



## Modular Carpet Installation Instructions - TractionBack®

The following document describes the correct method for installing Milliken modular carpet manufactured with TractionBack® adhesion backing.

**APPLICABLE INSTALLATION METHODS:** Except where exceeded or modified by this instruction, Milliken recognises the Australian Standard AS2455.1 for Installation of Commercial Carpet, as the minimum acceptable standard for the installation of its carpet products.

**GENERAL:** Milliken modular carpet with TractionBack® is designed for installation without the general use of adhesive. However, the TractionBack® adhesion backing system will ONLY function properly when the stringent floor preparation and installation guidelines outlined below are followed. For this reason, it is VERY important that a qualified installation contractor install this product. Milliken **strongly recommends** the use of a **suitably qualified contractor** to install TractionBack® modular carpets.

**TILE ORIENTATION:** Some Milliken designs require specific installation methods (Quarter-turn, Ashlar, etc.) to achieve the intended appearance.

**PRIOR TO INSTALLATION,** always consult your local Milliken sales representative or Milliken customer Service if you have questions or concerns about the correct installation method. From time to time during installation, these products may require that tiles be shifted within the layout in order to avoid a dark line in one tile being positioned next to a dark line in another tile. The dark seam is not a carpet manufacturing defect and can be avoided by attention during the installation phase.

### FLOOR PREPARATION:

**NOTE:** The following are guidelines only. The Flooring Contractor has responsibility to assure compliance. Financial responsibility for bringing any floor into conformance with these guidelines must be determined prior to beginning work.

- Subfloor: Subfloor must be structurally sound, clean, dust free, smooth and level. Cracks and holes in excess of 3.2mm should be filled with a Portland Cement based floor patching material such as W.W. Henry® 547 Unipro™, DAP Webcrete® 98, Maipex® PlaniPatch®, Ardex Featherfinish® or similar. Gypsum based compounds are not recommended.
- Sealing of Floor: Sealing or other post treatment of concrete floors is at the discretion of the installation contractor. In general, properly cured (90 days minimum) steel trowel-finished concrete requires no additional treatment. Excessively porous or dusty concrete slabs are the only exceptions. Please call Milliken Customer Services if you have questions. Durabond D250 is a recommended product should this type of treatment be deemed necessary; however, any non-silicone-based sealer will work acceptably with non-PVC backings. **This treatment is NOT intended to be a corrective for out-of-specification water vapour transmission levels.**
- Old Adhesive: Milliken modular carpet backings are non-reactive and contain no PVC or plasticizers, so it is typically not necessary to remove old adhesive from the floor prior to installing Milliken modular carpet with TractionBack®. No chemical incompatibility exists between Milliken modular carpet with TractionBack® and any existing floor covering adhesive. This includes "cutback", asphalt emulsion, general-purpose adhesive, epoxy and any other commonly found flooring adhesives. The only physical requirement for existing adhesive films is that they be smooth, non-tacky, and that residual trowel notches be reduced to 0.8mm or less. In most cases the removal of the existing floor covering accomplishes this with only normal sweeping, cleaning, and patching required prior to beginning installation. Milliken is not responsible for subfloor conditions. The installer has the responsibility for obtaining a successful installation.
- Dust Removal: For TractionBack® to effectively prevent lateral movement, it is REQUIRED that ALL dust and dirt MUST be removed from the floor prior to installation. A thorough wet mopping with warm water of the floor surface is REQUIRED prior to beginning the installation of TractionBack®.
- Sweeping Compounds: Oil or silicone based sweeping compounds and similar products, except where specifically approved, must not be used during floor preparation. TractionBack® must not be installed over surfaces contaminated with oily residues.
- Oily Residue/ Asbestos Abatement: If your subfloor is contaminated with an oily residue either from removal of "cutback" during asbestos abatement or from a previous end use such as metal fabrication, this residue MUST be totally removed or covered prior to applying modular adhesive and carpet. In addition, if residual adhesive - either "cutback" or general purpose - has been damaged/reactivated by previously installed PVC-backed carpet, call Milliken Customer Services for guidance. NEVER scrape, sand or mechanically abrade any exposed black adhesive or any existing resilient floor. These may contain asbestos. If residual adhesive is **not** black, scrape or sand until smooth and non-tacky as required above and follow with a thorough mopping as directed above. If additional smoothing is required and residual adhesive is black (cutback or asphalt emulsion) smoothing **must** be accomplished by applying a very thin layer of one of the above patching compounds.
- Level Floor: Protruding objects must be removed. Floor must be flat (not undulating) to within 4mm across 2m) with no abrupt changes. This is very critical with TractionBack® since there can be no differential adjustment of corner alignment as is possible when a general coverage of adhesive is present.
- When working with a Gyp-Crete or Gypsum subfloor, Milliken recommends sealing with a gypsum floor sealer prior to installation. Failure to do so will result in an unacceptable installation. Gyplock Sealer by Cornerstone Coatings International Inc. is a suitable sealer.
- Carpet Storage and Conditioning: Carpet should be stored between 4°C to 38°C and must be conditioned to between 15°C and 32°C for at least 24 hours prior to and during installation.
- Installation Temperature and Humidity: Floor temperature should be 15°C minimum for proper performance of TractionBack®. Floor temperature should not exceed 32°C.
- Relative humidity of the slab should not exceed 85% as measured by the RH Probe Test (ASTM F2170).
- Floor pH should not exceed 10.0. Floor should be acid washed using 50/50 vinegar and water or a 1/20 muriatic acid and water solution of pH is greater than 10.
- On all TractionBack® projects where the use of any supplemental adhesive materials may be necessary as a locking mechanism, and the Relative Humidity of the slab exceeds 85%RH as determined by the In-Situ relative humidity probe test. Milliken recommends the use of the applicable Milliken Non-Reactive Standard or Milliken Moisture Extreme adhesives.
- Water Vapour Emission: Water Vapour should not exceed 3.6kg/93m per 24 hours period. Any test used MUST be performed to comply with ASTM F-1869-98. Milliken modular carpet with TractionBack® has been tested to accept water vapour emission levels up to 4kgs without creating adhesion bonding problems. However, on all TractionBack® projects where the use of many supplemental adhesive materials may be necessary and the water vapour emission level is above 2kg in that area, the installation must be pre-approved in writing by Milliken.

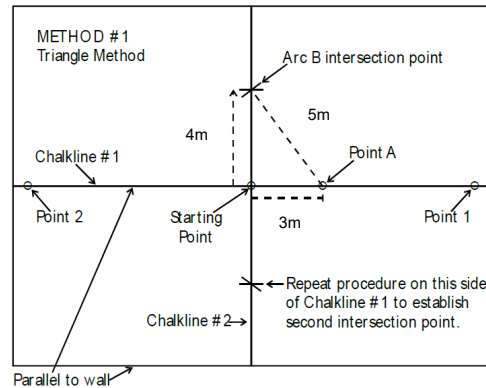
## INSTALLATION INSTRUCTIONS:

**GENERAL:** The most important part of any modular installation occurs before the first tile goes on the floor or any adhesive is applied. **Proper planning and layout is crucial to the success of all modular installation.** Floor preparation should be verified before beginning installation.

1. Place a carpet tile on the cleaned floor and press the entire tile down firmly. Kneel beside the module and attempt to slide it across the floor by grasping the opposite edge and pulling. The tile should not move laterally.
2. Lift a corner of the tile and then lift the tile from the floor. The tile should easily separate from the floor surface.

**CHALKLINE APPLICATION:** Once floor preparation is completed and the floor thoroughly mopped with warm water, two working chalk lines must be applied to the floor to insure a straight, square, and properly aligned installation. These chalk lines intersect at the starting point and are exactly 90° to each other. Following are two methods for applying chalk lines:

### METHOD #1- TRIANGLE METHOD:



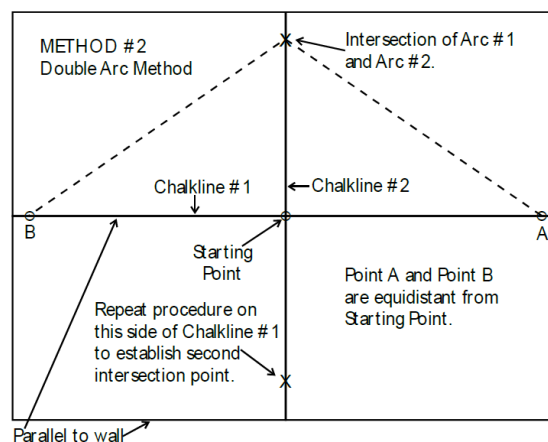
**Chalk line #1:** Regardless of method, chalk line one - also referred to as the "baseline" - is snapped roughly parallel to some architectural feature (outside wall, column line, etc.) and generally runs the longer dimension of the area. This is done by placing two and only two points on the floor as far apart as possible within the area at the same distance from the selected architectural feature. (See Point 1 and Point 2 on the diagram.) This distance is determined by the installer to optimise cut sizes and minimise waste.

**Starting point and Chalk line #2:** Select a starting point somewhere on Chalk line #1. Location of starting point is usually but not always close to the true center of the area. It may be offset to optimise cut sizes. Using the largest possible multiple of a 3-4-5 triangle (6-8-10, 9-12-15, 12-16-20, 15-20-25, 18- 24-30, 30-40-50 etc.), construct a chalk line through the starting point exactly 90° to chalk line #1 as follows:

#### Construct Chalk line #2 as follows:

1. Measure exactly 3m from the starting point along chalk line #1.
2. Measure exactly 4m from the starting point approximately perpendicular to the line #1. Mark an arc (line) on the floor parallel to chalk line #1 10cm to 12cm long as indicated by Arc "B".
3. Measure exactly 5m diagonally from point "A" to Arc "B" as indicated.
4. That point on Arc "B" exactly 5m from point "A" when connected with the starting point gives a line exactly 90° to chalk line #1. For maximum accuracy, this procedure should be repeated on the opposite side of chalk line #1. A chalk line or a dry line should be stretched between the two intersection points created. If measurements are accurate, the string will go directly across the starting point.

### METHOD #2 - DOUBLE ARC METHOD:



**Chalk line #1** - Same as in Triangle Method.

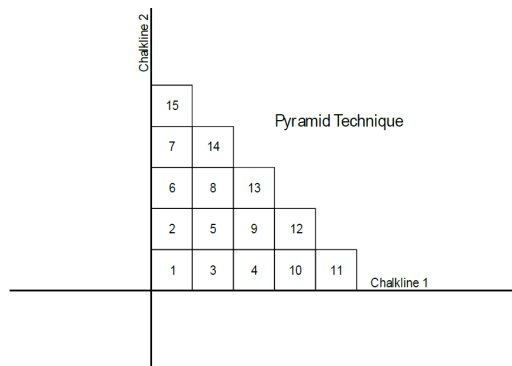
**Chalk line #2** - Select starting point same as triangle method and proceed as follows:

1. From the starting point, measure any convenient distance in both directions along chalk line #1 and mark point A & B on the floor (see diagram). These points should be as close as possible to the end walls of the area and must be the same distance from the starting point.
2. From points A & B, measure diagonally as indicated by the dotted lines allowing the tape measure to feed out until you are close to the side wall. Place a framing square or a carpet module at the starting point aligned with chalk line #1 to act as a visual guide to tell you when you are close to 90 degrees. Once you feel you are close, pick a distance and remember it.
3. Strike an arc (Arc #1) measuring the distance determined above from point "A". Now working from point "B", measure diagonally using exactly the same distance used to strike Arc #1 and strike Arc #2. This intersection point connected to the starting point is a 90° angle to line #1.
4. As in the Triangle Method, this procedure should be repeated on the opposite side of line #1. Once accurate chalk lines are applied, begin installation at the intersection point of the two chalk lines.

When working with TractionBack®, it is necessary to move across the newly placed modules very carefully until the installation can be locked in at the perimeter.

#### GENERAL:

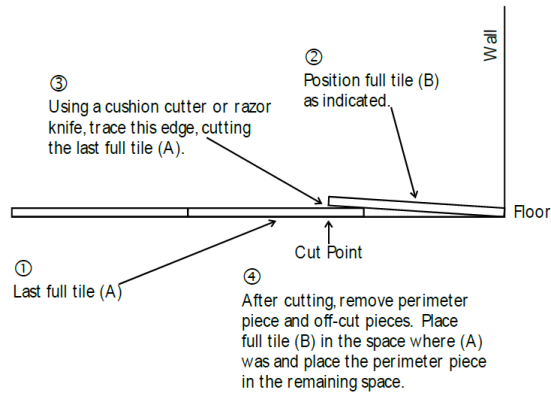
- The pyramid technique (see diagram below) gives three alignment checkpoints on each tile placed and should be used on ALL products regardless of module size or backing. This technique also helps control spacing or "growth" and keeps the entire layout closely referenced to the chalk lines. Strict attention should be paid to corner alignment. Tiles out of alignment by more than 1.6mm on 50cm product or 3.2 mm on 1m product should not be installed. Some "wandering" of edges due to undulation in the floor is unavoidable. This will be gradual and tend to come and go randomly, however, if corners become misaligned and this misalignment continues to increase, this indicates an out of square condition. The problem should be immediately determined and corrected.



- Always **SLIDE** each module into position from the side to prevent trapped yarn. Set each module by firmly rubbing both joints. Should the TractionBack® become contaminated with dust, the back of the tile should be wiped with a damp cloth to remove the contamination and restore the effectiveness of the TractionBack®.
- Modules should be tight but not compressed. Peaking will occur when modules are too tight. Too loose an installation will never achieve the best possible overall appearance and can show gaps over time as the looseness accumulates in one area.
- Tightness or "growth" should be determined by measuring the distance covered by 11 full modules (10 joints). This measurement should be no more than 3.2mm over the calculated distance for eleven tiles. In some cases this distance may be less than calculated. This distance may also vary between the length and width of the product. Once this "growth" figure is determined, it must be maintained throughout the installation.
- Directional arrows are applied to the back of each tile indicating pile direction. This allows the customer/installation contractor to choose the method of installation preferred: Quarter-Turned, Monolithic (Corner-to-Corner or Ashlar), Random, 180-Degree Turned, Checkerboard, Mosaic or a mixture. **Some Milliken designs REQUIRE that specific installation methods be used to achieve the desired visual. Always check with your Milliken representative or call Technical Services if there is any question.**
- Whenever possible it is recommended that arrows be run parallel to major traffic lanes. Unless it is unavoidable, arrows should not run across hallways.
- Installations receiving heavy rolling traffic should be locked in every 10m.
- When installing Milliken modular carpet with TractionBack® on inclined surfaces, a locking mechanism (Milliken Pressure Sensitive Adhesive) must be used for the entire incline area.

#### CUTTING:

- The parallel or "scribe" cutting technique is one method of easily and accurately cutting modular carpet. (See diagram below.) This method is valid regardless of backing system and yields a good vertical cut that is snug but not compressed. Any method that achieves this result is acceptable.



- A fixed and unmovable perimeter is mandatory to ensure the performance of the finished installation. To avoid tile movement or shifting, each tile must be firmly fitted to all wall lines or fixed building structures. When this is not practical, the product must be securely anchored using a perimeter adhesive (50-60cm) or double-sided tape. Adhesive or double-faced tape should be used under all partial or cut tiles measuring less than 30cm in any single direction.
- In situations where, vertical abutments do not extend to (connect with) the floor or cutting techniques do not yield a snug fit to the wall, Milliken recommends the use of a locking mechanism. A minimum of two strips of double-faced carpet tape or a 30cm wide application off Milliken pressure sensitive adhesive applied along the walls are acceptable locking mechanisms.
- Properly installed installations with TractionBack® can begin receiving foot and rolling traffic as soon as they are finished and locked into the perimeter of the area. Exposed edges should be protected when rolling heavy loads such as pallets of carpet across the installed portion. Plywood or Masonite should be positioned on the carpet when heavy furniture or supplies are moved.
- The recommended casters for desk chairs should have a tread width of 19mm to 25mm, and a wheel diameter of 5cm - 6cm tapered. Hard polyolefin composition is recommended. For more detailed information, contact Milliken Technical Services.

#### TRANSITIONS:

- For the most attractive finish with its modular products Milliken recommends the use of top set cove base after carpet installation is completed.
- Appropriate transition strips MUST be installed wherever there is a potential for an edge to be exposed or where Milliken modular carpet finishes to another flooring type. The total thickness of WellBAC® Comfort Plus and WellBAC® Comfort products requires a transition treatment capable of accepting the carpet without the necessity of modifying or adapting the edge.

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

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