

Whole House Ventilation Method

Using a Whole House Ventilation rate of 0.5 ACH (air changes per hour) the ERV cfm has been determined for the following homes.

Total Square Feet x Ceiling Height (cubic feet)		Required CFM to Ventilate the Home
_____	x 0.5 air changes per hour =	
60 minutes		

Example:

Main Floor: 1000 sq ft x Ceiling Height: 11 ft = 11000 cubic ft
 Basement: 850 sq ft x Ceiling Height: 8 ft = 6800 cubic ft
 2nd Story: 900 sq ft x Ceiling Height: 8 ft = 7200 cubic ft

Total: 25000 cubic ft

25000 _____ 60 min		x 0.5 ACH = 208 Required CFM
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Room Count Ventilation Method

The total ventilation capacity of a home can be calculated by using the room rate method.

The individual rooms rates are added together to determine the minimum ventilation rate.

<u>Room</u>	
Master bedroom	20
Additional bedrooms	10
All other occupied rooms	10
Unfinished basement	20
Finished Basement	30
Bathroom	10

The ventilation system must be adequately sized in order to properly ventilated the required area. A well designed system will remove indoor air contaminants and excess humidity effectively and efficiently while providing maximum indoor comfort.



For commercial air requirements, ASHRAE has generated the *Ventilation Standard 62-1989* that is used to determine acceptable ventilation rates. This standard is referenced directly or used as "Good Engineering Practice" in most Code documents or design criteria.

<p><u>Fast Food & Small Restaurants, Donut Shops</u></p> <p>Seats: 40 Employees: 5</p> <p>Total: 45</p> <p>ASHRAE Requirement: 20 cfm per person Ventilation Requirement: 20 cfm x 45 people = 900 cfm</p>	<p><u>Bank</u></p> <p>Customers: 25 Employees: 9</p> <p>Total: 34</p> <p>ASHRAE Requirement: 20 cfm per person Ventilation Requirement: 20 cfm x 34 people = 680 cfm</p>
<p><u>Bar or Tavern</u></p> <p>Seats: 50 Employees: 7</p> <p>Total: 57</p> <p>ASHRAE Requirement: 30 cfm per person Ventilation Requirement: 30 cfm x 57 people = 1710 cfm</p>	<p><u>Bingo Hall</u></p> <p>Seats: 180 Employees: 20</p> <p>Total: 200</p> <p>ASHRAE Requirement: 30 cfm per person Ventilation Requirement: 30 cfm x 200 people = 6000 cfm</p>
<p><u>Class Rooms</u></p> <p>Seats: 29 Employees: 1</p> <p>Total: 30</p> <p>ASHRAE Requirement: 15 cfm per person Ventilation Requirement: 15 cfm x 29 people = 450 cfm</p>	<p><u>Swimming Pools</u></p> <p>1 cfm per sq ft of the water surface area or 0.5 cfm per sq ft of the water surface plus deck area</p> <p><u>Hot Tubs / Spas</u> 7-10 cfm per sq ft of the water surface area</p>

