



Broadloom Installation Instructions

Except where exceeded or modified by these instructions, Milliken considers CRI documents 104 (Commercial) to be the minimum acceptable standard for the installation of its carpet products.

ATTENTION INSTALLER: Extreme care and effort have gone into the selection and manufacturing of this carpet. Before installation begins, please make certain you have the proper installation tools and knowledge to install this type of product. Proceeding without the right tools or proper knowledge will jeopardize a successful installation and possibly void the manufacturer's warranty.

For any additional topics not specifically covered in this bulletin that you may have concerns about or require assistance should be directed to Milliken's Technical Service Department between the hours of 8:00 am till 5:00 pm eastern standard time at: 1-800-308-4344, select option 2.

Below you will find Milliken's manufacturing tolerances for patterned carpet. Carpet is a textile fabric subject to inevitable processing variations. Verify the product received is the product that was ordered and check for any visible defects. Pattern variation can be characterized by three conditions; 1) bow 2) bias/skew and 3) pattern repeats. To ensure a successful installation the carpet installer must perform certain measurements on each uninstalled breadth of carpet, making multiple checks along the length, and consider the average. With most pattern carpets these variations are not visually apparent. However, in certain geometric patterns the variation may appear to be more than actually present, especially true in very large installations. All carpet should be dry-laid prior to installation to evaluate the visual effect and acclimate to the climate conditions for at least 12 to 24 hours. Power stretchers and stay nailing are commonly required in addition to time requirements to effectively make adjustments during the installation process. The above requirements are also directed by CRI-104, Standard for Installation of Commercial Carpet. Should one or more of these processes not be performed it could ultimately affect the end-user's satisfaction, as well as, Milliken's warranty. *Thank you in advance for your support and cooperation.*

Visible Defects: 1) Color and Style 2) Concealed Damage 3) Manufacturing defects

Subfloor: Must be cleaned, free of dust, dirt, grease, wax, paint, curing or parting agents or any other substance that may affect the bond. Old adhesive must be removed, or encapsulated with Milliken TriSeal or a substantially similar adhesive remover. (Please refer to applicable installation requirements for adhesive remover.) Concrete floors must be level, fully cured, free of excessive moisture emissions and alkali. Underlayments mixed with water are acceptable; however they must contain a latex additive. Concrete floors with a moisture emission rate exceeding 5.0 lbs/ 1,000 sq. ft. in a 24 hour period or 80% humidity per ASTM F2170, and with a surface pH not reading between 7.0 and 9.0 require corrective measures. Milliken recommends application of a non-porous, polyurethane film barrier. (For more information, see Milliken's Encore Driseal).

Adhesive: A premium multi-purpose adhesive that contains at least 60% resinous solids must be used. (For more information, see Milliken's Premium Adhesive #29). Full spread adhesive application is required.

Recommended Trowel Sizes:

Floor Covering Types	Trowel Recommendation	Coverage
Double Stick Installations Pad to Floor	3/32" x 3/32" x 3/32" V-Notch	10 - 15 square yards/gallon
Non-Patterned Products	1/8" x 1/8" x 1/16" V-Notch	8 - 10 square yards/gallon
Patterned Products or Double Stick Installations Carpet to Pad	1/8" x 1/8" x 1/16" U-Notch	5 - 8 square yards/gallon

Roll carpet with a 35 lb. roller to ensure glue transfer and to roll out bubbles.



Carpet Conditioning: Prior to installation, carpet should be taken to the job site and given 12 to 24 hours to acclimate which will allow carpet to relax and become more pliable for seaming and stretching for pattern match. The ideal temperature of the space would be 65 F. for 48 to 72 hours before beginning.

Pattern Matching: Always make cut sizes longer than required length. This will allow for some additional patterns for trimming the carpet against the wall. Dry lay all pieces prior to starting the glue spread or hot melt tape application. This allows for potentially relocating some pieces for a more acceptable pattern match. PRE-STRETCH breadths prior to seaming. This allows for closer matches and less stretching while the carpet is in wet adhesive.

Room Squareness: Check the installation area for squareness and strike a chalk line perpendicular to an outside wall across the room. Align the carpet to these lines, which will help you to keep the patterns aligned and square across the room.

Dry Lines: Tool used to keep pattern straight across breadths of carpet.

Brief Instructions and Requirements. For more specific questions please refer to the contacts listed above.

1. Direct Glue Down: When all adjoining breadths are in place, spread adhesive up to 24" from the seam and adhere the elongated breadth. Lay carpet into adhesive bed so that the carpet may slide in the adhesive to obtain pattern match. Match pattern at the midpoint of the seam so that elongations can be corrected to each wall. Using a two head power stretcher or a "dead man", stretch the shorter patterns to match longer ones. Use stay nails to hold the stretched side on pattern match and use a knee kicker to close gaps or push any fullness toward the center of the carpet. Leave stay nails in place until adhesive has reached adequate strength. Recommended seam sealer is a latex based sealer. For hot melt seams use latex or acrylic based seam sealer. DO NOT protect with plastic. We recommend craft paper or corrugated boxing material.

2. Double Glue: Incorporate all procedures specified for pattern matching as listed above, except use a "cotton head" power stretcher instead of a standard head. This will minimize damage to the cushion. To ensure adequate adhesive transfer, carpet with secondary backing should be pressed into the adhesive bed using a roller weighing 35 pounds. Roll in both directions. DO NOT over roll or use a heavier roller as this may push too much adhesive into the backing, resulting in a premature installation failure. Seams require the use of a hot melt tape specifically designed for double glue installation. Acrylic or latex seam sealer is required. To allow for proper adhesive cure, minimize foot and rolling traffic for 24 hours. DO NOT protect with plastic. We recommend craft paper or corrugated boxing material.

3. Stretch-in: Incorporate all procedures specified for pattern matching as listed above. Commercial or architectural tackless strips must used. Apply seaming tape and seam sealer to both edges and allow to sufficiently dry. A double headed or "cotton head" power stretcher and possibly a deadman should be used to achieve a proper pattern match while the seam is being constructed. Once the seam has cooled, the carpet is ready to be stretched.

The carpet should be stretched from the center in both length and width angling slightly toward the corners. After the carpet is stretched, it can then be trimmed and tucked around the walls. DO NOT protect with plastic.

Should other trades perform work in areas where Milliken carpet has been installed, the installer and/or general contractor assumes total liability for damage and deterioration, including but not limited to wear, compaction, soiling, staining, abrasion and stretching. Failure to provide adequate protection until occupancy may void all Milliken's Warranty.

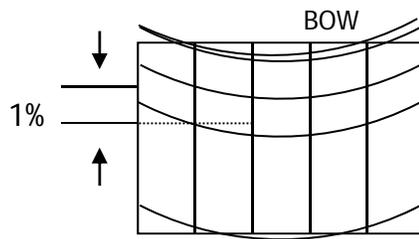
PROTECTING CARPET AFTER INSTALLATION: Milliken recognizes CRI 104 (The Carpet and Rug Institute) as the standard guideline for protecting carpet and associated materials after installation. CRI 104 specifically states: "It is recommended that carpet be the last trade on any job site. However, if it is required to protect the finished floor covering from soil or paint, or if any additional work is required to be done after the installation, the carpet should be covered with a non-staining building material paper. Protect the installation from rolling traffic by using



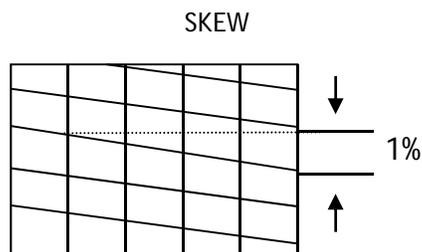
sheets of hardboard or plywood in the potentially affected areas." Also, CRI cautions: "Self-adhering plastic film may leave residues that result in rapid soiling after removal. Do not place plastic sheeting over any carpet installation because it may present a slip hazard. Most importantly, plastic coverings will trap moisture, retard adhesive curing and may promote mold growth."

MANUFACTURING TOLERANCES (uninstalled):

1. **Bow** - approximately 1% in twelve feet (144 inches) of the width or 1.5 inches. A chalk line is drawn across the full 12' width from match point on one side (A) to match point on the opposite side (B) as close to the selvage edge as possible. At all pattern points across the width, the design should be approximately 1% of this line. Multiple checks along the length should be performed and the average considered.

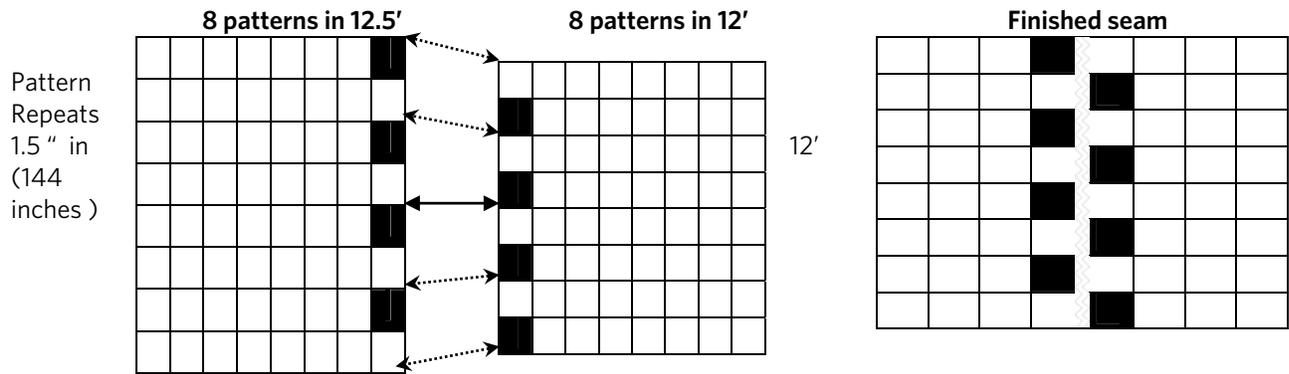


2. **Bias/Skew** - approximately 1% in twelve feet (144 inches) of the width or 1.5 inches. Using a 4-foot T-Square align the short edge of the square along one pattern edge. Making sure the square's short side is perfectly parallel to the carpet pattern, place one end of the chalk line with the corner of the square. Pull the chalk line tight and parallel to the long side of the square. Follow the pattern and line across the carpet width. The difference between the pattern and the line should be approximately 1%. Multiple checks along the length should be performed and the average considered.



3. **Repeat Variation or Pattern run off (Length)** - You must know the specifications of your pattern repeat. The variation with-in twelve linear feet (144 inches) can be approximately 1.5 inches gained or lost. Divide 144 (inches) by the size (lengthwise) of your pattern repeat. For instance, if your pattern repeat is 8 inches the pattern should repeat itself 18 times in 144 inches. By pre-measuring your repeats you are able to work from the longest repeat gradually to the shortest repeat with-in the dye lot. It may require the rolls to install out of roll sequence. This should not be a problem as Milliken's rolls are manufactured in the same dye lot, **unless** otherwise specified. Pattern repeat variations across the width can be determined in the same manner. This is important only on end-to-end "cross" seams.

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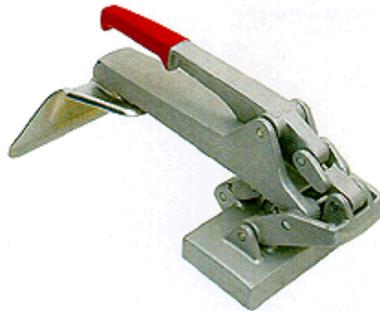


Carpet does not shrink. Therefore, stretch shorter repeat to longer repeat starting in the middle and stretching in both directions.

Pattern Matching Tools Required



POWER STRETCHER



MINI STRETCHER



STAY NAILS



DEADMAN & DRYLINE

8-7-12