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Success Story

Success Using Marksman™ Series Filters for Amine Filtration

The Challenge

A customer producing fuel oil was dissatisfied with the cleanliness levels of its DGEA (amine) system, which used 25 µm felt bag filters in a bank of four size 2 bag housings. With this system, numerous changeouts were required per shift, and the felt bags failed to improve the cleanliness of the system. The felt bags also had the tendency to extrude through the basket openings, making removal of the used bags very difficult.

The Solution

Pall ran an efficiency test on a sample of the 25 µm-labeled felt bags in its laboratory. The efficiency test revealed that the bag was not performing at the desired 25 µm level. The lab results demonstrated the bag's performance as follows.

Beta 10	Beta 100	Beta 1000	Life (grams)
51 µm	66 µm	74 µm	472

Pall recommended a trial using Marksman Poly-Fine® II Series filter cartridges, rated at 40 µm absolute. These 6-inch diameter filters feature a single layer of Pall's proprietary melt blown polypropylene filter media, which has highly consistent, absolute-rated performance. In addition, the Marksman Poly-Fine II filter elements have an extremely high surface area for low pressure drops and high dirt-holding capacity.

The customer's first trial commenced with the 40 µm absolute (20 µm nominal) rated Marksman Poly-Fine II filters installed in each of the four existing bag housings. The Marksman filters readily retrofitted the bag housings without any change in hardware. In fact, even the existing bag baskets were utilized. The Marksman filter's B-style sliding flange provided an excellent seal into the housings and allowed for full support of the filter element by the bottom of the housing basket.

Prior to the trial, the solids level in the amine stood at 603 ppm. The first set of Marksman filters ran for 4.3 hours and reduced the solids load in the fluid down to 200 ppm. Dirt-holding capacity of this first set of filters was calculated at over 9600 grams. A second set of Marksman filters was then installed. These filters ran for 7.5 hours and captured about 17,000 grams of contaminant. Finally, a set of the previously used felt bag filters was installed; these filters ran for only one hour.

The Benefits

The Marksman filters achieved cleanliness levels far superior to that of the bag filters. In fact, as a result of the superior performance of the Marksman filters, the fluid color changed from black to a light lime green. In addition, the outer cage on the Marksman filters prevented the filter media from extruding into the basket, allowing for easy element removal. The customer is very satisfied with the Marksman filter performance and has volunteered to report their findings to the Fuel Oil Production Alliance (Industry Association).

In summary, Marksman Series filters:

- delivered the desired removal efficiency
- provided 4-6 times the service life versus the previously used bag filters
- attained excellent fluid cleanliness
- allowed easy removal of the spent element from the housing

*Filtration. Separation. Solution.*SM