Milliken SDN Broadloom Carpet - Installation Instructions

Milliken **strongly** recommends the use of a **Milliken Certified Installation Contractor** to install all broadloom products. Installation contractors certified by the Floor Covering Installation Board **(FCIB)** as well as firms that can document the employment of installers certified by the International Certified Floor Covering Installers Association **(CFI)** at the C2, R2, or Master level fare recognized as sources of recommended quality installation labor.
APPLICABLE CRI INSTALLATION METHODS: Except where exceeded or modified by this instruction, Milliken recognizes the CRI™ 104 Standard for Installation of Commercial Carpet, and CRI™ 105 Standard for Installation of Residential Carpet September 2015 as the minimum acceptable standards for the installation of its carpet products.

NOTICE: Dealer and/or installer must inspect carpet prior to installation. Milliken cannot be responsible for visible defects after carpet has been cut and installed.

CUSHION RECOMMENDATIONS:

COMMERCIAL: Firm pad is recommended

- Slab Rubber (vulcanized synthetic rubber such as TredMor®): Minimum Density 21#/cu. ft., Maximum Thickness ¼" (6.4 mm.)
- Frothed polyurethane: Healthier Choice Foundation SE Density 12#/cu ft. Thickness 0.250".
- Pad should be installed 90° (right angle) to intended carpet installation.

Note: Improper cushion is a leading cause of re-stretch callbacks, seam failure, unsatisfactory carpet performance and poor appearance retention. Pad seams should be glued – do not staple or tape. Duct tape can be used on stair nosing edge to minimize wear impact.

INSTALLATION LAYOUT & ACCLIMATION

To understand and assure overall pattern layout of SDN Broadloom carpet, it is imperative to do the following:

- Drops should be dry laid for a minimum of 24 hrs to allow for acclimation with HVAC running.
  - Indoor temperature rage 65° to 95° F (18° to 35° C).
  - Maximum Relative Humidity 65%.
- Drops should be cut 1 pattern repeat plus 3" to 4" longer than area measured.
  - Pattern repeat size should be considered.

CUTTING PROCEDURE:

- Trim selvage edge approximately 1/4" inch from the edge using a loop pile cutter.
- Choose the appropriate row to cut that yields complimentary characteristics of the pattern for a proper match.
- Remember that seam sealing is mandatory on Milliken SDN broadloom carpet.
- **All cut edges MUST be sealed prior to seaming**. Milliken Barrier Bond Seam Sealer or Touchdown #710 Kwik-Seam Latex Adhesive by W F Taylor is recommended.

SEAMING PROCEDURE:

1. Two methods of seaming Milliken SDN Broadloom carpet are acceptable: Kool Glide Iron or hotmelt with premium seam tape. (thermoplastic or "hot melt" method).
2. The following seaming tapes are recommended:
   - Kool Glide seam tape – must cut edges/flange off each side of tape for double stick installation.
   - Orcon K-80 "double stick" - Orcon Corp., 510-489-8100.
   - The seaming iron should be equipped with a heat shield to prevent damage to backing and face yarns. Seams should be made on a hard, flat surface.

   All cut edges MUST be sealed prior to seaming. Milliken Barrier Bond Seam Sealer or Touchdown #710 Kwik-Seam Latex Adhesive by W F Taylor is recommended.
   - Recommend quart size container to minimize the drying impact of open containers.

PATTERN MATCH TECHNIQUE:

Trim both breadths to be seamed along complementary pattern points as directed above. For best results and maximum ease of installation, lengthwise pattern repeat, pattern bow and pattern bias should be measured on all rolls to be installed. Site measurement of these properties allows the contractor to "fine tune" the sequence of installation.

1. LENGTHWISE PATTERN REPEAT (L.P.R.): **** MUST DEFINE PATTERN REPEAT FOR EACH SKU***
   - Divide published length pattern dimension into 144" for 12' (3.66m) wide material or 162" for 13'6" (4.1m) wide material. This answer will generally be a whole number. If not, round up to the next higher number. Example: On 13'6" (4.1m) wide material having a 40.5" length repeat, 40.5 goes into 162 four (4) times.
   - Measure along both selvages on each roll the number of pattern repeats obtained above (four in this example). This measurement will typically be slightly larger or smaller than 144" or 162" (3.66m or 4.1m). In any dye lot, all measurements obtained in this way will vary no more than 2" (5cm).

2. PATTERN BOW (WIDTH AND LENGTH):
   - For width bow, pick two identical pattern points on the same widthwise pattern line – one at the left edge and one at the right.

- Pull a chalk line or tightly stretched string between these points across the width (12' or 13'6", 3.66m or 4.1m). Measure the distance between the chalk line or string and the same pattern point at the point of greatest separation. This will be no more than 1" (2.5cm) across 12' or 13'6" (3.66m or 4.1m).
- For length bow (also called "trueness of edge"), use the same procedure connecting common pattern points 40 feet (12.6m) apart along the edge of the carpet. The pattern will be no more than ½" (12.8mm) from the string or chalk line.

3. PATTERN BIAS:
   - Starting at the same pattern points isolated in the width bow measurement – call these "A" and "B" – measure lengthwise along both selvage edges exactly 9' and mark these points with a small piece of tape. Call these points "C" and "D".
   - Measure from point A diagonally to point C and from point B diagonally across to point D. The difference between these measurements will not exceed 2 3/8" (6.0cm). More detailed information sheets on each of these criteria are available if needed.

GENERAL PATTERN PROCEDURES:
- **Sequence cuts according to field verified Length Pattern Repeat. (Longest to Shortest)**
- Shift trimmed breadths to achieve a match near the midpoint of the seam

DIRECT GLUE-DOWN INSTALLATION:

FLOOR PREPARATION:
- All dust, foreign matter, non-compatible adhesive residues, grease, paint, wax, oil, dirt, etc. should be removed.
- Cracks, holes and depressions should be filled with a Portland cement based patching material. Protrusions should be removed.
- Floor surface should be smooth and non-undulating to within 1/8" (3.2mm) in 10 feet (3.0m) in conformance with ACI standards.
- Standard alkalinity and moisture (Rh) tests should be performed. Concrete slab pH should not exceed 9.0. Excessive moisture will interfere with the curing/performance of the adhesive. Rh should not **exceed 90% as measured by the in situ Relative Humidity Probe Test (per latest version of ASTM F2170).** Milliken subscribes to the industry position that this testing should be performed by an independent agency trained and certified to perform this testing.
- "Sealing" of concrete floors is at the discretion of the flooring contractor. Excessively porous or dusty concrete slabs are the only exceptions. Prelude by XL Brands is a recommended product should this type of treatment be deemed necessary. This type of "sealing" is not a curative for excessive water vapor emission. If out of tolerance emission levels are encountered, call Technical Services for assistance.

RECOMMENDED ADHESIVES:

Premium broadloom adhesive such as Milliken Broadloom Carpet Adhesive, must be used. This applies to both Direct Glue down and double stick installations.

COVERAGE:
- Direct glue: 10 to 15 sq. yds. per gallon using a 1/8" x 1/8" x 1/8" (3.2mm x 3.2mm x 3.2mm) "U" notched trowel.
  - Application rate may vary depending on substrate.

INSTALLATION PROCEDURES – ADHESIVE INSTALLATION:
- Trowel notch size, shape and adhesive coverage rate MUST be maintained as noted above. Insufficient adhesive is the #1 cause of failure in all adhesive installations.
- Proper open time must be allowed. Temperature and relative humidity influence adhesive open time.
- If patterned carpet is being installed, installation sequence MUST be determined based on pattern repeat size as described above. Rolls should be sequenced according to length pattern repeat. .
- Patterned carpets must be cut along complementary pattern characteristics to insure a proper match. The use of hotmelt seaming tape to achieve and secure pattern match is strongly recommended on all double stick installations and is very helpful on direct cement installations where repeat variation is significant. Orcon K-80 seam tape is the recommended product for both direct and double stick applications.
- Obtain a net seam – do not compress. Use knee kicker or "crab" stretcher to position.
- Bead all edges with seam sealer on all carpets regardless of construction. (See previous section on seaming procedures and recommended products.)
- Avoid air entrapment. Lay carpet into adhesive working in both directions from center. Depending on the amount and type of pattern variation present, it is sometimes necessary to vary the way the carpet is placed back into the adhesive. For severe bow or bias, it is more efficient to roll the carpet into the adhesive end-to-end in short sections, working and straightening each section before proceeding. Where significant pattern repeat variation is present, it is generally easiest to assemble the seams "dry" using the K-80 seaming tape noted earlier and then roll the carpet sideways to expose the floor under the seam. The backing paper on the K-80 is then removed and adhesive spread. The carpet is rolled back into the adhesive once the proper open time is observed.
- Roll installed carpet with 75 lb. (34 Kg) maximum roller in length direction only.
- Restrict all traffic and furniture movement for at least 24to 48 hours.
- Carpet vacuuming should be restricted for 72 hrs.

DOUBLE STICK INSTALLATION :

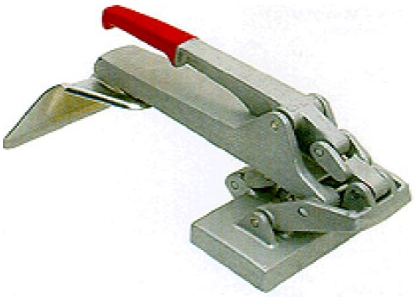
- Pad selection – see "Cushion Recommendations" (excluding use of wool pad for double stick install).
- Plan pad installation for longest continuous lengths possible considering traffic flow and seaming diagram seam placement.
- Pad seams should be 90 degrees (right angle) to intended carpet seams.
  - If not possible, carpet seams should be offset by at least 6" from pad seams.

- Affix pad to floor according to the pad manufactures recommendation. In most situations this will require the use of a pressure sensitive adhesive such as Milliken Non-Reactive Standard Adhesive or Milliken Broadloom Carpet adhesive.
- PSA application rate for pad to floor. Typically, 1/16" x 1/16" x 1/16" square notch trowel – consult adhesive manufactures recommendation.
- Allow adhesive time to off gas / setup prior to installing pad. Do not install into wet adhesive. It should be tacky, yet no transfer.
    - A non-porous surface will require more open time for the adhesive to setup.
- Roll pad into tacky pressure sensitive or broadloom carpet adhesive.
- Carpet to pad installation – follow "Installation and Layout" recommendations prior to gluing carpet to pad.
- Double stick between cushion and carpet – recommended adhesives:
    - Premium broadloom adhesives such as Milliken Broadloom Carpet Adhesive.
    - Application: 6 to 8 sq. yds. per gallon using a 1/8" x 3/16" x 1/8" (3.2mm x 4.8mm x 3.2mm) "U" notched trowel or as recommended by the manufacturer of the double stick system being used.
- Carpet installation – follow "Installation Procedures – Adhesive installation.
- Installed Milliken SDN Broadloom carpet must be immediately rolled with a 35-50 lb roller in the length direction only. Re-roll 2 -3 hours later.

PATTERN MATCHING INSTALLATION TOOLS:



Power Stretcher



Mini or crab stretcher



Deadman & dry line



Stay Nails

PROTECTING CARPET AFTER INSTALLATION:
Milliken recognizes the CRI™ **104 Standard for Installation of Commercial Carpet, and CRI™ 105 Standard for Installation of Residential Carpet September 2015** as the standard guidelines for protecting carpet and associated materials after installation. The CRI™ Standard 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 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 potentially affected areas." Also, CRI™ cautions: "Self-adhering plastic films 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."

Milliken cannot be responsible for pattern match in direct glue-down installations. This includes all double stick methods. If a consumer desires an adhesive installation, carpet must be inspected for visible manufacturing defects prior to installation. Once installed, Milliken will decline all complaints. Sequencing cuts of LPR measurements is mandatory for success when installing Milliken SDN broadloom carpet in any direct glue or double stick application.

Milliken and Company, Floor Covering Business
Installation Services Dept., 300 Lukken Industrial Drive West, LaGrange, GA 30240
BACKED BY THE LARGEST, MOST PRODUCTIVE RESEARCH AND DEVELOPMENT FACILITY IN THE CARPET INDUSTRY.
Call Technical Services Team Toll Free 1-800-528-8453 – Select Option #2

The above instructions represent the best available data and are deemed correct and complete. However, Milliken assumes no liability for installation-related problems.
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