



FROZEN FOOD MANUFACTURER

AIR FILTERS. SIGNIFICANT ENERGY SAVINGS RESULTED IN REBATE CHECK FROM LOCAL UTILITY COMPANY...AIR FILTERS WERE BASICALLY FREE.

COMPANY PROFILE

One of North America's largest packaged food companies with branded and private brand food serving consumers, restaurants, and food service operations across the globe.

THE SITUATION

Three air handling units supplied 170,000 CFM of air to critical processing areas in one of the nation's largest frozen food manufacturing facilities. The high moisture return air contained breading residue which restricted airflow and overwhelmed the Airguard Merv 8 pleated prefilters within one to two weeks. Rated at Merv 11, the Airguard Legacy synthetically-charged media final filters were the incorrect efficiency for the critical application. Once the charge dissipated, the low Merv rating of the filters dropped further. With only 4"-deep pockets, the filter configuration had insufficient media area with poor dirt loading and resulted in shorter service life than expected. In addition, dramatic pressure drop increases created airflow issues within the plant.

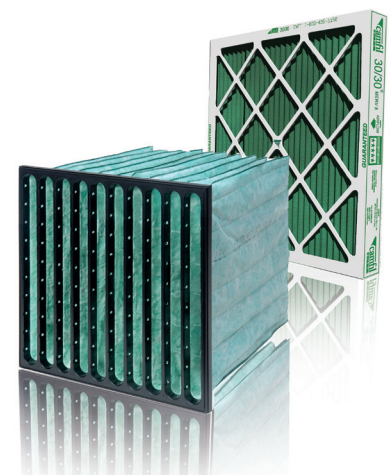
The ongoing challenges and time demands placed on maintenance personnel drove the need for important filter program changes to deliver consistent airflow, extend filter life and improve efficiency, particularly in the final filter. There was also an opportunity to capitalize on a utility rebate program if all three challenges were accomplished and the energy savings were documented by an independent third party consultant.

THE ACTION

As a proven performer in food plants across the country, the Camfil 30/30® Merv 8 was selected to combat the breading residue and moisture in the prefilter section. Its higher strength construction and U-shaped pleat configuration would allow for collection across the entire media surface guaranteeing longer service life. For the final stage, the award-winning Camfil Hi-Flo ES® 22" deep Merv 13 pocket filter was selected due to its proven performance in similarly challenging food and beverage plants. Lastly, data logging equipment was installed by a third party to monitor the energy usage. The 45-day testing on two identical units measured final filter pressure drop readings and fan motor kilowatt hours.

THE RESULT

In complete compliance with the utility company's guidelines, the third party reporting determined the Camfil filters provided significant energy reduction with longer service life and reduced labor and disposal fees. The Camfil 30/30 Merv 8 prefilter and Hi-Flo ES 22" deep Merv 13 pocket final filter combination was the solution — saving over \$33,000 annually.



"The 30/30 prefilter and Hi-Flo ES filter combination reduced overall filter costs by more than 26% annually."

THE PROOF

Prefilter Stage

As seen in virtually every side by side pre-filter test, the 30/30® Merv 8 pleat outperformed the Airguard pleat. In this particular case, the 30/30 lasted three times longer. Additionally, the data logging equipment revealed the average cost of energy for the unit operating with the Airguard pleat was \$42.67 per day versus \$37.86 per day for the unit operating with the 30/30. For the purposes of tracking total cost and making comparisons, half of the unit's energy cost was assigned to the prefilters and half to the final filters. The cost of the filters, labor and disposal fees was added in to calculate the "total cost of ownership," which proved by converting to the 30/30 the food manufacturer would save \$8,830 annually on the prefilters alone.

Final Filter Stage

The results of the final filter testing were just as dramatic. The previous Legacy filter needed replacing within six months; whereas, the service life of the Camfil Hi-Flo ES® 22" deep Merv 13 pocket filter was double — lasting one year. Additionally, the Camfil CamTester was used to evaluate the pressure drop reading after one full year in-service. The readings showed an insignificant increase from its original .37" w.g.; however, the physical weight of the filter was 2.2 lbs. heavier than when brand new. This indicated that while maintaining the necessary airflow, a large amount of dirt was captured and prevented from entering the production facility. The data logger information combined with the associated replacement, labor, and disposal

costs showed the Airguard Merv 11 Legacy filters were costing \$15,712 annually to operate while the Merv 13 Camfil Hi-Flo ES filters were costing only \$13,240 annually.

The Camfil pre- and final filter combination in all three identical units saved the plant over \$33,000 per year. This savings is not inclusive of the financial gain from greater airflow into the plant or the inherent value of significantly cleaner indoor air to support food safety, employee health, and equipment operation.

The information from the data loggers was submitted and later confirmed by the local utility company. The manufacturer was awarded a rebate check for significantly reducing their overall energy usage.

ANNUALIZED UNIT OPERATING COST *(Third party data logging energy cost calculations)*

PREFILTERS

35 openings 24" x 24" per stage	Annual Quantity	50% of Average Daily Energy Cost Pro-rated Annually	Annual Product Cost	Annual Labor & Disposal Cost	Total Cost of Ownership
Airguard DP	52	\$12,022	\$8,408	\$7,020	\$27,450
Camfil 30/30	18	\$10,520	\$5,670	\$2,430	\$18,620

PREFILTER SAVINGS: \$8,830

FINAL FILTERS

35 openings 24" x 24" per stage	Annual Quantity	50% of Average Daily Energy Cost Pro-rated Annually	Annual Product Cost	Annual Labor & Disposal Cost	Total Cost of Ownership
Airguard Legacy	2	\$12,022	\$3,150	\$540	\$15,712
Camfil Hi-Flo ES	1	\$10,520	\$2,450	\$270	\$13,240

FINAL FILTER SAVINGS: \$2,472

TOTAL UNIT SAVINGS: \$11,302

TOTAL ANNUAL SAVINGS: \$33,906