

CASE STUDY



PROJECT OVERVIEW

BUILDING

New home construction

LOCATION

Mankato, Minnesota

AEROSEAL CONTRACTOR

Aeroseal of Rochester

GOAL

Meet building code for duct tightness

BEFORE AEROSEAL

537.8 CFM: 26% system leakage



1 CFM = Size of a Basketball

AFTER AEROSEAL

24.2 CFM: 1.2% system leakage

RESULTS

In less than 4 hours and without demolition, Aeroseal of Rochester was able to seal the duct system and exceed code requirements.

New Home Builder Turns To Aeroseal To Pass Building Code And Finish The Job On Schedule

City inspectors amazed by the amount of leakage remaining after manual sealing; and the ease and effectiveness of using latest breakthrough in duct sealing technology

It was near end of day when duct sealing specialist Dan Rollie received a call from a building contractor looking for assistance. Before the General Contractor could get sign off on a new house he was building, he had to show that the leakage rates of newly installed ductwork did not exceed 70 CFM. With the home nearing completion, newly hung drywall and other obstructions made accessing and sealing the duct system impossible without demolishing much of the work that was just completed.

When Dan pulled up in his Aeroseal of Rochester utility truck, the general contractor and the city inspectors were waiting. Neither the General Contractor or the inspectors had ever witnessed the aerosol sealing process before and they wanted to see this innovative procedure for themselves.

It took Rollie about an hour to set up the sealing equipment and prepare the ductwork. Aeroseal measured the duct leakage and the inspectors were surprised to see that, despite manual sealing, the 500+ CFM leakage meant that the home wasn't even close to meeting code. Rollie explained that while the city requires sealing around duct connections, he's found that there is typically excessive leakage throughout the ductwork, even where sealing is required.

Once setup was completed, it took Rollie about a half hour to seal the house. Since Aeroseal works from inside the ducts, no demolition was required to find or seal the leaks. The inspectors watched the equipment monitor to see the leakage rate plummet to less than 25 CFM – well below code requirements. The inspectors quickly signed off on the project and the home was completed on schedule.



“When you factor in the true cost of manually sealing and testing, Aeroseal in newly constructed homes is the way to go. Not only can it lower costs, but it is faster and more effective than traditional sealing methods. It can be applied any time after the ducts have been installed so it provides unparalleled scheduling flexibility. And since it monitors the sealing process as its working, you know the results right away. No need to call in a third-party to retest – the system generates a final report with the before and after results.”

Dan Rollie, Sealing Specialist

Aeroseal of Rochester



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CASE STUDY



PROJECT OVERVIEW

BUILDING

One-Story, Ranch Home

LOCATION

Dayton, Ohio

AEROSEAL CONTRACTOR

Williams Comfort Air

GOAL

Eliminate home's negative pressure, alleviating homeowner's severe sinus pressure.

BEFORE AEROSEAL

918.9 CFM of leakage



1 CFM = Size of a Basketball

AFTER AEROSEAL

82.9 CFM of leakage

RESULTS

Sealing the home's supply and return ductwork eliminated 91% of leakage to eliminate the home's negative pressure.

Duct Sealing Helps Homeowner Solve Nagging Sinus Issue

Home's Negative Pressure Caused Health Issues

Dayton, Ohio Homeowner Tammy Lua has lived in her home for 18 years with her husband Mark. During that time, she has suffered from severe sinus pressure. She knew her home was making the problem worse.

Multiple Attempts to Solve Problem

She oversaw multiple renovation projects that she helped would remedy the situation – insulating the attic, replacing the roof, and insulating the home's soffit vents. But her sinus issue persisted. And her home was uncomfortable, with uneven temperatures throughout. Lua suspected her home's HVAC system was part of the issue. She knew it wasn't cooling the home evenly and it was making her home dustier than normal, which was in turn contributing to her sinus issues.

The previous owner compensated for uneven temperatures by turning the temperature down very low in the summer. This eliminated hot zones throughout the home, but they had to sleep with an electric blanket due to the extreme cold in their bedroom. After extensive online research, Lua realized the problem was leaky ductwork. This led her to the solution: Aeroseal duct sealing. She turned to Williams Comfort Air for help in solving this ongoing issue.

A Complete HVAC System Solution

A quick inspection told Jeff Howard of William's Comfort Air that Lua's home contained negative pressure, drawing in unwanted outdoor air into the home. This air was bringing dust, allergens and other contaminants into the home and it was all being recirculated by the HVAC system.

But before he could seal the Lua's leaky ducts, their home needed a larger ductwork system to achieve proper airflow throughout the home. And once Williams Comfort Air installed the ductwork, tests showed duct leakage of 918.9 CFM. This equates to the home losing 551.4 refrigerators full of air – every hour!

The entire duct sealing process took less than a day and reduced leakage by 91 percent.

"Aeroseal is critical to getting all of the leaks sealed – especially the ones you can't see or access without cutting open walls," said Howard. "With manual duct sealing, it would take longer, require walls to be repaired and we wouldn't be guaranteed all the leaks were sealed. Aeroseal is the best, most effective option."

Instant Results, Breathing Easy

Tammy Lua noticed a change immediately. She's had fewer sinus pressure issues and the home's comfort level has increased, eliminating its uneven temperatures.



"It was a relief to finally eliminate my sinus issues, now our heating and cooling is even throughout the home and our air is cleaner. I'm glad I learned about Aeroseal duct sealing."

Tammy Lua
Homeowner



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CASE STUDY



PROJECT OVERVIEW

BUILDING

60 year old, two-story home

LOCATION

Alison Park, Pennsylvania

AEROSEAL CONTRACTOR

Aeroseal of Pittsburgh

GOAL

Improve comfort of home

BEFORE AEROSEAL

390 CFM of leakage



1 CFM = Size of a Basketball

AFTER AEROSEAL

26.2 CFM of leakage – 93% reduction

RESULTS

Balanced temperatures between rooms. 93.3% reduction in leakage, plus 12% energy savings.

Pittsburgh Homeowner Turns To Duct Sealing Innovation For Comfort And Finds Energy Savings As A Bonus

Local Aeroseal dealer called for help in getting even heat throughout the home

Ever since Erik B. moved into his Pittsburgh-area home, he and his family struggled to get enough heat and air-conditioned air to all the rooms in the house. No matter how he set the thermostat, some rooms remained uncomfortable during hot summer days and cold winter nights. He first tried insulating his home to solve the problem, but that did little to help. He then noticed that air was blowing stronger out of some of the vents than others. Internet research led him to information about the role duct leakage often plays in robbing homeowners of comfort and energy savings.

He also found information about a new approach to duct sealing that works from the inside of the duct system to find and seal all the leaks – not just those on the outside, easily accessible by hand.

After a call to his local Aeroseal dealer, Aeroseal of Pittsburgh came to his home, free of charge, and tested his ductwork for leakage. Results indicated that while his energy-efficient furnace and air conditioner were working properly, he was losing nearly 390 CFM of treated air through duct leaks. According to computer calculations, all of the little leaks added together were the equivalence of a 54 square inch hole. Erik decided to have the ducts cleaned and the leaks sealed shut.

On the scheduled day, the Aeroseal team arrived in the morning, laid down drop cloths in the intended work area, and began by cleaning the duct system. By early afternoon, they had cleaned and prepared the ductwork for sealing. It took about one hour to seal the entire duct system. At the end, the computerized Aeroseal process generated a report that showed that leakage was reduced by more than 90%. More significantly, Erik immediately felt the difference with strong air coming out of vents throughout his home. As a bonus, he calculated that he would now be saving \$300-\$500 year on his utility bill.



“The temperatures throughout my home have felt more balance since my ducts were sealed. The force of the air coming from the problem vents has increased substantially, and my furnace and AC now run less to better heat and cool the house. The team at Aeroseal of Pittsburgh was professional and highly respectful of my home. I would definitely recommend Aeroseal if you are looking for increased home comfort.”

Erik B.
Homeowner



“Erik’s story isn’t unusual. Most of the homes we test in this area have leakage rates in excess of 20% – an amount that really makes a difference in indoor comfort and energy usage. With Aeroseal, you can easily reach and seal the entire duct system, not just the small fraction of exposed ducts that you may be able to seal by hand. It usually takes us less than a day to clean and seal an entire home.”

Andy Haak
Aeroseal of Pittsburgh



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CASE STUDY



PROJECT OVERVIEW

BUILDING

Rural two-story country home

LOCATION

Bellingham, Washington

AEROSEAL CONTRACTOR

Barron Heating and Air Conditioning

GOAL

Improve indoor comfort / indoor air quality

BEFORE AEROSEAL

350 CFM of leakage



1 CFM = Size of a Basketball

AFTER AEROSEAL

25 CFM of leakage – 92% reduction

RESULTS

Solved uneven temperatures in home. Cured homeowner's chronic health issues including severe face rash.

Aeroseal Duct Sealing Leads To Home Comfort And A Surprising Cure For A Persistent Health Problem

Fast, effective duct sealing helps solve a home renovation problem and turns a sales lead into another loyal customer

When Mary S., a Bellingham, Washington homeowner, first called Barron Heating and Air Conditioning, she was simply looking to improve the indoor comfort of her house. During the initial home inspection, however, Barron's comfort advisor, Wes Diskin heard from Mary that she was plagued with health issues, including a persistent rash on her face that doctors couldn't either explain or cure.

On a hunch, Diskin performed a home performance assessment where he found several indoor air quality (IAQ) issues including a wet and moldy crawlspace, duct leakage and envelope infiltration.

With homeowner consent, Barron worked with a subcontractor to address several key concerns related to building performance and IAQ. They sealed the attic floor, removed contaminated insulation and solved water drainage issues. They then turned their attention to the HVAC system where duct leakage was allowing contaminants to be sucked into the ductwork and then spread throughout the entire home.

To find and effectively seal the leaks, Barron used an innovative approach to duct sealing developed by the U.S. Department of Energy. Unlike traditional duct sealing methods, the computer-controlled aerosol-based sealing technology is blown into the interior of the ductwork where it automatically locates and seals leaks throughout the entire duct system even those hidden behind walls or in hard to reach spaces. By watching the computer monitor during the sealing process, both the contractors and homeowner could see the leakage disappear from the original 350 CFM of leakage down to 25 CFM – a 92% reduction.

Just weeks after finishing their work, Barron received a call from Mary. She told them something amazing happened. For the past five years, she had been seeing doctors about a mysterious rash on her face. But apparently, what her doctors couldn't solve, Aeroseal could. It turned out that insulation fibers and mold spores in the air were the cause of her health problem and that sealing the leaks in her ductwork was the cure.



"My house is now my fortress and my refuge. Thanks to everyone at Barron for doing more than simply selling me a new HVAC system. They asked me the right questions and listened to my answers. They then took that information, did some educated research and ultimately found a solution to a problem that several doctors couldn't solve."

Mary S.
Homeowner



"This is only one of many times we have been able to change people's lives through our home performance knowledge and the use of Aeroseal technology. There cannot be air quality without control of the duct leakage – period. No other solution has impacted our IAQ offering or created as much real improvement to a home as Aeroseal."

Wes Diskin
Barron Heating and Air Conditioning

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