ASHRAE 62.2-2010 VS 62.2- 2013

WHAT ARE THE DIFFERENCES?

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- Local fans are “demand controlled”.

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- Intermittent ventilation: “intermittently operated whole building ventilation that is automatically controlled”
- Demand controlled mechanical exhaust: “A local mechanical exhaust system shall be designed to operate as needed by the occupant”

Local ventilation Overview

- Purpose: To exhaust the worst air in a dwelling as quickly as possible.
  - Bathrooms
  - Kitchens

Whole Building Ventilation Overview

"A mechanical exhaust system, supply system, or a combination thereof shall be installed for each dwelling unit to provide whole building ventilation"

62.2 Ventilation Requirements Overview

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- Whole building, intermittently operating ventilation may be used for compliance.
- Ventilation air must come directly from the outdoors.
- Infiltration credit is allowed for envelope air leakage.

Whole Building Calculation Comparison
62.2-2010 vs 62.2-2013

	2010	2013
Starting Ventilation	Same as 2013, but with default infiltration	Same as 2010, but with no default infiltration
Default Infiltration	2 CFM per 100 ft^2	None
Alternative Compliance	Same as 2013	Same as 2010
Weather Data	wf, 280 for North America	wsf, 1020 for North America.
Infiltration Credit	½ in excess of default infiltration	Full credit
Final Ventilation Rate	Similar to 2013	Similar to 2010

ASHRAE 62.2-2010

Floor Area ft²	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

Fan Flow = 0.01 x Floor Area + 7.5 (# bedrooms +1)

ASHRAE 62.2 – 2013

Floor Area ft²	Bedrooms				
	1	2	3	4	5
<500	30	38	45	53	60
501-1000	45	53	60	68	75
1001-1500	60	68	75	83	90
1501-2000	75	83	90	98	105
2001-2500	90	98	105	113	120
2501-3000	105	113	120	128	135
3001-3500	120	128	135	143	150
3501-4000	135	143	150	158	165
4001-4500	150	158	165	173	180
4501-5000	165	173	180	188	195

Fan Flow = 0.03 x Floor Area + 7.5 (# of bedrooms +1)

Whole Building Ventilation

1500 ft² dwelling with 3 bedrooms

Fan Flow = 0.01 x floor area+ 7.5 (# Bedrooms +1)
1500 (0.01) + 7.5 (4)
15 + 30 = 45 CFM

2010 calculation

Without infiltration Credit

Fan Flow = 0.03 x floor area + 7.5 (# Bedrooms +1)
1500 (0.03) + 7.5 (4)
45 + 30 = 75 CFM

2013 calculation

Whole Building Ventilation

1500 ft² existing dwelling 1 story (10' height) with 3 bedrooms located near the Portland airport with a 1600 CFM BD test

Fan Flow = 0.01 x floor area+ 7.5 (# Bedrooms +1)
1500 (0.01) + 7.5 (4)
15 + 30 = 45 CFM
Infiltration Credit = 18 CFM
Final Flow = 27CFM

2010

With infiltration credit

Fan Flow = 0.03 x floor area + 7.5 (# Bedrooms +1)
1500 (0.03)+ 7.5 (4)
45 + 30 = 75 CFM
Infiltration Credit = 47 CFM
Final flow = 28 CFM

2013

*Calculations made using RED calculators

Intermittent Whole Building Ventilation

- The whole building ventilation requirements may be satisfied by intermittent operation.
- Example:
  - 80 CFM measured fan flow
  - Whole house continuous requirement is 20 CFM
  - The fan may operate intermittently on a timer for 15 minutes every hour.

Calculations:
20 CFM x 60 minutes/hour = 1200 CF

1200 CF ÷ 80 CFM = 15 minutes

Intermittent Whole Building Ventilation

As long as the intermittent cycle is run at least every three hours (2010 is four hours), the adjustment is proportional. If the cycle is longer, there is a penalty.

Infiltration Credit changes to 62.2-2013

- The default infiltration credit has been eliminated.
  - Default infiltration was .02 x the living area.
    - Half of any infiltration in excess of the default was subtracted from the whole building ventilation requirement.
  - 2013 allows the full infiltration credit to be subtracted from the whole building infiltration requirement.

Infiltration Credit

- 2010 Infiltration credit was based on ASHRAE 119 & 136 standards.
- The 2013 infiltration credit is based on a new method standard now incorporated into the new standard.

Infiltration Credit

- Calculating the infiltration credit required a weather location
  - 2010 version includes 280 weather stations for North America (ASHRAE 136)
  - 2013 Version includes 1020 weather locations (appendix B)

Weather Stations for Oregon

- 2010 standard: 7 locations
- 2013 standard: 19 locations

Blower Door

- The 2013 (and 2010) standard requires that a multi-point blower door be completed unless the authority having jurisdiction allows for a single point test.

Multi-family Buildings

- Whole building ventilation rates are applies on a per unit basis.
- No infiltration credit on multifamily buildings
- Corridor ventilation of 6 cfm per 100 sqft

Multi-Family Buildings

- Compartmentalizing Requirement
  - All envelope components must be sealed
- Exhaust fans
  - Single inline fan may serve multiple units
  - Individual fans may not share an exhaust duct

Multi-Family Buildings

- Supply Fans
  - A single fan may serve multiple units if it is continuously operated or if a backdraft damper is included at each unit to prevent cross contamination.
- Common garage ventilation
  - An exhaust rate of 40 CFM per 100 ft^2 is required for attached common garages with an exemption if 2 or more walls are open to the outside.

Additional Requirements

- Carbon Monoxide Alarms
  - All units, regardless of fuel, type must have CO alarm(s) installed
    - Outside of each separate dwelling unit sleeping area in the immediate vicinity of the bedroom(s).
    - On every level of a dwelling unit including basements.

Additional Requirements

- Instructions & Labeling
  - Provide to the owner or occupant of the unit:
    - Information on the ventilation Systems installed;
    - Instructions on proper operation; and
    - Instructions on proper maintenance
  - Controls must be labeled as to their function.

Calculators

- Two calculators will be approved for use:
  - Heyoka Solutions EXCEL calculator
  - Residential Energy Dynamics online calculator
    - www.residentialenergydynamics.com

www.techstreet.com

Questions?

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