

Whole-House Mechanical Ventilation - Code Notes

[62.2-2004, 2003 IECC, 2006 IECC]

ASHRAE Standard 62.2 provides guidance on the appropriate Ventilation and Acceptable Indoor Air Quality in Low-Rise Residential Buildings. The information provided in the standard offers some guidance for incorporating whole-house systems into a home. This material augments requirements in the national model energy codes for compliance with mechanical ventilation systems.

At this time, the residential IECC does not reference ASHRAE 62.2.

Ventilated Mechanically

Ventilated Mechanically

The process of supplying or removing air by mechanical means to or from any space. Such air may or may not have been conditioned.

Ventilated Naturally

Ventilated Naturally

The process of supplying or removing air by natural means to or from any space.

CFM

CFM

Cubic feet per minute. A standard measurement of airflow.

Historically, residential buildings did not have specific requirements for ventilation because leakage in envelope components and natural ventilation was considered adequate. As envelope construction practice has improved, the need to control air quality in the home has increased.

ASHRAE has developed a new consensus standard that provides guidelines for ventilation requirements. In addition to addressing whole-house ventilation, the standard addresses local exhaust and source control. Ventilation requirements for safety (such as garage air handlers) are also important.

To comply with the ASHRAE standard, residential buildings (including manufactured homes) are required to install a mechanical ventilation system. An override control for the occupants is also required. Ventilation systems are not currently required by the IECC in warm climates.

Plan Review:

1. Confirm that a mechanical ventilation system that provides the appropriate ventilation rate (cfm) is called out.
2. Check that the planned ventilation rate is not greater than 7.5 cfm per 100 square feet if located in a very cold climate or a hot-humid climate. See Table 8.1 and 8.3 for details.
3. Check that other ventilation items (local exhaust) have been planned for appropriately. Typically this is simply local exhaust systems in kitchens and bathrooms.

Field Inspection:

1. Confirm that a mechanical ventilation system that provides the appropriate ventilation rate (cfm) is present.



2. Confirm that an occupant override has been installed as required by 62.2-2004 section 4.3 and IECC 2003 section 503.3.3.5.

Code Citations*

ASHRAE 62.2-2004, Table 4.1a (I-P) Ventilation Air Requirements, (cfm)

Floor Area (ft ²)	0-1 bedrooms	2-3 bedrooms	4-5 bedrooms	6-7 bedrooms	>7 bedrooms
<1500	30	45	60	75	90
1501-3000	45	60	75	90	105
3001-4500	60	75	90	105	120
4501-6000	75	90	105	120	135
6001-7500	90	105	120	135	150
>7500	105	120	135	150	165

IECC 2003, Section 503.3.3.5 Mechanical ventilation.

Each mechanical ventilation system (supply, exhaust, or both) shall be equipped with a readily accessible switch or other means for shutoff (or volume reduction and shutoff) when ventilation is not required. Automatic or gravity dampers that close when the system is not operating shall be provided for outdoor air intakes and exhausts.

IECC 2006, Section 403.5 Mechanical ventilation.

Outdoor air intakes and exhausts shall have automatic or gravity dampers that close when the ventilation system is not operating.

ASHRAE 62.2-2004, Table 8.1 Hot, Humid U.S. Climates

Alabama: Mobile, Montgomery, Selma	Louisiana: Baton Rouge, Lake Charles, New Orleans, Shreveport
Arkansas: Texarkana	Mississippi: Biloxi, Gulfport, Jackson
Florida: Apalachicola, Daytona, Jacksonville, Miami, Orlando, Pensacola, Tallahassee, Tampa	North Carolina: Wilmington
Georgia: Savannah, Valdosta	South Carolina: Charleston, Myrtle Beach
Hawaii: Hilo, Honolulu, Lihue, Kahului	Texas: Austin, Beaumont, Brownsville, Corpus Christi, Dallas, Houston, Galveston, San Antonio, Waco



ASHRAE 62.2-2004, Table 8.3 Very Cold U.S. Cities

Alaska: Anchorage, Fairbanks	Minnesota: Duluth, International Falls
Maine: Caribou	North Dakota: Fargo, Grand Forks, Williston
Michigan: Marquette, Sault Ste. Marie	

ASHRAE 62.2-2004 Reference and link

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