

Explanation of 62.2 change proposal  
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**Reason and substantiation:**

This modification is needed to clarify the standard regarding the required ventilation rate and to account for the inherent distribution effectiveness differences between balanced and unbalanced, single-point and multi-point, and mixed and unmixed mechanical ventilation systems.

**Section 3. DEFINITIONS**  
Add new text as follows:

**fully-ducted ventilation system:** an air duct system separate from the central duct system where ventilation air is supplied to all bedrooms and air is exhausted from the kitchen and at least one other area not including a bedroom

**central forced air distribution system:** an air duct system whereby ducts supply air to all portions of the conditioned space through a fan, and a provision for return air exists from all portions of the conditioned space.

**multi-point supply:** a ventilation system that supplies air to each bedroom.

**multi-point exhaust:** a ventilation system that exhausts air from separate locations at least equal to the number of bedrooms but not less than two locations.

**Modify Section 4.1 Ventilation Rate as follows:**

**4.1 Ventilation Flow Rate Ventilation Rate**

Ventilation air shall be provided to each dwelling unit using a balanced fully ducted ventilation system to provide whole-building ventilation with outdoor air at no less than the rate specified in Table 4.1a and Table 4.1b or, equivalently, Equations 4.1a and 4.1b or using alternative systems with ventilation flow rates as specified by equation 4.2.

~~A mechanical exhaust system, supply system, or combination thereof shall be installed for each dwelling unit to provide whole-building ventilation with outdoor air each hour at no less than the rate specified in Table 4.1a and Table 4.1b or, equivalently, Equations 4.1a and 4.1b, based on the floor area of the conditioned space and number of bedrooms.~~

$$Q_v = 0.01 A_{\text{floor}} + 7.5(N_{\text{br}} + 1) \quad (4.1a)$$

where

$Q_v$  = ventilation flow rate in cubic feet per minute (cfm)

$A_{\text{floor}}$  = floor area in square feet (ft<sup>2</sup>)

$N_{\text{br}}$  = number of bedrooms; not to be less than one.

~~$$Q_{\text{fan}} = 0.01 A_{\text{floor}} + 7.5(N_{\text{br}} + 1) \quad (4.1a)$$~~

where

$Q_{\text{fan}}$  = fan flow rate in cubic feet per minute (cfm);

$A_{\text{floor}}$  = floor area in square feet (ft<sup>2</sup>);

$N_{\text{br}}$  = number of bedrooms; not to be less than one.

**Exceptions:** Whole building mechanical systems are not required if the authority having jurisdiction determines that window operation is a locally permissible method of providing ventilation and that at least one of the following conditions is met: ~~Whole-building mechanical systems are not required provided that at least one of the following conditions is met:~~

(a) the building has no mechanical cooling and is in zone 1 or 2 of the IECC 2004 Climate Zone Map (see Figure 8.2);

(b) the building is thermally conditioned for human occupancy for less than 876 hours per year.

~~a- the building is in zone 3B or 3C of the IECC 2004 Climate Zone Map (see Figure 8.2);~~

~~b- the building has no mechanical cooling and is in zone 1 or 2 of the IECC 2004 Climate Zone Map (see Figure 8.2); or~~

~~c- the building is thermally conditioned for human occupancy for less than 876 hours per.~~

~~and if the authority having jurisdiction determines that window operation is a locally permissible method of providing ventilation.~~

**TABLE 4.1a (I-P)**  
**Ventilation Flow Rate Requirements, cfm**

Floor Area (ft <sup>2</sup> )	Bedrooms				
	0-1	2-3	4-5	6-7	>7
<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

**4.1.1 Fan Flow Rate**

The required ventilation flow rate specified in Table 4.1a and Table 4.1b or, equivalently, Equations 4.1a and 4.1b, shall be provided by fan flow rates as follows:

$$Q_{fan} = Q_v C_d \quad (4.2)$$

where

$Q_{fan}$  = fan flow rate

$C_d$  is the distribution coefficient from Table 4.2

Renumber Table 4.2 as Table 4.3 and add Table 4.2

**Table 4.2 Distribution Coefficient based on System Type**

System Type	Distribution Coefficient ( $C_d$ )
Fully ducted balanced ventilation system, with or without central duct system	1
Non-fully ducted balanced ventilation, with central duct system, and central air handler unit controlled to a minimum runtime of at least 10 minutes per hour	1
Supply ventilation, with central duct system, and central air handler unit controlled to a minimum runtime of at least 10 minutes per hour	1.25
Exhaust ventilation, with central duct system, and central air handler unit controlled to a minimum runtime of at least 10 minutes per hour	1.25
Exhaust ventilation, with central duct system, and central air handler unit NOT controlled to a minimum runtime of at least 10 minutes per hour	1.5
Supply ventilation, without central duct system	1.75
Exhaust ventilation, without central duct system	1.75

Move section 7.3 here

**4.1.2.3 Airflow Rating**

The airflows required by this standard refer to the delivered airflow of the system as installed and tested using a flow hood, flow grid, or other airflow measuring device. Alternatively, the airflow rating at a pressure of 0.25 in. w.c. (62.5 Pa) may be used, provided the duct sizing meets the prescriptive requirements of Table 7.1 or manufacturers' design criteria.

**4.1.5 Credit for Infiltration.**

When infiltration has been determined using ANSI/ASHRAE Standard 136-1993 (RA 2006), A Method of Determining Air Change Rates in Detached Dwellings to be greater than the rate  $Q_v$  in section 4.1, then the rate  $Q_{fan}$  may be decreased by the credit in Equation 4.3.

$$\text{Infiltration Credit} = 0.5(Q_{136} - 0.02A_{floor}) \quad (4.3)$$

where

$Q_{136}$  is the infiltration rate from ANSI/ASHRAE Standard 136 multiplied by the house volume and divided by 60.

**4.1.3 Infiltration Credit.** Section 4.1 includes a default credit for ventilation provided by infiltration of 2 cfm/100 ft<sup>2</sup> (10 L/s per 100 m<sup>2</sup>) of occupiable floor space. For buildings built prior to the application of this standard, when excess infiltration has been measured using ANSI/ASHRAE Standard 136, A Method of Determining Air Change Rates in Detached Dwellings,<sup>2</sup> the rates in Section 4.1 may be decreased by half of the excess of the rate calculated from Standard 136 that is above the default rate.

Change Section 4.4 Delivered Ventilation as follows:

**4.4 Delivered Effective Ventilation Rate**

The delivered ventilation rate shall be calculated as the larger of the total supply or total exhaust and shall be no less than specified in Section 4.1 during each hour of operation. **Exception:**

The effective ventilation rate of an intermittent system is the combination of its delivered capacity, its daily fractional on-time, and the ventilation effectiveness from Table 4.23.

$$Q_{fan} = Q_v / (\epsilon f) \quad (4.24)$$

where

$Q_v$  = fan flow rate,

$Q_v$  = ventilation air requirement (from Table 4.1a or Table 4.1b)

$\epsilon$  = ventilation effectiveness (from Table 4.23),

$f$  = fractional on time