



**Professional**

# **RESIDENTIAL**

## **Carpet Cleaning**



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**Textbook # RTS1002CCT**

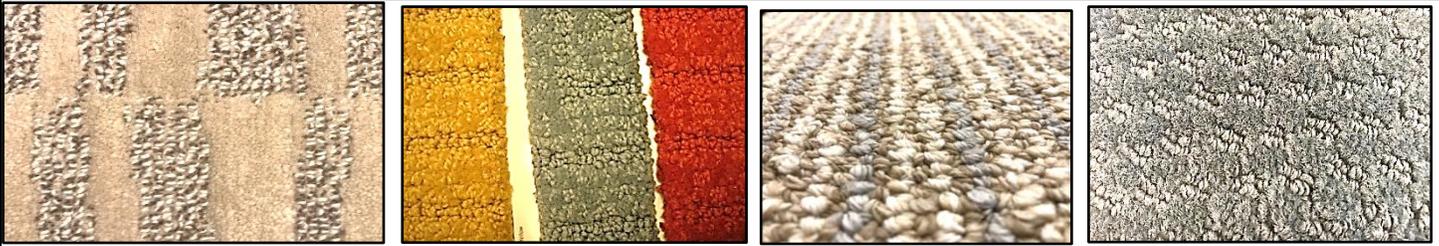
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# MODULE 4 The Yarn Characteristics:

## The Synthetic Yarns

### NYLON



#### Nylon Background:

Nylon was developed by DuPont in the 1930's, nylon became the world's first 100% synthetic (man-made) yarn. The word nylon came from NY (New York) and LON (London), the two places Dupont had co-developed the yarn. Nylon has been the best-selling synthetic yarn of all time. In recent years, polyester has passed nylon in residential carpet sales. Nylon has an affinity, or natural attraction, for absorbing acid dyes. You probably already know acid dyes. Acid dyes are coloring, found in nearly everything we eat and drink. Therefore, nylon yarns, left unprotected, will readily stain with acid dyes.

#### CLEANING CONCERNS: ADVANTAGES

1. Nylon is very resilient. It will spring back up when walked on, or after cleaning.
2. Nylon Hides soils. It absorbs some light, unlike other synthetics; it does not reflect light thus magnify the soils.
3. Nylon is the best soil hiding synthetic yarn. 4. Nylon is relatively oil resistant. It can release oily soils better than any other yarn. Nylon tends to give cleaners the best chance to remove oils.
4. Nylon has a soft hand.

#### NYLON CLEANING CONCERNS: DISADVANTAGES

1. Nylon is absorbent to water, and water-based staining material –acid, disperse dye, and turmeric dyes.
2. May require extensive dry times after cleaning, more than any other synthetic yarn
3. May be discolored from bleaches, sunlight (windows, sliding doors, skylights), and other atmospheric contaminants such as gas stoves, UV Sunlight, etc.

#### Two Types of Nylon – Type 6,6 and Type 6

There are two types of nylon made today: Type 6,6 and Type 6. Each is a little different for the cleaning technician although we must note they are to be cleaned the same, and often with differing results.

#### TYPE 6,6

1. Dye Sites are smaller and fewer in number on the face of the filament.
2. Tends to hold color against UV sunlight fading, and atmospheric contaminants like gas stoves, that promote fume fading.
3. Tends to dry faster when cleaned.
4. Tends to be harder to spot dye, or whole room dyeing on location
5. Tends to get better results removing stains.

#### TYPE 6

1. Dye Sites are larger in size and number than Type 6,6.
2. It tends to be subject to fading from atmospheric contaminants like gas stoves and sunlight.
3. Tends to dry slower when cleaned.
4. Tends to be offered in more colors.

# MODULE 5 The Yarn Characteristics:

## The Blended Yarns

Cleaning technicians must keep watch for blended yarns.

- If your fiber identification discovers two or more yarns, the carpeting is a blend of yarns.
- Clean the yarns as the yarn that is most sensitive to cleaning chemistry, or as the one that is most absorbent. As an example, use this formula: ***If Wool & Nylon = Wool***
- We would clean the wool / nylon blend as wool because wool is more sensitive to cleaning chemistry (also known as “less forgiving”) than nylon.
- A second reason we would clean the blend as wool is because wool is *more water absorbent* than nylon.

Here is a general list of some of the many possibilities:

1st Yarn	2 <sup>nd</sup> Yarn	Clean As:		1st Yarn	2 <sup>nd</sup> Yarn	Clean As:
Nylon	Polyester	Nylon		Wool	Silk	Silk
Nylon	Olefin	Nylon		Wool	Rayon	Rayon
Nylon	Acrylic	Nylon		Wool	Linen	Linen
Nylon	Triexta	Nylon		Wool	Seagrass	Seagrass
Wool	Nylon	Wool		Polyester	Linen	Linen
Wool	Olefin	Wool		Polyester	Silk	Silk
Wool	Polyester	Wool		Polyester	Rayon	Rayon
Wool	Acrylic	Wool		Triexta	Polyester	Polyester
Wool	Sisal	Sisal		Triexta	Rayon	Rayon
Wool	Jute	Jute		Triexta	Wool	Wool



Two yarns in one!



White loops are wool, small brown loops are jute.



Wool and viscose (rayon) blend area rug. It is popular.

### The Chemical Test

## FIBER IDENTIFICATION CHART

FIBER	ODOR	ASH	FLAME
<b>WOOL</b>	Burning hair	Crumbles, irregular black, crumbles to a coarse powder, Easy to crush	Orange, sputters out, does not support flame
<b>COTTON</b>	Burning paper	Crumbles to fine powder, Irregular glowing ember of gray & black color	Yellow fame. Burns evenly, continues to smolder, no smoke. Has afterglow.
<b>RAYON / VISCOSE</b>	Burning paper	Soft + gray, or none. Similar as linen	Rapidly burning orange or bright yellow flame. No afterglow. Burns faster than cotton.
<b>LINEN</b>	Smells like burning newspaper	Light, feathery, gray ash	Yellow flame. Burns less quickly than cotton.
<b>SILK</b>	Burning hair	Little or no ash Easy to crush.	Round, shiny bead, easy to crush. Curls away from flame.
<b>NYLON (both Type 6 and Type 6,6)</b>	Celery / sealing wax	Round, shiny, hard black bead.	Blue base with orange tip, burns evenly but rapidly with no smoke with white puff
<b>ACRYLIC</b>	Acrid / burned meat	Irregular, black hard crust, can be crushed. Black ash	Sputters, orange, and white fame, burns fast with black smoke. Fuses.
<b>POLYESTER</b>	Sweet / fruity	Hard, round, black bead. Won't crush.	Sputters, burns fast
<b>TRIEXTA</b>	Same as polyester	Same as polyester	Same as polyester
<b>OLEFIN (Polypropylene)</b>	Asphalt, tar	Round bead, a tan or brownish hard bead	Blue base with orange tip, burns evenly, but rapidly, and with no smoke



\*Trick question...What yarns are in these carpets? The answer is "I don't know, I must test them first!" In fact, here you must test every color. When finding multicolor yarns in carpet be sure to test every yarn, every time!



1. Sharp turn in top of nylon hallway that leads to bedrooms.



2. Deep tracked soils around where a bed used to be.



3. Extreme soil in olefin carpet & shows where area rug was.



4. Extreme dog oils on a nylon area rug.

### B. Apparent Soils

Apparent soils consist of many different types. Apparent soils may appear to change the texture, color or in some other way the appearance of the carpeting. Apparent soils may be simply light reflections from a window or skylight. Cleaning technicians have been misled for years thinking small shadows are soils, or just simply spots. Some examples are:

#### 1. NAP REVERSAL



### 3. TANNIN STAINS: BROWNOUT CONDITIONS



1. Apply Anti-Browning Agent strong as possible. Most cases you may use it undiluted.
2. Let Stand for 20- 60 minutes
3. Extract with acidic Fiber Rinse, or Fiber rinse & Acidic Detergent Combination Product.
4. Re-apply anti-browning agent of needed.

Causes: too much alkaline or too strong alkaline cleaning solutions applied, then left in the yarn. Then it is not neutralized or rinse well.

Cure: apply anti-browning agent, which is acidic pH. Anti-browning agent may work slowly, be patient. You may rinse the anti-browning agent with a fiber rinse. Acidic solutions may damage silk fiber.

Prevention: rinse fabric out with acidic solutions all fiber rinses. (ph 3 - 6)

### 4. TANNIN STAINS: BLOOD



#### Removal Procedure:

1. Apply Anti-microbial. Let stand 20 minutes.
2. Extract all remaining blood material.
3. Apply tannin remover
4. Apply enzyme or All-Purpose Spotter
5. Agitate
6. Extract well
7. Apply anti-browning agent to traces of stain
8. Apply light coat of deodorizer to cover any remaining scent

### 5. TANNIN STAINS: TOMATO BASED

Tomato-based food or juice drinks, tomato-based alcohol drinks, sauces, salad dressings, and toppings.



1. Scrape and or rinse all excess as possible.
2. Apply Anti-Browning Agent strong as possible. Most cases you may use it undiluted.
3. Let stand for 20- 60 minutes
4. Apply enzyme spotter or all-purpose spotter.
5. Agitate all directions. Try not to spread into a larger stain.
6. Extract with acidic Fiber Rinse, or Fiber rinse / Acidic detergent combo product.
7. Re-apply Anti-Browning Agent if needed. Use tannin acid spotter & enzymes. Rinse well. May also require a water solvent or enzyme to remove any soils.