

## Synthetic Fiber Carpet

### Nylon

The fiber nylon was introduced first by the DuPont Chemical Company in 1938. Several years later, after a great deal of development, nylon became the first synthetic fiber to be used in the entire carpeting industry.

The first 3 generations of fiber experienced many problems with the worst being staining. The 4th generation fiber of nylon had a mill applied coating that solved a majority of the staining problems. The ability of the fiber to repel water and oil based spills as well as soil helped to propel nylon into the top selling carpet fibers out there.

After several other changes, the DuPont company introduced the fifth generation nylon fiber. This stain resistant fiber would repel most dye stains if treated in a reasonable time. This fiber is more accurately called an acid dye blocker in that it doesn't allow acid dyes to penetrate and stain the fiber.

The protective coating mill is applied and fills the dye sites with anionic molecules.

### Tip

An easy way to test fiber for the presence of a fluorochemical is to cut a couple of fibers from a non traffic area and apply a few drops of oil and water mixture. If it beads up, then there is an active fluorochemical present.

Whenever testing for the presence of the acid dye blocker, you should again cut a couple of fibers from a non traffic area, then immerse the fibers in a red kool-aid mixture and wait for 5 minutes or so. Remove the fiber from the liquid and flush with neutral detergent solution. If the acid blockers are present and active, there will be no discoloration.

### Polyester

The fiber of polyester was first introduced into the garment industry around in the 1950s. By the late 1960s, polyester was introduced into the carpet industry as a face yarn. In hand, feel, and appearance it is similar to nylon, although it doesn't possess that same resiliency.

Polyester doesn't absorb water based spills, isn't affected by urine or kool-aid, but it will absorb oil based spills. Polyester is non allergenic and mildew resistant.

### Acrylic/modacrylic

Both of these fibers were first used as carpet yarns around the late 1940s. They disappeared around 1988 due to the competition from other fibers. It was reintroduced to the market around 1990 in Berber styling.

This was done so that people could take advantage of the wool like appearance, hand feel, and the fact that it's more spot resistant, much easier to clean, and not damaged in the ways that wool is.

### Olefin

Olefin is the latest of the synthetic fibers to be adopted to carpets. Once only available in continuous filament, it is now produced in staple form as well. Olefin has a wide variety of uses that include primary and secondary backing of tufted carpets, warp yarns, and other uses as well.

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