ADDRESSING THE CHOICE BETWEEN Nylon 6 and Nylon 6,6 Fiber:

A Masland Contract White Paper

Selection of the proper carpet fiber is imperative when it comes to specifying carpet for a commercial project. Most commercial carpets in today's market use either Nylon 6 or Nylon 6,6 face fiber. The following white paper compares and contrasts the two types of fiber, and offers specifiers the information they need in choosing high-performance, long-lasting carpet for commercial projects.

NYLON: THE BUILDING BLOCK

Nylon 6,6 and Nylon 6 are two important members of a group of polymers known as polyamides. A polyamide manufactured from aliphatic monomer(s) is commonly known as nylon. However, the U.S. Federal Trade Commission has defined nylon as a manufactured fiber in which the fiber-forming substance is a long-chain synthetic polyamide in which less than 85% of the amide linkages are attached directly to two aromatic rings.(REFERENCE 1)

Nylon fibers were the first truly synthesized manufactured fibers; introduced in the 1930s as replacement for boar bristles in toothbrushes, nylon fiber quickly found itself adapted into several forms of manufactured items.(REFERENCE 2)

Nylon 6,6 is synthesized by polycondensation of two monomers, hexamethylenediamine and adipic acid, while Nylon 6 is synthesized by ring-opening polymerization of caprolactam, an organic compound.

Nylon 6,6 has a tighter molecular structure than Nylon 6 due to a higher level of hydrogen bonding and maximum alignment between molecular chains. This creates a tighter structure that better resists crushing, matting and stain penetration.

MAKING THE RESPONSIBLE CHOICE

Today's specifiers are charged with assessing the potential environmental aspects of how each product is made, as well as how its performance characteristics and aesthetic qualities lend themselves to a particular project.(REFERENCE 4)

According to the U.S. Environmental Protection Agency, as with all products, environmental impacts can occur throughout the life cycle of carpet, from the initial acquisition of raw materials to the final disposal of any product remnants. These impacts vary with the types of materials used, the pattern of carpet use and replacement, and the options available for reuse, recycling, or disposal. By considering a variety of life cycle attributes, from the materials used to manufacture and install carpet to recycling and disposal issues, specifiers can make informed decisions that are best for their particular projects. (REFERENCE 5)

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The chemistry of Nylon 6,6 gives carpet the unique balance of strength, elasticity and durability needed to survive in commercial installations. Since its superior performance characteristics make it last longer and require less maintenance to stay looking good, carpets with Nylon 6,6 Fiber offer a solid investment for business applications, and benefit the environment with a strong "First Life" capability.

Masland Contract products now feature Refresh™ fiber, the first and most sustainable Nylon 6,6 carpet fiber in the world. This innovative fiber created by using recycled post-consumer yarn harvested from used carpet diverted from U.S. landfills. Its producer, Universal Fibers®, uses proprietary processes to produce "clean fluff," which is then recycled with Nylon 6,6 to create solution-dyed yarn with recycled content and permanent stain resistance.

Longer life and enhanced stain resistance place Nylon 6,6 at the top of the list for commercial projects. Masland Contract will continue to produce carpets with Nylon 6,6 to meet the needs of specifiers today and in the years to come.

REFERENCES

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