#### **Issue**

#### Heating and cooling account for between 40-60% of energy used in U.S. residential buildings. This represents a large opportunity to save energy throughout U.S. buildings. One of the leading cause of energy waste from heating and cooling in both commercial and residential buildings is inadequate insulation.

The air within homes can become **stale** from moisture, odors, and **pollutants** that penetrate the building or are generated internally by human activity and **off-gassing** from building materials and furnishings. A steady supply of fresh outdoor air can increase indoor air quality and improve occupant comfort. Historically, residential buildings have not had specific requirements for ventilation because natural air leakage and natural ventilation was considered adequate. As envelope construction practices have improved and the envelopes of residential buildings become tighter, the need to ensure air quality through practices like mechanical ventilation has risen.

#### **Overview**

#### Mechanical ventilation systems circulate fresh air into the home to replace stale and/or moist air. For buildings that have **mechanical ventilation** systems installed, the IECC requires an automatic or gravity **damper** for any intake or exhaust protruding through the **envelope**. The goal is to reduce air leakage through the envelope when the ventilation system is not in operation. Health concerns make the circulation of air necessary for occupants. Mechanical ventilation system requirements achieve balance between occupant health and energy savings.

Any mechanical ventilation system will not reach its performance potential if components are poorly manufactured or installed improperly. Several factors contribute to poor performance of ventilation systems including long duct lengths and compression in flexible ducts, each resulting in a loss of ventilation rate and a significant increase in power and energy consumption by **HVAC systems**.

(277 mots)

http://bcapcodes.org/tools/code-builder/residential/ventilation/