

OTTAWA HVAC PRO

Ductwork

Duct design, sizing, sealing, and airflow balancing

7 Expert Answers from Construction Brain

ottawahvacpro.ca/construction-brain

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Q1

What is the best duct material?

Sheet metal ducts are generally the best choice for most residential HVAC systems, offering superior durability, airflow efficiency, and longevity compared to flexible or fiberboard alternatives.

Sheet metal ducts, typically made from galvanized steel or aluminum, provide the smoothest interior surface for optimal airflow with minimal resistance. They don't sag over time like flexible ducts, maintain their shape for decades, and are less prone to damage from rodents or physical impact. Metal ducts also don't harbor mold or bacteria as readily as other materials, making them the healthiest long-term choice for indoor air quality.

Flexible ducts are commonly used for short runs to individual rooms because they're easier to install around obstacles and cost less upfront. However, they have higher airflow resistance, can develop kinks or sags that restrict airflow, and typically need replacement every 10-15 years. When flex duct is used, it should be properly supported every 4 feet and kept as straight as possible.

In Ottawa's climate, **insulated metal ducts** are particularly important for runs through unconditioned spaces like crawl spaces or attics. The extreme temperature swings we experience here make proper insulation critical for energy efficiency and preventing condensation issues. Many Ottawa homes built in the 1980s-2000s have flex duct systems that are now due for replacement with more efficient metal ductwork.

Professional installation is crucial regardless of material choice. Poorly sealed or sized ducts can reduce HVAC efficiency by 20-40%, leading to higher energy bills and comfort issues. TSSA requirements may apply to ductwork modifications, especially when connected to gas furnaces.

For a comprehensive ductwork assessment and recommendations specific to your Ottawa home, consider having a licensed HVAC technician evaluate your current system's performance and efficiency.

Q2

How often should ductwork be replaced?

Ductwork typically lasts 15-25 years, but replacement timing depends more on condition than age. Well-maintained ducts in good condition can last decades, while poorly installed or damaged ductwork may need replacement much sooner.

Signs your ductwork needs replacement include visible damage like holes, disconnected joints, or crushed sections, excessive dust throughout your home despite regular cleaning, uneven heating or cooling between rooms,

and significantly higher energy bills without explanation. If your ducts are located in unconditioned spaces like crawlspaces or attics and lack proper insulation, replacement with properly insulated ductwork can dramatically improve efficiency.

In Ottawa's climate, ductwork faces unique challenges from our extreme temperature swings and high humidity summers. Ducts in older homes (pre-1980s) often lack adequate insulation and may have been installed with materials that don't meet current standards. Many Ottawa homes have ductwork running through unheated basements or crawlspaces, where poor insulation leads to significant energy loss during our cold winters.

Professional duct inspection can determine if your system needs replacement or if repairs and sealing will suffice. A TSSA-licensed HVAC technician can assess your ductwork's condition, check for proper sizing, and identify any code compliance issues. Sometimes what appears to need full replacement can be addressed with strategic repairs and professional sealing.

Before considering replacement, have your ducts professionally cleaned and inspected. This service typically costs \$400-800 in Ottawa and can reveal the true condition of your system while improving air quality and efficiency. If replacement is needed, expect costs of \$3,000-8,000 depending on your home's size and complexity.

For a thorough assessment of your ductwork's condition and replacement options, request a consultation from Ottawa HVAC Pro.

Q3

How do I improve airflow from my vents?

Poor airflow from your vents is usually caused by dirty filters, blocked vents, or ductwork issues - most of which you can check yourself before calling a professional.

Start with the simplest solution: **check your furnace filter**. A clogged filter is the most common cause of reduced airflow throughout your home. If it's dirty or hasn't been changed in 2-3 months, replace it with a new one. Make sure you're using the right size and don't go higher than MERV 11 unless your system is designed for it - higher-rated filters can actually restrict airflow in older systems.

Next, **inspect all your vents and returns**. Walk through your home and make sure furniture, curtains, or other items aren't blocking supply vents or return air grilles. Even partially blocked vents can significantly reduce airflow to that room. Remove any dust buildup on the vent covers themselves - a vacuum with a brush attachment works well for this.

Check your ductwork in accessible areas like the basement or crawl space. Look for disconnected ducts, large gaps, or crushed flexible ducts. These are common in Ottawa homes, especially older ones or those with recent renovations. You can temporarily seal small gaps with metal tape (not regular duct tape), but major ductwork repairs should be handled by professionals.

In Ottawa's climate, **ductwork problems are particularly common** due to our extreme temperature swings causing expansion and contraction. Many homes also have undersized return air ducts, which creates negative pressure and reduces overall system efficiency. If you've checked the basics and still have poor airflow, the issue likely requires professional ductwork evaluation or system balancing.

Call a licensed HVAC technician if you notice airflow problems in multiple rooms, hear unusual noises from the ducts, or if basic maintenance doesn't improve the situation. Poor airflow can strain your system and lead to premature equipment failure, especially during Ottawa's harsh winters when your furnace works hardest.

For comprehensive ductwork inspection and professional duct cleaning services, Ottawa HVAC Pro can evaluate your entire system and recommend the most cost-effective solutions for your home.

How do I know if my ducts need cleaning?

Most Ottawa homes benefit from professional duct cleaning every 3-5 years, but several signs indicate your ducts may need attention sooner. If you notice excessive dust accumulating on surfaces despite regular cleaning, or if family members are experiencing increased allergy symptoms or respiratory issues, your ductwork could be circulating contaminants throughout your home.

Visible signs around your vents are often the clearest indicators. Look for dust buildup around supply and return vents, dark staining on the walls near vents, or musty odors when your HVAC system runs. If you remove a vent cover and see significant dust, debris, or even mold growth on the visible ductwork, it's time for professional cleaning. Pet owners and homes that have undergone recent renovations typically need more frequent duct cleaning due to increased hair, dander, and construction dust.

In Ottawa's climate, ductwork faces unique challenges from our cold winters and humid summers. Condensation issues can lead to mold growth, especially in poorly insulated ducts or crawl spaces. If your energy bills have increased without explanation, dirty ducts could be restricting airflow and forcing your furnace or air conditioner to work harder. Additionally, if you've never had your ducts cleaned and you've lived in your home for more than five years, it's likely overdue.

Professional duct cleaning involves specialized equipment that homeowners can't replicate with household vacuums. TSSA-licensed technicians use powerful truck-mounted or portable systems to create negative pressure while agitating debris with compressed air tools. This process removes not just dust, but also potential mold, bacteria, and allergens that accumulate over time.

For Ottawa homeowners, professional duct cleaning typically costs \$400-\$800 for a whole home, depending on the size of your ductwork system and level of contamination. The investment often pays for itself through improved indoor air quality and HVAC efficiency. If you're experiencing any of these warning signs, consider scheduling an inspection to determine if duct cleaning would benefit your home's air quality and system performance.

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Q5

Should I seal my ductwork?

Yes, sealing your ductwork is one of the most cost-effective improvements you can make to your HVAC system. Most homes lose 20-30% of their heated or cooled air through leaky ducts, which directly impacts your energy bills and comfort.

Duct sealing involves identifying and closing gaps, cracks, and disconnected joints in your ductwork system. Common problem areas include connections at registers, joints between duct sections, and where ducts connect to your furnace or air handler. Professional duct sealing typically uses mastic sealant or metal-backed tape (never regular duct tape, which actually fails over time) to create airtight connections.

In Ottawa's climate, proper duct sealing is especially important because we rely heavily on our heating systems for 6+ months of the year. Leaky ducts in unconditioned spaces like basements, crawl spaces, or attics mean you're essentially heating or cooling those areas instead of your living space. This is particularly wasteful when ducts run through unheated basements, which is common in Ottawa homes.

Professional duct sealing typically costs \$1,500-\$3,000 for an average Ottawa home and can reduce energy bills by 15-20%. Many homeowners see payback within 3-5 years through lower utility bills. The work should be done by licensed HVAC technicians who can also inspect for other issues like inadequate insulation or improperly sized ductwork.

Signs you need duct sealing include uneven temperatures between rooms, high energy bills, excessive dust, or difficulty maintaining comfortable temperatures. A professional energy audit or duct inspection can identify the severity of leaks using specialized equipment.

For a comprehensive assessment of your ductwork and a free estimate on sealing services, request a quote from Ottawa HVAC Pro. We can evaluate your entire system and recommend the most cost-effective improvements for your home.

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Q6

What are signs of leaky ductwork?

Leaky ductwork typically shows several telltale signs that Ottawa homeowners can spot, with uneven temperatures between rooms being the most common indicator.

Temperature and airflow issues are usually the first signs you'll notice. Some rooms may feel consistently warmer or cooler than others, even with the thermostat set to the same temperature. You might also notice weak airflow from certain vents, or rooms that take much longer to reach the desired temperature. If you have to constantly adjust the thermostat or run your system longer to maintain comfort, ductwork leaks could be the culprit.

Higher energy bills often accompany leaky ducts, as your furnace or air conditioner works harder to compensate for the lost conditioned air. In Ottawa's climate, this becomes especially noticeable during our cold winters and hot summers when your HVAC system runs more frequently. You might see energy costs increase by 20-30% compared to a properly sealed system.

Dust and air quality problems frequently indicate duct leaks, particularly when ducts run through unconditioned spaces like basements or crawl spaces. Leaky return ducts can pull in dust, allergens, and even moisture from these areas, leading to more dust accumulation in your home and potentially affecting indoor air quality. You might notice more frequent filter changes are needed, or family members experiencing increased allergy symptoms.

Physical signs around your ductwork include visible gaps or disconnected joints, particularly at elbows and connections. In Ottawa homes with basement ductwork, look for sections where the duct tape or mastic sealant has deteriorated. You might also notice whistling sounds when the system runs, indicating air escaping through gaps.

Professional duct testing can definitively identify leaks and quantify their impact on your system's efficiency. TSSA-licensed technicians use specialized equipment to pressurize your duct system and measure air loss. This testing is particularly valuable in Ottawa's older homes, where ductwork may have settled or deteriorated over time.

For a comprehensive duct inspection and sealing estimate, Ottawa HVAC Pro can assess your system and recommend the most cost-effective solutions to improve your home's comfort and efficiency.

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Should I insulate my ductwork?

Yes, insulating your ductwork is one of the most cost-effective energy improvements you can make, especially if your ducts run through unconditioned spaces like basements, crawl spaces, or attics.

Uninsulated ducts lose significant energy - studies show that poorly insulated ductwork can waste 20-30% of your heating and cooling energy. In Ottawa's climate, where we have both hot summers and cold winters, this translates to hundreds of dollars in wasted energy costs annually. When heated air travels through cold basement ducts or cooled air moves through hot attic spaces, you're essentially heating or cooling areas you don't live in.

The benefits go beyond energy savings. Properly insulated ducts improve comfort by ensuring the air reaching your living spaces is closer to your desired temperature. They also reduce condensation problems that can lead to mold and moisture issues, particularly important in Ottawa's humid summers. Insulated ducts also run more quietly, reducing the whooshing sounds you might hear when your system cycles on.

In Ottawa, focus on ducts in unconditioned spaces - typically basement ceiling ducts and any ductwork in crawl spaces or unfinished areas. Most local homes have ducts running through basements that stay around 10-15°C in winter, meaning your 20°C heated air loses significant temperature before reaching your rooms. The recommended insulation level is R-6 to R-8 for supply ducts and R-4 for return ducts.

Professional installation ensures proper sealing and insulation techniques. While this might seem like a DIY project, proper duct insulation involves sealing air leaks first, then applying insulation without compressing it or leaving gaps. Many homeowners discover additional issues like disconnected ducts or poor airflow that affect system efficiency.

For a comprehensive assessment of your ductwork insulation needs, request a quote from Ottawa HVAC Pro - we can evaluate your entire duct system and recommend the most cost-effective improvements for your home.

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