

Semiconductor

MEGAcel® II ePTFE

CASE STUDY



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CUSTOMER:

Largest semiconductor manufacturer in the world

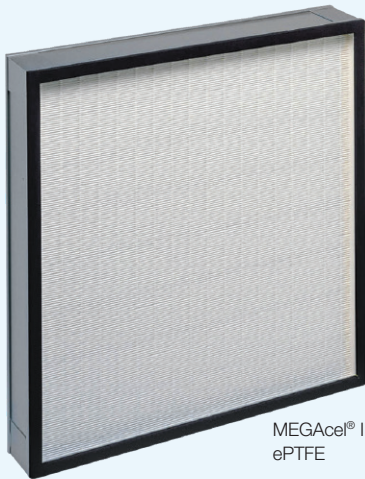
CHALLENGE:

A global semiconductor company needed to improve energy efficiency in one of their newest manufacturing facilities in the U.S. In particular, the customer focused on a new fab with 5,800 4'X4' fan filter units (FFUs) with glass media filters installed. Within other cleanrooms in similar facilities supporting wafer manufacturing, the traditional glass media drove energy costs up due to its relatively high pressure drop. Additionally, it was prone to damages during filter installation, maintenance, changeouts, and storage.

RECOMMENDED SOLUTION:

To achieve the required energy savings in the new fab, AAF Flanders recommended:

- MEGAcel II ePTFE ULPA filters, which have only about half the resistance of glass media filters and offer superior durability

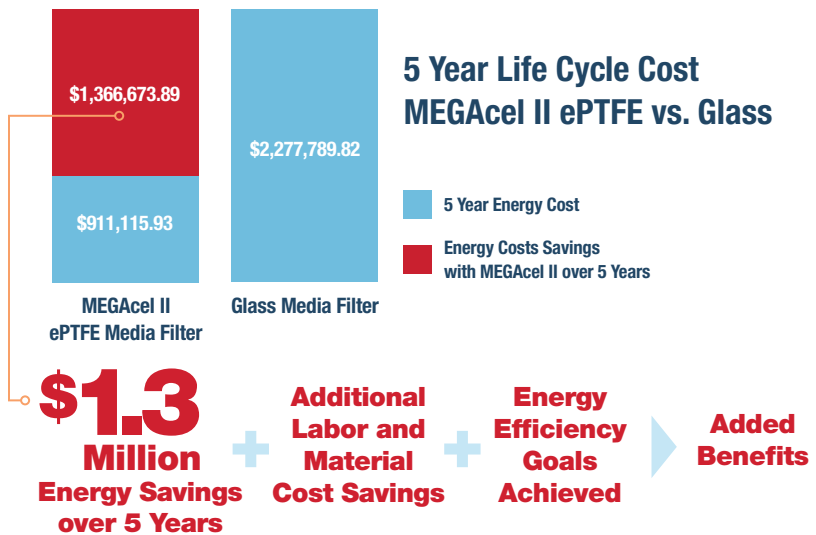


IMPLEMENTATION:

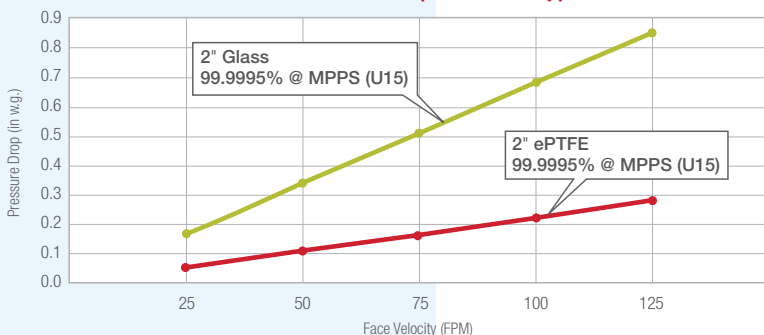
AAF Flanders became involved through the general contractor (GC) overseeing the project, whose primary mission was to supply a more energy-efficient alternative at a competitive price. For the customer to understand fully the value that the MEGAcel II ePTFE ULPA membrane media filters provide, it was imperative that we work with them directly. AAF Flanders presented a total cost of ownership (TCO) summary to the customer to demonstrate the long-term energy, labor, and material costs savings achieved by switching to membrane media ULPA filters. After reviewing the side-by-side comparison of glass vs. membrane ULPA filters, the customer purchased 5,800 MEGAcel II ePTFE ULPA filters for the facility.

CONCLUSIONS:

Installation of all MEGAcel II ePTFE ULPA filters will be complete by February 2022. Energy cost savings for this project are anticipated to be \$1.3M over a five-year period. Additionally, whereas other facilities in their portfolio had been keeping hundreds of glass media filters in inventory due to installation damage, this facility eliminated the need to maintain a similar inventory due to the durability of the membrane media. This added benefit offers substantial labor and material cost savings, plus it frees up square footage.



ePTFE vs Glass (Pressure Drop)



Abrasion Resistance – Flat

