

How Much Fresh Air Does Your Home Need?

The latest version of the ASHRAE 62.2 residential ventilation standard calls for bigger fans — and Joe Lstiburek is ticked off

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Max Sherman (left) and Joseph Lstiburek have been disagreeing about appropriate minimum ventilation rates for many years.

The American Society of Heating, Refrigerating, and Air-Conditioning Engineers (ASHRAE) has had a residential ventilation standard since 2003, when ASHRAE 62.2 ("Ventilation and Acceptable Indoor Air Quality in Low-Rise Residential Buildings") was first approved for publication. (For more information on providing fresh air for homes, see [Designing a Good](#)

Ventilation System.)

Until recently, the basic ventilation rate formula established by ASHRAE 62.2 back in 2003 — 7.5 cfm per person plus 1 cfm per 100 square feet — has remained unchanged. (The standard assumes that the number of occupants in a home equals the number of bedrooms plus one.)

However, the latest (2013) version of ASHRAE 62.2 includes a significant change in the decade-old ventilation formula. Under the new formula, high-performance homes will need to be ventilated at a higher rate, namely 7.5 cfm per person plus 3 cfm per 100 square feet. This means that for a tightly built 2,400-square-foot home with 3 bedrooms, the minimum airflow rate of the ventilation equipment has jumped 89%, from 54 cfm to 102 cfm.

This new formula has been criticized by some building scientists, especially those who have long argued that even the older formula — the one specifying a lower ventilation rate — was probably too high. The most prominent critic of the new formula is Joseph Lstiburek, a principal of the Building Science Corporation in Massachusetts and one of the original members of the ASHRAE committee that developed the 62.2 standard.

One of the most prominent defenders of the new formula is Max Sherman, a senior scientist at Lawrence Berkeley National Laboratory and the former chairperson of the ASHRAE 62.2 committee. (Sherman is also a Holladay Distinguished Fellow, an ASHRAE honorific named after my grandfather.)

The 2010 version (and earlier versions) of ASHRAE 62.2 asserted that the (old) formula used to determine the minimum airflow rate of ventilation equipment was based on the assumption that all homes deserve an “infiltration credit” of...

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