

Air Filtration - Total Cost of Ownership

Global Manufacturer Learns How Total Cost of Ownership Applies to Air Filters

Company Profile:

Global designer and producer of leisure and athletic eyewear, sports electronics, and apparel goods. Headquartered in Southern California.

The Situation:

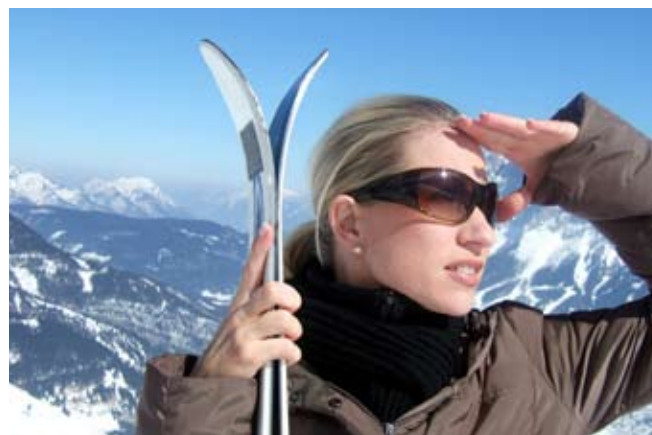
At their U.S. headquarters they were experiencing very short filter life on synthetic (coarse fiber) media bag filters used in a material spray coating process. The bag filters were used to capture material overspray and were requiring change out every 45 minutes to four hours due to quick loading and excessive pressure drop. At the same time, particles were making it through the filter media causing other pollution concerns. Camfil Farr was called in to review the situation and provide recommendations for a solution to increase filter life and improve air quality.

The Action:

There were three problems identified: The first problem being that the charged synthetic media bag filters were quickly losing their efficiency allowing particles to pass through; secondly, the hardware frames holding the filters were not properly designed and needed to be replaced; and thirdly, the pocket configuration on the existing filter was causing pressure drop to increase quickly. Camfil Farr conducted an MMT (Mobile Media Test) on the existing bag filter at the customer's site to determine true operating system efficiency.

The Result:

The Flanders Precisionaire® PAP MERV 14, 12-pocket bag filter tested to be operating at only 30% efficiency on 0.4 micron size particles while the recommended Camfil Farr Hi-Flo® MERV 14, 12-pocket bag filter tested at 72% efficiency.



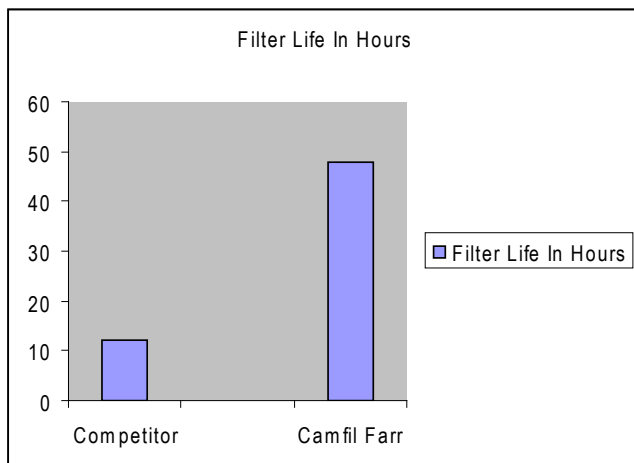
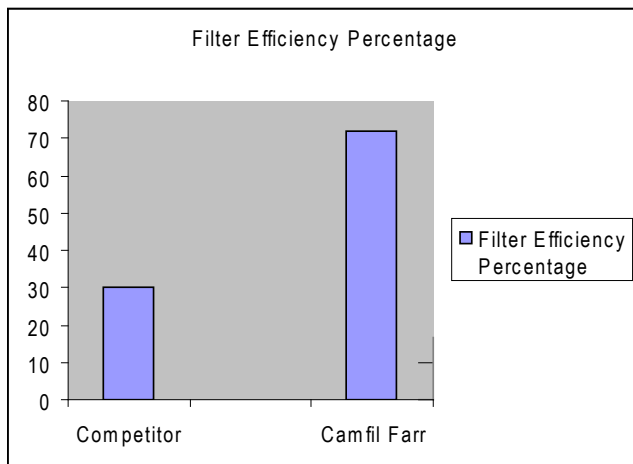
The Camfil Farr controlled media spacing filter pockets, in spite of the heavy contaminant loading, maintained a much lower pressure drop profile resulting in longer life and lower energy consumption. The Hi-Flo product increased filter life from 45 minutes-four hours to 12 hours to two days, 12 times the life.



“Media test results show Camfil Farr’s fine fiber media bag filters to be 42% more efficient than the synthetic (coarse fiber) commonly used in the facility’s system.”

The Proof:

The MMT (Mobile Media Tester) was developed by Camfil Farr to allow testing of bag filters at the user's site to verify actual performance of filters in the AHU systems versus relying on ASHRAE tests that only indicate initial performance on test dust and not particulate levels experienced at the specific location. These tests can predict real life air quality conditions and help determine filter life and proper change cycles to maximize filter usage and minimize energy cost.



Filter efficiency in spray coating applications is important. Any particles “getting through” the filter media are being exhausted to the atmosphere at possible levels that exceed EPA requirements, or are being recirculated internally causing poor air quality and possible product defects due to contamination of the finished product.

Filter life is also equally critical in spray coating application. Any time the process has to be shut down to change filters, there is lost productivity and reduced capacity for that day or week. By minimizing filter replacement frequency, production efficiency is optimized and labor and disposal costs are reduced.



Camfil Farr Mobile Media Tester