



IMPORTANT INFORMATION REGARDING THE QUALITY OF AIR INSIDE YOUR HOME

Indoor air quality is becoming one of the most widely debated subjects in new home construction. The U.S. Environmental Protection Agency states that indoor air quality may be up to five times more hazardous to your health than air directly outside your home and that indoor air quality is one of the top five environmental risks to public health. Asthma, allergies, and other serious respiratory ailments are rising dramatically and researchers are looking for answers. While the issues are complex and multi-faceted, tightly sealed homes built in the last two decades (for very good energy efficiency reasons) have long been suspected as a major contributor to the dramatic rise in respiratory ailments over the same time period. Since people spend 90% of their time indoors (about 65% in their homes), indoor air quality has become a major area of concern.

1. Why is ventilation important to my family's health and well-being? You are producing carbon dioxide every time you exhale and you need oxygen when you breathe. If you have pets, they produce carbon dioxide and they are a source of dander, a known air irritant. Volatile Organic Compounds (VOC'S) contained in your carpeting, flooring, paint, furniture and other manmade items within your home produce various chemicals and contaminants. These contaminants can become trapped inside your tightly sealed house with no way to escape. Some people are extremely sensitive to these pollutants and may have serious reactions, while others are only mildly affected by their presence. Proper ventilation is important to dilute these irritants, to replace lost oxygen and to relieve that "stuffy" feeling. It is also important to promote easier and healthier breathing as well as to help reduce the possibility of moisture-related damage to your home.

2. What do other industry experts say about indoor air quality? The American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE) is the standards organization for the HVAC (Heating, Ventilation and Air-Conditioning) industry. ASHRAE has adopted a new standard for ventilation and acceptable indoor air quality in homes (ASHRAE 62.2-2004). This standard requires natural or mechanical ventilation for new construction. The 2003 International Builders Code states "Every occupied space shall be ventilated by natural means in accordance with Section 402 or by mechanical means in accordance with Section 403". Neither standard addresses the indoor air quality issues of the millions of tightly constructed existing homes built in the last two decades. Ventilation by natural means involves leaving windows or doors open on a more or less continuous basis. Resultant energy loss, security concerns, and entry of uncontrolled and non-conditioned (hot, cold, or humid) outside air makes ventilation by natural means totally unacceptable for the typical homeowner. Mechanical ventilation is the only viable solution to today's indoor air quality problem.

3. What products are available to help improve indoor air quality? A wide variety of products have been produced to address indoor air quality problems. They range from simple air filter systems that remove particles from the indoor air to complex and expensive air treatment systems (originally developed for semiconductor clean rooms and hospitals) that kill airborne microbes. However, there is no substitute for supplying fresh air, with adequate oxygen content, into your home on a regular basis.

4. I thought that all air conditioning systems provided fresh air? Central heating and air conditioning systems simply re-circulate the air contained inside your home. A blower is used to collect the air at a return inlet, where it is filtered and then either heated or cooled and expelled back into the rooms of your home. You will only get fresh outside air from any leakage that occurs in unsealed areas such as around doors, windows or other openings. These entry sources have been greatly reduced by extensive sealing techniques built into your home to keep your energy costs low.

ACR, the technological leader in ventilation and airflow control.

5. Will fresh air ventilation increase my heating and cooling costs? The answer is yes. How much depends on a number of variables such as the climate, tightness and size of the house, size of the HVAC system and other factors. The AQS 201 Air Quality System, shown below in the photo, utilizes each normal heating or cooling cycle of the existing HVAC system to provide a measured amount of fresh ventilation air to be mixed with the circulating inside air and distributed throughout the home. The only additional energy required is to heat or cool the incoming ventilation air to room conditions. During times when the HVAC system is operating infrequently, such as during the spring and fall periods, the AQS 201 automatically provides periodic ventilation cycles by energizing the system blower (only) to distribute fresh air throughout the house. In this case, no conditioning (heating or cooling) energy is expended but energy is required to run the system blower. The AQS 201 itself requires an insignificant amount of operating power. While these added energy costs are highly variable, studies indicate that the owner of a typical home using a three-ton air conditioner might expect added costs of \$60 to \$70 per year to properly ventilate a home with a mechanical ventilation system.

6. Why am I not aware of air quality problems in my home? Humans are simply not equipped to recognize potentially serious or even deadly compounds introduced into or generated within a home. Examples are carbon monoxide, radon gas and some VOC'S. While source elimination is the preferred solution, the homeowner might be unaware of the problem. Proper ventilation can serve to dilute concentrations of these otherwise trapped contaminants.

7. Can my home be upgraded to include mechanical ventilation? Yes, retrofitting your home is quick and easy when you use the most cost effective system available today, the AQS 201. The system attached to a typical HVAC system return plenum is shown in the photograph on the right. It can be added to your home to provide proper ventilation just as it does in new homes. The AQS 201 is an innovative new whole-house ventilation system, developed by ACR, to provide just the right amount of fresh air for your family on a timed basis, around the clock. The ACR system is installed and connected to an outside air duct by an authorized HVAC professional who adjusts the system controls to accommodate the interior volume of your home and the normal number of occupants. An airtight valve, controlled by a microprocessor, monitors your HVAC system and introduces fresh air only when needed. During spring and fall, when your system operates infrequently, the ACR system automatically starts your system blower (only) and opens the valve to satisfy your fresh air requirements. The quiet, long-life, airtight valve prevents unwanted outside air infiltration when the system is not operating. This feature helps maintain energy efficiency in your home. Other features include sharing the existing HVAC system air filter and eliminating the need for a separate air quality filter. Your air quality system requires no periodic maintenance and is designed to give you years of trouble-free operation.



8. How do I get additional information? Call your local air conditioning contractor for an appointment. They will inspect your current system, discuss all the AQS 201 options available and provide you with a no-obligation quotation. Thank you for the opportunity to provide this important information to your family.

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