

# Carpet Selecting Guide

A guide to help you get familiar with the four most popular carpet fibers so you can make a better decision on selecting your next carpet.

## Fiber Types The Pros & Cons

There are many different types of fiber used to make carpet. Here are some PROS & CONS of the four most popular fibers, Nylon, Polyester, Olefin, and Wool.

### NYLON

#### **PROS**

Good Elasticity - Nylon will stretch up to 33% of its length and still regain its original shape. This is very important in heavy traffic areas where furniture may be dragged across the carpet.

Very Abrasion Resistant - It even surpasses wool. Many manufacturers offer wear guaranties.

Static Resistant - Not its ancestry, but today's fibers do very well.

Heat Sets Well- When properly heat set, nylon retains its crimp, twist, and dye extremely well.

Good resiliency - Nylon can be crushed for long periods and still regain its original shape.

Non-Absorbent - Nylon dries quickly since it will absorb less than 8% of its weight in H<sub>2</sub>O.

Mildew Resistant - Nylon provides no food source, but mildew can grow on it if another food source is available. Notice the damage that can be done under an over watered potted plant.

Nylon responds very well to most professional cleaning methods and treatments, especially Hot Water Extraction, and is David's ECO-CLEAN favorite fiber to clean.

#### **CONS**

Nylon is almost always acid dyed. It is rarely solution dyed, so it can have problems with bleaching, fading, urine reactions, etc.

### **POLYESTER**

Polyester's popularity seems to go up and down like a roller coaster. Because it is relatively inexpensive to produce, manufacturers are regularly reintroducing this fiber to the carpet industry. Although it has some excellent qualities, and is a great fiber for clothing, it does have some limiting factors when used in carpet. If you purchase polyester you need a heavy ounce preferably 50 or above.

#### **PROS**

Since polyester does not have dye sites, it is usually dyed with a disperse dye or solution dye method which makes it very resistant to bleaching, fading and soil dye reactions.

Stain Resistant - This applies only to water based stains.

Low Absorbency - Quick drying

#### **CONS**

Polyester is difficult to dye and usually must be solution dyed which limits the variety.

It is not resistant to oily stains, and in fact an oily spill or spot left without proper cleanup can oxidize and even chemically bond with, and become part of, the fiber. You need to know that some of these spots just won't come out.

Polyester is not a resilient fiber. When crushed it does not regain its original shape easily. Traffic areas tend to lie down, showing "apparent soiling". Furniture marks can be permanent reminders to the owner of where his furniture used to be.

Even when cleaned properly it will lay flat. It tends to lie in different directions (nap reversal) down a heavily traveled hall or room and is very noticeable. The appearance from the nap reversal then looks like a snake down the hall or a pool of water in the middle of a room.

Crimp Loss - Early polyester was a mess. A new polyester carpet was fuller, fluffier and more luxurious than anything on the market. Six-month-old polyester was an owner's nightmare. Due to loss of twist and crimp, long straight fibers were left in the traffic areas, which caused matting and tangling and destroyed the original look of the carpet.

Definite improvements have been made by heat setting and using finer yarns, but crimp loss can still be a problem. This is a characteristic of polyester, not a defect.

**Polyester is not recommend in high traffic areas.**

## Olefin

Olefin has become almost synonymous with one of its trade names "Herculon" a trademark owned by Hercules Corporation, a major manufacturer of olefin.

### PROS

Olefin is very moisture resistant. It will absorb only one tenth of 1 % of its weight in water. This leads to some pros and some cons.

Olefin is very difficult to stain.

Olefin is great *for* outdoor applications (stadium or pool)

Chemical Resistant - Most chemicals and bleaches won't damage it at all

Solution dyeing makes it resistant to fading.

Lightweight - It is the only common carpet fiber that will float on water.

Strong - It wears well except for resiliency factor.

It has good clean ability and stain release. (Except oil/petroleum-based stains - see cons)

### CONS

Olefin is not a resilient fiber. When crushed it does not regain its original shape easily. Traffic areas tend to lie down, showing "apparent soiling". Furniture marks can be permanent reminders to the owner of where his furniture used to be. It is a very heat sensitive fiber. Its melting point is around 300 degrees but damage can occur at lower temperatures. Olefin can be damaged by friction. Even dragging a heavy piece of furniture across an olefin carpet can cause permanent marks from the heat generated by friction.

If kids are rough housing and kick the carpet the friction from a tennis shoe can mark and burn.

Like polyester, extended exposure to oil-based soils may become permanent.

Olefin is very difficult to dye due to its low absorbency rate. It is almost always solution dyed.

Quite often, Olefin is in a glue-down situation in commercial use which creates a potential to brown from soil wicking from the base of the yarns due to incomplete soil removal. Over wetting and/or slow drying increases the likelihood.

**Olefin is not recommended in high traffic areas.**

## WOOL

Wool comes from the fleece of sheep or lambs. This is one of the oldest fibers used by man, dating back over two thousand years. It is still one of the finest face yarns available *for* carpet. Wool is chemically made up of standard organic elements including sulfur, which accounts for the wool smell when it is damp.

### PROS

Wool has excellent soil hiding capabilities. Wool will not exhibit or show soil as much as other fibers. The reason *for* this is that wool is an opaque fiber (as opposed to synthetics which are transparent) and wool doesn't refract and reflect light like synthetics. The naturally dull appearance provided by the scales of the epidermis makes soil much less apparent to the human eye. Natural crimp makes wool an excellent insulator

Wool is very strong, elastic and resilient. Wool face yarn in a well-constructed carpet will stand up to the heaviest traffic and still look beautiful. Good Absorbency - This means that wool reacts well to a number of dye types and techniques. Keep in mind, this means easy staining also. Soil Release - Wool responds very well to cleaning as moisture makes the fiber swell and release dirt.

Wool is naturally flame retardant.

### CONS

Wool is a very expensive material. This arises mainly from the processing cost, the cleaning, and the preparation, etc., rather than the actual cost of the raw material.

Fiber Distortion - Wool is very prone to distortion by excess agitations from the homeowner scrubbing to get a spot out.

Stains Easily - Due to its absorbency and ease of dyeing, wool is also easily stained by wine, Kool-Aid and other acid dyestuffs.

Remember that absorbency is the same quality that makes wool so desirable as far as dye acceptance and obtaining the beautiful rich colors that you often find in wool carpets and oriental rugs.

Chemical Sensitivity - Wool is sensitive to alkaline chemicals above a pH of 9.5 after prolonged exposure. This exposure will tend to make wool brittle and discolor somewhat. This problem is sometimes referred to as "felting". Wool is also very sensitive to chlorine bleach, such as Clorox, which is normally found in homes and grocery stores. Chlorine bleach will completely dissolve wool within a matter of minutes. The New Zealand Wool Bureau recommends water-based cleaning solutions with a pH not lower than 5.5 and not higher than 8 pH. Staple Yarn - Fuzzing can be a source of problems because wool only comes as a staple yarn and excess agitation can cause that fuzzing effect.

