

## Should You Have Your Ducts Cleaned?

### Little Known Facts About What Really Helps To Reduce Dust & Improve Indoor Air Quality

Dust on the furniture. Allergy or asthma suffering. Concerns about unhealthy indoor air. Dirt on the AC vents.

Many homeowners assume that having their ducts cleaned will alleviate these common issues. Unfortunately, they are often disappointed with the results.

While duct cleaning is not a bad thing to do, it is important to have realistic expectations about what the results will be. This report explains what duct cleaning can and can't do, and what to look for when selecting a duct cleaning contractor.

The most expensive way to fix a problem is to do it the wrong way first and then have to spend more money to do it the right way. While there are some cases where duct cleaning is the best answer to the problem, most others first require more investigation to identify the best solution.

It starts with understanding the actual sources of dust in the home, and the many other options now available to make your home cleaner and healthier.

#### What The EPA Says:

The US Environmental Protection Agency (EPA) has published an excellent unbiased document on duct cleaning. Here are some excerpts:

*"Duct cleaning has never been shown to actually prevent health problems. Neither do studies conclusively demonstrate that particle (e.g., dust) levels in homes increase because of dirty air ducts. This is because much of the dirt in air ducts adheres to duct surfaces and does not necessarily enter the living space."*

*"Do not hire duct cleaners who make sweeping claims about the health benefits of duct cleaning -- such claims are unsubstantiated."*

Source: "Should You Have The Air Ducts In Your Home Cleaned?" EPA document 402-K-97-002. Full report available at: <http://www.epa.gov/iaq/pubs/airduct.html>

#### Where Does That Dust Come From?

Ducts don't make the dust, they simply move it around. So where does the dust really come from?

A good deal of it comes from internal sources such as skin flakes, pets and fabric fibers. A better vacuum (HEPA or central), and a better central air filter can greatly reduce the presence of internal dust.

However, new research has found that in many homes a significant amount of the dust actually originates from outside the living space. The hot or cold outside air that leaks in through gaps & cracks often brings a lot of dust along with it. The air from outside always contains airborne particles such as pollen, mold spores, soot, tire rubber and agricultural dust. Think how dirty patio furniture can get after just a few days.

#### The Dirtiest Air Comes From Attics, Crawlspaces and Garages

However, that outside air leaking in around windows and doors is only a small part of the problem. Windows and doors usually represent less than 20% of a home's air leaks. The air coming in there is often relatively clean in comparison to where the other 80% comes from. Building scientists have recently discovered that in the typical home, most of the incoming air first passes through dirty areas such as the attached garage, outside walls, crawlspace, basement, attic or even from underground.

This incoming air is often contaminated with pollutants such as mold spores, insulation fibers, carbon monoxide, automobile exhaust, carcinogenic radon gas, pesticides and volatile organic chemical fumes. These can negatively affect your family's health and safety.

*"Pollutants that enter the home both from outdoors and indoor activities ... can cause greater exposure to contaminants than dirty air ducts."* (EPA)

#### Test & Pinpoint The Air Leaks

The best way to pinpoint where the bad air leaks are is to have an Infiltrometer blower door test performed. The test was originally invented by Dept. of Energy scientists, and is now required by the American Lung Association in their Health House program. It has been featured in National Geographic magazine, Popular Science, and on This Old House and other TV shows.

The test involves installing a computerized diagnostic instrument with a powerful fan in your front doorway, to temporarily negative pressure test your house. A cool smoke puffer and infrared camera are then used to find the air leaks. The test typically takes an hour to perform, and is a very interesting and eye opening experience. The worst leaks are always in places the homeowners never suspected.

A lot of the dirt that builds up in ducts actually gets into them via duct leaks. If you have dirt accumulating on the supply air vents, the cause is most likely duct leaks, not dirt from inside the ducts. A good sealed duct system, with filtration at the inlets, rarely if ever needs cleaning.

*“Whether or not you decide to have the air ducts in your home cleaned, preventing water and dirt from entering the system is the most effective way to prevent contamination. Make sure ducts are properly sealed and insulated in all non-air-conditioned spaces (e.g., attics and crawl spaces).”* (EPA)

Finding and fixing the leaks that let in bad air will make your home healthier, and less dusty. Your home will also become more comfortable, and have more controllable indoor humidity levels.

Fixing air leaks will even pay for itself through lower heating and cooling bills. In fact, duct leakage alone has been found to waste 20% to 40% of most system’s heating or air conditioning.

Many leaks can be easily repaired by homeowners as weekend projects. Others such as leaks in your air ducts, or through recessed can lights are better left to professionals.

*“A more comprehensive dust-reduction program is necessary (e.g. reducing house air leakage, better and more frequent vacuuming, reducing house particulate sources, etc.) to make a significant reduction in house airborne particulate...”* (Canadian Housing Research Agency)

## **Is Your House Tight or Leaky?**

In addition to pinpointing the leaks, the test provides an exact measurement of the home and duct system air-tightness. Some houses are very air tight, don’t get enough fresh air, and need improved mechanical ventilation.

On the other hand, most homes are too leaky. This usually causes excessive dust, a humid and clammy feeling in the summer, dry air and cold drafts in winter, uncomfortable rooms, and high heating and cooling bills. Until you test, you just don’t know.

## **Test, Don’t Guess**

In summary, authorities say that when trying to solve an unhealthy indoor air or dust problem the first step is to find out where the contaminants are coming from. Since much of the particulate present in homes comes from outside, informed consumers now request the Infiltrometer blower door test before investing in any solutions.

Comfort Institute member contractors offer the test as part of a *Home and Duct Performance Test* that also checks

insulation levels and overall duct system performance. Ask your local member contractor for a quotation to perform the testing on your home. It is virtually always much less than a good duct cleaning, and ensures you get on the right track to solve the problem.

Once the assessment is completed, your consultant can provide quotes for any recommended air quality improvement services, such as duct cleaning, duct sealing/renovation, better filters, Ultra-Violet light, fresh air ventilation, or whole house dehumidifiers.

To learn more about the Home and Duct Performance Testing option, visit your CI member company’s web page and watch **consumer education videos** produced by Comfort Institute. They include interviews with representatives of the EPA, Department of Energy and utility company researchers on how to make your home cleaner, healthier, more comfortable and energy efficient. Your local member is:

### **When Duct Cleaning IS Recommended**

According to the EPA, while duct cleaning usually doesn’t make much improvement to visible dust or health issues, there are three specific situations when you should consider having your ducts cleaned:

- you can see mold on hard surface ducts or other parts of your heating and cooling equipment
- your ducts are infested with rodents or insects
- your ducts are clogged to the extent that airflow is greatly restricted

If you do have these problems, the EPA cautions that they may be due to various underlying causes. Before you have your ducts cleaned, you should repair the underlying causes to make sure the problems don’t return.

If fibrous duct materials (e.g. duct liner, ductboard) are wet & moldy, they should be replaced, not cleaned.

If you choose to have your ducts cleaned, choose your contractor carefully. Make sure that in addition to cleaning your ducts, they also clean your heating and cooling system fully (fans, heaters, cooling coils, etc.).

The EPA recommends that you only clean your ducts when necessary. They do not recommend maintenance cleanings, as they have not found a benefit from routine, repeated duct cleaning.