



Ultra-Web® SB Pleated Bag Filters Provide Superior Performance on Fibrous Wool Dust

INDUSTRY: Rug Making

PROBLEM: Fibrous dust from wool rugs clogged up the pleated bag causing high pressure drop (10-inches water gauge) and only 6 months filter life.

SOLUTION: Donaldson Torit Ultra-Web SB pleated bags. The combination of Ultra-Web nanofibers and wider pleat spacing allows effective pulse-cleaning, achieves stable pressure drop (2.25-inches water gauge), and attains at least twice the filter life.



Ultra-Web SB pleated bag filters maintain lower pressure drop across the baghouse in the Karastan rug factory, helping to save energy and keep production running smoothly.

Not only did they need a baghouse that could handle the fibrous wool dust from spool loading for making rugs, but the plant engineer at this carpet weaving facility wanted filter life longer than six months. Was that too much to ask?

David Hammock of Karastan and his crew operate and maintain eight MAC baghouse dust collectors designed for 90,000 cfm on a 24/5 basis. The pleated bag filters they were using worked for 6 months, then plugged up—as evidenced by the 10-inches water gauge pressure drop and the deficient 55,000 cfm through the baghouse system.

An inspection by Donaldson® Torit® found wool fibers packed in the pleats of the bag that couldn't be pulsed out. The system had a variable frequency controller on the fan for greater fan efficiency, but it was not being used.

Donaldson Torit suggested four steps to full remedy:

- 1) Switch to Donaldson Torit Ultra-Web® SB pleated bags. The nanofiber layer over the polyester spunbond substrate, combined with the wider pleat spacing, would enable the pulse-clean systems to clean off the collected dust and fibers effectively.
- 2) Use a filter that is 48" long instead of 40" to provide more media area.
- 3) Use the variable frequency controller to save operating energy.
- 4) Implement a down-time cleaning cycle during weekend shutdown, without the fan running, to keep the filter surface cleaned off as much as possible.

Significant Results

Karastan implemented all of the recommendations and after ten months (5000 operational hours), the pressure drop of the baghouses is stable—between 2-inches and 2.5-inches water gauge.

Mr. Hammock says, “I am thrilled with the performance of the Ultra-Web SB pleated bags! They kept us from having to buy a new collector. So far, we are getting twice the life compared to the old bags, and I suspect we will get even more.” ☉

Collector Filter Bags

	Conventional Polyester	Ultra-Web SB Pleated	Benefits
Airflow	55,000 CFM	90,000 CFM	Collectors are now using less energy to operate and are able to operate at the designed flow rate
Pressure Drop after 6 months	10 "wg	2 "wg	Filters last longer with fewer filter changeouts

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