Indoor Environments Division (6607J)
Office of Air and Radiation (OAR)
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Should You Have the Air Ducts in Your Home Cleaned?

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What is Air Duct Cleaning?

Most people are now aware that indoor air pollution is an issue of growing concern and increased visibility. Many companies are marketing products and services intended to improve the quality of your indoor air. You have probably seen an advertisement, received a coupon in the mail, or been approached directly by a company offering to clean your air ducts as a means of improving your home's indoor air quality. These services typically -- but not always -- range in cost from $450 to $1,000 per heating and cooling system, depending on the services offered, the size of the system to be cleaned, system accessibility, climatic region, and level of contamination.

Duct cleaning generally refers to the cleaning of various heating and cooling system components of forced air systems, including the supply and return air ducts and registers, grilles and diffusers, heat exchangers heating and cooling coils, condensate drain pans (drip pans), fan motor and fan housing, and the air handling unit housing (See diagram).

If not properly installed, maintained, and operated, these components

may become contaminated with particles of dust, pollen or other debris. If moisture is present, the potential for microbiological growth (e.g., mold) is increased and spores from such growth may be released into the home's living space. Some of these contaminants may cause allergic reactions or other symptoms in people if they are exposed to them. If you decide to have your heating and cooling system cleaned, it is important to make sure the service provider agrees to clean *all* components of the system and is qualified to do so. Failure to clean a component of a contaminated system can result in re-contamination of the entire system, thus negating any potential benefits. Methods of duct cleaning vary, although standards have been established by industry associations concerned with air duct cleaning. Typically, a service provider will use specialized tools to dislodge dirt and other debris in ducts, then vacuum them out with a high-powered vacuum cleaner.

In addition, the service provider may propose applying chemical biocides, designed to kill microbiological contaminants, to the inside of the duct work and to other system components. Some service providers may also suggest applying chemical treatments (sealants or other encapsulants) to seal or cover the inside surfaces of the air ducts and equipment housings because they believe the sealant will control mold growth or prevent the release of dirt particles or fibers from ducts. **These practices have yet to be fully researched and you should be fully informed before deciding to permit the use of biocides or sealants in your air ducts.** They should only be applied, if at all, after the system has been properly cleaned of all visible dust or debris. [Click on the tumbnail for a full page "printable" version of the graphic below.]

Components of a Typical* Residential Heating and Cooling System

Upright Indoor System w/gas furnace

*Type (e.g., heat pump, gas, electric), size, position and location of system components will vary.

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Deciding Whether or Not to Have Your Air Ducts Cleaned

Knowledge about the potential benefits and possible problems of air duct cleaning is limited. Since conditions in every home are different, it is impossible to generalize about whether or not air duct

cleaning in your home would be beneficial.

If no one in your household suffers from allergies or unexplained symptoms or illnesses and if, after a visual inspection of the inside of the ducts, you see no indication that your air ducts are contaminated with large deposits of dust or mold (no musty odor or visible mold growth), having your air ducts cleaned is probably unnecessary. It is normal for the return registers to get dusty as dust-laden air is pulled through the grate. This does not indicate that your air ducts are contaminated with heavy deposits of dust or debris; the registers can be easily vacuumed or removed and cleaned.

On the other hand, if family members are experiencing unusual or unexplained symptoms or illnesses that you think might be related to your home environment, you should discuss the situation with your doctor. EPA has published *Indoor Air Quality: An Introduction for Health Professionals* that can be obtained free of charge by contacting IAQ INFO at the number listed in this guide. You may obtain another free EPA booklet from **IAQ INFO** entitled *The Inside Story: A Guide to Indoor Air Quality* for guidance on identifying possible indoor air quality problems and ways to prevent or fix them.

You may consider having your air ducts cleaned simply because it seems logical that air ducts will get dirty over time and should occasionally be cleaned. While the debate about the value of periodic duct cleaning continues, no evidence suggests that such cleaning would be detrimental, *provided that it is done properly*.

On the other hand, if a service provider fails to follow proper duct cleaning procedures, duct cleaning can cause indoor air problems. For example, an inadequate vacuum collection system can release more dust, dirt, and other contaminants than if you had left the ducts alone. A careless or inadequately trained service provider can damage your ducts or heating and cooling system, possibly increasing your heating and air conditioning costs or forcing you to undertake difficult and costly repairs or replacements.

You should consider having the air ducts in your home cleaned if:

There is substantial visible mold growth inside hard surface (e.g., sheet metal) ducts or on other components of your heating and cooling system. There are several important points to understand concerning mold detection in heating and cooling systems:

- Many sections of your heating and cooling system may not be accessible for a visible inspection, so ask the service provider to show you any mold they say exists.
- You should be aware that although a substance may look like mold, a positive determination of whether it is mold or not can be made only by an expert and may require laboratory analysis for final

confirmation. For about $50, some microbiology laboratories can tell you whether a sample sent to them on a clear strip of sticky household tape is mold or simply a substance that resembles it.

- If you have insulated air ducts and the insulation gets wet or moldy it cannot be effectively cleaned and should be removed and replaced.
- If the conditions causing the mold growth in the first place are not corrected, mold growth will recur.

Ducts are infested with vermin, e.g. (rodents or insects); or

Ducts are clogged with excessive amounts of dust and debris and/or particles are actually released into the home from your supply registers.

Other Important Considerations...

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 or go down after cleaning. This is because much of the dirt that may accumulate inside air ducts adheres to duct surfaces and does not necessarily enter the living space. It is important to keep in mind that dirty air ducts are only one of many possible sources of particles that are present in homes. Pollutants that enter the home both from outdoors and indoor activities such as cooking, cleaning, smoking, or just moving around can cause greater exposure to contaminants than dirty air ducts. Moreover, there is no evidence that a light amount of household dust or other particulate matter in air ducts poses any risk to health.

EPA does not recommend that air ducts be cleaned except on an as-needed basis because of the continuing uncertainty about the benefits of duct cleaning under most circumstances. If a service provider or advertiser asserts that EPA recommends routine duct cleaning or makes claims about its health benefits, you should notify EPA by writing to the address listed at the end of this guidance. EPA does, however, recommend that if you have a fuel burning furnace, stove, or fireplace, they be inspected for proper functioning and serviced before each heating season to protect against carbon monoxide poisoning. Some research also suggests that cleaning dirty cooling coils, fans and heat exchangers can improve the efficiency of heating and cooling systems. However, little evidence exists to indicate that simply cleaning the duct system will increase your system's efficiency.

If you think duct cleaning might be a good idea for your home, but you are not sure, talk to a professional. The company that services your heating and cooling system may be a good source of

advice. You may also want to contact professional duct cleaning service providers and ask them about the services they provide. Remember, they are trying to sell you a service, so ask questions and insist on complete and knowledgeable answers.

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Suggestions for Choosing a Duct Cleaning Service Provider

To find companies that provide duct cleaning services, check your Yellow Pages under "duct cleaning" or contact the National Air Duct Cleaners Association (NADCA) at the address and phone number in the information section located at the end of this guidance. Do not assume that all duct cleaning service providers are equally knowledgeable and responsible. Talk to at least three different service providers and get written estimates before deciding whether to have your ducts cleaned. When the service providers come to your home, ask them to show you the contamination that would justify having your ducts cleaned.

Do not hire duct cleaners who make sweeping claims about the health benefits of duct cleaning -- such claims are unsubstantiated. Do not hire duct cleaners who recommend duct cleaning as a *routine* part of your heating and cooling system maintenance. You should also be wary of duct cleaners who claim to be certified by EPA. **EPA neither establishes duct cleaning standards nor certifies, endorses, or approves duct cleaning companies.**

Do not allow the use of chemical biocides or sealants unless you fully understand the pros and the cons (See "Unresolved Issues of Duct Cleaning).

Check references to be sure other customers were satisfied and did not experience any problems with their heating and cooling system after cleaning.

Contact your county or city office of consumer affairs or local Better Business Bureau to determine if complaints have been lodged against any of the companies you are considering.

Interview potential service providers to ensure:

- they are experienced in duct cleaning and have worked on systems like yours;
- they will use procedures to protect you, your pets, and your home from contamination; and
- they comply with NADCA's air duct cleaning standards and, if your ducts are constructed of fiber

glass duct board or insulated internally with fiber glass duct liner, with the North American Insulation Manufacturers Association's (NAIMA) recommendations.

Ask the service provider whether they hold any relevant state licenses. As of 1996, the following states require air duct cleaners to hold special licenses: Arizona, Arkansas, California, Florida, Georgia, Michigan and Texas. Other states may require them as well.

If the service provider charges by the hour, request an estimate of the number of hours or days the job will take, and find out whether there will be interruptions in the work. Make sure the duct cleaner you choose will provide a written agreement outlining the total cost and scope of the job before work begins.

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What to Expect From an Air Duct Cleaning Service Provider

If you choose to have your ducts cleaned, the service provider should:

Open access ports or doors to allow the entire system to be cleaned and inspected.

Inspect the system before cleaning to be sure that there are no asbestos-containing materials (e.g., insulation, register boots, etc.) in the heating and cooling system. Asbestos-containing materials require specialized procedures and should not be disturbed or removed except by specially trained and equipped contractors.

Use vacuum equipment that exhausts particles outside of the home or use only high-efficiency particle air (HEPA) vacuuming equipment if the vacuum exhausts inside the home.

Protect carpet and household furnishings during cleaning.

Use well-controlled brushing of duct surfaces in conjunction with contact vacuum cleaning to dislodge dust and other particles.

Use only soft-bristled brushes for fiberglass duct board and sheet metal ducts internally lined with fiberglass. (Although flex duct can also be cleaned using

soft-bristled brushes, it can be more economical to simply replace accessible flex duct.)

Take care to protect the duct work, including sealing and re-insulating any access holes the service provider may have made or used so they are airtight.

Follow NADCA's standards for air duct cleaning and NAIMA's recommended practice for ducts containing fiber glass lining or constructed of fiber glass duct board.

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How to Determine if the Duct Cleaner Did A Thorough Job

A thorough visual inspection is the best way to verify the cleanliness of your heating and cooling system. Some service providers use remote photography to document conditions inside ducts. All portions of the system should be visibly clean; you should not be able to detect any debris with the naked eye. Show the **Post-Cleaning Consumer Checklist** to the service provider before the work begins. After completing the job, ask the service provider to show you each component of your system to verify that the job was performed satisfactorily.

If you answer "No" to any of the questions on the checklist, this may indicate a problem with the job. Ask your service provider to correct any deficiencies until you can answer "yes" to all the questions on the checklist.

Post-Cleaning Consumer Checklist

		Yes	No
General	Did the service provider obtain access to and clean the entire heating and cooling system, including ductwork and all components (drain pans, humidifiers, coils, and fans)?	--	--
	Has the service provider adequately demonstrated that duct work and plenums are clean? (Plenum is a space in which supply or return air is mixed or moves; can be duct, joist space, attic and crawl spaces, or wall cavity.)	--	--
Heating	Is the heat exchanger surface visibly clean?	--	--

Cooling Components	Are both sides of the cooling coil visibly clean?	--	--
	If you point a flashlight into the cooling coil, does light shine through the other side? It should if the coil is clean.	--	--
	Are the coil fins straight and evenly spaced (as opposed to being bent over and smashed together)?	--	--
	Is the coil drain pan completely clean and draining properly?	--	--
Blower	Are the blower blades clean and free of oil and debris?	--	--
	Is the blower compartment free of visible dust or debris?	--	--
Plenums	Is the return air plenum free of visible dust or debris?	--	--
	Do filters fit properly and are they the proper efficiency as recommended by HVAC system manufacturer?	--	--
	Is the supply air plenum (directly downstream of the air handling unit) free of moisture stains and contaminants?	--	--
Metal Ducts	Are interior ductwork surfaces free of visible debris? (Select several sites at random in both the return and supply sides of the system.)	--	--
Fiber Glass	Is all fiber glass material in good condition (i.e., free of tears and abrasions; well adhered to underlying materials)?	--	--
Access Doors	Are newly installed access doors in sheet metal ducts attached with more than just duct tape (e.g., screws, rivets, mastic, etc.)?	--	--
	With the system running, is air leakage through access doors or covers very slight or non-existent?	--	--

Air Vents	Have all registers, grilles, and diffusers been firmly reattached to the walls, floors, and/or ceilings?	--	--
	Are the registers, grilles, and diffusers visibly clean?	--	--
System Operation	Does the system function properly in both the heating and cooling modes after cleaning?	--	--

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How to Prevent Duct Contamination

Whether or not you decide to have the air ducts in your home cleaned, committing to a good preventive maintenance program is essential to minimize duct contamination.

To prevent dirt from entering the system:

Use the highest efficiency air filter recommended by the manufacturer of your heating and cooling system.

Change filters regularly.

If your filters become clogged, change them more frequently.

Be sure you do not have any missing filters and that air cannot bypass filters through gaps around the filter holder.

When having your heating and cooling system maintained or checked for other reasons, be sure to ask the service provider to clean cooling coils and drain pans.

During construction or renovation work that produces dust in your home, seal off supply and return registers and do not operate the heating and cooling system until after cleaning up the dust.

Remove dust and vacuum your home regularly. (Use a high efficiency vacuum (HEPA) cleaner or the highest efficiency filter bags your vacuum cleaner can take. Vacuuming can increase the amount of dust in the air during and after vacuuming as well as in your ducts).

If your heating system includes in-duct humidification

equipment, be sure to operate and maintain the humidifier strictly as recommended by the manufacturer.

To prevent ducts from becoming wet:

Moisture should not be present in ducts. Controlling moisture is the most effective way to prevent biological growth in air ducts.

Moisture can enter the duct system through leaks or if the system has been improperly installed or serviced. Research suggests that condensation (which occurs when a surface temperature is lower than the dew point temperature of the surrounding air) on or near cooling coils of air conditioning units is a major factor in moisture contamination of the system. The presence of condensation or high relative humidity is an important indicator of the potential for mold growth on any type of duct. Controlling moisture can often be difficult, but here are some steps you can take:

Promptly and properly repair any leaks or water damage.

Pay particular attention to cooling coils, which are designed to remove water from the air and can be a major source of moisture contamination of the system that can lead to mold growth. Make sure the condensate pan drains properly. The presence of substantial standing water and/or debris indicates a problem requiring immediate attention. Check any insulation near cooling coils for wet spots.

Make sure ducts are properly sealed and insulated in all non-air-conditioned spaces (e.g., attics and crawl spaces). This will help to prevent moisture due to condensation from entering the system and is important to make the system work as intended. To prevent water condensation, the heating and cooling system must be properly insulated.

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Unresolved Issues of Duct Cleaning

Does duct cleaning prevent health problems?

The bottom line is: no one knows. There are examples of ducts that have become badly contaminated with a variety of materials that may pose risks to your health. The duct system can serve as a means to distribute these contaminants throughout a home. In these cases, duct cleaning may make sense. However, a light amount of

household dust in your air ducts is normal. Duct cleaning is not considered to be a necessary part of yearly maintenance of your heating and cooling system, which consists of regular cleaning of drain pans and heating and cooling coils, regular filter changes and yearly inspections of heating equipment. Research continues in an effort to evaluate the potential benefits of air duct cleaning.

In the meantime...

Educate yourself about duct cleaning by contacting some or all of the sources of information listed at the end of this publication and asking questions of potential service providers.

Are duct materials other than bare sheet metal ducts more likely to be contaminated with mold and other biological contaminants?

You may be familiar with air ducts that are constructed of sheet metal. However, many modern residential air duct systems are constructed of fiber glass duct board or sheet metal ducts that are lined on the inside with fiber glass duct liner. Since the early 1970's, a significant increase in the use of flexible duct, which generally is internally lined with plastic or some other type of material, has occurred. The use of insulated duct material has increased due to improved temperature control, energy conservation, and reduced condensation. Internal insulation provides better acoustical (noise) control. Flexible duct is very low cost. These products are engineered specifically for use in ducts or as ducts themselves, and are tested in accordance with standards established by Underwriters Laboratories (UL), the American Society for Testing and Materials (ASTM), and the National Fire Protection Association (NFPA).

Many insulated duct systems have operated for years without supporting significant mold growth. Keeping them reasonably clean and dry is generally adequate. However, there is substantial debate about whether porous insulation materials (e.g., fiber glass) are more prone to microbial contamination than bare sheet metal ducts. If enough dirt and moisture are permitted to enter the duct system, there may be no significant difference in the rate or extent of microbial growth in internally lined or bare sheet metal ducts. However, treatment of mold contamination on bare sheet metal is much easier. Cleaning and treatment with an EPA-registered biocide are possible. Once fiberglass duct liner is contaminated with mold, cleaning is not sufficient to prevent regrowth and there are no EPA-registered biocides for the treatment of porous duct materials. EPA, NADCA, and NAIMA all recommend the replacement of wet or moldy fiber glass duct material.

In the meantime...

Experts do agree that moisture should not be present

in ducts and if moisture and dirt are present, the potential exists for biological contaminants to grow and be distributed throughout the home. Controlling moisture is the most effective way to prevent biological growth in all types of air ducts.

Correct any water leaks or standing water.

Remove standing water under cooling coils of air handling units by making sure that drain pans slope toward the drain.

If humidifiers are used, they must be properly maintained.

Air handling units should be constructed so that maintenance personnel have easy, direct access to heat exchange components and drain pans for proper cleaning and maintenance.

Fiber glass, or any other insulation material that is wet or visibly moldy (or if an unacceptable odor is present) should be removed and replaced by a qualified heating and cooling system contractor.

Steam cleaning and other methods involving moisture should not be used on any kind of duct work.

Should chemical biocides be applied to the inside of air ducts?

Air duct cleaning service providers may tell you that they need to apply a chemical biocide to the inside of your ducts to kill bacteria (germs), and fungi (mold) and prevent future biological growth. Some duct cleaning service providers may propose to introduce ozone to kill biological contaminants. Ozone is a highly reactive gas that is regulated in the outside air as a lung irritant. However, there remains considerable controversy over the necessity and wisdom of introducing chemical biocides or ozone into the duct work.

Among the possible problems with biocide and ozone application in air ducts:

- Little research has been conducted to demonstrate the effectiveness of most biocides and ozone when used inside ducts. Simply spraying or otherwise introducing these materials into the operating duct system may cause much of the material to be transported through the system and released into other areas of your home.
- Some people may react negatively to the biocide or ozone, causing adverse health reactions.

Chemical biocides are regulated by EPA under Federal pesticide law.

A product must be registered by EPA for a specific use before it can be legally used for that purpose. The specific use(s) must appear on the pesticide (e.g., biocide) label, along with other important information. It is a violation of federal law to use a pesticide product in any manner inconsistent with the label directions.

A small number of products are currently registered by EPA specifically for use on the inside of bare sheet metal air ducts. A number of products are also registered for use as sanitizers on hard surfaces, which could include the interior of bare sheet metal ducts. While many such products may be used legally inside of unlined ducts if all label directions are followed, some of the directions on the label may be inappropriate for use in ducts. For example, if the directions indicate "rinse with water", the added moisture could stimulate mold growth.

All of the products discussed above are registered solely for the purpose of sanitizing the smooth surfaces of unlined (bare) sheet metal ducts. No products are currently registered as biocides for use on fiber glass duct board or fiber glass lined ducts, so it is important to determine if sections of your system contain these materials before permitting the application of any biocide.

In the meantime...

Before allowing a service provider to use a chemical biocide in your duct work, the service provider should:

> **Demonstrate visible evidence of microbial growth in your duct work.** Some service providers may attempt to convince you that your air ducts are contaminated by demonstrating that the microorganisms found in your home grow on a settling plate (i.e., petri dish). This is inappropriate. Some microorganisms are always present in the air, and some growth on a settling plate is normal. As noted earlier, only an expert can positively identify a substance as biological growth and lab analysis may be required for final confirmation. Other testing methods are not reliable.
>
> **Explain why biological growth cannot be removed by physical means, such as brushing, and further growth prevented by controlling moisture.**

If you decide to permit the use of a biocide, the service provider should:

> **Show you the biocide label, which will describe its range of approved uses.**
>
> **Apply the biocide only to un-insulated areas of the duct system after proper cleaning, if necessary to reduce the chances for regrowth of mold.**

Always use the product strictly according to its label instructions.

While some low toxicity products may be legally applied while occupants of the home are present, you may wish to consider leaving the premises while the biocide is being applied as an added precaution.

Do sealants prevent the release of dust and dirt particles into the air?

Manufacturers of products marketed to coat and seal duct surfaces claim that these sealants prevent dust and dirt particles inside air ducts from being released into the air. As with biocides, a sealant is often applied by spraying it into the operating duct system. Laboratory tests indicate that materials introduced in this manner tend not to completely coat the duct surface. Application of sealants may also affect the acoustical (noise) and fire retarding characteristics of fiber glass lined or constructed ducts and may invalidate the manufacturer's warranty.

Questions about the safety, effectiveness and overall desirability of sealants remain. For example, little is known about the potential toxicity of these products under typical use conditions or in the event they catch fire.

In addition, sealants have yet to be evaluated for their resistance to deterioration over time which could add particles to the duct air.

In the meantime...

Most organizations concerned with duct cleaning, including EPA, NADCA, NAIMA, and the Sheet Metal and Air Conditioning Contractors' National Association (SMACNA) do not currently recommend the routine use of sealants in any type of duct. Instances when the use of sealants may be appropriate include the repair of damaged fiber glass insulation or when combating fire damage within ducts. Sealants should never be used on wet duct liner, to cover actively growing mold, or to cover debris in the ducts, and should only be applied after cleaning according to NADCA or other appropriate guidelines or standards.

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To Learn More About Indoor Air Quality

U.S. Environmental Protection Agency
Office of Radiation and Indoor Air
Indoor Environments Division (6604J)
401 M St., S.W.

Washington, DC 20460
(202) 564-9370
(202) 565-2038 (fax)
E-mail: webmaster.oria@epamail.epa.gov

World Wide Web Site:
http://www.epa.gov/iaq/

Indoor Air Quality Information Clearinghouse (IAQ INFO)
P.O. Box 37133
Washington, DC 20013-7133
1 (800) 438-4318
(703) 356-4020 (local)
(703) 356-5386 (fax)
E-mail: IAQINFO@aol.com

Useful EPA publications available free of charge from either location above:

- *The Inside Story: A Guide to Indoor Air Quality*
- *Indoor Air Pollution: An Introduction for Health Professionals*
- *Residential Air Cleaning Devices: A Summary of Available Information*
- *Ozone Generators That are Sold as Air Cleaners*

Consumer Research Council (CRC)
IAQ Checklist
P.O. Box 12099
Washington, DC 20005-0999

Ask for: ***How Healthy Is The Air In Your Home?*** (Free. Send a self-addressed, stamped standard size business envelope)

To Learn More About Air Duct Cleaning

National Air Duct Cleaners Association (NADCA)
1518 K Street, NW Suite 503
Washington, DC 20005
(202) 737-2926

http://www.nadca.com

Ask for: ***Introduction to HVAC (Heating, Ventilating, and Air Conditioning) System Cleaning Services***
(Although intended for commercial customers, information can be useful to consumers.)

North American Insulation Manufacturers

Association (NAIMA)
44 Canal Center Plaza, Suite 310
Alexandria, VA 22314
(703) 684-0084

Ask for: ***Cleaning Fibrous Glass Insulated Air Duct Systems; Recommended Practice***

Other Useful Resources

For a free list of state and local consumer protection agencies and Better Business Bureaus:

Consumer's Resource Handbook
Consumer Information Center
Pueblo, CO 81009

For Information on Antimicrobial Biocides:

National Antimicrobial Information Network (NAIN)
1 (800) 447-6349.
Email: nain@ace.orst.edu

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Consumer Checklist

	Learn as much as possible about air duct cleaning before you decide to have your ducts cleaned by reading this guidance and contacting the sources of information provided.
	Consider other possible sources of indoor air pollution first if you suspect an indoor air quality problem exists in your home.
	Have your air ducts cleaned if they are visibly contaminated with substantial mold growth, pests or vermin, or are clogged with substantial deposits of dust or debris.
	Ask the service provider to show you any mold or other biological contamination they say exists. Get laboratory confirmation of mold growth or decide to rely on your own judgement and common sense in evaluating apparent mold growth.
	Get estimates from at least three service providers.

	Check references.
	Ask the service provider whether he/she holds any relevant state licenses. As of 1996, the following states require air duct cleaners to hold special licenses: Arizona, Arkansas, California, Florida, Georgia, Michigan and Texas. Other states may also require licenses.
	Insist that the service provider give you knowledgeable and complete answers to your questions.
	Find out whether your ducts are made of sheet metal, flex duct, or constructed of fiber glass duct board or lined with fiber glass since the methods of cleaning vary depending on duct type. Remember, a combination of these elements may be present.
	Permit the application of biocides in your ducts only if necessary to control mold growth and only after assuring yourself that the product will be applied strictly according to label directions. As a precaution, you and your pets should leave the premises during application.
	Do not permit the use of sealants except under unusual circumstances where other alternatives are not feasible.
	Make sure the service provider follows the National Air Duct Cleaning Association's (NADCA) standards and, if the ducts are constructed of flex duct, duct board, or lined with fiber glass, the guidelines of the North American Insulation Manufacturers Association (NAIMA).
	Commit to a preventive maintenance program of yearly inspections of your heating and cooling system, regular filter changes, and steps to prevent moisture contamination.

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http://www.epa.gov/iaq/airduct.html