

# I Got The High Thread-Count Blues!

*A consultant outlines some technical pitfalls associated with high-end textiles*

**By Sam Garofalo**

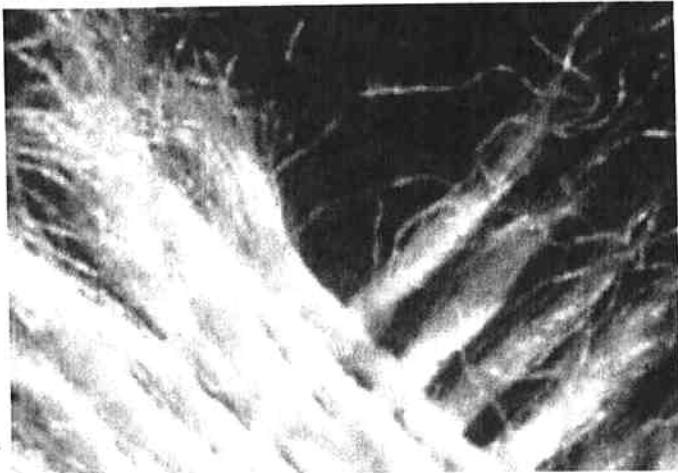


Photo 1

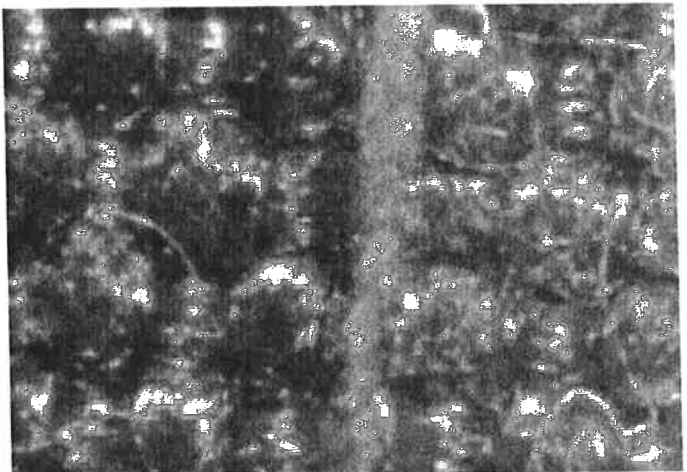


Photo 2

**I**t was a nice Tuesday afternoon in Super City, MO. Your plant is caught up, the two-hour lunch went well and you're thinking about hitting the links when your plant manager charges into your office and tells you that *all* of the 250 thread-count sheets from the high-end casino are ripping as they go onto the spreader/feeder.

As you rush into the plant, your first thought, is that the feeder is pulling them out too tight! Your second thought is damage control! Your mind becomes a calculator estimating the damages. As you arrive at the disaster site you notice that *not all* of the sheets are ripping. You thank God your manager exaggerated, but you realize that you do have a serious problem. Is it a freak, isolated incident? Is it going to go away? As you stand there examining the damaged sheets, you notice that they seem to tear in one direction and not the other. What do you do? You're thinking of ways to assign responsibility. It must be a chemical problem! Call the rep!

## **Luxury vs. longevity**

The new focus of the hospitality industry servicing high-end hotels and casinos is a dramatic paradigm shift in the quality of bed linens

and the way they are applied to the guestrooms. Another paradigm shift is that most of these linens are COG. This complication leaves the hotelier or casino purchasing agents at the mercy of linen suppliers. High thread-count linens do not have the serviceability of their lower thread-count brothers. Logically, if you take one square inch of fabric that has a T 300 thread count, the yarns need to be thinner than if you have a T 180. The problem is compounded when you have to tighten the weave, to pack the yarns tighter. Adding a double "pic" to the warp will produce a higher thread count and more expensive fabric. The manufacturers tout their product as luxurious, while downplaying the loss in durability. The yarns are smaller and the stress is greater. These comparatively new problems have created a need for industry support of the processors of luxury linens. The worst thing is trying to explain to a casino that they bought a product that won't live up to the durability claims of the linen manufacturer's sales reps. TRSA did a remarkable job during its Aug. 9 Luxury Linen Seminar in Chicago in presenting the pitfalls and potential opportunities for the laundry industry in servicing these products. If you missed the event and are in or contemplating getting into high-end textile service, get the CD-ROM ver-

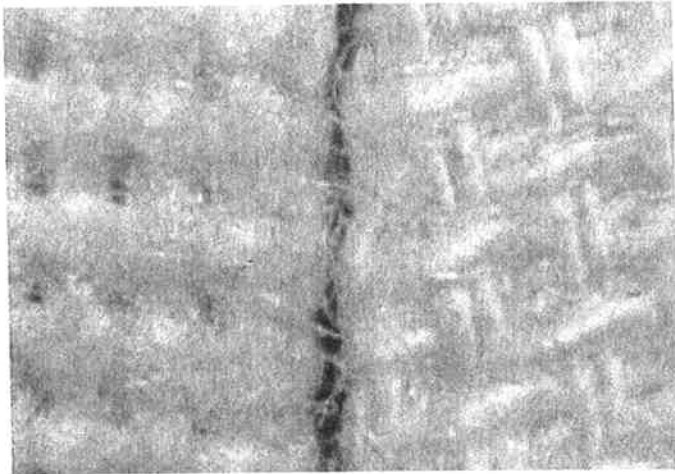


Photo 3

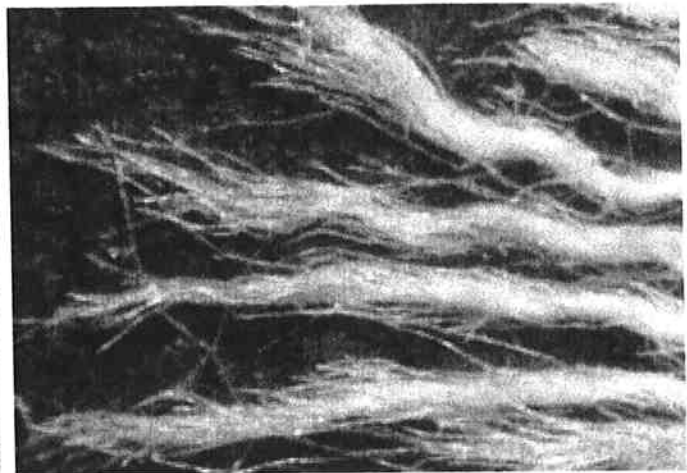


Photo 4

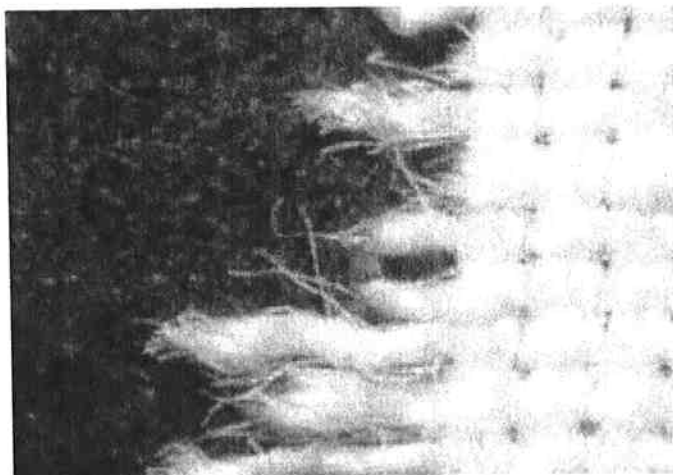


Photo 5

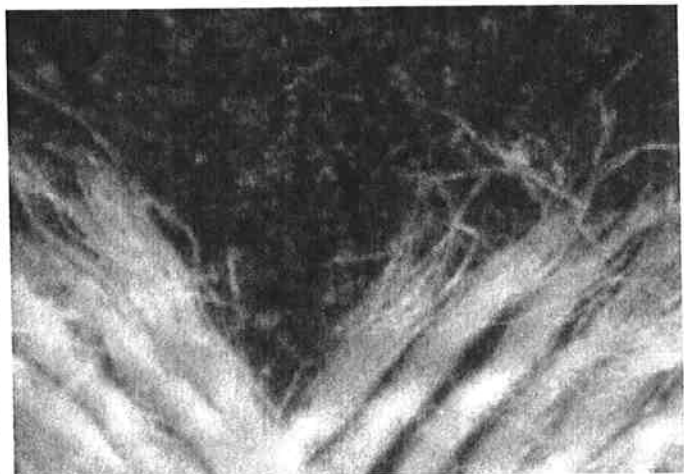


Photo 6

sion available from TRSA.

### Microscopic view of trouble

Roughly 60% of the requests to my firm, Technical Consulting, for fabric analysis are from the high-end hotelier or casino industry. The issues for analysis run the gamut from damaged sheeting to poorly ornamented casino pit jackets. The lab microscope would usually tell the story. However, something was left to be desired in the description process. We purchased a digital microscope camera in hopes that the old adage, "one picture is worth a thousand words" would in fact eliminate the need for the "1,000 words" and help strengthen the analysis process. Since purchasing the microscope, roughly 120 photographs have been catalogued and made part of a database to help document the causes of damage to linen products. The most common sources of fabric damage were recreated in the lab so that when the sample is received the analysis process becomes more comparative. The photographic-comparison procedure has made the analytical process much simpler and easier to describe to the inquiring party, or in the worst-case scenario, a jury.

Laundry operators serving the high-end user should at least

attempt to get involved in the purchasing process of their hotelier and casino customers. The hotel or casino should welcome the guidance of their laundry purveyor as to the durability of the products before they are purchased. Unfortunately, many laundry operators are so intimidated by their high-profile customers that they would rather settle any issues after the fact. But as the budgets of the luxury hotels swell the cost of damage control, it will quickly make it prudent for laundries to get involved. Poor durability of sheeting and after-market decoration on garments leads the way in forcing laundries to make restitution for inherited problems.

The microscopic photos in this article will give you a bird's eye view of the types of damage associated with high-end linens.

1. This case was probably the most interesting that we've seen (see photo, pg. 56). The laundry was accused of damaging high-end sheeting during the wash process. The hotel contacted the linen manufacturer, who blamed the laundry, saying that the damage was caused by the laundering process. The hotel chose to believe the manufacturer and aggressively pursued the laundry to rectify the problem and make restitution. Tests performed by the laundry's chemical company showed that the formulation was correct and

## Luxury Linens

could not be causing the damage seen. The hotel compelled the laundry to allow a competing chemical company to do additional testing. They also concurred that laundering didn't cause the damage. The linen only ripped in one direction easily, the tensile strength in the other direction was better than normal. Under the microscope, two notable things were visible. First, there was a double (pic) warp weave, which means that the warp had two yarns to one filler yarn. Careful examination of the microscopic photo reveals that the filler yarns broke under almost effortless pressure. My initial reaction was, "How could the laundry process only damage the yarns going in one direction?" The answer was obvious, it couldn't. The damage to the filler yarns was identified as oxycellulose (chlorine bleach damage) probably in the treatment process prior to being made into yarn. You'll notice that in the photo, the yarns traveling from the bottom left to top right (filler) are stretched and pulled apart much like taffy. The double-pic yarns traveling from the bottom right to the top left burst evenly.

2. A client sent me two red napkins claiming that the domestic napkin did not attract lint while the imported napkin did (see photo, pg. 56). You will note that the surface of the imported napkin to the right is sanded to create a better hand, unfortunately, the sanding also causes the surface to catch lint and deteriorate much faster than the domestic fabric to the left. In my opinion, if you have to sand

the surface of your linen to make it feel good, you need to go back to the drawing board in manufacturing. Sanding may give it a better hand, but it also creates lint and causes premature degradation.

3. Here is a comparison of a lower and higher thread-count sheeting fabric (see photo, pg 57). To the left is a T180 Percale and to the right is a T300 fabric. The photo shows that the T180 has a larger yarn and the weave isn't as tight as the T300 to the left. The tighter, smaller yarn, in my view, is the reason for the lack of durability in the higher-thread count products that we're seeing in the market today. The tighter weave isn't as flexible, and the smaller yarns are naturally weaker. The chafing and inflexibility of the tighter weave and smaller yarn diameter adds to the degradation process.

4. Chlorine bleach damage (pg. 57)

5. Acid damage (pg. 57)

6. Normal wear at about 50% of life (pg. 57) **TR**



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