

Welcome to the comprehensive guide on installing handwoven carpets. This document outlines the essential steps and precautions necessary to ensure your carpet is installed correctly and maintains its beauty and integrity over time. These guidelines will provide you with the knowledge and techniques required for handling and installing these exquisite pieces.

Carpet Installation Checklist

1. **Acclimation:** Allow the carpet to adjust to the installation environment by laying it out in the intended area for 24 to 48 hours before installation.
2. **Cut:** Add an extra 3 inches to each cut, and if dealing with patterns, include the full pattern repeat plus 3 inches.

Stretch-in Installation

1. Use an architectural tack strip with three rows of pins. For carpets with heavy latex backs, woven carpets, Berber styles, or in rooms larger than 30 feet in any dimension, opt for either an architectural strip with three rows or two conventional strips with two rows each.
2. Seam handwoven carpets using a hot melt iron with premium seam tape, and ensure seams are sealed with latex. Seam sealing is mandatory. Carpet edges at seams must be trimmed using tools and techniques best suited for the carpet style (loop pile, cut pile, and cut-and-loop pile). Trim edges far enough into the material to maintain the structural integrity of the carpet and to join edges without gaps or overlapping. Although “row-cutting” both edges is preferred, other trimming techniques may be more suitable on some carpets. Many carpets do not lend themselves to all methods of cutting. Some woven carpets must not be trimmed. Proper trimming of carpet edges at seams is crucial.
3. Prior to seaming, both trimmed edges of the carpet sections to be joined must be sealed with an appropriate seam adhesive. Latex seam sealer is acceptable.
4. NFIC recommends that the monk’s cloth backing be removed prior to installation before stretching or gluing. When constructing seams on these products, unless the backing is a primary or secondary backing, any other backing should be removed.

Direct-Glue Installation

1. **Trowel Size for Direct-Glue Installation:** Use a trowel with a minimum notch size of 1/8” x 1/8” x 1/8” U-notch for applying glue.
2. **Maintain Temperature:**
 - Maintain indoor conditions between 65°F and 95°F with a maximum relative humidity of 65% for at least 48 hours before, during, and 72 hours after installation.
 - Before making an adhesive installation, a report detailing vapor emission levels and surface alkalinity of the concrete subfloor must be provided by the owner or general contractor prior to the use of adhesive.
3. **Moisture:** Concrete floors, even with adequate curing time, can present an unacceptable moisture condition by allowing excessive amounts of moisture vapor to pass through to the surface. This can be a problem even on suspended concrete floors. Test all concrete floors for moisture emission rates using an anhydrous calcium chloride moisture test kit. This quantitative test method must be conducted carefully in strict compliance with ASTM Test Method F1869. Moisture emission rate is measured in pounds of moisture over a 1,000-square-foot area during a 24-hour period. Because calcium chloride testing requires a minimum of 60 hours to conduct, proper installation planning is required. As a general guideline, an emission rate of 3 pounds (1.4 kg) or less is acceptable unless otherwise specified by the carpet manufacturer.
4. **Alkalinity:** A pH range of 7–9 is satisfactory for alkalinity; however, a reading above 9 requires corrective measures. Perform testing in accordance with ASTM Standard Practice F710 or consult the adhesive manufacturer for recommended testing and corrective procedures.
5. **Adhesive Installations:** The owner or general contractor must have the concrete subfloor tested to determine the moisture emission rate and surface pH prior to installation. Caution: 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 seeping into and through a concrete slab (ASTM F710).

6. **Relaxing/Acclimation:** To minimize wrinkling and buckling, and to facilitate installation, it is highly recommended that carpet be unrolled and allowed to relax in the installation area for a minimum of 24 hours at a temperature between 65°F and 95°F (18°C and 35°C). Carpet must be adequately protected from soil, dust, moisture, and other contaminants. It is also recommended to precut the carpet prior to acclimation.
7. **Ventilation:** During installation, maintain fresh ventilation by using exhaust fans and by operating the ventilation system at full capacity. Always exhaust air to the outside to avoid recirculation. After installation, maintain fresh air ventilation for 48 to 72 hours at normal room temperature by operating the ventilation or exhaust fan system at full capacity. Open doors and windows, if possible.
8. **Primers:** Using primers on floor surfaces generally is not required, except for sanded wood sheet products and dusty, porous, or acoustical concrete surfaces. Primers must be compatible with adhesives, which should be applied only after the primer is cured. Where a lightweight or acoustical concrete subfloor is present, refer to the manufacturer's recommendations for the proper installation procedure to use before the carpet is installed.
9. **Liquid Adhesive Removers:** There are several liquid adhesive removers available that effectively remove existing adhesive residue from subfloors; however, there is evidence that some products may adversely affect the new adhesive or the new floor covering. Residues left in or on the concrete slab may cause failure of the new floor adhesive.
10. **Sweeping Compounds:** These compounds may leave residue that interferes with adhesive bonding. They must not be used prior to an adhesive application. Vacuum dusty areas instead.
11. **Carpet Layout:** Lay out the carpet according to the seaming diagram. Carpet must be cut 3–4 inches longer than the area measurement. Where applicable, allow for pattern repeat. Align all carpet breadths to their proper position and trim seams.
12. **Adhesive Application:** The floor adhesive must be spread uniformly over the subfloor with the appropriate trowel, leaving ridges of sufficient height to achieve full and complete coverage of the substrate and carpet backing, including penetration into the backing's deepest recesses.
13. **Trowel Notches Wear Down During Use:** Maintain a clean and properly notched trowel throughout the installation process. After sufficient open time, the carpet must be pressed into the adhesive and rolled with the appropriate-weight roller, as specified. Caution: Bond failure most often is caused by inadequate adhesive application from the incorrect trowel notch size and/or trowel notch configuration; improper adhesive selection or quality; incorrect open time; residual curing and parting compounds; moisture-related issues; or premature traffic or cleaning before adhesives have adequately dried.
14. **Open Time:** Appropriate open time varies depending upon environmental conditions, subfloor porosity, carpet backing system, and adhesive type.
15. **Seam Adhesive (Sealer):** An appropriate direct-glue seam adhesive must be applied to the edges that are trimmed for seaming and must cover the thickness of both the primary and secondary backing without contaminating the face yarns. The seam adhesive is applied to the cut edge of one side only, that side being the first one placed into the floor adhesive. When the edges are butted together to form the seam, and while the seam adhesive still is transferable, this seals the first edge as well as the second.
16. **Rolling:** After sufficient adhesive application and open time, the carpet must be pressed into the adhesive and rolled with the appropriate roller. Rolling must be performed with the lightest roller that achieves full and complete coverage of the substrate and carpet backing, including penetration into the backing's deepest recesses. The roller for direct-glue installation should be no more than and no less than 75 pounds.
17. **All Seams:** All seams should be sealed with the appropriate seam sealer. The roller should be no more than or less than 75 pounds.

Double-Glue Installation

1. **Relaxing/Acclimation:** Site, environmental, and ventilation conditions become more important when performing double-glue installations. In double-glue installations, a separate cushion is adhered to the subfloor and the carpet is glued to the cushion.
2. **Cushion Installation:** Cushion must be installed in the longest continuous lengths possible with consideration to traffic patterns and carpet seam placement. Cushion seams must be at a right angle (90 degrees) to the carpet seams or offset at least six inches. Cushion seams must be butted without compression, leaving no gaps.
 - It is important that the glue have time to off-gas and set up. Without time for off-gassing, bubbles can appear anywhere from immediately to 6–12 months after installation. The glue should be tacky to the touch, but not transfer onto your finger (pressure-sensitive glue).
 - The recommended pad for double-glue installation is a 21-pound rubber slab pad. Felt pads and wool pads are NOT recommended for this type of installation.
3. **Carpet Layout:** Lay out the carpet according to the seaming diagram. Carpet must be cut 3–4 inches longer than the area measurement. When applicable, allow for pattern repeat. Align all carpet breadths to their proper position and trim seams. Care must be taken to avoid cutting into the cushion under the seams.
4. **Trowel Size for Double-Glue Installation:**
 - For pad to floor using pressure-sensitive glue, use a 1/16" x 1/16" x 1/16" square-notch trowel.
 - For carpet to pad with smooth-backed carpet, use a 1/8" x 1/16" x 1/8" U-notch trowel.
 - For carpet to pad with rough-backed carpet, use a 1/8" x 3/16" x 1/8" U-notch trowel.
5. **Rolling Recommendation:** The proper roller recommended for a double-glue installation is a 35- to 50-pound roller. Carpet should be rolled in both directions. After 2–3 hours, the carpet should be rolled again.
6. **Pattern Adjustment:** Pattern adjustment during installation is possible and should be anticipated.
7. **Pattern Alignment:** Match the pattern at the midpoint of the seam's length. Work from the seam's midpoint to the seam's end, bringing the pattern into register using appropriate tools that might include a power stretcher, knee kicker, dead man, dry line, stay nails, or crab stretcher.
8. **Curing Adhesives:** It is highly recommended that foot traffic over the applied adhesive installation be restricted for a minimum of 24–48 hours to allow adhesives to cure properly. Premature traffic can cause issues with the installation. Restrict carpet exposure to water from cleaning or other sources for a minimum of 30 days.
9. **Materials for Protection:** If additional work needs to be done after the carpet installation, cover the carpet with nonstaining building paper to protect the finished flooring from soil or paint. Protect the installation from rolling traffic by using sheets of hardboard or plywood in potentially affected areas. Do not place plastic sheeting over any carpet installation because it may present a slip hazard and may leave residues that will result in rapid soiling after removal. Additionally, plastic sheeting may trap moisture, which may promote mold growth and retard adhesive curing.
10. **Maintain Temperature:** Do not allow the temperature of indoor carpet areas to fall below 50°F (10°C), regardless of the age of the installation.