



FUNCTIONAL LIQUID BARRIER WITH BREATHABILITY



Spills & Wet Cleaning

With conventional carpet products, liquid spills and wet cleaning are major issues in intensive use commercial applications. How well a carpet and its backing resist moisture, while still offering breathability, affects the overall performance and beauty of the carpet. After extensive testing, carpet backing made with BioCel™ polyurethane technology has been found to provide an effective moisture barrier combined with the necessary breathability.

Functional Liquid Barrier

To simulate wet spills, the British Spill Test measures the penetration of a dyed water solution through the carpet product over a 24-hour period. A specified liquid amount is poured from a height of one meter through a funnel onto the carpet face, where it is contained in a concentrated area for 24 hours. The carpet is then evaluated for liquid penetration through the product. Results are reported as pass or fail. Polyurethane carpet backings made with BioCel Technology are designed to meet the requirements for a pass rating under this protocol. In addition, carpet backing made with BioCel polyurethane technology may meet other liquid barrier tests used by the industry.

Carpet and Rug Institute (CRI) Installation Standard 2011

Flooring materials exhibit different levels of breathability. Certain flooring products are less tolerant than others to installation over high moisture slabs. In cases where the flooring products don't breathe well, high slab moisture emission rates have a greater potential to cause failure. It is important to know the moisture emission rate of the slab prior to installing any type of flooring. CRI Carpet Installation Standard 2011 states: "Test all concrete floors for moisture emission rates by utilizing an anhydrous calcium chloride moisture test kit or Relative Humidity (RH) Testing. 9.3 Moisture Vapor Emission Rate (MVER) Testing - MVER tests must be conducted in accordance with the latest edition of ASTM F 1869, not to exceed 3 pounds per 1000 sq ft per 24 hours. (ASTM F1869 - Standard Test Method for Measuring Vapor Emission Rate of Concrete Subfloor Using Anhydrous Calcium Chloride). 9.4 Relative Humidity (RH) Testing - Testing for internal relative humidity of concrete slabs must be conducted in accordance with the latest edition of ASTM F-2170, not to exceed 75% relative humidity. (ASTM F2170 - Standard Test Method for Determining Relative Humidity in Concrete Floor Slabs Using In Situ Probes)." For specific recommendations, consult the carpet manufacturer.

Breathability

Carpets backed with BioCel polyurethane technology are designed with a unique breathability. They impede liquid spills from penetrating the subfloor, while allowing moisture vapor from the adhesives and concrete slab to evaporate through the product. This breathable barrier functions like high-tech breathable fabrics and similar materials.

Water Vapor Transmission for Materials - Test Method ASTM E 96

Test Method ASTM E 96 evaluates water vapor transmission using the water method. The Water Vapor Transmission Rate is defined as the steady water vapor flow in unit time through unit area of body, normal to specific parallel surfaces, under specific conditions of temperature and humidity at each surface.

Carpet backed with BioCel polyurethane technology was tested in accordance to ASTM E 96 and found to have the following moisture vapor transmission rating. (Test results may vary depending on carpet construction and total product weight.)

BioCel PFAB-3 > 7 lbs/1000 ft²/24 hrs

BioCel BLP-1, Premier Plus and PAB-3 > 5 lbs/1000 ft²/24 hrs

Testing shows that BioCel PFAB-3 technology allows more than seven pounds of water vapor to pass through the carpet backing, and BioCel BLP-1, Premier Plus and PAB-3 technology allows more than five pounds. This can be classified as meeting acceptable installation standards as outlined in CRI Installation Standard 2011 for installation over slabs emitting water vapor emission rates of up to three pounds. Installing carpet over slabs with higher moisture vapor emissions can cause adhesive bonding issues and a greater risk of installation failure.

For additional information:

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