



# FIBER BASICS

## NYLON

Nylon has been the most commonly used carpet fiber since the early 1960's. In overall performance characteristics, nylon is the softest and most versatile of all fibers, providing excellent flexibility in creating a variety of carpet styles. Nylon can be found in a wide range of both cut pile and loop pile styles. It is durable, resilient, and receptive to dyeing for color versatility and uniformity; many new nylon yarn systems are also exceptionally soft. Though not inherently stain resistant, most nylon carpets feature a stain-resist carpet treatment for protection against household spills and stains.

## POLYESTER (PET)

Polyester offers exceptional softness and color clarity, and it is also naturally stain and fade resistant. While polyester is not as inherently resilient as nylon, carpets made of polyester fiber will perform well if appropriately constructed. Thanks to technological advances in yarn processing and improved carpet construction techniques, polyester's purported weakness as a high-performance fiber has been largely overcome. When properly twisted and tufted, today's polyester yarns perform much better than in years past.

Polyester styles are good choices for low-to medium-traffic settings such as bedrooms. Polyester carpet styles typically represent good value.

## PTT (TRIEXTA)

PTT (Polytrimethylene Terephthalate) is a polyester fiber, first patented in 1941, but it was not until the 1990's, when Shell Chemicals developed a low-cost method of producing high-quality 1,3-propanediol (PDO), the starting raw material for PTT, that commercial production of the company's Corterra polymers was possible. Shaw introduced the first BCF PTT (Corterra) residential carpet in the United States in 2001.

PTT features good resiliency and excellent inherent stain resistance. However, due to flammability concerns, Shaw was unable to apply a stain and soil resistance system, resulting in a significant product weakness for our customers and end users. While most stains can be removed from carpets made of PTT, the yarn's lack of repellency can make clean-up of spills difficult. Many oil-based stains are extremely difficult to remove.

## POLYPROPYLENE (OLEFIN)

Unlike other fiber types, polypropylene will not absorb water and must therefore be solution dyed (pigmented) to impart color. Solution dyeing is a pigmentation process in which color is actually built into the fiber when it is formed, or extruded, thereby becoming an inherent part that cannot be removed. The color will not fade, even when exposed to intense sunlight, bleaches, atmospheric contaminants, or other harsh chemicals or elements. However, since it is not as resilient as other fibers, polypropylene is normally used in loop pile constructions in which there is less need for superior resiliency.