



Quick Guide To Ventilation and Air Filtration

It's all around you - invisible to the eye - but essential. It's the air you breathe. In your home, everything from cleaning supplies to paints, solvents, pesticides and excess moisture can affect air quality. Proper ventilation is a critical component to maintaining healthful air quality.

Threats to Indoor Air Quality

Dirt and Dust: Outdoor soil can contain fertilizer, pesticides and more. Tracked in, it becomes part of the indoor dust, which already holds dander, dust mites, plastics, and more.

Mold: Airborne mold spores and mold fragments can trigger asthma and allergy episodes.

VOCs: Volatile organic compounds are found in cleaning liquids, paints, solvents & other household supplies. They volatilize or offgas into the air, and can cause short-term irritation, possible organ damage and cancer.

Formaldehyde: This VOC is used in a variety of household products. It is a carcinogen, may trigger asthma, and irritate the eyes and respiratory system.

Asbestos: Found in some insulation, fireproofing materials, acoustic tile and "popcorn" ceilings, these tiny particles can cause lung-tissue damage and cancer.

Lead: Lead can enter the air as dust and cause damage to the central nervous system.

Moisture: Water leaks and high relative humidity encourage mold & bacterial growth, dust mite proliferation and increased formaldehyde emissions from building materials, furnishings and household items. This can trigger asthma, allergies, and other health issues.

Carbon Monoxide: Fuel-burning appliances and idling cars in attached garages can release carbon monoxide into the home, causing about 500 preventable deaths each year.

Radon: Radioactive gas can cause lung cancer - no smoking necessary.

Strategies to Improve Air Quality

It is important to practice source control and separation then utilize a proper mechanical ventilation system to reduce pollutants. Air filtration can then clean up remaining pollutants.

Five Ways to Improve Indoor Air Quality

- (1) Source control is eliminating the source of a pollutant. For instance, if you use low-VOC cleaning products you won't add those pollutants to the indoor air every time you clean the house. Removing lead and asbestos are also examples of source control.
- (2) Practicing separation means creating a barrier between the occupied part of the house and the pollution source. If a pollutant can't reach you, it can't harm you. Separation typically includes keeping insulation, radon, lead and asbestos away from you and your loved ones. An airtight house can be a good way to separate occupants from pollutants.
- (3) Control at the source means catching pollutants as close as possible to the source before they spread throughout the house. This strategy can be applied whenever it is impossible or impractical to completely eliminate the source or to apply the separation strategy. Spot ventilation systems, such as kitchen range hoods and bathroom fans are examples of control at the source. An active radon mitigation system is another example.



- (4) Whole-house ventilation is more than just air circulation between rooms. Proper ventilation requires an exchange of air between indoors and outdoors. The best and most efficient way to exchange home air is to rely on a mechanical ventilation system.
- (5) Filtration is often combined with ventilation to maintain good indoor air quality. Filters capture airborne pollutants but they do not bring in fresh air, remove excess humidity, or create oxygen; therefore, they should not be relied on as a substitute for a mechanical ventilation system.

Types of Controlled Ventilation Systems

There are two types of controlled ventilation systems:

- (1) High-volume local or spot ventilation. These systems are good for dealing with occasional peak pollution levels or excess moisture in specific rooms. Local ventilation is desirable in bathrooms, kitchens, and other service rooms that regularly have high levels of moisture or pollution. Sometimes local ventilation is called spot ventilation because it ventilates one spot in a house.
- (2) General ventilation. This is often called whole-house ventilation because it is for every room in the house. Its purpose is to provide the air that occupants need on a continual basis and remove dispersed pollutants. These systems are mechanical units that move air through a house continuously at a relatively low flow rate providing a continuous air change for fresh air to maintain healthy conditions for the occupants and the building itself.

Finding a Ventilation Solution

Help ensure the quality of indoor air by using ventilation products certified by the Home Ventilating Institute (HVI). You can find certified home ventilation products listed on the HVI site at <http://www.hvi.org>.

