



RMA Webinar Why Fiber Matters Presentation provides information on the four key components of Antron® carpet fiber with a discussion on fiber engineering, polymer base, and soil resistance technology. Presentation takes the architect, designer and end-user professional through a comprehensive overview of carpet fiber types and applications for commercial carpet. **Nathalie Leroux - INVISTA**
Segment Manager – Higher Education & Healthcare
Southwest Region



Why Fiber Matters.

antron. 



Does fiber really matter?

Of Course It Does!

Fiber matters in.....

- How it performs
- How it looks over time
- How it can last



Product Timeline.

Wallace Carothers invented nylon in 1935



Antron® nylon created with four-hole hollow filament in 1968

Bio_Antron® carpet fiber launched with 10% bio-based content in 2009 and Antron® Lumena™ fibers with TruBlend™ fiber technology with 30% pre- and post-consumer recycled content in 2010



In 1938 nylon was introduced in ladies hosiery. Almost 10 years later, nylon was first used in carpet



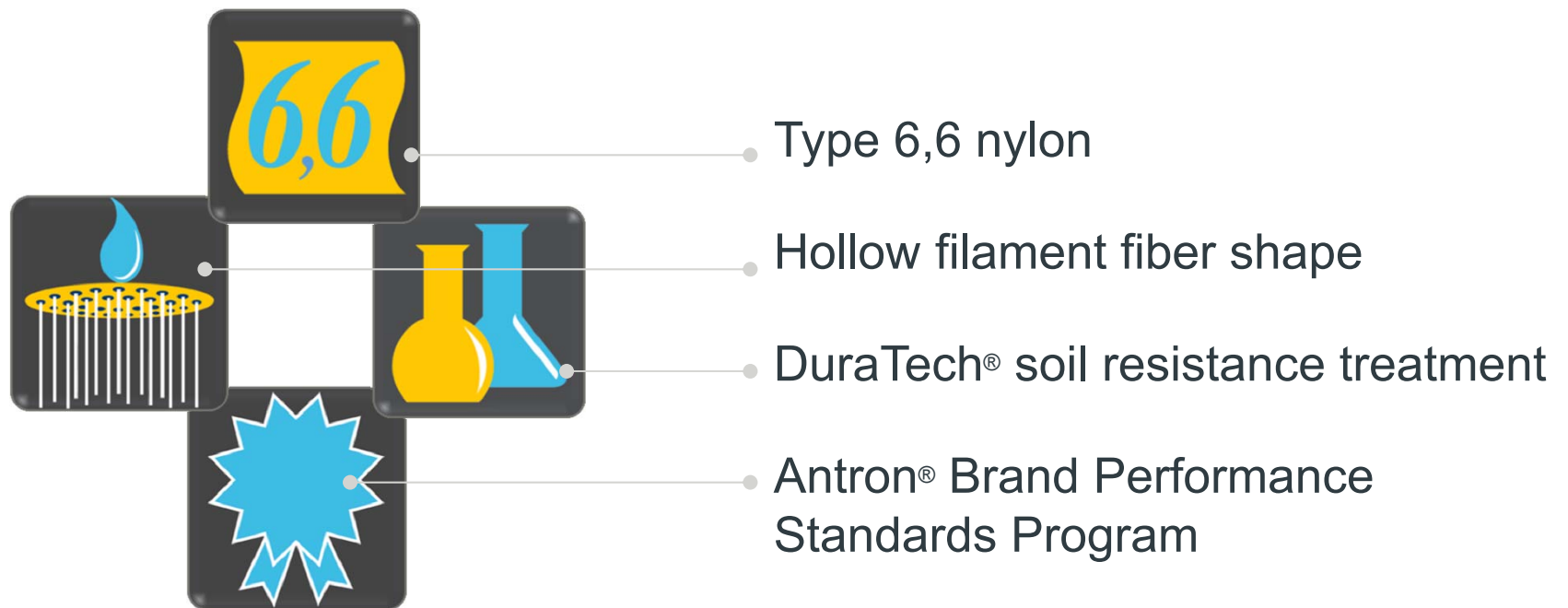
Introduction of Antron® Lumena™ solution dyed nylon in 1991 & Antron® Brilliance™ nylon in 2006



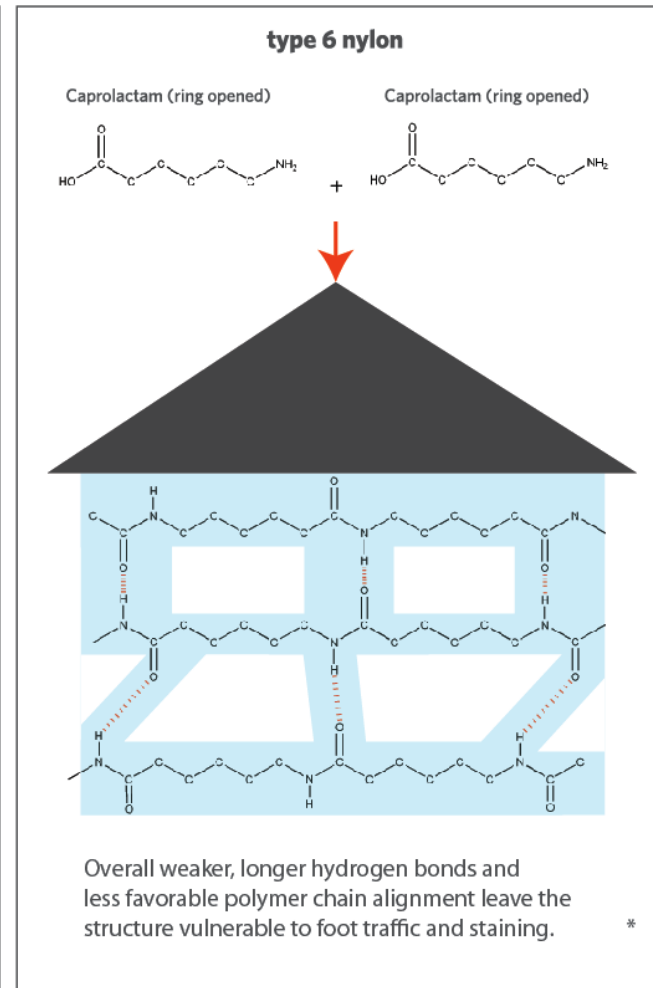
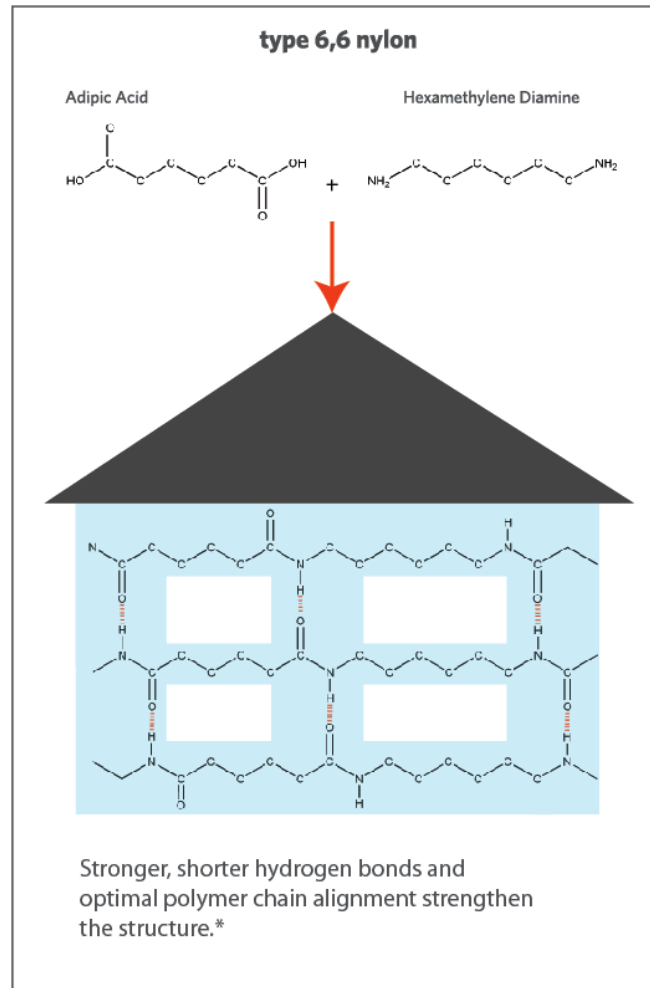
Introduction of Antron® Lumena™ solution dyed nylon 895 Fine denier in 2012

Antron® puts Four on the Floor.

Components of Antron® Fiber.



Built to Last.



* This illustration is intended as a representation of nylon polymer, and is to be used for illustrative purposes only.

Type 6,6 Nylon Difference.



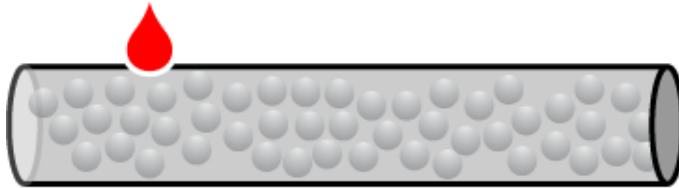
Better.....

- Texture retention
- Resistance to crushing and matting
- Resiliency/recovery after compression

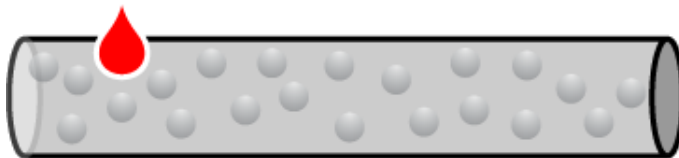
And.....

- Lower permeability

Stain Permeability.



Antron® Type 6,6 nylon
(tighter molecular structure)



Type 6 nylon
(more open molecular structure)



****Dramatization**



****Dramatization**

Antron® Legacy (Type 6,6 Nylon)

Competitive Type 6 Nylon

Competitive Type 6 Solution Dyed Nylon
with Soil Protection

Antron Lumena® (Type 6,6 Solution Dyed Nylon)

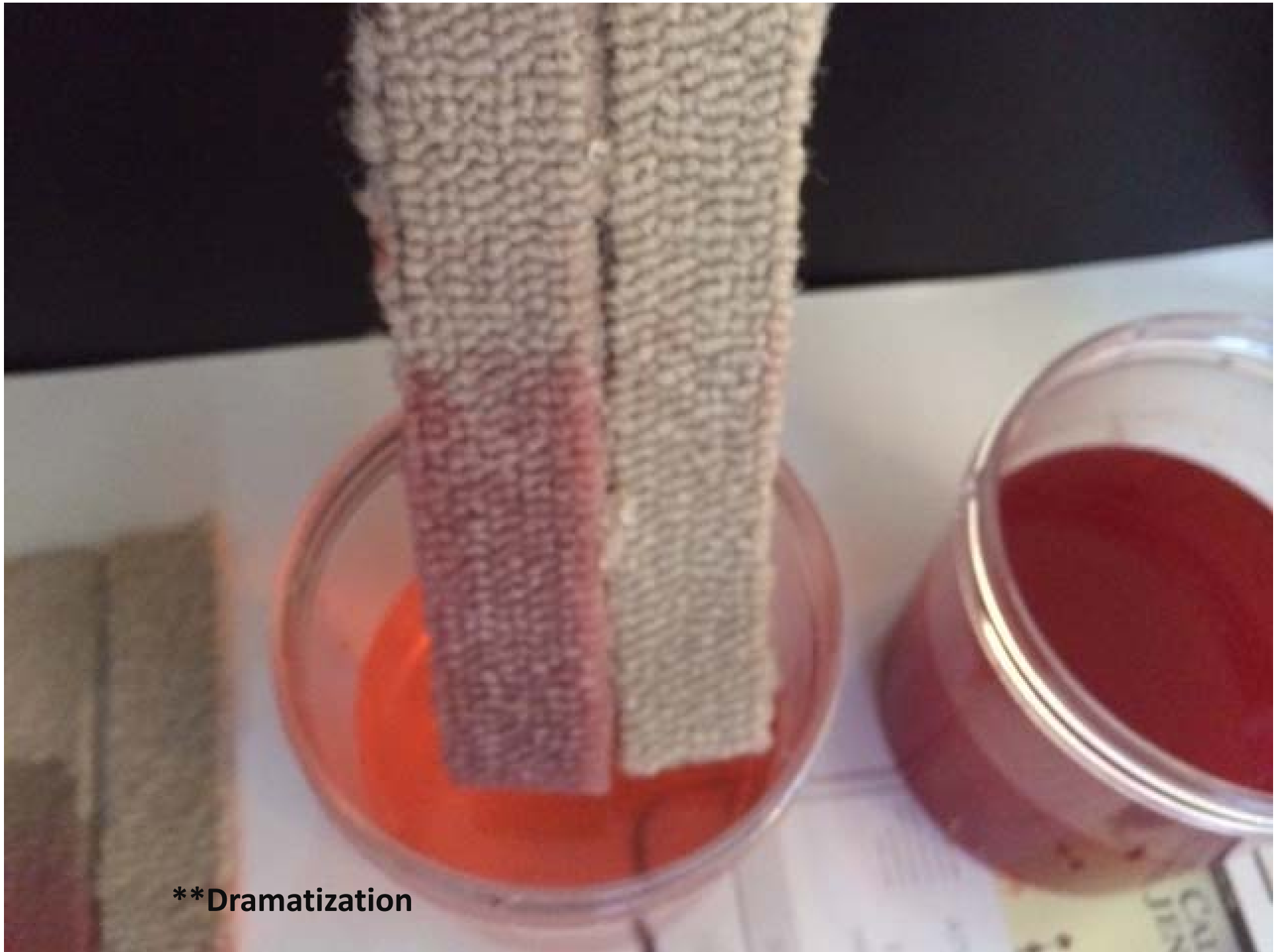
****Dramatization**



****Dramatization**



****Dramatization**

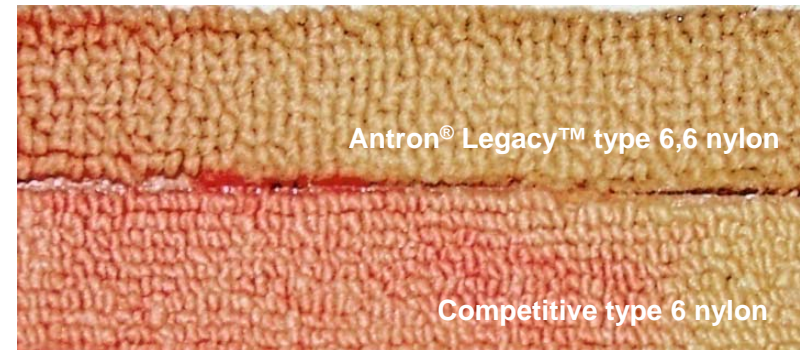


****Dramatization**

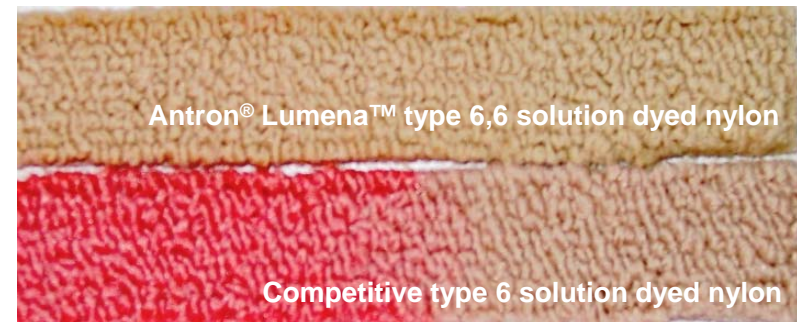


****Dramatization**

Stain Resistance Tests.



Results after 5 minute soak in red fruit drink, then rinsed with water



Results after 10 minute soak in red fruit drink, then rinsed with water

Hollow Filament and Fiber Shape.



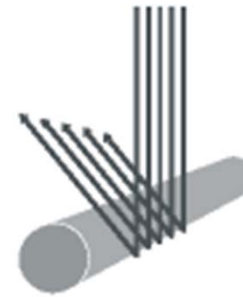
Antron® nylon vs. Competitive Fibers

- Exceptional soil hiding
- Exceptional soil release

What Shape Is Your Fiber?



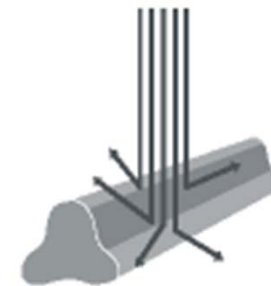
Fiber Shape determined by Spinneret



Round



Trilobal
(Long)



Trilobal
(Short)

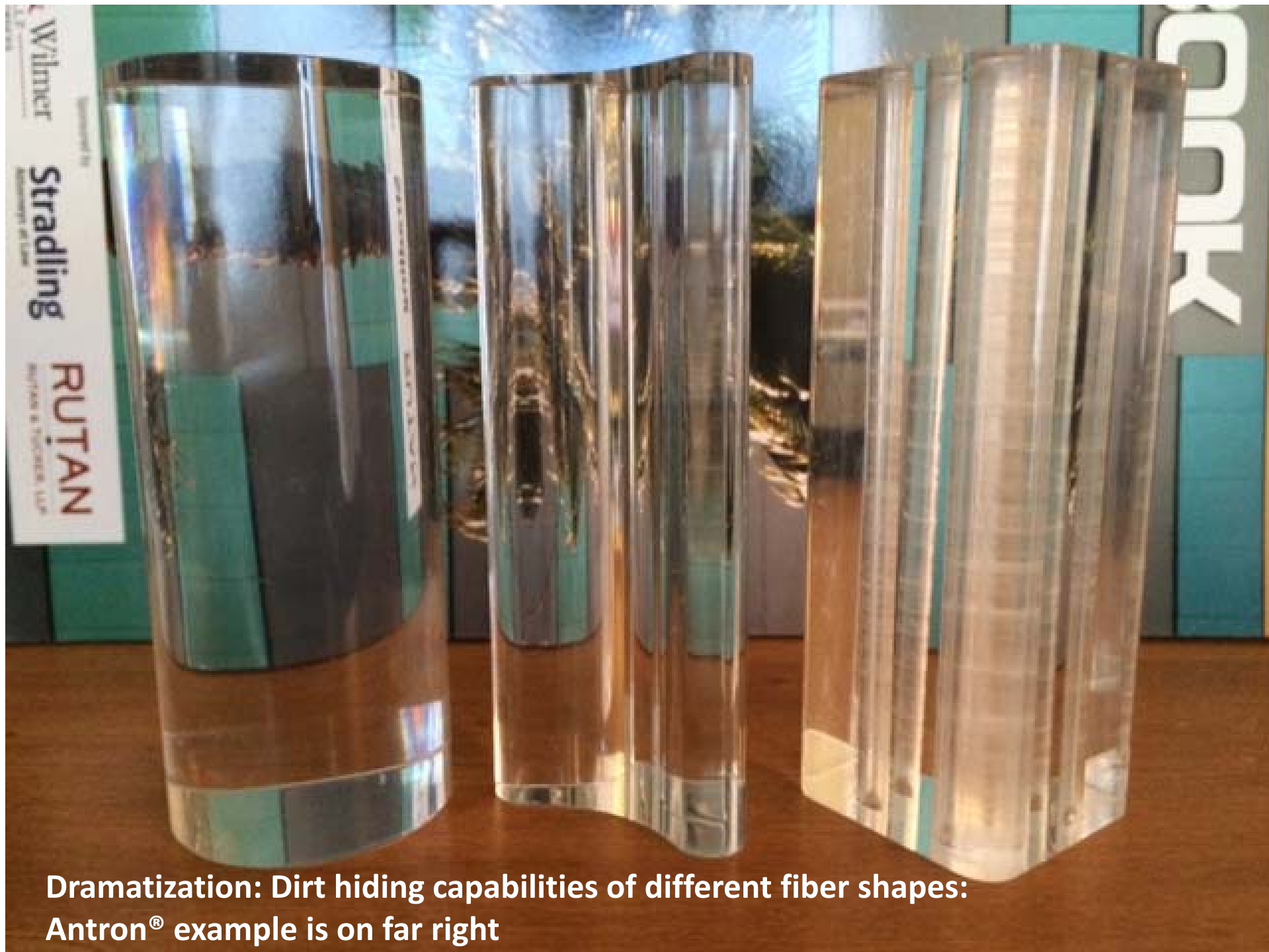


Hollow
Filament



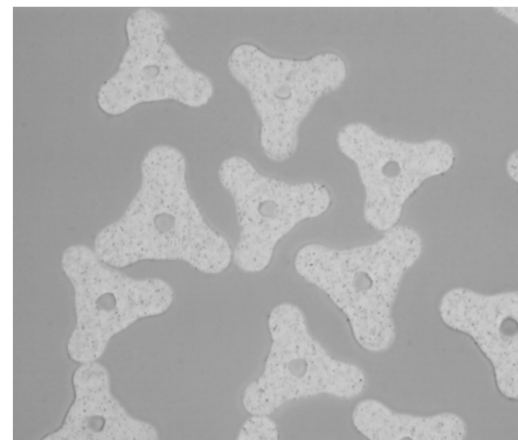
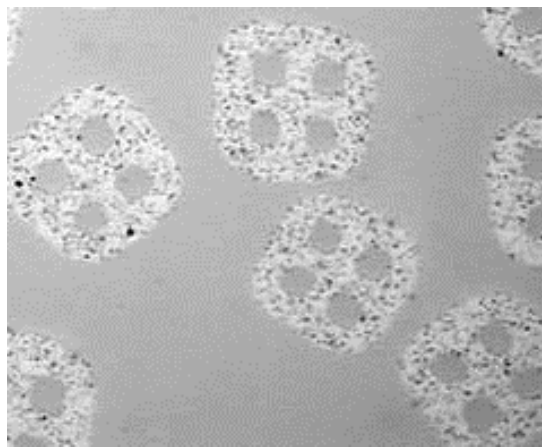






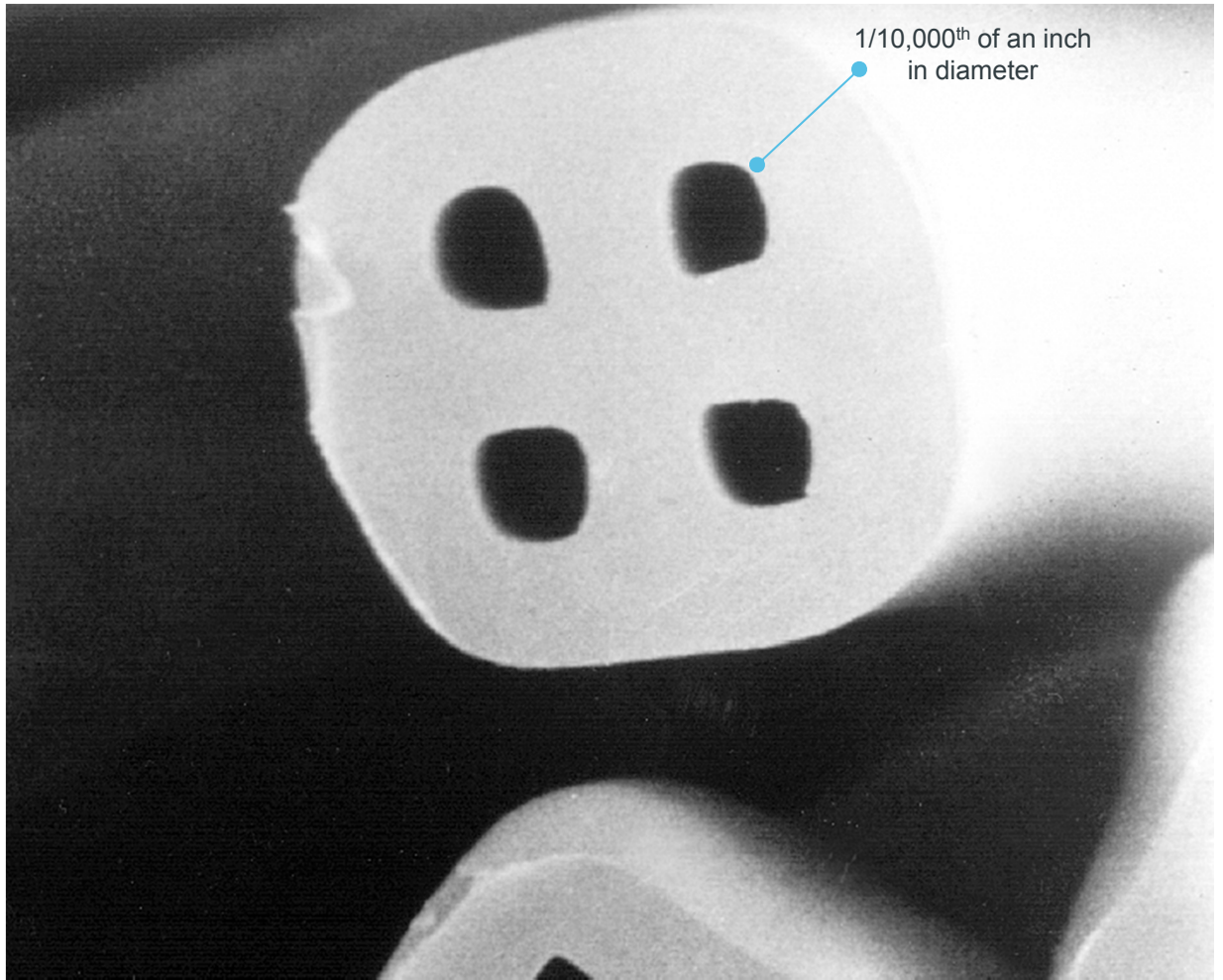
**Dramatization: Dirt hiding capabilities of different fiber shapes:
Antron® example is on far right**

Fiber Shape.



Fiber Shape.

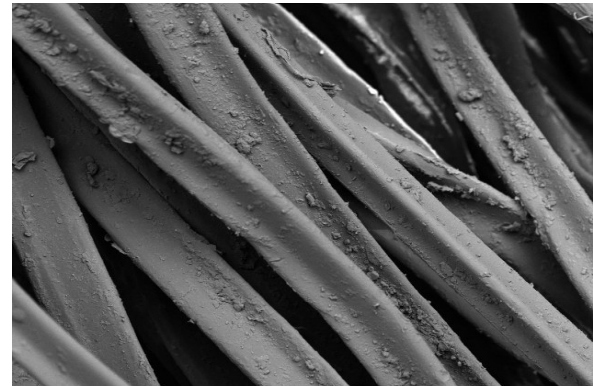
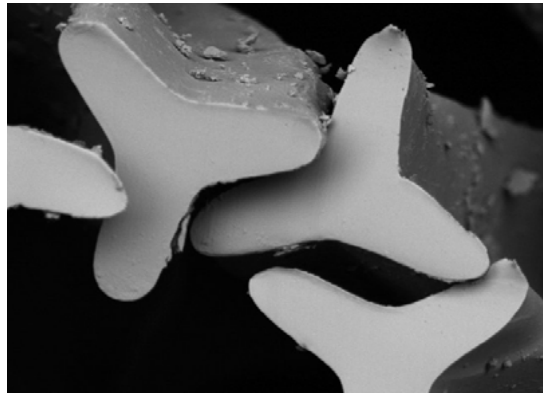
Example of Antron® nylon shape



Fiber Shape with Soiling.

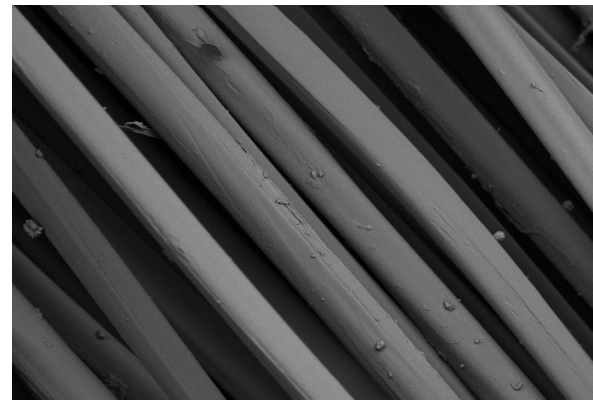
Soil Resistance Treatment: Both
Location: Medical Center
Period on Floor: [7 months](#)
Maintenance: Regular maintenance

Leading type 6 nylon
trilobal



crevices may
trap soil

Antron® type 6,6 nylon
hollow filament



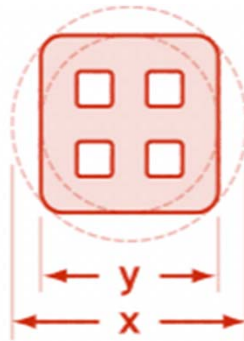
smooth surfaces
allow for easy
soil release

Staying in Shape.

Any Way You Slice It



Hollow Filament



< 1.5 MR

Common Trilobal Shape



~2.8 MR

$$\text{modification ratio} = \frac{x}{y}$$

DuraTech® Soil Resistance Treatment.



- Only available on carpets of Antron® nylon
- Heat bonded at mill
- Remains on carpet for over 1MM foot traffics

Antron® fiber has Uncommon Performance.

0 foot traffics

200,000 foot traffics

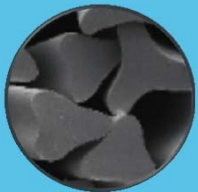
200,000 foot traffics,
hot water extracted

400,000 foot traffics

400,000 foot traffics,
hot water extracted



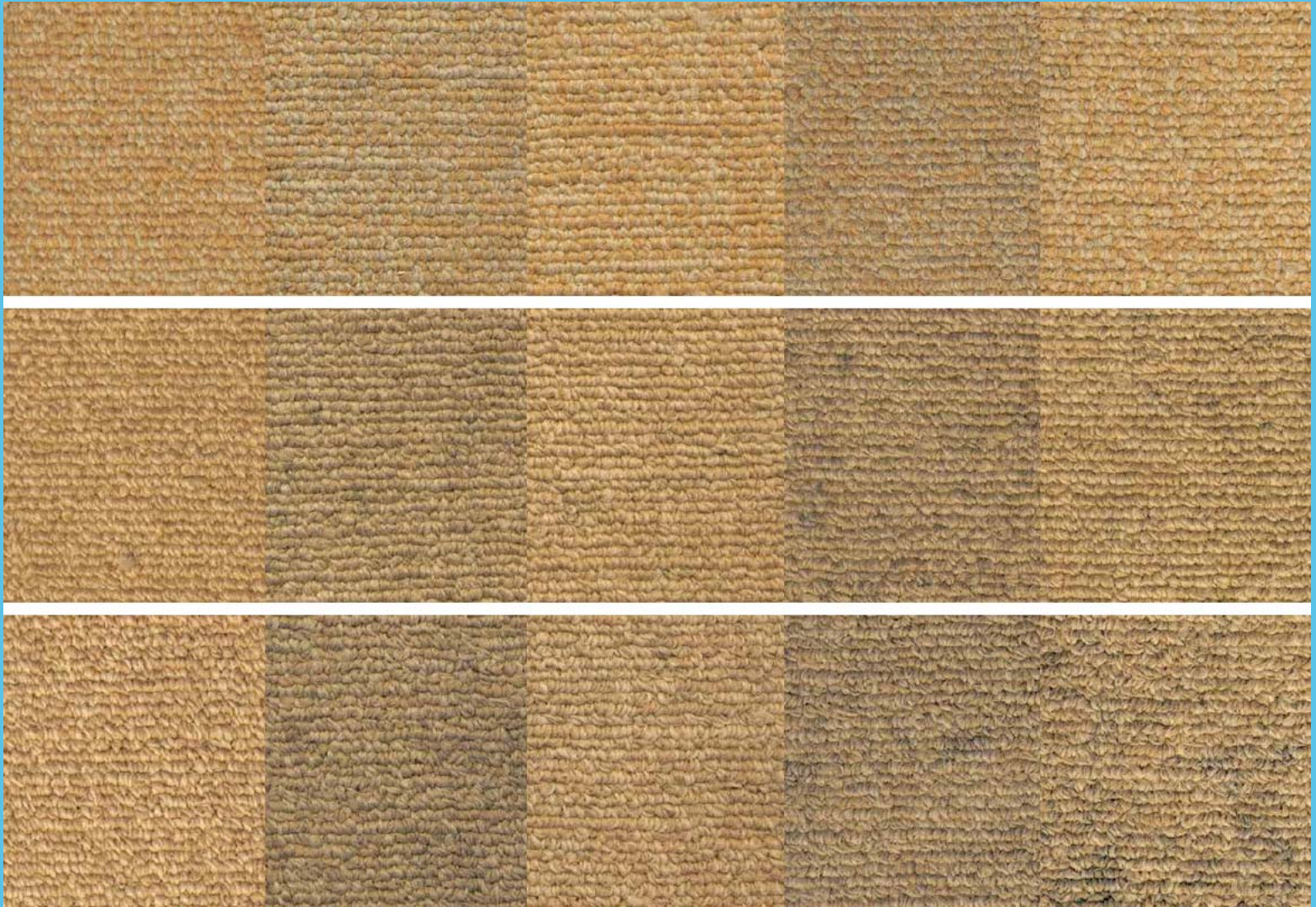
Antron® type 6,6 nylon
hollow filament with
DuraTech® soil
resistance treatment



A competitive type 6,6
nylon trilobal with a
generic soil resistance
treatment



A type 6 solution dyed
nylon trilobal with a
generic soil resistance
treatment



Antron® fiber has Uncommon Performance.

0 foot traffics

200,000 foot traffics

200,000 foot traffics,
hot water extracted

400,000 foot traffics

400,000 foot traffics,
hot water extracted



Antron® type 6,6 nylon hollow filament with DuraTech® soil resistance treatment



A competitive type 6,6 nylon trilobal with a generic soil resistance treatment



A type 6 solution dyed nylon trilobal with a generic soil resistance treatment



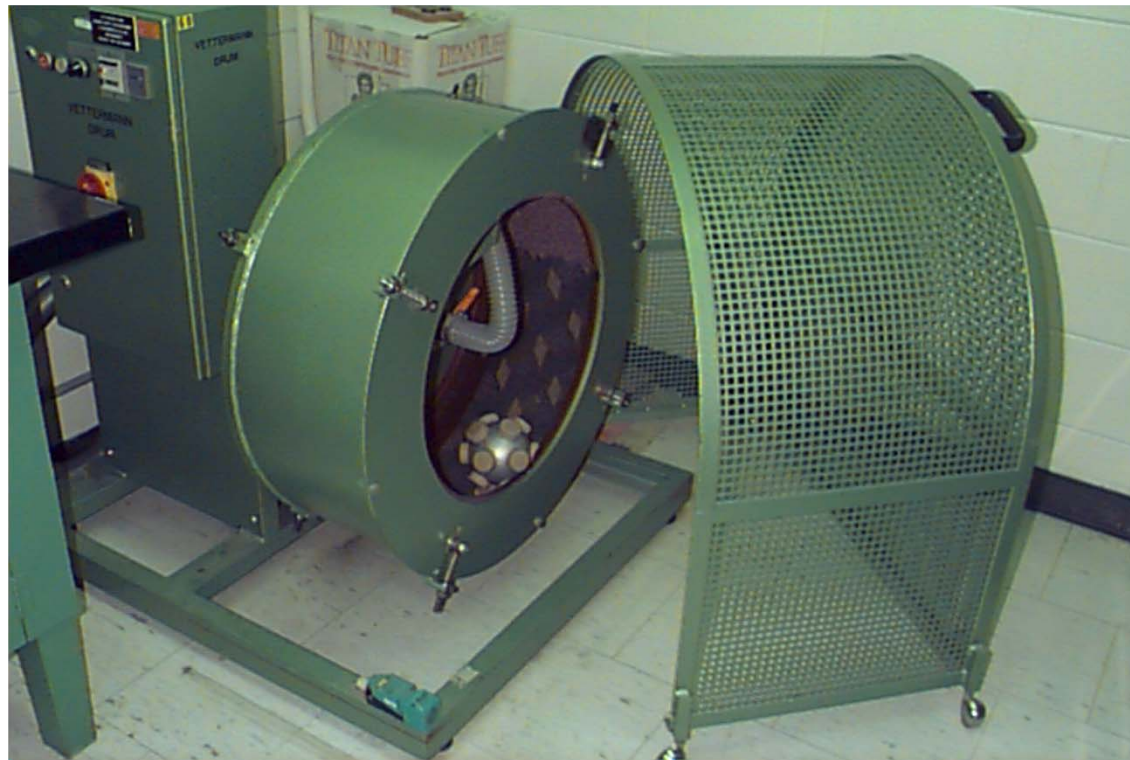
Antron® Brand Performance Standards Program.



- Performance testing process
- Quality assurance of a performance carpet style
- Confidence in the Antron® brand

vetterman drum

ASTM D5417

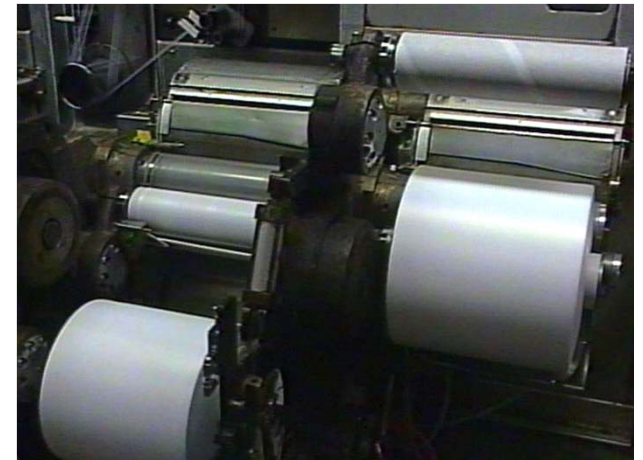
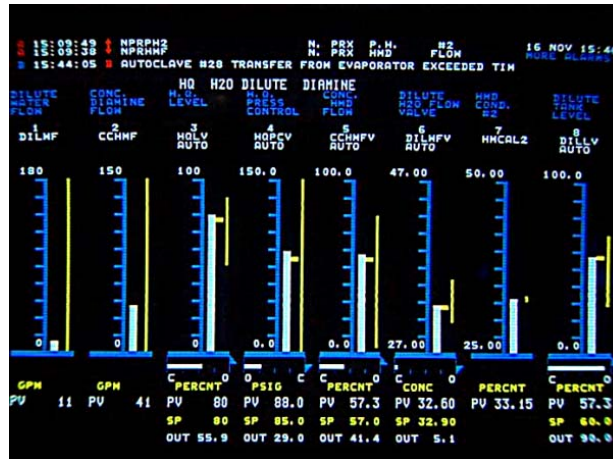
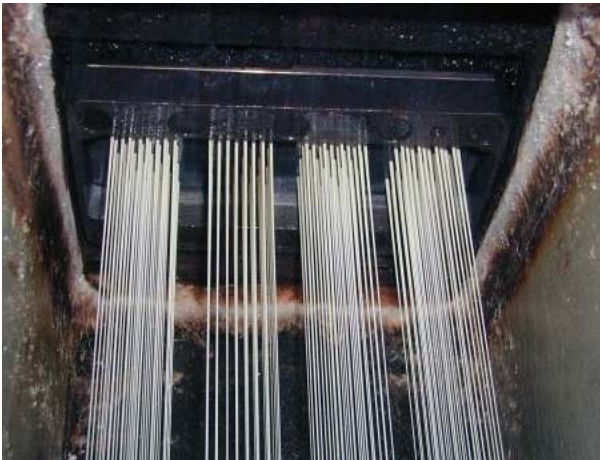


hexapod drum

ASTM D5252



Quality Control.



Product Certification.

- **Antron® Lumena™ and Antron® Legacy™ fibers are:**
 - The first carpet fibers to have earned the Environmentally Preferable Product (EPP) designation
 - The only carpet fibers to have been recertified multiple times
- **All Antron® fibers are currently EPP certified**



Environmentally Preferable Products are defined by U.S. Executive Order 13101 (replaced by EO13423) as products or services that have a lesser or reduced effect on human health and the environment when compared with competing products or services that serve the same purpose. To be certified by SCS Global Services as environmentally preferable, the product must perform equal to or better in every category of potential environmental impact than other products serving the same function, with no environmental trade-offs.*

**According to SCS Global Services, December 2012.*

What Does This Mean For You?



- Carpet can look newer, longer
- Can be easier to maintain
- May reduce maintenance costs
- Virtually unlimited aesthetic options
- Third-party certified environmental claims
- Carpets of Antron® fiber can last u75% longer in their FirstLife™ than the majority of competitive nylon*
 - They can have 38% lower energy consumption and 42% lower greenhouse gas emissions than the majority of competitive carpets.*

**Results based on testing of carpets of comparable construction, style and color.*

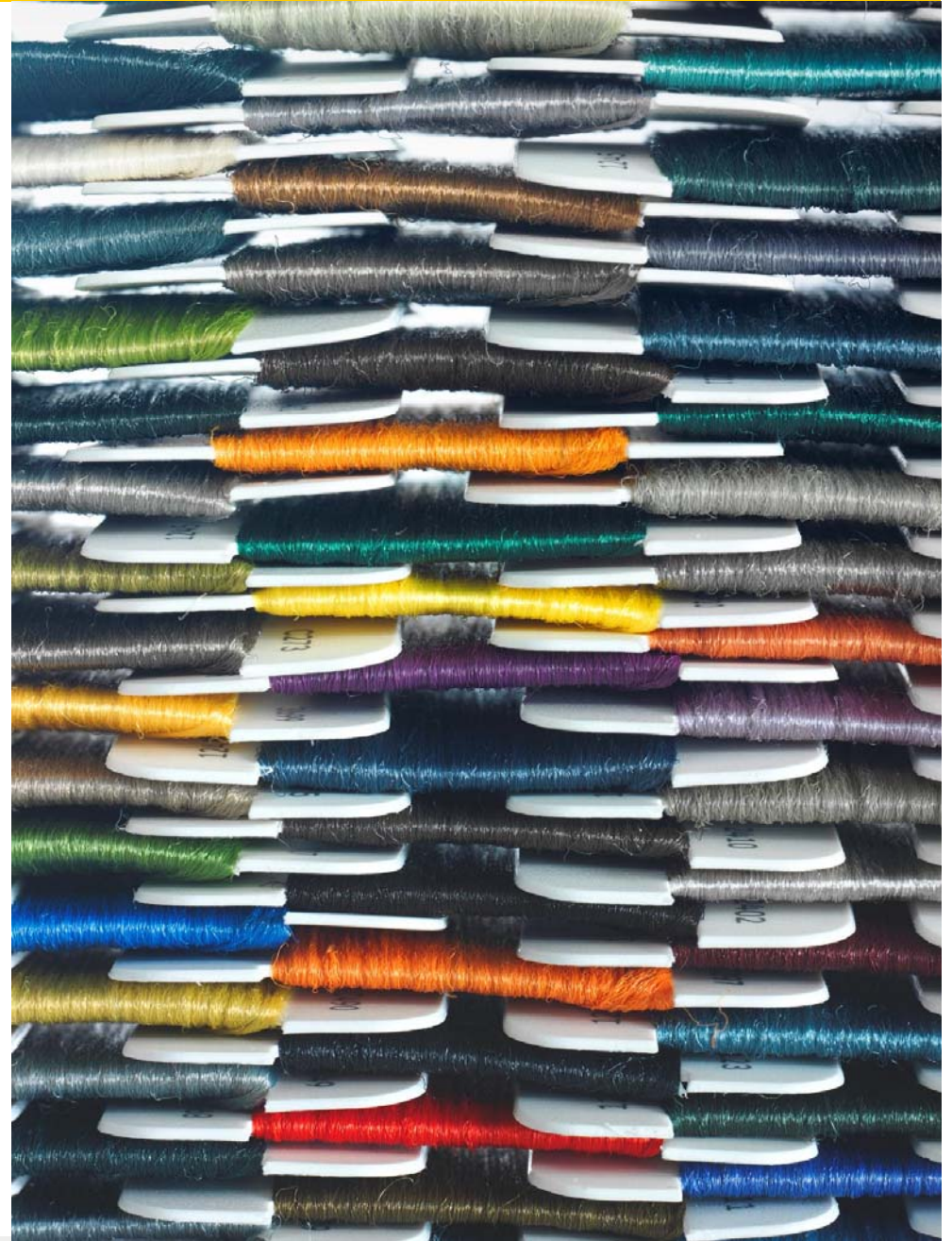
Antron® Legacy™ Nylon.

- White dyeable fiber
- Available in BCF in multiple deniers and lusters
- Virtually unlimited color options



Antron® Lumena™ Nylon.

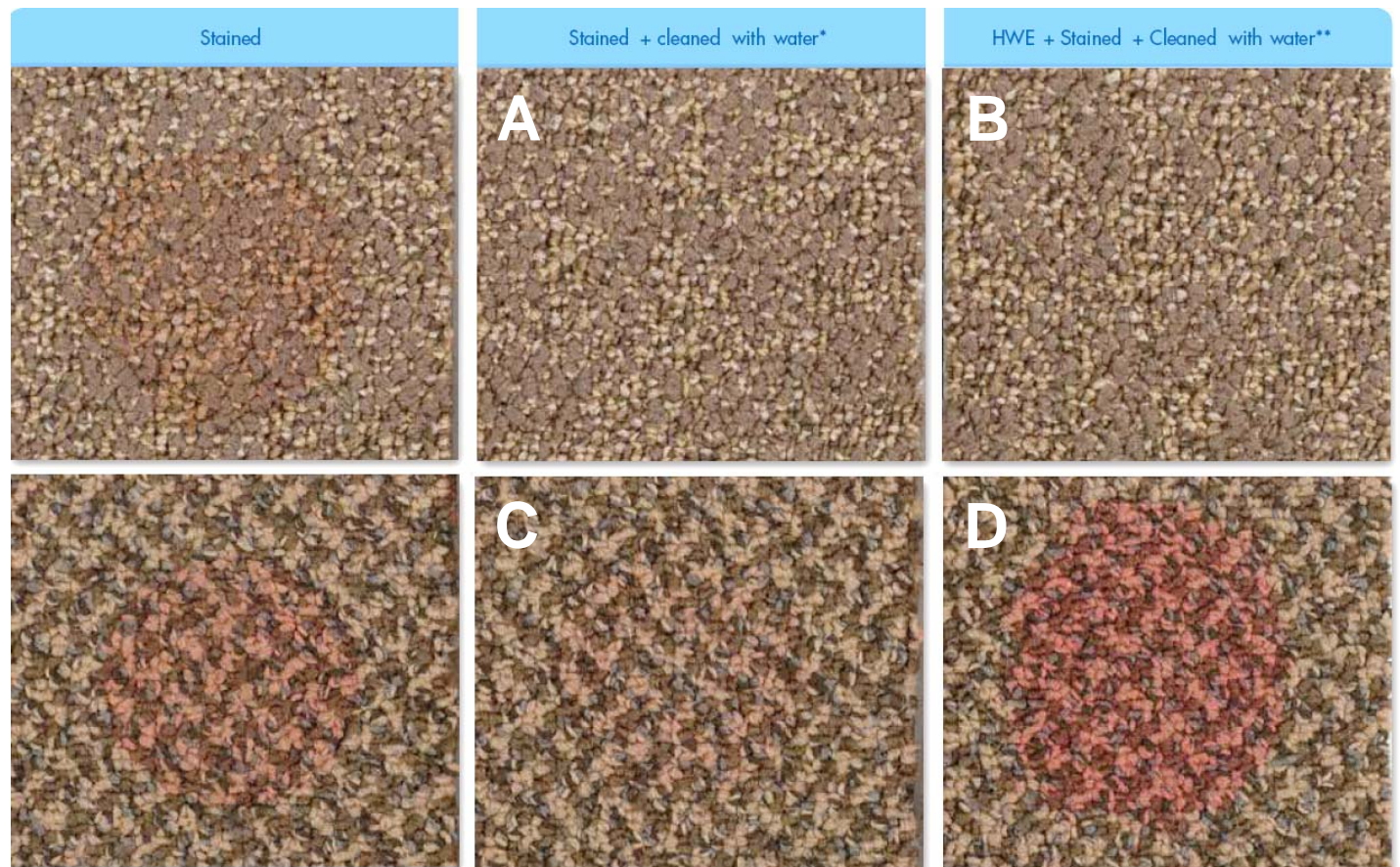
- Solution dyed fiber (SDN)
- Available in more than 300 colors
- Inherent stain resistance
- Resists fading from sunlight and atmospheric contaminants
- Available with Recycled Content:
 - TruBlend™ fiber technology contains 30% pre- and post-consumer recycled content



Spills Occur, but Beware.....

Antron® Lumena™
solution dyed nylon
type 6,6 solution
dyed nylon with
inherent
stain resistance

Branded type 6 solution
dyed nylon with topical
stain resistance
treatment
applied to the carpet



*Stained + Rinsed with water
**HWE cleaning + Stained + Rinsed with water

AATCC TM175 Stain Resistance: Pile Floor Coverings
AATCC TM171 Carpets: Cleaning of Hot Water Extraction Method, 2 passes
AATCC TM175 Stain Resistance: Pile Floor Coverings

Seriously...What is the Antron® Nylon Difference?

Carpets of Antron® fiber can have:

- 65% better soil resistance than the majority of competitive nylon carpets*
- 2.5x better texture retention than the majority of competitive nylon carpets*

Carpets of Antron® Lumena™ solution dyed nylon can have:

- 40% better fade resistance than the majority of competitive solution dyed nylon carpets.*
- 10x better stain resistance than the majority of competitive solution dyed nylon carpets.*

**Results based on testing a representative sample of carpets of comparable construction, style and color.*



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All test results and claims made in this presentation are based upon a representative sample of carpets manufactured and sold in North America. Individual results may vary.