

Case Study

Enhancing Efficiency and Cost Savings in a Healthcare Facility



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A leading healthcare facility in the Southeast sought to extend the service life of its prefilters while minimizing change out and disposal costs. MANN+HUMMEL teamed up to tackle the challenge.



PROBLEM

Improving operational efficiency and minimizing costs in a southeast healthcare facility



SITE

Healthcare facility in the southeast



OUTCOME

Enhanced efficiency and cost savings in healthcare

In the highly regulated healthcare sector, optimizing efficiencies is crucial to maintaining quality care and controlling costs. When a major healthcare facility in the southeast aimed to improve efficiency and reduce expenses within its critical air filtration systems, MANN+HUMMEL teamed up to deliver expert air filtration solutions. As a global leader in air filtration, MANN+HUMMEL was well-positioned to address the facility's specific challenges and enhance the performance of its healthcare environment.

IDENTIFYING THE ISSUE

Upon assessing the air filtration systems within the healthcare facility, our MANN+HUMMEL experts identified several issues impacting the business's operations.

1. The ground-level fresh air intake is located near a road and a loading dock that is exposed to significant debris. The HVAC system includes a 2-inch premium pleated filter that is supposed to last two times longer than a standard, high-capacity pleated filter. The system also uses a 4-inch premium pleated filter in the second stage. Due to the high contamination levels at the fresh air intake, the 2-inch prefilters are being overloaded, are blowing out, failing, and requiring a change-out too soon and too often (every 20-30 days). The 4-inch filters are also requiring a change-out sooner than they should at 30-45 days.
2. Healthcare facilities are facing tight budgets and labor shortages, making the frequent filter changes a strain on both staff and finances. Traditional solutions, such as deeper extended surface filters, aren't feasible due to a coil located less than six inches behind the filter bank, preventing the use of depth-loading filters.
3. The current maintenance process involves replacing the 2" pleats every 2-4 weeks and the 4" pleats every two months, with 166 filters in total. The initial pressure drop across both prefilters is 0.68" wg with clean filters. Each filter change requires 24 labor hours (3 technicians x 8 hours each).

IMPLEMENTING A SOLUTION

After conducting a thorough assessment with the MANN+HUMMEL team, the recommendation was to trial a unique and innovative solution: the Tri-Cube RFX Reverse Cube filter with a center pocket.

This cutting-edge filter design features a reverse cube structure that projects upstream, making it ideal for applications with heavy contaminant loads where space downstream of the filter bank is limited.

The Tri-Cube's large surface area and depth-loading media provide exceptional dust-holding capacity, ensuring superior filtration performance in high-particulate environments. With its ability to handle high dust loading and extend service life, the Tri-Cube RFX is an optimal choice for facilities needing a durable, long-lasting air filtration solution in challenging conditions.

The Tri-Cube RFX is the ideal solution for facilities requiring a robust, long-lasting air filtration system capable of performing in demanding conditions.

THE RESULTS

After just 45 days into the trial, the benefits of the Tri-Cube RFX filter have already become clear. The initial pressure drop (with clean filters) dropped to 0.18 in. w.g., representing a 73% reduction.

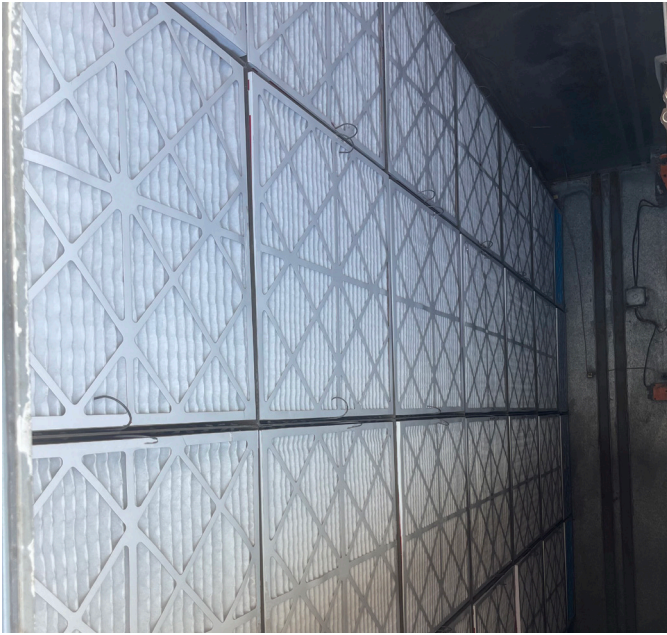
By the 45-day mark, the Reverse Cube filter has already saved the healthcare facility several filter changes, and the customer now anticipates extending the filter change cycle to 3-4 months, leading to significant labor and filter cost savings. Additionally, the facility expects to reduce filter disposal waste by more than 75% annually, addressing a growing concern and expense for healthcare facilities.

Given these promising results, the facility has decided to implement the Tri-Cube RFX Reverse Cube filters across all face-loading air handlers where depth allows, and to use the reverse cube design in areas where there is limited space. This decision will not only improve operational efficiency but also contribute to long-term sustainability and cost savings for the healthcare facility.

Through calculated and innovative air filtration solutions, MANN+HUMMEL addressed the immediate challenges faced by the healthcare facility and laid the foundation for sustained operational success. By choosing MANN+HUMMEL for a strategic partnership, the leading healthcare facility in the southeast was empowered to thrive in an ever-evolving marketplace.



MANN+HUMMEL Tri-Cube RFX



Before (with premium pleats)



After



MANN+HUMMEL Tri-Cube RFX permanent retaining hardware



Installing the Tri-Cube RFX with center pocket on the retaining hardware



After

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