Semiconductor AstroFan™ FFU and MEGAcel® II ePTFE CASE STUDY

AAF | Flanders®
Bringing clean air to life.®

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CUSTOMER:

Global digital memory and storage solutions company

CHALLENGE:

One of the largest semiconductor companies in the world faced high operational costs associated with the glass ULPA filters and fan filter units (FFUs) used to supply particle-free air to the wafer manufacturing cleanrooms in their primary U.S. facility. The customer needed an alternative to the traditional glass media that drives up energy costs due to its resistance and is prone to damage during filter handling, storage, installation, and maintenance.

RECOMMENDED SOLUTION:

Working directly with the customer, AAF Flanders proposed:

- AstroFan fan filter units (FFUs), which were tied into the facility's building management system (BMS) for seamless communication and control
- MEGAcel II ePTFE ULPA filters, which have only about half the resistance of glass media filters and offer superior durability

MEGAcel® II ePTFE

IMPLEMENTATION:

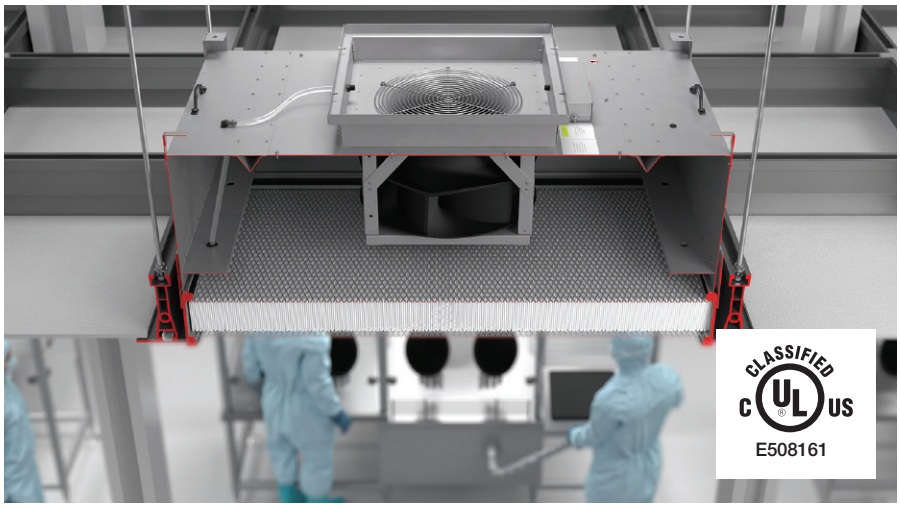
The customer purchased 1,166 AstroFan FFUs and MEGAcel II ePTFE ULPA 4'X4' filters for their U.S. facility. Installation of the AstroFan FFUs and MEGAcel II ePTFE ULPA filters takes place January-March 2022.

CONCLUSIONS:

Energy cost savings are anticipated to be $340K+ over a five-year period. In addition, the durability of the membrane media filters adds to the already significant cost savings. Besides the labor costs associated with replacing damaged filters, the customer can discontinue the practice of carrying extra inventory of filters, as is frequently done with glass media filters. This spare inventory can be up to 10% of the installed quantity of filters.

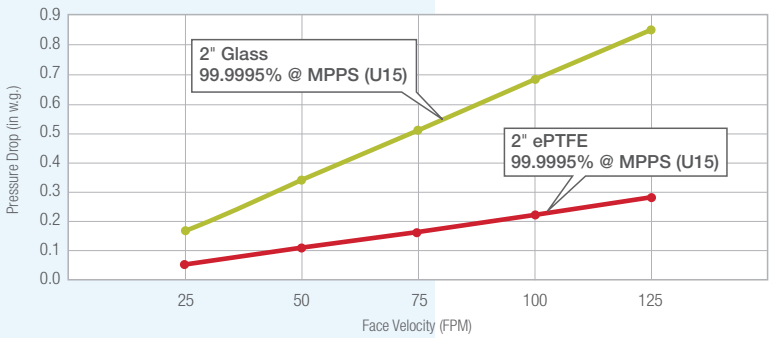
In the next year, AAF Flanders and the customer plan to work directly to replace another current 1,100 FFUs with AstroFan FFUs with MEGAcel II ePTFE ULPA filters at this same facility.

$340K Energy Savings over 5 Years + Additional Labor and Material Cost Savings = Energy Efficiency Goals Achieved + Future Cost-saving Projects

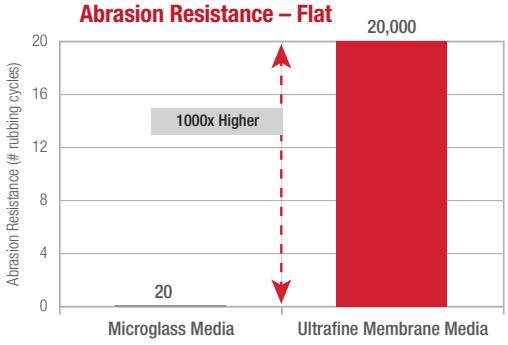


AstroFan™ FFU

ePTFE vs Glass (Pressure Drop)



Abrasion Resistance – Flat



Results based on Test Standard DIN EN 12947-2.