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CASE STUDY

WITH TIME RUNNING OUT, USE OF AEROSEAL PROVES TO BE WINNING STRATEGY FOR COMMERICAL RENOVATION PROJECT

Aerosol-based Duct Sealing Process Saves Time And Money For Engineers Looking To Meet California's Tighter Duct Sealing Building Code Requirements

With days to go before the new tenants were scheduled to move in to their freshly renovated office building in downtown Berkeley, California, engineers learned that none of the newly installed ductwork came even close to passing the state's tighter requirements for duct leakage. All of the ducts in the first of the two-phase project had been manually sealed with mastic before being mounted into place.

When testing showed excessive leakage in all the newly installed ductwork, teams of sealers – seven men on four different floors, were brought in to reseal – first with mastic and then, when that failed, with tape. Limited space around the ducts made access difficult. Newly framed walls made duct removal impossible. It was three weeks of resealing – testing – failing – and then resealing again before the crews were able to adequately seal the leaks by hand.

In Brief

Building: Shattuck Office Building
Location: Berkeley, California
Engineers: Arup Group Limited
Aeroseal Contractors: Air Seal Solutions Corp.
Goal: Meet mechanical specifications of 5% leakage
Before Aeroseal: Avg. 3,317 CFM leakage per section
After Aeroseal: Avg. 178 CFM leakage per section
Results: Leakage reduced 95%; easily met 5% leakage rate demanded by mechanical specifications.

So when it came to phase two of the project, the general contractor agreed that it was time to try Aeroseal. An aerosol-based sealant that works from the inside of the ducts, Aeroseal alleviates problems associated with finding, accessing and effectively sealing all the leaks. The computerized system monitors the sealing progress, eliminating any guesswork as to its success. Air Seal Solutions Corp., the TAB experts on the project, were also experts at aerosealing. After a review of the process, the company was given the final go ahead to give the new technology a try.

The ductwork for the remaining three floors of the building was simply installed and then aerosealed right from the start. No manual sealing at all. It took Air Seal Solutions just a few days to seal all of the newly installed ductwork. One application and the ducts tested well below the 5% leakage rate demanded by the building code. The Aeroseal system automatically generated a report showing the results.

In the end, Aeroseal proved easier, faster, less expensive and much more effective at getting the job done. Thanks to Aeroseal the building easily passed inspection and opened ahead of schedule.

"Especially when there is time pressure to get the job done, Aeroseal is the answer. The process is fast and effective and unlike with mastic, you don't have to wait for anything to dry. The results are immediate. You also don't have to guess whether or not you got the leaks. The computerized process shows you the results as it happens. The documentation that the system created provided the immediate proof we needed for the city inspector as well."

Art Vegas, mechanical contractor
Arves Mechanical

"Aeroseal proved to be the right solution, particularly for sealing ductwork where leaks were hard to access. Since it works from the inside to seal, it also provided a better alternative to mastic and tape when exposed ductwork made aesthetics an issue."

"I had initial concern that the aeroseal process would coat the entire interior of the ductwork. It didn't."

Nigel Marcussen, PE CEng
Arup Group Limited

"I was skeptical that the aeroseal method would actually find and seal the leaks -- but it did. At the same time, it didn't have any negative effect on the VAV equipment installed inside the ductwork."

Jim Gustamantes , controls technician
Trane

Aeroseal – The Technology

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

For more information on this sealing project or about Aeroseal in general, contact Aeroseal at (937) 428-9300. You can also visit the Aeroseal website at www.aeroseal.com.

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