

Carpets Inter[®]

Installation Guideline

ØFlow[®] - Moisture Resistant Backing

Note:

Failure to read this Installation Guideline and the recommendations contained within this document may result in issues arising that may null and void the product warranty.



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1. Scope

This guideline establishes minimum manufacturer's installation standards for Carpets Inter's ZeroFlow back carpet. These guidelines should be read in conjunction with the following standards:



- 1.1 Standard for Installation of Commercial Carpet CRI 104-2015 – The Carpet and Rug Institute
- 1.2 AS/NZS 2455. 1:2007 Textile floor coverings-Installation practice Part 1: General
- 1.3 Code of practice ASTM F-1869-98 – Test Method for Measuring Moisture Vapour Emission Rate of Concrete Sub-floor Using Calcium Chloride, American Society of Testing & Materials, 100 Barr Harbor Drive, West Conshohocken, PA 19428- 2959. www.astm.org

2. Storage and Handling

2.1 Storage

Store carpet and related materials in a climate-controlled, dry space. Protect carpet from soil, dust, moisture and other contaminants and store on a flat surface. Carpet rolls should be face out around the storage tube. Stacking heavy objects on top of carpet rolls is prohibited. Carpet stored for extending amounts of time should be rotated every six weeks to avoid roll crush.

2.2 Roll Crush

Roll crush usually appears across the width of the carpet as areas of the pile yarn that have flattened due to the weight of the roll. Areas of crush may appear lighter or darker and usually are identified as widthwise bands. Roll crush is not a manufacturing defect.

Most rolls of carpet will exhibit some degree of roll crush immediately after the roll has been unwrapped. Minor roll crush will disappear after the yarn has been allowed sufficient time to recover. Roll crush will normally be alleviated in carpet using steam or hot water extraction cleaning.

2.3 Handling

Transport carpet in a manner that prevents damage and distortion. Carpet rolls or cuts from rolls must not be bent or folded.

NOTE: Failure to observe the preceding requirements may result in the following:

- 1) Contamination from soil, grease and/or oil
- 2) Delamination
- 3) Dimensional changes
- 4) Permanent indentation
- 5) Development of wrinkles and bubbles
- 7) Pile crushing
- 8) Creases
- 9) Pattern distortion

3. Planning

Carpets Inter provides an Installation Manual, which includes installation procedures, a seaming diagram, production 'scrolls' and a packing list. This information must be made available at the job site. Roll quantities should be reconciled with the packing list and any discrepancies must be reported immediately to your Carpets Inter representative.

3.1 Transitions to Other Surfaces & Wall Base

Where ZeroFlow® carpet transitions to other floor coverings, the carpet edges are required to be protected or covered with appropriate transition moldings. The edge of the hard surface flooring should not exceed a maximum of 1.5mm (1/16") higher than the total carpet thickness where no transition molding exists. Apply a minimum of 3.0mm (1/8") bead of antimicrobial impervious seam-sealer to the edge of the carpet along the entire transition.

Wall base - when vinyl, plastic or rubber wall base is used in a carpet installation, cove base or base-with-toe is recommended. Ensure any gaps are completely sealed to wall fixing.



3.2 Carpet over Expansion Joints

Do not install ZeroFlow over Expansion joints. Expansion joints allow separate adjacent substrate surfaces to expand and contract independently. In addition, do not install on any area of a floor that does not provide a stable and mechanically sound surface. This does not include cut or saw joints within a section of the floor. Non-stable/unsound substrate joint conditions are required to be addressed in strict accordance with the appropriate architectural drawing. If no expansion joint device is specified on the drawing, the building owner, owner's representative, or other responsible party is required to be made aware that failure to address expansion joints will potentially result in installation failure, damage to the carpet and/or operational health and safety concerns.

3.3 Pile Direction

Where two or more pieces of the same ZeroFlow® carpet are installed adjacent to one another, the pile direction is required to be the same unless otherwise specified on the drawing provided. The arrow on the underside of the carpet indicates the manufactured direction and all should point the same direction. Uniform pile direction is not required with dissimilar color and/or pattern carpet.

4. Testing of Concrete Sub-floors

Before direct glue-down installation, the owner or general contractor, or their designated testing agent, must submit to the flooring contractor a written report on the moisture and alkalinity conditions of the concrete substrates in the locations to be carpeted.

Proper testing is essential for a successful installation and any deviation from these industry accepted test methods often results in an installation failure and may void manufacturers' warranties.

***NOTE:** It is recommended that qualified independent third-party testing agencies be used for determining moisture and alkalinity conditions of a concrete slab. Testing by an independent third party specialist to determine installation suitability is a prudent and necessary safeguard for general contractors, owners, architects, flooring products providers and installation contractors to reduce the risk of concrete slab moisture related flooring problems. As a minimum, testing agencies or individuals must demonstrate verifiable experience in concrete moisture testing or be certified by a recognized organization.*

4.1 Moisture Vapor Emission Rate (MVER) Testing

MVER tests must be conducted in accordance with the current version of ASTM F 1869 Standard Test Method for Measuring Vapor Emission Rate of Concrete Sub-floor using Anhydrous Calcium Chloride, not to exceed an emission rate of 5 lbs./1000 ft²/24 hrs.

4.2 Relative Humidity (RH) Testing

Testing for internal relative humidity of concrete slabs must be conducted in accordance with the current version of ASTM F2170 Standard Test Method for Determining Relative Humidity in Concrete Floor Slabs using in situ Probes, not to exceed 75%.

4.3 Testing for Alkalinity

Testing the pH at the surface of a concrete slab must be conducted in accordance with the current version of ASTM F710 Standard Practice for Preparing Concrete Floors to Receive Resilient Flooring, not to exceed a pH range of 7 - 9.

***NOTE:** Preparing the surface of a concrete slab for pH testing can be problematical. Make sure the concrete surface is adequately cleaned of adhesives and other contaminants, curing compounds etc. When pH readings are less than 7, it may be an indication of a residue remaining on the concrete surface. Also use care not to over clean the surface of the concrete, consequently removing the (usually) thin layer of carbonation. This can result in pH readings >12.*

5. Site Conditions

5.1 Substrate Conditions

The owner or general contractor is responsible for providing an acceptable substrate for the specified installation. Proper site conditions as outlined in this section are essential for a successful installation and any deviation often results in an installation failure and may void manufacturers' warranties.

NOTE: *Installing ZeroFlow carpet before other trades have completed their work may result in problems with: overall appearance, visible damage, soiling, hidden damage such as puncture holes in the moisture resistant barrier, adhesive failure, delamination and dimensional stability issues, should heavy hydraulic lifting apparatus be rolled over. These conditions may not be immediately evident upon inspection and handover of the site.*

5.2 Ambient Temperature and Humidity Suitable Substrates

The installation is not to begin until the HVAC system is operational and the following conditions are maintained for at least 48 hours before, during and 72 hours after completion of carpet installation. The carpet is to be installed when the indoor temperature is 65-95°F (18-35°C) with a maximum relative humidity of 65%. The substrate surface temperature should not be less than 65°F (18°C) at time of installation. Do not allow the temperature of indoor carpeted areas to fall below 50° F (10° C), regardless of the age of the installation.

NOTE: *If the above conditions are not met, installations may be susceptible to moisture related failures including but not limited to dew point condensation.*

5.3 Ventilation

During installation, maintain air circulation by operating the HVAC system at full capacity.

NOTE: *For acceptable indoor air quality, fresh air ventilation in commercial spaces is recommended to conform to current guidelines specified in ASHRAE Standard 62 published by the American Society of Heating, Refrigerating and Air Conditioning Engineers (www.ashrae.org). Failure to comply could cause negative ramifications to the installation and the indoor air quality.*

6. Substrate Preparation

ZeroFlow® carpet is required to be installed over properly prepared substrates that are suitable for the specific product and installation method selected. All cracks, holes and flooring irregularities are required to be repaired to ensure a flat, smooth substrate, prevent accelerated wear and telegraphing substrate irregularities from appearing as undulations in the surface of the carpet. Substrates are required to be structurally sound and free of foreign substances that may compromise the carpet or its installation. Patching compounds are required to be suitable for the use application. Select polymer-fortified patching compounds according to the carpet manufacturer's instructions. (Refer to current version of ASTM E1155).

NOTE: *Patched areas may be porous and highly alkaline, which will prevent adequate adhesive bond. For best results, prime patched areas. Consult patch manufacturer for primer recommendations and compatibility with adhesives.*

6.1 Concrete

Concrete must be cured, clean, dried and tested in accordance to Section 4. The concrete should be free of dirt, grease, oil, curing or parting agents, and other contaminants, including sealers, that may interfere with the bonding of adhesive.

NOTE: *It is not recommended to chemically treat (abate) substrates. These chemicals are difficult to completely remove and will adversely affect new adhesive and carpet.*

Whenever a powdery or porous surface is encountered, a primer/sealer compatible with the adhesive should be used to provide a suitable surface for the glue-down installation. Patching of cracks and depressions shall be made with appropriate and compatible latex or polymer fortified patching compound. Do not exceed manufacturer's recommendations for patch thickness. Large patched areas must be primed.

NOTE: *Any concrete floor, even when adequately cured and dry, can allow moisture vapor to pass through to its surface. Depending upon the type of carpet and method of installation, the moisture emission rate greatly influences the long-term success of an installation. The use of a properly installed, uncompromised, approved moisture membrane is essential in preventing moisture migration into and through a concrete slab. (Ref. ASTM F 710)*

6.1.1 Moisture Mitigation Systems

Concrete that has been treated with a moisture mitigation system will render the substrate non-porous. Before installation, a bond test is recommended. If the bond test fails, the substrate must be adequately prepared to accept adhesive.

6.2 Wood

Wood substrates are required to be structurally sound, flat, dry and securely anchored. Substrates, such as plywood, hardwood, particleboard, oriented strand board, or other materials, are required to be flooring grade (APA approved) and installed according to manufacturer specifications. Irregularities, imperfections and joints are required to be properly patched and prepared. The use of a primer on the substrate will improve bond strength of the patch.

6.2.1 Treated Wood

Wood that is chemically treated to alter properties relating to outdoor exposure or flame resistance is not a suitable substrate for direct glue-down applications. Floor covering adhesives would be subject to chemical degradation when applied to these surfaces.

6.3 Metal

It is required that metal floors create a smooth, even plane, and be free of grease, oil, soil and rust.

6.4 Raised Access Flooring

It is required that raised access flooring be structurally sound, flat and properly secured. For ZeroFlow installation, seams should be offset from access panel seams unless otherwise specified.

6.5 Resilient

Installing ZeroFlow over resilient flooring may be acceptable as long as the resilient flooring is securely bonded to the substrate and all waxes, sealers, floor finishes and other foreign materials have been removed. It is not recommended to install over floating, perimeter bonded or cushion-backed sheet goods.

NOTE: Some sheet vinyl, resilient tile and cut-back asphalt-based adhesive may contain asbestos and/or crystalline silica. Recommended work practices prohibit sanding, dry scraping, bead-blasting or mechanically pulverizing resilient flooring, backing or lining felt. Do not use powered devices that create asbestos dust when removing "cut-back" or asphalt-based adhesives. Removal procedures must comply with federal, state and local government agency regulations covering the removal and disposal of asbestos-containing materials (ACM).

6.6 Radiant Heat Floors

The maximum surface temperature of radiant-heated substrates cannot exceed 85°F/29°C.

Refer to the Radiant Panel Association for additional information.

6.7 Terrazzo, Ceramic, Marble, Slate and Other Nonporous Surfaces

Remove surface finishes and abrade flooring surfaces to ensure adhesion. To avoid telegraphing, grout lines must be filled and flush with flooring material surface. Ceramic or other surfaces may require the use of a primer to ensure proper adhesion. Slate and brick surfaces may be too rough and uneven for most installations and may require the use of a self-leveler or smoothing before installing ZeroFlow. Attention must be given to the “open time” requirements of the adhesive manufacturer when adhering carpet to these surfaces.

6.8 Painted Surfaces

Painted surfaces may be suitable for adhesive application; however, bond tests are recommended. Glossy surfaces must be abraded prior to installation. Contact the adhesive manufacturer for requirements.

***NOTE:** Lacking documented evidence to the contrary, e.g., current testing, assume that all paints contain lead and treat them in the manner prescribed by existing lead abatement regulations.*

6.9 Primers

Using primers on floor surfaces generally is not required except for sanded wood sheet products and dusty, porous or acoustical concrete surfaces. Primers are not designed to reduce moisture vapor emissions and should not be used for that purpose. They should be compatible with adhesives, which can only be applied after the primer is cured. Where lightweight or acoustical concrete substrate is present, refer to manufacturer requirements for the proper installation procedure to use before the carpet is installed.

***NOTE:** Substrate primers are recommended by some manufacturers for specific carpet installations to enhance adhesion.*

6.11 Chemical Adhesive Removers and Abatement Chemicals

These products are not recommended for use on a substrate that will receive a floor covering.

6.12 Sweeping Compounds

Do not use sweeping compounds prior to adhesive application. The residue from these compounds interferes with adhesive bonding. Be sure to vacuum dusty areas instead. Vacuum cleaners are required to have a properly functioning filter per OSHA and/or EPA requirements.

7. Product Acclimation

It is recommended that carpet and installation materials be allowed to acclimate in the installation area for a minimum of 24 hours at a temperature of 65-95°F (18 -35°C). Carpet must be adequately protected from soil, dust, moisture and other contaminants.

8. Direct Glue-Down Installation

The following are “recommendations” only.

8.1 Product Layout and Approval

ØFlow® is supplied with the Pile surface facing out. The installation flooring contractor must unwrap and in according to the seaming diagram dry-lay an area of approximately (20m²) and immediately obtain the approval and sign-off by the project manager and/or Architect before proceeding with a permanent application.

During dry-laying the carpet installer must be responsible to observe if any ‘bold’ patterning lines appear at the joints, where the same color (dark or light) row of yarn creates a noticeable wider line and relocate the adjacent module into another position. Align all carpet breadths/ widths to their proper position; overlap the edges to allow for double Top-Cut for butt-joint.

For specific instructions or advice, please consult your local Carpets Inter representative Office.

IMPORTANT NOTICE:

• *Due to the inherent stiffness and random-match pattern of FlowSoft, there is no need for a conventional knee-kicker or power stretcher. However, a knee kicker set to lowest pin extension may be used by hand to grab the SURFACE PILE only making sure never to penetrate the backing, for massaging the carpet into position on the moist adhesive*

• *Under no circumstances should 'stay-nails' be used temporarily for setting out datum lines and/or to hold/position FlowSoft during installation. This will puncture the moisture resistant backing voiding the moisture resistant warranty.*

8.2 Floor Adhesive Application and Open Time

Fold back 50% of the roll and apply a pressure sensitive adhesive listed in Appendix 1 to the substrate using a recommended V1 notched trowel (notches @1.6mm. deep x 1.6mm. wide). Check the trowel notch depth regularly and replace the trowel once worn down by more than 0.3mm. The adhesive is to be spread to all floor surface areas to be carpeted, including the peripheral areas adjacent to wall skirting (baseboard). Failure to apply adhesive thoroughly may result in smaller perimeter pieces constantly uplifting during regular vacuuming. Allow the adhesive to partially dry (i.e.; wet to partial dry) without turning completely clear, then immediately install the carpet.

IMPORTANT NOTICE: Carpets Inter takes no responsibility or any liability for any adhesive products, and has no third-party interest in any adhesive Manufacturer.

NOTE: Bond failure most often is caused by:

- *inadequate adhesive application from incorrect trowel notch size and/or trowel notch configuration, wear or improper trowel angle during application*
- *improper type and grade of adhesive*
- *incorrect open time and/or working times*
- *bond breakers or substrate contaminants such as, but not limited to, residual curing and parting compounds*
- *pH and moisture-related problems*
- *lack of protection*

8.3 Installation

The carpet is carefully placed into the semi-dry (Milky) adhesive, overlapping the unfinished edges.

i. Trimming

Overlap is trimmed by double straight-cutting with a TOP CUTTER to remove the two raw selvages.

ii. Sealing edges / Seam Weld

All seams must be 100% sealed with an Anti-Microbial seam sealant to complete the moisture barrier. Using the sealant manufacturers guideline and applicator bottle, apply a suitable solvent based seam sealer to BOTH EDGES (see Appendix 2) covering the combined exposed thickness of both the moisture barrier and PET cushion layers, without contaminating the Pile face yarn. Ensure that the abutted trimmed edges weld together.

IMPORTANT NOTICE: Carpets Inter takes no responsibility or any liability for any adhesive Seam-Sealant products, and has no third-party interest in any adhesive Manufacturer.

8.4 Amount of Stretch

Due to the rigidity of ØFlow® back carpet, stretching during installation should be unnecessary. If it is necessary to use a Knee-Kicker, then the carpet installer must adjust the pins and use lightly so that they only grab the carpet pile, but absolutely must not penetrate into/through the ØFlow® moisture resistant back. A knee-kicker should only be used for a light stretch to tension of the carpet to lay flat and should not stretch more than 0.2% in any direction to obtain adequate tension.

8.5 Finishing at Wall Line

Finish the installation along the wall and or to adjacent floor-finishes and or under Door transitions leaving a smooth, neat and secure fit. All edges should be sealed completely in conjunction with the recommended transition profile and installed as per the profile manufacturers guideline to complete the moisture barrier.

8.6 Rolling

To ensure an adequate bond, carpet must be uniformly pressed into the adhesive using a roller designed for this purpose. Rolling should be performed with the lightest roller that will cause the troweled adhesive ridge pattern to transfer into the back of the PET cushion backing, while still leaving the adhesive bonded to the floor. Do not exceed 35Kg (75 lbs). Roll the carpet in both length and width directions.

NOTE: *In some circumstances, re-rolling is required as well as the placement of weights in problematic areas.*

8.7 Post Installation

8.7.1 Curing Adhesives

It is recommended that traffic over field-applied adhesive installations be restricted to installation personnel only for a minimum of 24 hours to allow adhesives to cure properly. Premature traffic will cause installation failure. Restrict carpet exposure to water from cleaning or other sources for a minimum of 30 days.

8.7.2 Materials for Protection

It is recommended that carpet installation 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 additional work is required to be done after the installation, the carpet should be covered with a non-staining, breathable building material paper. Protect the installation from rolling traffic by using sheets of hardboard or plywood in potentially affected areas.

IMPORTANT NOTICE: DO NOT USE PLASTIC PROTECTIVE COVERINGS

- *Plastic coverings will trap moisture, retard adhesive curing and may promote mold growth.*
- *Plastic sheeting over any carpet installation will present a slip hazard.*
- *Self-adhering plastic films may leave residues that result in rapid soiling after removal.*

8.7.3 Maintain Temperature

Do not allow the temperature of carpeted areas to fall below 50o F (10o C), regardless of the age of the installation.

9. Stairs

ØFlow® can be installed on stairs. It is required that carpet be cut and installed with the tread and riser being separate pieces. The nosing (apex) of the step should have a step nosing profile affixed for both aesthetic and safety purposes. Exposed step edges should use a coordinating edge-profile. The size and type of Nosing will depend on the style of stairway and the type of environment (refer to profile manufacturers installation guide).

IMPORTANT NOTICE: Carpets Inter takes no responsibility or any liability for any step nosing and/or edge trim profile products, and has no third-party interest in any profile Manufacturer.

APPENDIX I

The manufacturers listed below provide recommended pressure sensitive adhesives suitable for installing ØFlow®. Please check with the respective product distributor for their specific product recommendation, application instruction and warranty. Other manufacturers may also have acceptable products.

Adhesive	Company	Address	Telephone
Okatmos Star 100	Kiesel Bauchemie GmbH u. Co. KG	Wolf-Hirth-Strasse 273730 Esslingen Germany	+49 711 93134-0
Nexus 470 Carpet Seam Sealer	Nexus Adhesives Pty Ltd	42 Healey Road Dandenong South VIC 3175 Australia	+61 3 9706 4022
Roberts 80	Q.E.P. Co., Inc.	1001 Broken Sound Pkwy,NW, Suite A, Boca Raton, Fl 33487 U.S.A	+1 866 435 8665

IMPORTANT NOTICE: Carpets Inter takes no responsibility or any liability for any adhesive products, and has no third-party interest in any adhesive Manufacturer.



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