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≡ CASE STUDY ≡

MILITARY HOSPITAL ADOPTS INNOVATIVE DUCT SEALING PROCESS TO ENSURE HVAC EFFICIENCY / SAVE TIME AND MONEY

Administrators at Dwight D. Eisenhower Army Medical Center (EAMC) were already familiar with aerosol technology. They had used it during a previous project involving the renovation of the facility's operating room suite where it proved to be a simple way to dramatically improve HVAC efficiency while eliminating much of the disruption and other impacts to daily operating procedures throughout the duration of the project. It also cut construction costs by allowing the use of existing duct rather than replacing. So, this time around, aerosol technology was specified from the start for a project that replaced a 200-ton air handling unit servicing the medical center's west side. By using aerosol, the project contractor, Kirlin Builders, knew it could rehabilitate and reuse much of the original ductwork and, in doing so, reduce project costs, eliminate disruptions to the facility and still meet tight SMACNA standards that called for leakage rates below 5%.

Kirlin called in the duct experts from Aerosol Southeast, who, after extensive prep and planning, began cleaning and sealing the long riser that extended down the length of the 14-story building. Serving as the system's return duct, the riser also housed separate supply and exhaust ducts that were also cleaned and aerosol sealed tight.

In Brief

Building: Dwight D. Eisenhower Army Medical Center

Location: Fort Gordon, Augusta, Georgia

General Contractor: Kirlin Builders

Aerosol Contractor: Aerosol Southeast

Goal: Effectively seal existing ductwork; meet tight standards

Before Aerosol: Total 87,584.4 CFM of leakage

After Aerosol: 7,842.6 CFM of leakage; 91% reduction.

Results: The majority of existing ductwork was left intact and refurbished to meet today's tighter standards for leakage. Using aerosol reduced project costs and eliminated disruption.



To accomplish this project, scaffolding was built inside the approximately 10' x 25'-wide riser to allow workers access for cleaning the main trunk. For sealing, foam blocks were used to temporarily divide the entire duct system into more than 30 individual sections. Temporary entryways were cut into each section, allowing the computerized aerosol system to disperse microscopic particles of sealant into the duct interior of that section. Under pressure, the sealant was driven to the multitude of leaks where it automatically found and sealed the holes.

Due to be completed in early 2019, the entire cleaning and sealing project represents about 20 weeks of work spread out over a two-year period. When finished, TAB experts will be brought in to confirm what the reports generated by the aerosol equipment already document; overall system leakage was reduced more than 90%, industry standards are now being met, and by reconditioning the existing duct system, hospital administrators eliminated a large percentage of the costs and disruption associated with traditional duct sealing methods.

“We used aroeseal during an earlier project, and it did great things – the government loved it, and they specified it again for this project. The technology allows us to recondition existing ductwork, saving costs, time and labor and eliminating much of the demolition and reconstruction associated with traditional duct sealing methods.”

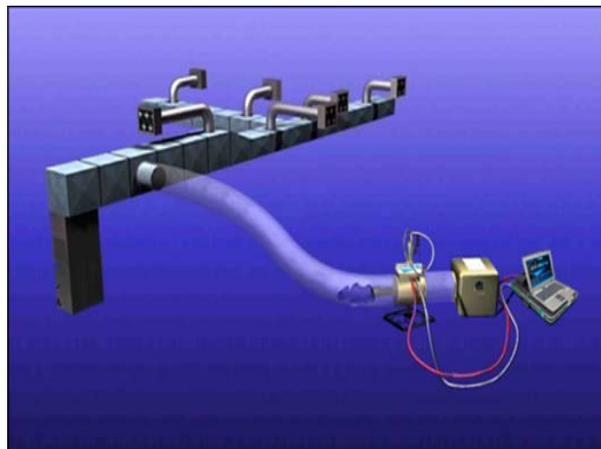
Chad Randolph, Senior Project Manager, Kirlin Builders

“We’ve found our aroeseal expertise to be a perfect complement to our duct cleaning skills. Proving that we can successfully implement both services, even in such a sensitive environment, has been critical in helping us rise above competing businesses.”

Cary Aiken, LEED Green Associate, Aroeseal Southeast

“We are proud of our commitment to quality and our resulting past performance record. As a certified Veteran-Owned Business, we stand uniquely ready to deploy for DOD, VA or any other substantial government project.”

Jill Rhodes, President, Aroeseal Southeast



Aroeseal – The Technology

In the aroeseal process, an aerosol mist of sealant is blown throughout the interior of the ductwork. The microscopic particles of sealant remain suspended in air until they reach a leak. Here they cling to the edge of the hole and then to other sealant particles until the leak is completely sealed.

- Developed at Lawrence Berkeley National Laboratory in 1994.
- Research for aroeseal technology was partially funded by the U.S. Department of Energy.
- Aroeseal is delivered as a non-toxic aerosol mist that seeks out and plugs leaks.
- Aroeseal has proven to be 95% effective at sealing air duct leaks.