

# INSTALLATION BASICS FOR CARPET TILE

## Basics

Bentley Mills has adopted the Carpet and Rug Institute's "Standard for Installation of Commercial Carpet," (CRI 104) ([www.carpet-rug.org](http://www.carpet-rug.org)) as the basic minimum industry guideline for the installation of Bentley Mills carpet. Please note, however, that the instructions for some specific styles may exceed the basic minimum requirements set forth in the CRI 104 Standard. When consulting the CRI 104, please make certain it is the most recent edition and contains the latest updates. Copies may be obtained on the CRI website. These instructions relate to Bentley Mills' carpet tile and include NexStep® Cushion Tile, AFIRMA™ Hardback Tile and AFFIX™ Hardback Tile.

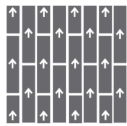
## Layout

Carpet tile seams will never be invisible and are usually most visible on the day of installation. Seams become increasingly less visible with routine vacuuming and foot traffic. Bentley Mills goes to great lengths to determine how a particular style should be installed to help maximize its appearance in all standard color combinations. The variety of styles and tile sizes make it extremely important for the installer to know whether the preferred installation layout for a particular style is monolithic, brick, ashlar, quarter-turn, or herringbone.

Some styles allow for a variety of installation layouts. Others have only one or two recommended layout methods to assure an acceptable aesthetic for the client. Installation layout is critical for a successful installation. The installer should know which recommended layout is preferred by the end user prior to starting the installation. If there are questions about the recommended layout, please contact Bentley Mills prior to starting installation of any carpet tile style.

## Tile Installation Reference

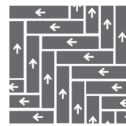
### 9 in x 36 in Carpet Tile:



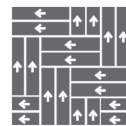
ASHLAR



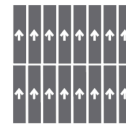
BRICK



HERRINGBONE



DOUBLE  
HERRINGBONE



MONOLITHIC

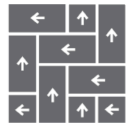
### 18 in x 36 in Carpet Tile:



ASHLAR



BRICK



HERRINGBONE



PARQUET



MONOLITHIC



RANDOM

### 24 in x 24 in Carpet Tile:



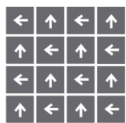
ASHLAR



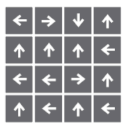
BRICK



MONOLITHIC



QUARTER  
TURN



RANDOM

# INSTALLATION BASICS FOR CARPET TILE

## **CRI 104**

In addition to the specific instructions detailed here, the Carpet and Rug Institute Standard for Installation of Commercial Carpet (CRI 104) must be closely followed as basic minimum requirement for floor preparation and installation on all carpet installations.

## **Concrete Sub-Floor**

All new concrete must be fully cured, clean, and dry. Old concrete must be clean, dry, level, and free of paint, dirt, old adhesive, oils, or other contaminants. All concrete floors must comply with moisture and alkalinity requirements prior to proceeding with installation. The concrete should be free of curing or parting agents that interfere with the bonding of the adhesive. Whenever a powdery surface is encountered like lightweight concrete, a sealer compatible with the adhesive, such as W.F Taylor 2025 Primer, must be used to provide a suitable surface for direct glue installation.

Level the floor to the standards outlined in the American Concrete Institute specifications for Concrete Building ACI 301 in regards to trowel finish and finishing tolerance. Leveling compounds must be Portland-based cement. Patch cracks and holes with one of the following approved patching compounds: Ardex Feather Finish, Ardex K-15, Henry's 547, Mapei Plani Patch, or similar cement based compound. Do not exceed manufacturer's recommendation for patch thickness. Gypsum based compounds are not recommended.

Please note: Incompatible adhesives, solvent-based materials, and other contaminants should be removed 85-90% and encapsulated with W. F. Taylor Encap 500 Adhesive Residue Encapsulator prior to installation of carpet. Contact Bentley Mills for further information at 800.423.4709.

## **Other Substrates**

Underlayment grade OSB, APA registered underlayment plywood, Gypsum or lightweight concrete must be primed with W. F. Taylor 2025 primer.

## **Concrete Moisture**

Concrete floors, even with adequate curing time, can present an unacceptable moisture condition by allowing excessive amounts of moisture vapor to pass through to the surface. Vapor emission from concrete sub-floors can destroy adhesive and cause installation failure.

## **Test Conditions**

Accurate testing of concrete floors requires the building to be fully enclosed and the air conditioning and heating system should function to a level similar to that expected when the space is occupied.

## **Calcium Chloride**

The test must be administered in strict adherence to the specifications of the ASTM F1869 test procedure. Moisture emissions must not exceed twelve (12) pounds per 1,000 square feet for 24 hours. If the test results are higher than 12 pounds, do not proceed with the installation until subsequent testing demonstrates the emission rate is 12 pounds or less. Once testing has confirmed the moisture emission rate is within stated tolerances, a chemical pH of the slab must also be determined and confirmed to 12 pounds or less.

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## Relative Humidity

The test must be administered in strict adherence to the specifications of ASTM Standard F2170 and as described here. Moisture levels in the concrete sub-floor must be 99 percent or less before proceeding. Once levels have been determined to be 99 percent or less, then the chemical pH of the concrete sub-floor should also be tested. In the event of a discrepancy between calcium chloride test results and the results from relative humidity testing, the decision to remediate or correct excessive vapor emission should be based on results from relative humidity testing. Relative humidity testing will take precedence over the calcium chloride testing when both tests are performed on the same project.

## Chemical pH

All concrete floors, old or new, should be tested for alkalinity by using an alkalinity test kit, a pH Test Probe or pH Test Meter. The slab should have an alkalinity level ranging from 7.0 to 12.0 to be suitable for installation. Chemical pH test strips should be capable of measuring a range of 0-14. The area to be tested must be enclosed and acclimated as described.

## Conditioning Carpet

Let the carpet tile acclimate prior to installation. The amount of time necessary for conditioning will depend upon potential temperature extremes during storage. Carpet subject to extreme temperature fluctuations will require more acclimation time than carpet stored in a climate controlled building. During periods of high humidity more time may be required to allow the carpet to acclimate. Water-based adhesives may need more time to flash off prior to placing carpet onto the adhesive. Ideally, the carpet should be allowed to acclimate in the space to be carpeted for 24 hours whenever possible.

Please note: Bentley Mills cannot be held responsible for carpet stability issues such as curl, dome, expansion, or contraction when carpet is not properly conditioned prior to installation.

## Full Spread

Once the floor has been properly prepared as detailed in CRI 104, a full spread method is most important in preventing lateral shifting and ensuring the successful installation of Bentley Mills' carpet tile. Full spread simply means that the entire area to receive carpet tile should be covered only with Bentley Mills' Healthbond 2399 pressure sensitive adhesive. Use a 3/4 in nap paint roller for RH levels up to 95 (27-34 square yards per gallon spread rate). Use a 1/16 in x 1/32 in x 1/32 in U-notch trowel for RH levels between 95.1- 99 (25-30 square yards per gallon spread rate).

**All full spread installations must be rolled with a 75-100lb roller to ensure proper adhesion.**

## Centering/Squaring

Divide the room into four quadrants and snap a chalk line. Make sure quadrants meet at right angles. Take care to keep perimeter carpet tile cuts larger than half size or 9.84 inches (25 cm). Arrows are printed on the back of carpet tiles, showing pile direction. For monolithic installation, make sure arrows point in the same direction throughout the installation.

## Through Doorways

In order to spread adhesive throughout the room and allow for a single set-up time, an additional perpendicular line should be established and squared from the center line of the room to run through doorways. Care should be taken to measure a distance equal to an even number of carpet tiles from the room's center line to a point in the doorway. That point in the doorway will

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determine where the first tile is installed. By establishing a line through the doorway and perpendicular to the centered chalk-line grid in the room, adhesive can be spread in the room. The installer can spread back through the doorway and begin a square installation in the doorway without having to track back through the adhesive. Once the chalk lines have been established at right angles in the center of the room, install only one carpet tile. This first tile should be placed snugly in the corner formed by the 90-degree angle of the chalk lines with two sides of the tile aligned along two chalk lines of one quadrant. Repeat procedure on remaining quadrants.

### **Tipping Tiles Into Place**

Tip individual carpet tiles into place. Please take care to prevent tile corners from rolling under when they are positioned. Sliding tiles across the adhesive will cause corners to roll under and should be avoided. Frequently check tile joints for proper alignment and firm abutment. Avoid tight or overly compressed joints that can cause peaking edges or corners.

### **Check Tightness**

Expect a slight gain as the modules are installed because of spacing at the joints. To ensure a tight installation and minimize the amount of gain, measure 10 squares (in length) from the front side of the first tile to the back side of the 10th tile. The measurement should be slightly more than 240 inches with a gain no greater than about 1/8-inch or 3 millimeters. If gain exceeds 1/8-inch, tiles should be reinstalled and butted more tightly along the backing edge. Reposition and check again.

### **Important Advice**

These installation procedures are recommendations designed for the experienced and competent installer. Strict adherence to these procedures will result in a quality installation under most conditions. Any situation that could alter the installation procedure or jeopardize the possibility of a satisfactory installation, such as identification of defective material or unusual installation conditions, creates a responsibility for the installer to STOP the installation immediately and call Bentley Mills Customer Care at 800.423.4709. Bentley Mills will not be responsible for substandard installation or for an installer's decision to proceed with an installation that is not resulting in a satisfactory or acceptable finished installation.

### **Contact Us**

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