THE CARPET AND RUG INSTITUTE

P.O. Box 2048 Dalton Georgia 30722-2048
706.278.3176
carpet-rug.org

Adhesive Installation Over Concrete Sub-Floors

Technical Bulletin

Site Conditions – The environment in which the carpet is to be installed must be controlled with the temperature between 65°F and 95°F (18°C and 35°C) and the relative humidity between 10% and 65%. The slab temperature should not be less than 65°F (18°C). These conditions must be maintained for at least 48 hours before, during, and 48 hours after the installation.

Floor Preparation – Concrete shall be inspected to determine the special care required to make it a suitable foundation for carpet. All cracks 1/8 inch (3mm) wide or protrusions over 1/32 inch (.8mm) should be filled or leveled.

Concrete shall be cured, clean, and dry. The concrete shall be free of paint, dirt, grease, oil, curing or parting agents, and other contaminants, including sealers, that may interfere with the bonding of the adhesive.

Whenever a powdery or porous surface is encountered, a primer compatible with the adhesive shall 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.

Primers – The use of primers on floor surfaces is generally not necessary except for sanded, dusty, porous, or acoustical surfaces. Priming cannot overcome moisture conditions and must not be used for that purpose. When used, primers must be thin and fast drying. They must be compatible with adhesives, which should be applied only after primer is dry.

Where lightweight or acoustical concrete is used, refer to the manufacturer's recommendations for the proper primer to be used before carpet is installed.

Liquid Adhesive Removers – There are a number of liquid adhesive removers available that will effectively remove cut-back or emulsion adhesive residue from sub-floors; however, there is evidence these products may adversely affect the new adhesive or the new floor covering. Any residual of these products left in or on the concrete slab is capable of causing failure of the new floor adhesive. The use of these removers may void all applicable warranties.

Testing of Concrete Sub-floors Prior to Adhesive Installations – The owner or general contractor must submit to the flooring contractor a written report on moisture and surface alkalinity of the slab to determine its suitability as a substrate for the material to be installed.

Moisture Testing – 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. All concrete floors should be tested for moisture emission rate by utilizing an anhydrous calcium chloride moisture test kit available from installation supplies and accessories distributors.

This quantitative method is very precise and must be conducted carefully with strict attention to the test kit manufacturer's detailed instructions. Moisture emission rate is expressed in lbs./1000 square feet/24 hours. Because the calcium chloride test for emission rate requires 3 days to conduct, proper installation planning is a must.

As a general guideline, an emission rate of 3 lbs. (1.4 kg) or less is acceptable for most carpet. In the range from 3 to 5 lbs. (1.4 to 2.3 kg), carpet with porous backings can usually be installed successfully; however, the risk of moisture related problems increases. Since some floor covering products are less tolerant of moisture than others, always consult the individual manufacturer to determine the acceptable emission rate for specific products.

Alkalinity Testing – a pH range of 5-9 is satisfactory; however, a reading above 9 requires corrective measures. Consult the adhesive manufacturer for recommended testing and corrective procedures.

Source of information: CRI-104, *Standard for Installation of Commercial Carpet*. CRI-104 is available for a nominal cost from the CRI Publications Department.