

## **INSTALLATION PROCEDURES & REQUIREMENTS**

Please read this entire brochure carefully before beginning any installation.

**Failure to comply with these instructions may void specific product warranties!**

All other installation practices not specifically addressed within this text must be in strict accordance with Australian Standard AS 2455.1:1995.

### **SITE CONDITIONS**

#### **1. Floor Preparation**

Each sub floor shall be inspected to determine the special care required to make it a suitable foundation for carpet.

##### **a) Concrete**

New concrete shall be cured, clean and dry. It shall be free of curing and parting agents that interfere with the bonding of the adhesive. The owner or general contractor/builder must submit to the flooring contractor a report on the percentage of moisture in the slab. The moisture content shall not exceed a hygrometer reading of 65%.

Patching of cracks and depressions shall be made with a compatible latex patching compound. Do not exceed manufacturer's recommendation for patch thickness. Large patched areas must be sealed.

Old concrete must be clean, dry, and free of paint, dirt, adhesive, oils and other contaminants.

##### **b) Wood**

Wood sub-floors should have a minimum 460mm (~18") air space underneath with cross ventilation. Plywood, hardwood, and particleboard used as sub-flooring must be a flooring grade installed to the manufacturer's specifications. Joints shall be filled and rough areas sanded smooth. Old wood shall be checked for soundness, and any loose boards shall be re-nailed. Rough and uneven areas shall be sanded smooth and sealed.

##### **c) Resilient Floor Covering**

Carpet should not be glued down directly over existing sheet vinyl, homogeneous or laminated solid vinyl tile, and some rubber flooring products. These materials contain vinyl plasticizers, which can migrate into the carpet adhesive and loosen the bond. Consult individual manufacturers for specific recommendations.

Direct-stick over vinyl asbestos tile (VAT) and/or vinyl composition tile (VCT) is acceptable as long as it is tightly adhered to the substrate, and all waxes, sealers, floor finishes, and other foreign materials have been removed.

**Note:** The installation of a second layer of finish flooring material, including some carpets, can trap moisture resulting in widespread failure, even over sub-floors that had never previously shown any signs of moisture. Appropriate moisture tests should be performed before installing over any existing resilient tile.

## 2. **Moisture in Concrete Sub floors**

At least 90-120 days are to be allowed for a concrete slab to cure and reach an acceptable dryness. Appearance alone is not a reliable test. In order to prevent product and adhesive problems due to moisture and alkali, the owner or general contractor/builder shall be responsible for providing written moisture and alkali test results relating to the concrete slab prior to the installation. A pH range of 5-9 is satisfactory; however a reading above 9 requires corrective measures. This can be accomplished by applying an acid etch consisting of 10 parts water to 1 part muriatic acid, and rinsing twice with clear water. In some cases, a 30% mixture of vinegar and water may be used to reduce alkalinity.

## 3. **Temperature and Humidity**

Ideally, carpet shall be installed when the temperature is between 18°C and 35°C (65°F and 95°F) and the relative humidity is between 10% and 65%, and if installing over concrete, the slab temperature should not be less than 18°C (65°F).

## 4. **Relax Carpet**

To minimize wrinkling and buckling, all carpet shall be unrolled, relaxed, and allowed to ventilate with the induction of fresh air for a minimum of 24 hours prior to actual installation.

## 5. **Environment Conditions**

Fresh air ventilation during installation shall be maintained by opening windows and doors, by utilizing exhaust fans, and by operating the ventilation fan system at full capacity. When conditions warrant, fresh air ventilation shall be maintained after installation for 48-72 hours at normal room temperatures by operating the ventilation fan system at full capacity and by opening windows and doors if possible. This will help eliminate the existence of any lingering odours.

# **PLANNING AND LAYOUT**

All facets of the installation are to be coordinated. A scale drawing of the area to be carpeted is required to determine metrages, metrage per dye lot, edge treatments, underlays, adhesives, mouldings, and other accessories, and to identify proper location of seams.

## 1. **Shop Drawings and Layout**

The carpet shop drawings shall contain the following information:

- Name of the job, owner, and Installation Company. On new construction, the name of the general contractor/builder and architectural firm shall be listed.
- Building address.
- Date of drawing.
- Scale.
- Floor number and location of building.
- Compass direction on each sheet.
- Drawing of installation for each area.
- Type of floor for each area.
- Type of installation for each area.
- Quantities of carpet needed for each area, including individual cuts and total roll length requirements.
- Notations where dye lot changes will occur.
- Excess material in each area and how it will be used.
- Seam layout of each area.
- Carpet pile direction for each area.
- Name of manufacturer, quality, and colour of carpet.
- Large scale drawing showing treatment of step areas for each area.
- Location and type of all edge mouldings.
- Type of skirting / baseboard in each area.

**2. Seams**

Seams shall be kept to a minimum. The seams shall be positioned so that where possible:

- The seams run the length of the area.
- Main traffic runs along rather than across seam.
- Incident light does not strike across the seams.
- The seams are away from areas subject to pivoting traffic.
- Seams are not perpendicular to doorway openings.

**3. Pile Direction**

Where two or more pieces of the same carpet are adjacent, the pile direction shall be the same as in other areas unless otherwise specified. Ideally, pile direction shall be toward the entrance, but other factors such as pattern, aesthetics and economic use of material may also be considered.

**INSTALLATION**

Northstate recommends using only premium quality and environmentally safe installation products.

**GENERAL REQUIREMENTS**

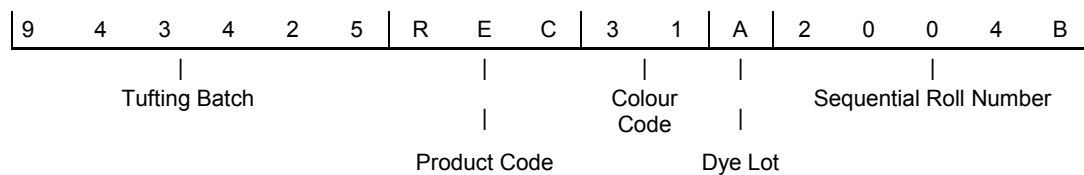
**1. Carpet**

As a condition of Warranty, Northstate requires the inspection of carpet prior to cutting. This inspection should include a thorough examination for;

- Product Type & Quality
- Style / Pattern
- Colour
- Dye Lots
- Streaks
- Missing Tufts
- Backing Material & Lamination
- Sizes

**Note:** For best visual results, rolls in the same dye lot must be sequenced prior to installation.

Refer to below diagram for details on identifying tufting batch, product code, colour code, dye lot and sequential roll number;



Above example is for the product 'RECOIL', colour '31/indigo', dye lot 'A'.

**2. Adhesive**

As a condition of Warranty, Northstate requires that the adhesive used for the installation must, as a minimum, last and maintain proper adhesion throughout the entire warranty period of the carpet.

**Note:** Lack of adhesion is most often caused by either incorrect trowel notch size, improper adhesive selection &/or incorrect open time, or improper rolling. A 100% transfer of floor adhesive into the carpet backing, including the recesses of the carpet back, while maintaining full coverage of the floor, must be attained.

The following trowel notch sizes are recommended for synthetic backed carpets;

Commercial products:	3.2mm x 1.6mm x 3.2mm "V" Notched Trowel (Coverage rate up to 2m <sup>2</sup> per Litre)
Residential products:	2.4mm x 2.4mm x 2.4mm "V" Notched Trowel (Coverage rate up to 3m <sup>2</sup> per Litre)

The trowel is a measuring tool designed to apply a specific amount of adhesive. Choose the correct trowel to achieve 100% adhesive transfer.

### 3. Seaming and Joining

As a condition of Warranty, in all Direct-Stick installations, Northstate requires that all seams and cross joins are sealed with an appropriate seam sealing adhesive. (See pages 5-6 for complete details.)

As a condition of Warranty, in all Double-Bond and Carpet Gripper (Conventional) installations, Northstate requires that all edges to be seamed are sealed first with an appropriate edge sealing adhesive and an appropriate Hot-Melt Adhesive Seaming Tape is applied to all seams and cross joins. (See pages 6-9 for complete details.)

### 4. Unprotected Edges

As a condition of Warranty, all unprotected (raw) edges in Direct-Stick, Double-Bond, and Carpet Gripper installations must be protected with an appropriate edge sealing adhesive.

Definition: 'Unprotected Edge' is any carpet edge that is located at a transition to another floor covering material and is not protected with an appropriate knap locking trim.

### 5. Transitions

The use of a knap locking trim is recommended on all carpet edges in Direct-Stick, Double-Bond, and Carpet Gripper installations that are located at a transition to another floor covering material. For those edges where knap locking trims can not be used, the recommended finished pile height is 2mm above the adjacent floor finish, and the edge must be protected with an appropriate edge sealing adhesive.

**Note:** Improperly protected &/or sealed edges can lead to edge delamination and loss of face yarns with unsightly results.

### 6. Underlay

As a condition of Warranty, in Double-Bond and Carpet Gripper (Conventional Lay) installations, Northstate requires that only commercially rated new underlays are used with carpets installed in commercial environments.

**Note:** The use of 'Hair Felt' and 'Jute' underlay are not recommended where any dimension in the area to be covered is more than 7m in any direction as it may contribute to improper carpet tensioning which can increase the occurrence of rucking.

### 7. Pattern Matching

Due to the extensible nature of textile carpet products some distortion is likely, and therefore variances of pattern in the width and length should be expected. For the best results, seams must be row cut and the carpet must be dry laid with all pieces arranged to your best advantage, prior to starting the gluing &/or seaming process. Do not 'double cut' seams and cross joins. Unrestricted access to the entire floor area being installed is mandatory. Reasonable pattern matching will be more readily achieved when using the carpet gripper (conventional lay) installation system. Colour &/or texture pattern match is not guaranteed.

### 8. Stretching

As a condition of Warranty, in all Carpet Gripper (Conventional Lay) installations, Northstate requires the carpet be installed by the use of power stretchers.

## **DIRECT-STICK SYSTEM**

In this type of installation, the carpet is glued directly to the sub-floor.

### **1. Preparation**

The sub floor shall be sound, smooth, dry and free from all contaminants that will prevent good adhesion. Surfaces shall be vacuumed and thoroughly cleaned before application of the adhesives.

Whenever possible, carpet should be spread in the room 24 hours prior to actual installation, with room temperature between 18°C and 35°C (65°F and 95°F).

### **2. Carpet Layout and Cutting**

Following the seaming diagram, cut the carpet to the proper length and spread it out in the area where it is to be installed. The carpet shall be cut 7cm - 10cm longer than the area measurement. Where pattern matches are involved, an extra repeat must be allowed on each cut for the match, plus an extra 7cm - 10cm on each cut for trimming. Align all breadths or sections of carpet in their proper position, and before spreading adhesive trim seam edges using the appropriate seam cutting tools.

### **3. Adhesive and Trowel Notch Size**

Select the appropriate adhesive and trowel notch size recommended by the adhesive supplier. A 100% transfer of the floor adhesive into the carpet backing while maintaining equal and full coverage of the floor must be obtained.

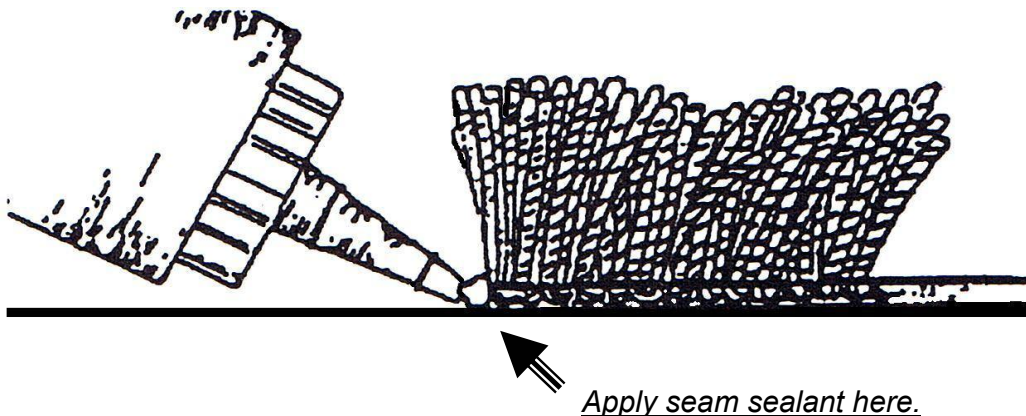
The floor adhesive shall be spread uniformly over the sub-floor with the specified trowel. Trowel notches wear down during use and the proper size must be maintained by re-notching when necessary. After sufficient open time, the carpet should be pressed into the adhesive and rolled with the appropriate roller.

The correct open time for adhesive is required. The applied adhesive must develop "legs", or tack, prior to laying the carpet into the adhesive. Open time will vary dependent upon environmental conditions.

### **4. Seaming and Joining**

Seam Sealing is required for all Direct-Stick installation.

To prevent deterioration of seams and cross joins, a 3mm (~1/8") continuous bead of seam adhesive must be applied to the base of the first edge where the face yarn enters the backing. (See diagram below.) The bead must be "tall" enough to "meet" the secondary backing, primary backing and yarn bundles, but never contacting the face fibre. This will seal the first edge as well as the second when the edges are butted together to form the seam.



**Note:** Seams and cross joins that are not permanently bonded together will cause breakdown of the carpet at the edges which can lead to seam delamination and loss of face yarns with unsightly results.

## 5. Unprotected Edges

All unprotected (raw) edges must be protected with an appropriate edge sealing adhesive.

**Note:** Improperly sealed edges can lead to seam delamination and loss of face yarns with unsightly results.

## 6. Rolling

Rolling shall be performed with the lightest roller which will achieve 100% transfer of the floor adhesive into the carpet backing. A roller weighing 25-30kg (~55-65lbs.) is recommended. Roll in both directions, whilst being careful not to over roll.

## **DOUBLE-BOND SYSTEM**

In this type of installation, a separate underlay is adhered to the floor and the carpet is glued to the underlay.

### 1. Preparation

The sub floor shall be sound, smooth, dry and free from all contaminants that will prevent good adhesion. Surfaces shall be vacuumed and thoroughly cleaned before application of the adhesives.

Whenever possible, carpet should be spread in the room 24 hours prior to actual installation, with room temperature between 18°C and 35°C (65°F and 95°F).

### 2. Underlay (Cushion) Layout and Cutting

After the floor is prepared, the layout and cutting of the underlay should be completed. The underlay should be installed in the longest continuous lengths possible with consideration given to the traffic pattern and seam placement of the carpet. The underlay seams should not be installed directly under carpet seams, but located at right angles to the carpet seams. When this is not practical, shift the underlay so that seams are at least 150mm (~6") to one side of the carpet seams. Underlay seams must be butted without compression, leaving no gaps.

### 3. Carpet Layout and Cutting

Following the seaming diagram, cut the carpet to the proper length and spread it out in the area where it is to be installed. The carpet shall be cut 7cm - 10cm longer than the area measurement. Where pattern matches are involved, an extra repeat must be allowed on each cut for the match, plus an extra 7cm - 10cm on each cut for trimming. Align all breadths or sections of carpet in their proper position and trim seam edges using the appropriate seam cutting tools.

### 4. Seaming and Joining

Edge Securing/Sealing and Hot-Melt seaming is required for all Double-Bond installations.

#### a) Edge Securing/Sealing

Once the edges are trimmed and prior to seaming with hot-melt tape, all edges which are to be seamed must be sealed with an appropriate edge sealing adhesive. Apply the adhesive to the edge between the primary and secondary backing, and never contacting the face fibre. Allow the adhesive to dry thoroughly before seaming.

**Note:** Improperly sealed edges can lead to seam delamination and loss of face yarns with unsightly results.

**b) Seaming with Hot-Melt Adhesive Tape – Double-Bond installation**

Premium quality low profile 'double-bond' tape with high tensile strength and sufficient adhesive on the woven scrim is recommended. The tape is centred beneath the seam with the paper backing removed. The scrim may be laid into the wet film of flooring adhesive. Heat from an electric iron melts the adhesive, securing the tape to the double-bond underlay and laminating the carpet backing to the tape. A grooved iron is recommended for better penetration of the adhesive. Proper iron temperature is essential, with special care taken for carpet with synthetic backing or synthetic pile yarns. Always run the iron in the smooth direction of the pile. The maximum recommended heat setting is 2 1/2. **A heat shield for the iron is required.** Wood should be used to weigh the seam behind the iron. Do not use a metal surface because it traps the heat. **The use of Hot-Melt Adhesive Seaming Tape is mandatory on all seams and cross joins for Double-Bond installations.**

**5. Unprotected Edges**

All unprotected (raw) edges must be protected with an appropriate edge sealing adhesive.

**Note:** Improperly sealed edges can lead to seam delamination and loss of face yarns with unsightly results.

**6. Adhesives and Trowel Notch Sizes**

Select the appropriate adhesive and trowel notch size recommended by the adhesive supplier. Roller or spray applications may be used upon recommendations from the adhesive supplier.

For application of carpet to cushion, consideration is to be given to the coarseness of the carpet backing when selecting the trowel notch size. It is important that the trowel notch be large enough to apply a continuous thin film of adhesive for 100% transfer into the backing while maintaining full coverage of the cushion.

The adhesive shall be spread uniformly over the cushion surface with the specified trowel. After sufficient open time, the carpet should be pressed into the adhesive and rolled with the appropriate roller.

For application of cushion to floor, a pressure sensitive adhesive is recommended to facilitate easy removal of cushion at the end of use. Other premium adhesives may be used, but removal of cushion from the floor will be more difficult.

The correct open time for adhesive is required. The applied adhesives must develop "legs", or tack, prior to placing the cushion or floor covering into the spread adhesive. Open times will vary dependent upon environmental conditions.

**7. Rolling**

Rolling shall be performed with the lightest roller which will achieve 100% transfer of the floor adhesive into the carpet backing. A roller weighing 25-30kg (~55-65lbs.) is recommended. Roll in both directions, whilst being careful not to over roll.

**CARPET GRIPPER (CONVENTIONAL LAY) SYSTEM**

In this type of installation, the carpet is fastened under tension to a carpet gripper strip around the perimeter of the area to be carpeted. A separate cushion shall be used.

**1. Preparation**

The sub floor shall be sound, smooth, dry and free from all contaminants. Surfaces shall be vacuumed and thoroughly cleaned.

Whenever possible, carpet should be spread in the room 24 hours prior to actual installation, with room temperature between 18°C and 35°C (65°F and 95°F).

## 2. Installation of Carpet Gripper Strip

- Full length pieces of carpet gripper strip shall be spread around the wall perimeter with pins pointing towards the wall.
- The proper gully between the carpet gripper and the wall shall be slightly less than the thickness of the carpet, but not to exceed 10mm (~3/8").
- The carpet gripper strips shall be cut to proper lengths to maintain the same gully, regardless of the shape of the wall.
- The carpet gripper strips shall be securely fastened to maintain the proper stretch provided by power stretching. Two nails (fastening points) are required for the smallest piece of gripper strip.
- Carpet shall NOT be stapled to the carpet gripper strip.
- Avoid placing carpet gripper strips across door openings or door sills where possible.

As a condition of Warranty, in all commercial installations, Northstate requires the use of one row of commercial/architectural grade, or two rows of domestic grade carpet gripper.

**Note:** In residential installations where any dimension in the area to be covered is more than 7m in any direction, the use of one row of commercial/architectural grade, or two rows of domestic grade carpet gripper is recommended.

## 3. Underlay (Cushion) Layout and Cutting

After the floor is prepared, the layout and cutting of the underlay should be completed. The underlay should be installed in the longest continuous lengths possible with consideration given to the traffic pattern and seam placement of the carpet. The underlay seams should not be installed directly under carpet seams, but located at right angles to the carpet seams. When this is not practical, shift the underlay so that seams are at least 150mm (~6") to one side of the carpet seams. Underlay seams must be butted without compression, leaving no gaps.

**Note:** Foam underlay seams are to be covered with vinyl covered fabric tape, such as duct tape, and secured with adhesive. Staples or adhesives are to be applied approximately 150mm (~6") within the perimeter edges all around.

### a) Underlay Installed Wall-to-Wall

Underlay shall be securely fastened to the sub floor with staples or non-flammable underlay adhesive around the perimeter of the installation. Seams shall be secured with staples or non flammable underlay adhesive.

## 4. Carpet Layout and Cutting

Following the seaming diagram, cut the carpet to the proper length and spread it out in the area where it is to be installed. The carpet shall be cut 7cm - 10cm longer than the area measurement. Where pattern matches are involved, an extra repeat must be allowed on each cut for the match, plus an extra 7cm - 10cm on each cut for trimming. Align all breadths or sections of carpet in their proper position and trim seam edges using the appropriate seam cutting tools.

## 5. Seaming and Joining

Edge Securing/Sealing and Hot-Melt seaming is required for all Carpet Gripper (Conventional Lay) installations.

### a) Edge Securing/Sealing

Once the edges are trimmed and prior to seaming with hot-melt tape, all edges which are to be seamed must be sealed with an appropriate edge sealing adhesive. Apply the adhesive to the edge between the primary and secondary backing, and never contacting the face fibre. Allow the adhesive to dry thoroughly before seaming.

**Note:** Improperly sealed edges can lead to seam delamination and loss of face yarns with unsightly results.



- b) **Seaming with Hot-Melt Adhesive Tape – Carpet Gripper (Conventional) installation**  
Premium quality tape with high tensile strength and sufficient adhesive on the woven scrim is recommended. The tape is centred beneath the seam. Heat from an electric iron melts the adhesive, laminating the carpet backing to the tape. A grooved iron is recommended for better penetration of the adhesive. Proper iron temperature is essential, with special care taken for carpet with synthetic backing or synthetic pile yarns. Always run the iron in the smooth direction of the pile. The maximum recommended heat setting is 2 1/2. **A heat shield for the iron is required.** Wood should be used to weigh the seam behind the iron. Do not use a metal surface because it traps the heat. **The use of Hot-Melt Adhesive Seaming Tape is mandatory on all seams and cross joins for Carpet Gripper (Conventional) installations.**

5. **Unprotected Edges**

All unprotected (raw) edges must be protected with an appropriate edge sealing adhesive.

**Note:** Improperly sealed edges can lead to seam delamination and loss of face yarns with unsightly results.

6. **Power Stretching**

Following seaming, the carpet shall be firmly hooked onto the carpet gripper strip at the starting walls and power stretched onto the carpet gripper strips in the surrounding area to provide a flat, taut and evenly tensioned installation. **The use of a power stretcher is mandatory.**

Before power stretching, make certain that hot melt tape seams are cool to the touch.