



Success Story

Success Using Marksman™ Series Filters in a Sucrose Application

The Challenge

A customer was filtering sucrose (50-100 cp, viscosity temperature dependent) using 100 µm nylon mesh filter bags. In response to a company-wide directive to improve product cleanliness to the 25 µm level, the customer switched to 25 µm nylon mesh filter bags from the same manufacturer. Unfortunately, this switch resulted in a 35% reduction in flow rate—from the desired 190-200 GPM level down to only 120-130 GPM.

The flow reduction was deemed unacceptable for this plant, which had its productivity measured on tank car loading time. The solution offered by the bag filter manufacturer: buy more housings. With over 30 processing sites in the US, the capital expense of adding housings to all affected lines would be prohibitive.

The Solution

Marksman filters were initially introduced to this customer as a means to achieve the desired fluid cleanliness. However, additional, significant benefits resulting from the filter's high surface area were anticipated. Among these were longer run times between changeouts resulting from the Marksman filter's excellent dirt holding capacity as well as its low flow restriction/high flow rate capabilities.

Pall's applications engineers recommended the Marksman Poly-Fine® II filter elements, which feature a single layer of proprietary melt-blown polypropylene filter media, which is known to be very consistent. The size 2 elements selected (PFTM 40-2UE-PFC) were rated at 40 µm absolute (20 µm nominal) to meet the customer's cleanliness specification. The Marksman C-style flange provided an excellent seal in the existing FSI over-the-top duplex housing, and the filters readily retrofitted into the existing housing baskets, requiring no additional capital investment.

The Benefits

A trial with Marksman elements produced very positive results. The first indication of success was that the desired flow rate of 190-200 GPM was achieved. Cleanliness measurements showed that the Marksman filters performed to the desired efficiency level and met or surpassed the customer's cleanliness requirements. The most significant advantage to using the Marksman filters was service life. The nylon mesh filter bags needed to be changed out on the average of every two weeks because of the drop-off in flow rate as they plugged. During tests, Marksman filters demonstrated the ability to maintain high flow rates over three months of service.

This customer has been promoting Marksman Series filters company-wide as a means of leveraging performance benefits while avoiding further capital investment.

In summary, Marksman Series filters used in a sucrose application:

- had a service life six times that of nylon mesh bags
- improved fluid cleanliness to meet company-mandated specifications
- provided high flow rates and low pressure drops
- enabled the company to avoid significant capital expenditure for new housings