

Carpet Use by Individuals with Allergies and Chemical Sensitivities

Today's synthetic carpets are manufactured from nylon, polyester, and polypropylene fibers, and polypropylene and polyurethane backing materials, which are the same materials used to make food and drink containers, sutures, surgical casts, patient examination gloves, and other medical implements and materials, clothing, upholstery, drapery, sportswear, and sporting good products. For the majority of our population, including those who suffer from common allergies, the use of carpet provides a sense of warmth, comfort, and beauty to their home and workplace, as well as being a product that poses no threat of invoking an adverse reaction once it is installed. However, because individuals with Multiple Chemical Sensitivity (MCS) have demonstrated irritability to a wide range of chemicals it is reasonable to expect individuals with MCS to have concerns regarding their exposure to the Volatile Organic Compounds (VOCs) emissions associated with new carpet emissions and other products.

Volatile Organic Compounds originate from both synthetic and natural substances that contain carbon. VOC emissions from new carpet are associated with the manufacturing and use of the synthetic latex compound styrene butadiene rubber that enter into a gas phase that produces the odor commonly associated with new carpet. Because odor is considered to be a vital factor in the perception of indoor air quality, and because odors can be perceived as being irritating or even harmful, the VOC emission associated with new carpet have been studied extensively, and in concentration many times higher in the air than what is possible for new carpet to emit. As of this date there has been no medically documented case which, based on the use of scientifically approved test methods, has validated that an individual has experienced adverse health effects as a result of exposure to the level of VOCs new carpet emits.

Customers concerned about their use of carpet should look for carpets that display The Carpet and Rug Institute's Green Label Plus (GLP) Indoor Air Quality (IAQ) Green Label logo. The maximum allowed VOC emission from new carpet in this test program, which utilizes the ASTM D 1156 test method to evaluate new carpet VOC emissions over a 24 hour and a 14 day period, is 0.5 milligrams per meter square, which is many times lower than the VOC emission levels associated with many other interior products and materials. In addition, VOC emissions associated with new carpet are reduced significantly over 48-72 hours after a carpet has been installed, and when adequate fresh air-exchange is provided in the newly carpeted areas. Generally, after 96 hours the presence of odors associated with new carpet VOC emissions is usually undetectable to most individuals.

Although the carpet industry has not used formaldehyde for any purpose since 1982, it is still not uncommon for consumers who want to be certain they are purchasing a product that is safe for their use to occasionally ask whether or not formaldehyde is still used by the carpet industry. Because formaldehyde is a naturally occurring substance found present in both our indoor and outdoor environments, the list of VOC emissions associated with new carpet in the CRI GLP IAQ test program includes formaldehyde in order to demonstrate that this chemical is not used in any carpet manufacturing process or material.

Another concern regarding the use of carpet among individuals with allergies pertains to the presence of household dusts, dust mite, and other allergens. Of the estimated 20% of our population who suffer from allergies, an estimated 53% of this population suffers allergies to house dust. An estimated 70% of those individuals allergic to house dust are allergic to mite allergen. The significance here is that when an individual encounters an allergic reaction when a new carpet is installed it is generally due to their exposure to environmental dusts, dust mite, and other allergens that were not thoroughly removed by vacuuming their existing carpet prior to having it pulled-up from their floor, causing these allergens to be suspended into the breathing zone.

Because only about 1% of carpet dusts are located on the surface of a carpet, exposure to dust and dust mite allergen may actually be lower from a properly maintained carpet than from a smooth, hard floor surface. Studies have shown that frequent vacuuming using a vacuum equipped with efficient filtration system along with periodic cleaning by hot water-extraction significantly reduces dust mite allergen levels in carpet. The importance of this stems from the fact that the presence of dust mite allergen in homes with a moderate humidity level is unavoidable.

For the majority of our population, today's synthetic carpets provide a sense of warmth, comfort, and beauty to their surroundings, as well as a softer alternative to hard surface floorcovering materials. And, unlike hard floorcovering materials, carpet seems to provide a better floorcovering choice in controlling dusts, dust mite, and other allergens that can become re-suspended into the breathing zone by the mechanisms of floor trafficking.

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