSDS) and/or product label of chemicals prior to handling or use.

Important Notice

All statements, technical information, and recommendations related to 3M's products are based on information believed to be reliable, but the accuracy or completeness is not guaranteed. Before using this product, you must evaluate it and determine if it is suitable for your intended application. You assume all risks and liability associated with such use. Any statements related to the product which are not contained in 3M's current publications, or any contrary statements contained on your purchase order shall have no force or effect unless expressly agreed upon, in writing, by an authorized officer of 3M.

Limited Warranty

All statements, technical information, and recommendations related to 3M's products are based Subject to the provisions of this Limited Warranty, 3M expressly warrants that Static Control Vinyl Floor Tile Series 8400 will be free from defects in material and manufacture for a period of ten (10) years from the date of purchase. 3M warrants that the 3M Product will perform in accordance with test method ESD S7.1 for the lifetime of the Product. This applies to both "Static Dissipative" Tile (surface-to-ground resistance of 1x106 to 1x109 ohms) and "Conductive" Tile (surfaceto- ground resistance of 2.5x104 to 1x106 ohms) subject to the Warranty Exclusions listed below. Must be installed using 3M approved conductive adhesive.

Exclusive Remedy; Limited Liability; Claims Procedure

Any Claims for surface defects or variations in color or pattern must be communicated to 3M in writing prior to the actual installation. If this product is proved defective within the warranty period stated above, the exclusive remedy will be, at 3M's option, to repair or replace the 3M Product or to refund the purchase price of the 3M Product. **IN NO EVENT WILL 3M OR ANY SELLER BE RESPONSIBLE OR LIABLE FOR SPECIAL, INCIDENTAL, OR CONSEQUENTIAL LOSSES OR DAMAGES UNDER ANY LEGAL THEORY INCLUDING BUT NOT LIMITED TO CONTRACT, NEGLIGENCE OR STRICT LIABILITY. 3M MUST BE NOTIFIED IN WRITING OF ANY DEFECT AND SUCH DEFECTIVE PRODUCT MUST BE RETURNED TO 3M ALONG WITH A PROOF OF PURCHASE.** 3M will not accept the return of any product without the prior approval of 3M. If the product is already installed, then 3M must examine and verify the defect.

3M, TroubleShooter and Twist 'n Fill are trademarks of 3M Company.

Warranty Exclusions

(1) There is no warranty for (i) workmanship of installation and (ii) dissatisfaction, problems, or damage due to installation or maintenance, other than as recommended by 3M. (2) Excessive moisture in or below the concrete slab can result in adhesion problems and/or surface defects (blistering or cracking) in any flooring material. This warranty does not include delamination or surface defects due to the presence of alkali or other contaminants in the subfloor or due to hydrostatic pressure or moisture vapor transmission rates greater than 3 pounds per 1000 square feet per 24 hours (ASTM F-1869). (3) There is no warranty for any reduction in the gloss of the tile from use. (4) There is no warranty for damage due to accidents, gouges, scuffs, scratches or indentation. (5) If Buyer's purchase includes goods from another manufacturer, only the warranty given by that particular manufacturer will apply to those specific goods. (6) **3M MAKES NO OTHER WARRANTIES INCLUDING, BUT NOT LIMITED TO, ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE.** The express warranty will not apply to defects or damage due to accidents, neglect, misuse, alterations, operator error, or failure to properly install, maintain, clean or repair the 3M Product. (7) 3M Flooring Products that are sold as "seconds" are sold strictly on an "as is" basis without any warranty. NOTE: No person or representative is allowed to give any other or any additional warranty other than what is stated above unless approved by an officer of 3M.



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