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INVESTING IN GEORGIA'S
ENERGY, LAND & WATER RESOURCES



Georgia Weatherization Assistance Program
ASHRAE 62.2-2013

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October 15, 2014



ASHRAE 62.2-2013

ASHRAE 62.2-2013 in WAP

- Adoption of the ASHRAE 62.2-2013 Standard into the Weatherization Assistance Program improves the health and safety of those who live in the dwelling units that we weatherize.
- The ASHRAE 62.2 Standard is a living standard and is continually improving.
- The following slides will show some differences and similarities between the 2010 Standard and the 2013 Standard along with some updates.
- The Residential Energy Dynamics (RED) ASHRAE 62.2-2013 Ventilation Rate Calculator will be presented with an overview of the tool.



ASHRAE 62.2-2013

ASHRAE 62.2-2013 in WAP

- This presentation is not an in-depth training of the ASHRAE 62.2-2013 Standard, but an overview.
- ASHRAE 62.2-2013 training is required at an Interstate Renewable Energy Council (**IREC**) approved WAP Training Facility.

Clarifications

- Whole House Ventilation is now called “Whole Building Ventilation”.
- Whole building ventilation should not only be installed, but it must be *installed to operate*.
- Intermittent only applies to Whole Building Ventilation (previously local ventilation).
- Local fans are now called demand controlled, operated by a switch (bathroom/kitchen).
- When local ventilation is part of the whole building system, the local ventilation can be credited as a portion of the whole building system.

Clarifications

- **Height:** Vertical distance between the lowest to the highest above grade points within the pressure boundary.
- **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. (Shut-off timers, occupancy sensors and multiple speed fans sensors can be used.)

Definitions

habitable space: building space intended for continual human occupancy; such space generally includes areas used for living, sleeping, dining, and cooking but does not generally include bathrooms, toilets, hallways, storage areas, closets, or utility rooms.

bathroom: any room containing a bathtub, a shower, a spa, or a similar source of moisture.

kitchen: any room containing cooking appliances.

Ventilation Overview

Local Ventilation Overview:

- Purpose: To exhaust the worst air in a dwelling as quickly as possible (bathroom/kitchen).

Whole Building Ventilation Overview:

- A mechanical exhaust system, supply system or a combination of shall be installed for each dwelling unit to provide whole building ventilation.
- Assumes 2 occupants in the master bedroom and 1 in each additional bedroom. Over this density, add 7.5 CFM/person.
- Whole building intermittently operated ventilation can be used for compliance.
- Ventilation air must come directly from outside (outdoor air).
- Infiltration credit is allowed for envelope air leakage.

Whole Building Ventilation Calculation Differences

Weather Data:

- 62.2-2010: 280 weather factor (wf) selections North America.
- 62.2-2013: 1020 weather shielding factor (wsf) North America.
- Georgia went from having 3 weather station selections to 19.

Infiltration Credit:

- 62.2-2010: Half in excess to default infiltration.
- 62.2-2013: Full credit.

Calculation:

- 62.2-2010: $Q_{fan} = 0.01A_{floor} + 7.5(N_{bedroom} + 1)$
- 62.2-2013: $Q_{fan} = 0.03A_{floor} + 7.5(N_{bedroom} + 1)$

Default Infiltration:

- 62.2-2010: 2 CFM per 100 square feet.
- 62.2-2013: None

Whole Building Ventilation Calculation Similarities

Starting Ventilation:

- 62.2-2010: Same as 2013, but with default infiltration.
- 62.2-2013: Same as 2010, but with no default infiltration.

Final Ventilation Rate:

- 62.2-2010: Similar to 2013.
- 62.2-2013: Similar to 2010.

Alternative Compliance:

- 62.2-2010: Same as 2013.
- 62.2-2013: Same as 2010.

Infiltration Credit Changes

- The Default Infiltration Credit from 62.2-2010 has been eliminated.
- 62.2-2013 allows the full infiltration credit to be subtracted from the whole building infiltration requirement.
- This infiltration credit is based on a new method standard now incorporated into the new standard.
- Calculating the infiltration credit requires a weather station location (2013 version includes 1020 weather locations in the standard).

Additional Requirements

Carbon Monoxide Alarms:

- All units regardless of fuel type must have a CO alarm(s) installed.
- Installed outside of each sleeping area, in the immediate vicinity of the bedroom(s).
- Installed on every level of a dwelling unit including basements.

Instructions & Labeling

Must provide to the occupant or owner of the dwelling unit:

- Information on the ventilation system installed.
- Instructions on operation & maintenance for the system.

Ventilation Controls:

- Must be labeled as to their function.



ASHRAE 62.2-2013

Calculator

RED 62.2-2013 Ventilation Rate Calculator is approved for use.

- Residential Energy Dynamics (RED) online calculator.
- <http://www.residentialenergydynamics.com/REDCalcFree/Tools/ASHRAE6222013>



ASHRAE 62.2-2013

Residential Energy Dynamics (RED) Calculator

RED Free Online ASHRAE 62.2-2013 Ventilation Rate Calculator:

- <http://www.residentialenergydynamics.com/> (Home Page)

RED Calculator



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RED Calc Free Tools

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- Electrical Design
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 - Infiltration
 - Advanced Infiltration
- Insulation
- Deer Path
- Leaky Pit
- Heat Transfer
- Advanced R-Value
- Fourier's Law
- Domestic Hot Water
- Systems Comparison
- Average Daily Usage
- Pitot Tube Airflow
- Indoor Air Quality
- Indoor Air Quality
- Water Flow Rate
- Weather
 - Infiltration
 - Weather Station Data

Subscribe to RED Newsletter for new tool notices

Free Building Science Calculation Tools for Energy Professionals

What's New with RED Tools

ASHRAE 62.2-2013 video tutorials

- Watch the new video tutorials for the RED ASHRAE 62.2-2013 at the RED YouTube Channel. We have posted a short version and an extended version. Good stuff!

Canadian Weather Data added for 80 locations

- This new Canadian weather data is now available for the Advanced Infiltration (AIM-2) tool and the Weather Station Data tools.

What's Been Updated

Pitot Tube Airflow tool

- The second input for this tool, "Pitot tube correction (K) factor" has been renamed and the allowed ranges have been extended. As a result, the tool will accommodate averaging flow sensor pitot tubes requiring a K factor value for calculation of an accurate flow.
- The User Guide has been updated to incorporate the change mentioned above and also now includes more thorough guidance.

Who Uses RED Calc Free Tools?

- Home performance analysts
- DOE weatherization energy auditors and quality-control inspectors
- Energy auditors
- HERS raters
- Design professionals
- HVAC analysts and installers
- Building inspectors
- Architects
- Engineers
- Building science researchers

First-Time Users, Start Here...

RED Calc Free Help and Support Features

1. Watch this video tutorial at the RED YouTube Channel;
2. Read the Getting Started help document;
3. Use the RED Calc Free menu on the left to try any of the tools;
4. Click the "F" in the blue circle to the right of any tool name in the menu at the left for more information;
5. Click/touch any tool input or result label to see popup help when you need it; and
6. The advanced features of RED Calc Free™ will run on the latest versions of all common web browsers.

Screenshot of Weather Station Data tool

Weather Station Data (TMV)

Closest TMV weather station: **Chesapeake**

Address: **18000 Chesapeake Blvd, Chesapeake, MD 20762**

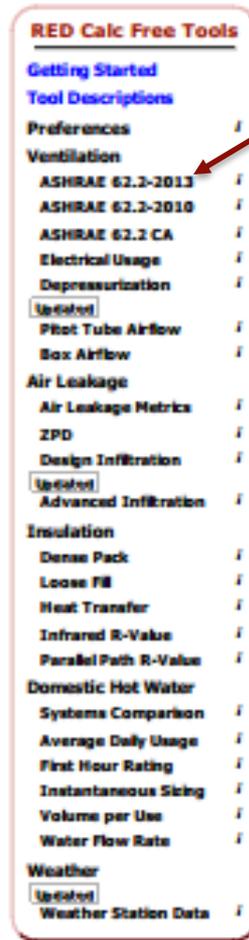
Latitude (deg) = 38.357 Longitude (deg) = -76.683

Elevation (ft) = 147.6

Units	Low	Average	High
Daily range			
Humidity (%)	60	70	80
Dry bulb (°F)	60	70	80
Dew point (°F)	50	60	70
Wind speed (mph)	0	10	20

Daily Average Weather Data

RED Calculator



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 - ASHRAE 62.2-2013**
 - ASHRAE 62.2-2010
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 - Electrical Usage
 - Depressurization
- ~~Updated~~ Pilot Tube Airflow
- Box Airflow
- Air Leakage
 - Air Leakage Metrics
 - ZPD
 - Design Infiltration
- ~~Updated~~ Advanced Infiltration
- Insulation
 - Dense Pack
 - Loose Fill
 - Heat Transfer
 - Infrared R-Value
 - Parallel Path R-Value
- Domestic Hot Water
 - Systems Comparison
 - Average Daily Usage
 - First Hour Rating
 - Instantaneous Sizing
 - Volume per Use
 - Water Flow Rate
- Weather
 - ~~Updated~~ Weather Station Data

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RED Calc Free Tools

Getting Started

Tool Descriptions

Preferences

Ventilation

ASHRAE 62.2-2013

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Electrical Usage

Depressurization

General

Plat Tube Airflow

Box Airflow

Air Leakage

Air Leakage Metrics

ZPD

Design Infiltration

Advanced Infiltration

Insulation

Dense Pack

Loose Fill

Heat Transfer

Infrared R-Value

Parallel Path R-Value

Domestic Hot Water

Systems Comparison

Average Daily Usage

First Hour Rating

Instantaneous Sizing

Volume per Use

Water Flow Rate

Weather

Weather Station Data

YouTube | G+

Subscribe to RED Newsletter for new tool notices

ASHRAE 62.2-2013 Ventilation [Reset] [Print]

New or existing construction: Existing

Use infiltration credit: Yes

Closest weather station: United States
-- Select a State/Territory --

Weather and shielding factor [1/hr] =

Living area [ft²]

Number of occupants

Building height [ft]

Measured leakage @ 50Pa [CFM]

Use Advanced Blower Door Inputs

Use Local Ventilation Alternative Compliance

Whole-Bldg Ventilation Results

Effective annual avg infiltration rate [CFM] =

Total required ventilation rate [CFM] =

Infiltration credit [CFM] =

Required mechanical ventilation rate [CFM] =

Whole-Bldg Ventilation Run-Time Tool

Fan capacity [CFM]

Fan run-time per hour [min] =

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- Fits under any kitchen range

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ASHRAE 62.2-2013 Ventilation
Reset Print

New or existing construction Existing

Use infiltration credit Yes

Closest weather station United States
Georgia
Atlanta Hartsfield Intl AP

Weather and shielding factor [1/hr] = 0.46

Living area [ft²] 1000
Number of occupants 2
Building height [ft] 8
Measured leakage @ 50Pa [CFM] 800

Use Advanced Blower Door Inputs

Use Local Ventilation Alternative Compliance

Kitchen included # Baths included 1

	Existing Flow [CFM]	Openable Window	Deficit [CFM]
Kitchen	80	<input checked="" type="checkbox"/>	0
Bath #1	34	<input type="checkbox"/>	16

Total deficit [CFM] = 16

Whole-Bldg Ventilation Results

Effective annual avg infiltration rate [CFM] = 19
Total required ventilation rate [CFM] = 45
Alternative compliance supplement [CFM] = 4
Infiltration credit [CFM] = 19
Required mechanical ventilation rate [CFM] = 30

Whole-Bldg Ventilation Run-Time Tool

Fan capacity [CFM] 150
Fan run-time per hour [min] = 12

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Hovering over the fields or labels with the cursor will show a ?
A left click on the mouse will open up a box with an explanation.

RED ASHRAE 62.2-2013 Ventilation

New or existing construction Existing

New or existing construction

This choice is necessary because ASHRAE 62.2-2013 has different requirements and options for existing dwellings than it does for new dwellings. The tool expands and contracts as you switch between these two settings.

- New:** For new dwellings that have not been constructed or that were recently constructed. This choice does not allow the Local Ventilation Alternative Compliance option. The Infiltration credit is limited to two thirds of the Total Required Ventilation Rate, Q_{tr} .
- Existing:** For dwellings that are not new. This choice allows the full infiltration credit. Also, the Local Ventilation Alternative Compliance choice may be selected.

Use Local Ventilation Alternative Compliance

Kitchen included # Baths included 1

	Existing Flow [CFM]	Openable Window	Deficit [CFM]
Kitchen	80	<input checked="" type="checkbox"/>	0
Bath #1	34	<input type="checkbox"/>	16

Total deficit [CFM] = 16

Whole-Bldg Ventilation Results

Effective annual avg infiltration rate [CFM] = 19

Total required ventilation rate [CFM] = 45

Alternative compliance supplement [CFM] = 4

Infiltration credit [CFM] = 19

Required mechanical ventilation rate [CFM] = 30

Whole-Bldg Ventilation Run-Time Tool

Fan capacity [CFM] 150

Fan run-time per hour [min] = 12

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ASHRAE 62.2-2013 Ventilation
Reset Print

New or existing construction Existing

Use infiltration credit Yes

Use infiltration credit

We recommend that you select "Yes" here because it allows you to take advantage of the measured leakage of the dwelling when determining whole-building ventilation requirements.

- **Yes:** This choice allows the infiltration credit, so the related inputs and results, including the Advanced Blower Door Inputs, are visible.
- **No:** This choice does not allow the infiltration credit, so related inputs or outputs are removed from the tool if you select "No".

Use Local Ventilation Alternative Compliance

Kitchen included # Baths included 1

	Existing Flow [CFM]	Openable Window	Deficit [CFM]
Kitchen	80	<input checked="" type="checkbox"/>	0
Bath #1	34	<input type="checkbox"/>	16

Total deficit [CFM] = 16

Whole-Bldg Ventilation Results

Effective annual avg infiltration rate [CFM] = 19

Total required ventilation rate [CFM] = 45

Alternative compliance supplement [CFM] = 4

Infiltration credit [CFM] = 19

Required mechanical ventilation rate [CFM] = 30

Whole-Bldg Ventilation Run-Time Tool

Fan capacity [CFM] 150

Fan run-time per hour [min] = 12

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ASHRAE 62.2-2013 Ventilation
Reset Print

New or existing construction Existing
 Use infiltration credit Yes

Closest weather station United States

Closest weather station

Select the country, state/province or territory, and station that is closest to the dwelling. In some cases, the closest weather station might be in a different state/province or territory.

Building height [ft] 8
 Measured leakage @ 50Pa [CFM] 800

Use Advanced Blower Door Inputs

Use Local Ventilation Alternative Compliance

Kitchen included # Baths included 1

	Existing Flow [CFM]	Openable Window	Deficit [CFM]
Kitchen	80	<input checked="" type="checkbox"/>	0
Bath #1	34	<input type="checkbox"/>	16

Total deficit [CFM] = 16

Whole-Bldg Ventilation Results

Effective annual avg infiltration rate [CFM] = 19
 Total required ventilation rate [CFM] = 45
 Alternative compliance supplement [CFM] = 4
 Infiltration credit [CFM] = 19
 Required mechanical ventilation rate [CFM] = 30

Whole-Bldg Ventilation Run-Time Tool

Fan capacity [CFM] 150
 Fan run-time per hour [min] = 12

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RED Calculator



RED ASHRAE 62.2-2013 Ventilation [Reset] [Print] [i]

New or existing construction: Existing ▾
Use infiltration credit: Yes ▾

Nearest weather station: United States ▾
Georgia ▾
-- Select a Station -- ▾
-- Select a Station --
Albany Dougherty County AP
Alma Bacon County AP
Athens Ben Epps AP
Atlanta Hartsfield Intl AP
Augusta Bush Field
Brunswick Golden Is
Brunswick Malcolm McKinnon AP
Columbus Metropolitan Arpt
DeKalb Peachtree
Fort Benning Lawson
Fulton Co Arpt Brow
Hunter AAF
Macon Middle Ga Regional AP
Marietta Dobbins AFB
Moody AFB/Valdosta
Rome R B Russell AP
Savannah Intl AP
Valdosta Wb Airport
Warner Robins AFB

Weather and shielding factors

Living area [ft² ▾]
Number of occupants
Building height [ft ▾]
Measured leakage @ 50
 Use Ad
 Use Local V
Whole
Effective annual avg infiltration rate [1/h ▾] =
Total required ventilation rate [CFM ▾] =
Infiltration credit [CFM ▾] =


ASHRAE 62.2-2013 Ventilation
Reset Print

New or existing construction: Existing
 Use infiltration credit: Yes

Closest weather station: United States
 Georgia
 Atlanta Hartsfield Intl AP

Weather and shielding factor [1/hr] = 0.46

Weather and shielding factor [1/hr]

As specified by the ASHRAE 62.2-2013 standard. This is how the influence of temperature and wind are taken into account in the determination of the infiltration credit. The larger the weather and shielding factor, the higher the infiltration rate.

Use Local Ventilation Alternative Compliance

Kitchen Included # Baths Included 1

	Existing Flow [CFM]	Openable Window	Deficit [CFM]
Kitchen	80	<input checked="" type="checkbox"/>	0
Bath #1	34	<input type="checkbox"/>	16

Total deficit [CFM] = 16

Whole-Bldg Ventilation Results

Effective annual avg Infiltration rate [CFM] = 19
 Total required ventilation rate [CFM] = 45
 Alternative compliance supplement [CFM] = 4
 Infiltration credit [CFM] = 19
 Required mechanical ventilation rate [CFM] = 30

Whole-Bldg Ventilation Run-Time Tool

Fan capacity [CFM] 150
 Fan run-time per hour [min] = 12

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ASHRAE 62.2-2013 Ventilation
Reset Print

New or existing construction Existing
 Use infiltration credit Yes

Closest weather station United States
 Georgia
 Atlanta Hartsfield Intl AP

Weather and shielding factor [1/hr] = 0.46

Living area [ft²] 1000

Living area

Area of the livable floor space. Include basements only if they are characterized as living space within the pressure envelope.

Allowed range:
0 ft² < #

Normal range:
500 ft² ≤ # ≤ 6000 ft²

			Deficit [CFM]
Kitchen	80	<input checked="" type="checkbox"/>	0
Bath #1	34	<input type="checkbox"/>	16

Total deficit [CFM] = 16

Whole-Bldg Ventilation Results

Effective annual avg infiltration rate [CFM] = 19
 Total required ventilation rate [CFM] = 45
 Alternative compliance supplement [CFM] = 4
 Infiltration credit [CFM] = 19
 Required mechanical ventilation rate [CFM] = 30

Whole-Bldg Ventilation Run-Time Tool

Fan capacity [CFM] 150
 Fan run-time per hour [min] = 12

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ASHRAE 62.2-2013 Ventilation
Reset Print

New or existing construction Existing
 Use infiltration credit Yes

Closest weather station United States
 Georgia
 Atlanta Hartsfield Intl AP

Weather and shielding factor [1/hr] = 0.46

Living area [ft²] 1000
 Number of occupants 2

Number of occupants

Number of occupants in the dwelling. The ASHRAE 62.2 Standard specifies this value should be the number of bedrooms, plus one (this assumes two people for the master bedroom). The Standard allows you to use more people than the number of bedrooms, plus one, but you may not use fewer unless the authority having jurisdiction approves.

Additionally, the Standard requires a minimum of 2 occupants for any dwelling. The associated drop-down menu allows 1 occupant for your ventilation sizing "what-if" experiments, but displays a not-compliant warning message if you select 1 occupant.

Deficit
[CFM]

0

16

Total deficit [CFM] = 16

Whole-Bldg Ventilation Results

Effective annual avg infiltration rate [CFM] = 19
 Total required ventilation rate [CFM] = 45
 Alternative compliance supplement [CFM] = 4
 Infiltration credit [CFM] = 19
 Required mechanical ventilation rate [CFM] = 30

Whole-Bldg Ventilation Run-Time Tool

Fan capacity [CFM] 150
 Fan run-time per hour [min] = 12

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ASHRAE 62.2-2013 Ventilation
Reset Print

New or existing construction

Use infiltration credit

Closest weather station

Weather and shielding factor [1/hr] = 0.46

Living area [ft²]

Number of occupants

Building height [ft]

Building height

Measured vertical distance between the lowest and highest above-grade points within the pressure envelope. This height should include the above-grade part of a basement if the basement is within the pressure envelope. Do not include an attic if it is not within the pressure envelope.

Allowed range:
0 ft < #

Normal range:
6 ft ≤ # ≤ 30 ft

Deficit

[CFM]

0

16

Whole-Bldg Ventilation Results

Effective annual avg infiltration rate [CFM] = 19

Total required ventilation rate [CFM] = 45

Alternative compliance supplement [CFM] = 4

Infiltration credit [CFM] = 19

Required mechanical ventilation rate [CFM] = 30

Whole-Bldg Ventilation Run-Time Tool

Fan capacity [CFM]

Fan run-time per hour [min] = 12

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If this home has a basement that is within the pressure boundary, this would be the Building Height.

Note: Exposed earth in a basement *shall not* be considered part of the pressure boundary.


ASHRAE 62.2-2013 Ventilation
Reset Print

New or existing construction Existing
 Use infiltration credit Yes

Closest weather station United States
 Georgia
 Atlanta Hartsfield Intl AP

Weather and shielding factor [1/hr] = 0.46

Living area [ft²] 1000
 Number of occupants 2
 Building height [ft] 8
 Measured leakage @ 50Pa [CFM] 800

Measured leakage @ 50Pa

Building leakage rate at 50 pascals during a standard blower door test. For existing buildings, this is usually the post-weatherization blower door test value. For new buildings, the blower door test result must be estimated for the installation of the whole-building fan. After the house envelope is completed and a valid blower door test is done, then the whole-building fan rate can be precisely sized and the installed fan can be adjusted to this rate with a variable speed control.

Allowed range:
 0 CFM < #

Normal range:
 500 CFM ≤ # ≤ 7000 CFM

Total required ventilation rate [CFM] = 45
 Alternative compliance supplement [CFM] = 4
 Infiltration credit [CFM] = 19
 Required mechanical ventilation rate [CFM] = 30

Whole-Bldg Ventilation Run-Time Tool

Fan capacity [CFM] 150
 Fan run-time per hour [min] = 12

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Use Advanced Blower Door Inputs

Checking this box allows you to enter the Advanced Blower Door Inputs which applies a correction factor for indoor and outdoor temperatures and altitude.


ASHRAE 62.2-2013 Ventilation
Reset Print

New or existing construction

Use infiltration credit

Closest weather station

-- Select a State/Territory --

Weather and shielding factor [1/hr] =

Living area [ft²]

Number of occupants

Building height [ft]

Measured leakage @ 50Pa [CFM]

Use Advanced Blower Door Inputs

Blower door test type

Indoor temperature [°F]

Outdoor temperature [°F]

Altitude [ft]

Pressure exponent

Adjusted leakage @ 50Pa [CFM] =

Use Local Ventilation Alternative Compliance

Whole-Bldg Ventilation Results

Effective annual avg infiltration rate [CFM] =

Total required ventilation rate [CFM] =

Infiltration credit [CFM] =

Required mechanical ventilation rate [CFM] =

Whole-Bldg Ventilation Run-Time Tool

Fan capacity [CFM]

Fan run-time per hour [min] =

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ASHRAE 62.2-2013 Ventilation
Reset Print

New or existing construction Existing
 Use infiltration credit Yes

Closest weather station United States
 Georgia
 Atlanta Hartsfield Intl AP

Weather and shielding factor [1/hr] = 0.46

Living area [ft²] 1000
 Number of occupants 2
 Building height [ft] 8
 Measured leakage @ 50Pa [CFM] 800

Use Advanced Blower Door Inputs

Use Local Ventilation Alternative Compliance

Kitchen #1
 Kitchen
 Bath #1

Use Local Ventilation Alternative Compliance

The alternative compliance path of the ASHRAE 62.2-2013 Standard allows for deficits in local exhaust fan flow rates [less than 50 CFM (24 L/s) occupant-controlled flow rate in bathrooms and less than 100 CFM (47 L/s) occupant-controlled flow rate in kitchens] as long as the whole-building ventilation flow rate is increased by 1/4 of this total deficit.

Total def

Whole-Bldg Ventilation Results

Effective annual avg infiltration rate [CFM] = 19
 Total required ventilation rate [CFM] = 45
 Alternative compliance supplement [CFM] = 4
 Infiltration credit [CFM] = 19
 Required mechanical ventilation rate [CFM] = 30

Whole-Bldg Ventilation Run-Time Tool

Fan capacity [CFM] 150
 Fan run-time per hour [min] = 12

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ASHRAE 62.2-2013 Ventilation
Reset Print

New or existing construction Existing
 Use infiltration credit Yes

Closest weather station United States
 Georgia
 Atlanta Hartsfield Intl AP

Weather and shielding factor [1/hr] = 0.46

Living area [ft²] 1000
 Number of occupants 2
 Building height [ft] 8
 Measured leakage @ 50Pa [CFM] 800

Use Advanced Blower Door Inputs

Use Local Ventilation Alternative Compliance

Kitchen included # Baths included 1

Kitchen included	Deficit [CFM]
Checking this box includes the kitchen in the "Local Ventilation Alternative Compliance" calculation. If you are not sure whether to include the kitchen, go ahead and check the box.	0
	16

Total deficit [CFM] = 16

Whole-Bldg Ventilation Results

Effective annual avg infiltration rate [CFM] = 19
 Total required ventilation rate [CFM] = 45
 Alternative compliance supplement [CFM] = 4
 Infiltration credit [CFM] = 19
 Required mechanical ventilation rate [CFM] = 30

Whole-Bldg Ventilation Run-Time Tool

Fan capacity [CFM] 150
 Fan run-time per hour [min] = 12

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ASHRAE 62.2-2013 Ventilation
Reset Print

New or existing construction Existing
 Use infiltration credit Yes

Closest weather station United States
 Georgia
 Atlanta Hartsfield Intl AP

Weather and shielding factor [1/hr] = 0.46

Living area [ft²] 1000
 Number of occupants 2
 Building height [ft] 8
 Measured leakage @ 50Pa [CFM] 800

Use Advanced Blower Door Inputs

Use Local Ventilation Alternative Compliance

Kitchen included Baths included 1

# Baths included	
Kitchen	80
Bath #1	34

The number of bathrooms you select will determine the number of rows in the Local Ventilation Alternative Compliance table. The ASHRAE 62.2-2010 (and later) Standard defines a bathroom as "any room containing a bathtub, a shower, a spa, or a similar source of moisture".

Total deficit [CFM]

Whole-Bldg Ventilation Results

Effective annual avg infiltration rate [CFM] = 19
 Total required ventilation rate [CFM] = 45
 Alternative compliance supplement [CFM] = 4
 Infiltration credit [CFM] = 19
 Required mechanical ventilation rate [CFM] = 30

Whole-Bldg Ventilation Run-Time Tool

Fan capacity [CFM] 150
 Fan run-time per hour [min] = 12

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ASHRAE 62.2-2013 Ventilation
Reset Print

New or existing construction Existing
 Use infiltration credit Yes

Closest weather station United States
 Georgia
 Atlanta Hartsfield Intl AP

Weather and shielding factor [1/hr] = 0.46

Living area [ft²] 1000
 Number of occupants 2
 Building height [ft] 8
 Measured leakage @ 50Pa [CFM] 800

Use Advanced Blower Door Inputs

Use Local Ventilation Alternative Compliance

Kitchen included # Baths included 1

	Existing Flow	Openable	Deficit
Kitchen	80		
Bath #1	34		

Existing Flow

Enter the measured flow of the existing local fan when the fan will remain in place as part of the ventilation system.

Allowed range:
0 ≤ Existing flow

Normal ranges:
 0 ≤ Kitchen flow ≤ 500 CFM (236 L/s)
 0 ≤ Bath flow ≤ 150 CFM (71 L/s)

Total deficit [CFM]

Effective annual
 Total required v
 Alternative com

Infiltration credit [CFM] = 19
 Required mechanical ventilation rate [CFM] = 30

Whole-Bldg Ventilation Run-Time Tool

Fan capacity [CFM] 150
 Fan run-time per hour [min] = 12

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ASHRAE 62.2-2013 Ventilation
Reset Print

New or existing construction Existing
 Use infiltration credit Yes

Closest weather station United States
 Georgia
 Atlanta Hartsfield Intl AP

Weather and shielding factor [1/hr] = 0.46

Living area [ft²] 1000
 Number of occupants 2
 Building height [ft] 8
 Measured leakage @ 50Pa [CFM] 800

Use Advanced Blower Door Inputs

Use Local Ventilation Alternative Compliance

Kitchen Included # Baths Included 1

	Existing Flow [CFM]	Openable Window	Deficit [CFM]
<input type="checkbox"/>		0	
<input checked="" type="checkbox"/>		16	

Check this box for each kitchen or bathroom having one or more openable windows. The ASHRAE 62.2-2010 (and later) Standard allows the deficit in a kitchen or bathroom to be reduced for an openable window.

Effective annual avg infiltration rate [CFM] = 19
 Total required ventilation rate [CFM] = 45
 Alternative compliance supplement [CFM] = 4
 Infiltration credit [CFM] = 19
 Required mechanical ventilation rate [CFM] = 30

Whole-Bldg Ventilation Run-Time Tool

Fan capacity [CFM] 150
 Fan run-time per hour [min] = 12

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ASHRAE 62.2-2013 Ventilation
Reset Print

New or existing construction Existing
 Use infiltration credit Yes

Closest weather station United States
 Georgia
 Atlanta Hartsfield Intl AP

Weather and shielding factor [1/hr] = 0.46

Living area [ft²] 1000
 Number of occupants 2
 Building height [ft] 8
 Measured leakage @ 50Pa [CFM] 800

Use Advanced Blower Door Inputs

Use Local Ventilation Alternative Compliance

Kitchen included # Baths included 1

	Existing Flow	Openable	Deficit
Kitchen			Deficit
Bath #1	This shows the calculated deficit for a kitchen or bathroom.		
Total def			

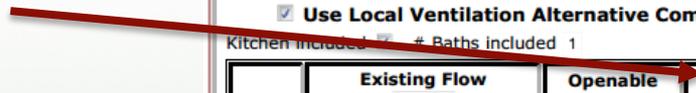
Whole-Bldg Ventilation Results

Effective annual avg infiltration rate [CFM] = 19
 Total required ventilation rate [CFM] = 45
 Alternative compliance supplement [CFM] = 4
 Infiltration credit [CFM] = 19
 Required mechanical ventilation rate [CFM] = 30

Whole-Bldg Ventilation Run-Time Tool

Fan capacity [CFM] 150
 Fan run-time per hour [min] = 12

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ASHRAE 62.2-2013 Ventilation
Reset Print

New or existing construction Existing
 Use infiltration credit Yes

Closest weather station United States
 Georgia
 Atlanta Hartsfield Intl AP

Weather and shielding factor [1/hr] = 0.46

Living area [ft²] 1000
 Number of occupants 2
 Building height [ft] 8
 Measured leakage @ 50Pa [CFM] 800

Use Advanced Blower Door Inputs

Use Local Ventilation Alternative Compliance

Kitchen included # Baths included 1

	Existing Flow [CFM]	Openable Window	Deficit [CFM]
Kitchen	80	<input checked="" type="checkbox"/>	0
Bath #1	34	<input type="checkbox"/>	16

Total deficit [CFM] = 16

Total deficit

The sum of the calculated deficits for the kitchen and bathroom(s).

Required mechanical ventilation rate [CFM] = 30

Whole-Bldg Ventilation Run-Time Tool

Fan capacity [CFM] 150
 Fan run-time per hour [min] = 12

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ASHRAE 62.2-2013 Ventilation
Reset Print

New or existing construction Existing
 Use infiltration credit Yes

Closest weather station United States
 Georgia
 Atlanta Hartsfield Intl AP

Weather and shielding factor [1/hr] = 0.46

Living area [ft²] 1000
 Number of occupants 2
 Building height [ft] 8
 Measured leakage @ 50Pa [CFM] 800

Use Advanced Blower Door Inputs

Use Local Ventilation Alternative Compliance

Kitchen included # Baths included 1

	Existing Flow [CFM]	Openable Window	Deficit [CFM]
Kitchen	80	<input checked="" type="checkbox"/>	0
Bath # 1	34	<input type="checkbox"/>	16

Total deficit [CFM] = 16

Whole-Bldg Ventilation Results

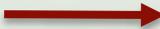
Effective annual avg infiltration rate [CFM] = 19

Effective annual avg infiltration rate

Constant flow rate that would be equivalent (in terms of pollutant/toxin removal) to the varying infiltration rate over the course of a year. This is denoted by Q_{inf} in the 62.2-2013 Standard.

Fan run-time per hour [min] = 12

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ASHRAE 62.2-2013 Ventilation
Reset Print

New or existing construction Existing
 Use infiltration credit Yes

Closest weather station United States
 Georgia
 Atlanta Hartsfield Intl AP

Weather and shielding factor [1/hr] = 0.46

Living area [ft²] 1000
 Number of occupants 2
 Building height [ft] 8
 Measured leakage @ 50Pa [CFM] 800

Use Advanced Blower Door Inputs

Use Local Ventilation Alternative Compliance

Kitchen included # Baths included 1

	Existing Flow [CFM]	Openable Window	Deficit [CFM]
Kitchen	80	<input checked="" type="checkbox"/>	0
Bath #1	34	<input type="checkbox"/>	16

Total deficit [CFM] = 16

Whole-Bldg Ventilation Results

Effective annual avg infiltration rate [CFM] = 19
 Total required ventilation rate [CFM] = 45

Total required ventilation rate

This is the initial minimum whole-building ventilation required by ASHRAE 62.2-2013, BEFORE any local alternative compliance supplement is added or any infiltration credit is subtracted. The standard denotes this as Q_{tot} .

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ASHRAE 62.2-2013 Ventilation
Reset Print

New or existing construction Existing
 Use infiltration credit Yes

Closest weather station United States
 Georgia
 Atlanta Hartsfield Intl AP

Weather and shielding factor [1/hr] = 0.46

Living area [ft²] 1000
 Number of occupants 2
 Building height [ft] 8
 Measured leakage @ 50Pa [CFM] 800

Use Advanced Blower Door Inputs

Use Local Ventilation Alternative Compliance

Kitchen included # Baths included 1

	Existing Flow [CFM]	Openable Window	Deficit [CFM]
Kitchen	80	<input checked="" type="checkbox"/>	0
Bath #1	34	<input type="checkbox"/>	16

Total deficit [CFM] = 16

Whole-Bldg Ventilation Results

Effective annual avg infiltration rate [CFM] = 19
 Total required ventilation rate [CFM] = 45
 Alternative compliance supplement [CFM] = 4

Alternative compliance supplement

This value is added to the "Total required ventilation rate" and compensates for deficient local ventilation in bathrooms and the kitchen by increasing the whole-building ventilation rate accordingly.




ASHRAE 62.2-2013 Ventilation
Reset Print

New or existing construction Existing
 Use infiltration credit Yes

Closest weather station United States
 Georgia
 Atlanta Hartsfield Intl AP

Weather and shielding factor [1/hr] = 0.46

Living area [ft²] 1000
 Number of occupants 2
 Building height [ft] 8
 Measured leakage @ 50Pa [CFM] 800

Use Advanced Blower Door Inputs

Use Local Ventilation Alternative Compliance

Kitchen included # Baths included 1

	Existing Flow [CFM]	Openable Window	Deficit [CFM]
Kitchen	80	<input checked="" type="checkbox"/>	0
Infiltration credit			16

This credit is subtracted from the "Total required ventilation rate" to find the "Required mechanical ventilation rate". For existing buildings, this value is equal to the "Effective annual avg infiltration rate", Q_{inf} . For new buildings, this value is limited to 2/3 times the "Total required ventilation rate", Q_{tot} .

Infiltration credit [CFM] = 19
 Required mechanical ventilation rate [CFM] = 30

Whole-Bldg Ventilation Run-Time Tool

Fan capacity [CFM] 150
 Fan run-time per hour [min] = 12

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ASHRAE 62.2-2013 Ventilation
Reset Print

New or existing construction Existing
 Use infiltration credit Yes

Closest weather station United States
 Georgia
 Atlanta Hartsfield Intl AP

Weather and shielding factor [1/hr] = 0.46

Living area [ft²] 1000
 Number of occupants 2
 Building height [ft] 8
 Measured leakage @ 50Pa [CFM] 800

Use Advanced Blower Door Inputs

Use Local Ventilation Alternative Compliance

Kitchen included # Baths included 1

	Existing Flow [CFM]	Openable Window	Deficit [CFM]
Kitchen	80	<input checked="" type="checkbox"/>	0
Bath #1	34	<input type="checkbox"/>	16

Required mechanical ventilation rate

This is the minimum whole-building (dwelling) mechanical ventilation required for compliance. This value assumes the fan runs 100 percent of the time. The 62.2-2013 Standard denotes this as Q_{fan} .

Required mechanical ventilation rate [CFM] = 30

Whole-Bldg Ventilation Run-Time Tool

Fan capacity [CFM] 150
 Fan run-time per hour [min] = 12

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ASHRAE 62.2-2013 Ventilation
Reset Print

New or existing construction Existing
 Use infiltration credit Yes

Closest weather station United States
 Georgia
 Atlanta Hartsfield Intl AP

Weather and shielding factor [1/hr] = 0.46

Living area [ft²] 1000
 Number of occupants 2
 Building height [ft] 8
 Measured leakage @ 50Pa [CFM] 800

Use Advanced Blower Door Inputs

Use Local Ventilation Alternative Compliance

Kitchen included # Baths included 1

	Existing Flow [CFM]	Openable Window	Deficit [CFM]
Kitchen	80	<input checked="" type="checkbox"/>	0
Bath #1	34	<input type="checkbox"/>	16

Total deficit [CFM] = 16

Effective ar
Total requir
Alternative
Infiltration
Required m

Whole-Bldg Ventilation Run-Time Tool

Allows you to determine fan run-time per hour if you decide to operate the whole-building ventilation intermittently. The fan must run at least once every four hours and be automatically controlled.

Whole-Bldg Ventilation Run-Time Tool

Fan capacity [CFM] 150
 Fan run-time per hour [min] = 12

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ASHRAE 62.2-2013 Ventilation
Reset Print

New or existing construction Existing
 Use infiltration credit Yes

Closest weather station United States
 Georgia
 Atlanta Hartsfield Intl AP

Weather and shielding factor [1/hr] = 0.46

Living area [ft²] 1000
 Number of occupants 2
 Building height [ft] 8
 Measured leakage @ 50Pa [CFM] 800

Use Advanced Blower Door Inputs

Use Local Ventilation Alternative Compliance

Kitchen included # Baths included 1

	Existing Flow [CFM]	Openable Window	Deficit [CFM]
Kitchen	80	<input checked="" type="checkbox"/>	0
Bath #1	34	<input type="checkbox"/>	16

Total deficit [CFM] = 16

Whole-Bldg Ventilation Results

Fan capacity

The capacity of the fan you will install (or of the fan that is already installed) that you will automatically control to operate intermittently. This value must be at least the "Required mechanical ventilation rate", Q_{fan} .

Allowed range:
0 CFM < #

Normal range:
10 CFM < # < 1000 CFM




ASHRAE 62.2-2013 Ventilation
Reset Print

New or existing construction Existing
 Use infiltration credit Yes

Closest weather station United States
 Georgia
 Atlanta Hartsfield Intl AP

Weather and shielding factor [1/hr] = 0.46

Living area [ft²] 1000
 Number of occupants 2
 Building height [ft] 8
 Measured leakage @ 50Pa [CFM] 800

Use Advanced Blower Door Inputs

Use Local Ventilation Alternative Compliance

Kitchen included # Baths included 1

	Existing Flow [CFM]	Openable Window	Deficit [CFM]
Kitchen	80	<input checked="" type="checkbox"/>	0
Bath #1	34	<input type="checkbox"/>	16

Total deficit [CFM] = 16

Whole-Bldg Ventilation Results

Effective annual avg infiltration rate [CFM] = 19
 Total required ventilation rate [CFM] = 45

Fan run-time per hour

The minimum time period the fan must operate each hour to satisfy the "Required mechanical ventilation rate", Q_{fan} .

Fan run-time per hour [min] = 12

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Dwelling:

- ✓ 1 bathroom
- ✓ 1 bedroom
- ✓ 1 Occupant
- ✓ 1000 square feet
- ✓ Ceiling height: 8 feet
- ✓ Slab on grade
- ✓ 1 kitchen exhaust fan. 1 operable window.
- ✓ 1 bathroom exhaust fan. No window.
- ✓ Location: Atlanta

Diagnostic Tests

- Blower Door: 800 CFM @ 50 Pa
- Bathroom: 34 CFM tested fan flow
- Kitchen: 80 CFM tested fan flow


ASHRAE 62.2-2013 Ventilation
Reset Print

New or existing construction Existing
Use infiltration credit Yes

Closest weather station United States
Georgia
Atlanta Hartsfield Intl AP

Weather and shielding factor [1/hr] = 0.46

Living area [ft²] 1000
Number of occupants 2
Building height [ft] 8
Measured leakage @ 50Pa [CFM] 800

Use Advanced Blower Door Inputs

Use Local Ventilation Alternative Compliance

Kitchen included # Baths included 1

	Existing Flow [CFM]	Operable Window	Deficit [CFM]
Kitchen	80	<input checked="" type="checkbox"/>	0
Bath #1	34	<input type="checkbox"/>	16

Total deficit [CFM] = 16

Whole-Bldg Ventilation Results

Effective annual avg infiltration rate [CFM] = 19
Total required ventilation rate [CFM] = 45
Alternative compliance supplement [CFM] = 4
Infiltration credit [CFM] = 19
Required mechanical ventilation rate [CFM] = 30

Whole-Bldg Ventilation Run-Time Tool

Fan capacity [CFM] 150
Fan run-time per hour [min] = 12

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Reset Print

RED ASHRAE 62.2-2013 Ventilation

New or existing construction Existing
Use infiltration credit Yes

Closest weather station United States
Georgia
Atlanta Hartsfield Intl AP

Weather and shielding factor [1/hr] = 0.46

Living area [ft²] 1000
Number of occupants 2
Building height [ft] 8
Measured leakage @ 50Pa [CFM] 800

Use Advanced Blower Door Inputs

Use Local Ventilation Alternative Compliance

Kitchen included # Baths included 1

	Existing Flow [CFM]	Openable Window	Deficit [CFM]
Kitchen	80	<input checked="" type="checkbox"/>	0
Bath #1	34	<input type="checkbox"/>	16

Total deficit [CFM] = 16

Whole-Bldg Ventilation Results

Effective annual avg infiltration rate [CFM] = 19
Total required ventilation rate [CFM] = 45
Alternative compliance supplement [CFM] = 4
Infiltration credit [CFM] = 19
Required mechanical ventilation rate [CFM] = 30

Whole-Bldg Ventilation Run-Time Tool

Fan capacity [CFM] 150
Fan run-time per hour [min] = 12

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30 CFM is the continuous rate of the mechanical ventilation that is needed.

12 Minutes is the amount of time that the fan listed above (150 CFM Fan Capacity) must run every hour intermittently. A fan flow test will confirm actual run-time per hour.

Note: Fan capacity should be slightly oversized to compensate for loss due to flow resistance.

Instead of installing a 30 CFM exhaust fan, it is a best practice to install a fan slightly larger. A 50 CFM fan would be a good choice. Remember, the tested fan flow of the installed fan must meet at least 30 CFM.

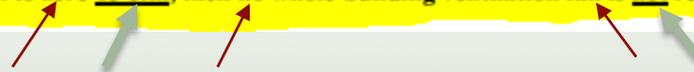
ASHRAE 62.2-2013 Addendum B changes

ASHRAE 62.2 Ventilation Standards has been amended to include “Addendum b”. This change allows for a minimum air flow requirement for existing buildings below which installation of whole-house ventilation is not required and would include the 15 cfm threshold for which many Grantees have already submitted variance requests to DOE for approval.

DOE is recommending, but not requiring, that Grantees adopt this provision into their WAP now rather than waiting for the 2016 publication of the standard which will incorporate the change. The strikethrough portion of the excerpt below is the original language that is being replaced by the underlined text.

A2. WHOLE-BUILDING MECHANICAL VENTILATION RATE

The required mechanical ventilation rate, Q_{fan} , shall be the rate Q_{tot} in Section 4.1.1 plus the required additional airflow calculated in accordance with Section A3. If the airtightness of the building envelope has been measured, the required mechanical ventilation rate may be reduced as described in Section 4.1.2. In these cases, Section A3 shall be applied before Section 4.1.2 when determining the final mechanical ventilation rate. For existing buildings, if Q_{fan} is less than or equal to ~~zero~~ 15 cfm, then ~~no~~ whole-building ventilation fan is not required.



Georgia Weatherization Assistance Program Health and Safety Plan

Prepared by Georgia Environmental Finance Authority and Southface Energy Institute

<p>Hands-on training will consist of evaluating an existing home for whole-house ventilation needs and determining whether existing ventilation meets these needs. The hands-on training will also include testing airflow of existing local exhaust systems. Additionally, Circuit Rider training will be provided to address ASHRAE 62.2 requirements.</p>
<p>Client Education: Discuss what specific steps will be taken to educate the client, if any, on the specific health and safety category if this is not explained elsewhere in the State Plan. Note: Some health and safety categories, like mold and moisture, require client education.</p>
<p>Clients will be provided with information on purpose, function, use, and maintenance of ventilation systems and components. This information will include a disclaimer that ASHRAE 62.2 does not account for high pollution sources or guarantee indoor air quality. All documentation shall be signed by the client and maintained in the client file.</p>
<p>Disposal Procedures: Provide disposal procedures or indicate where these procedures can be found in the Plan or Field Standards.</p>
<p>If installation of equipment necessary to ensure adherence to ASHRAE 62.2 is performed which creates old equipment or materials requiring disposal, materials should be removed from client's home and either recycled when possible or disposed of properly.</p>
<p>ASHRAE 62.2 Compliance: Provide a narrative describing implementation of ASHRAE 62.2, which will be required during the 2012 program year. Grantees must provide justification if making changes to ASHRAE 62.2 specific to their housing stock and local considerations.</p>
<ul style="list-style-type: none"> • Beginning January 2012, Weatherization Assessors and Crew Leaders will receive 8-hours of classroom and hands-on training that covers the ASHRAE 62.2 requirements outlined above. Additional follow up Circuit Rider training will be provided based on needs of specific agencies and workers. Agencies will be responsible for adherence to ASHRAE 62.2 requirements immediately following training of agency employees. • In accordance with Addendum "B" of the original publication of ASHRAE 62.2 2013, whole-house ventilation will only be installed in buildings requiring more than 15 CFM continuous ventilation. • Exceptions include: <ul style="list-style-type: none"> ○ Install mechanical ventilation for spot moisture control in buildings requiring 1-15 CFM, where existing spot ventilation is not operated by the occupants for a reasonable amount of time per day. ○ Install mechanical ventilation for spot moisture control in buildings requiring 1-15 CFM, where there is no pre-existing ventilation. ○ Agencies may install mechanical ventilation in any buildings where there is documented evidence of moisture or indoor air quality problems. ASHRAE 62.2 2013 will be used to determine the needed ventilation.

Print and Keep in Client File


ASHRAE 62.2-2013 Ventilation

Reset Print

New or existing construction Existing
 Use infiltration credit Yes

Closest weather station United States
 Georgia
 Atlanta Hartsfield Intl AP

Weather and shielding factor [1/hr] = 0.46

Living area [ft²] 1000
 Number of occupants 2
 Building height [ft] 8
 Measured leakage @ 50Pa [CFM] 800

Use Advanced Blower Door Inputs

Use Local Ventilation Alternative Compliance

Kitchen included # Baths included 1

	Existing Flow [CFM]	Openable Window	Deficit [CFM]
Kitchen	80	<input checked="" type="checkbox"/>	0
Bath #1	34	<input type="checkbox"/>	16

Total deficit [CFM] = 16

Whole-Bldg Ventilation Results

Effective annual avg infiltration rate [CFM] = 19
 Total required ventilation rate [CFM] = 45
 Alternative compliance supplement [CFM] = 4
 Infiltration credit [CFM] = 19
 Required mechanical ventilation rate [CFM] = 30

Whole-Bldg Ventilation Run-Time Tool

Fan capacity [CFM] 150
 Fan run-time per hour [min] = 12

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Hit Print
 Button.
 Then print.
 Keep in
 client file.

Hit Reset
 Button to
 calculate
 another
 unit.

Similar to the Old ASHRAE 62.2-2010 Ventilation Rate Calculator & Easy to Use



Ventilation Rate Calculator
ASHRAE 62.2-2010 Existing Homes
(Enter values into white-shaded cells only)

Nearest City	Atlanta, GA (w=0.75)	
Conditioned Floor Area, Sq. Ft	1500	
Number of Stories	1	
Number of Bedrooms	3	
Number of Full Bathrooms	2	
Post-Wx Leakage, CFM ₅₀	1800	
Spot Ventilation	Operable Window?	
Kitchen - Exhaust Flow, cfm	90	Yes
Bath 1 - Exhaust Flow, cfm	25	Yes
Bath 2 - Exhaust Flow, cfm	50	No
Bath 3 - Exhaust Flow, cfm		
Bath 4 - Exhaust Flow, cfm		
Base Ventilation, cfm	45.0	
Exhaust Deficit, cfm	1.3	
Infiltration Credit, cfm	19.3	
Ventilation Run Time	Continuous	
Required Air Flow, cfm	27.0	

Reset Print


ASHRAE 62.2-2013 Ventilation

New or existing construction Existing
Use infiltration credit Yes

Closest weather station United States
Georgia
Atlanta Hartsfield Intl AP

Weather and shielding factor [1/hr] = 0.46

Living area [ft²] 1000
Number of occupants 2
Building height [ft] 8
Measured leakage @ 50Pa [CFM] 800

Use Advanced Blower Door Inputs

Use Local Ventilation Alternative Compliance
Kitchen included # Baths included 1

	Existing Flow [CFM]	Operable Window	Deficit [CFM]
Kitchen	80	<input checked="" type="checkbox"/>	0
Bath #1	34	<input type="checkbox"/>	16

Total deficit [CFM] = 16

Whole-Bldg Ventilation Results

Effective annual avg infiltration rate [CFM] = 19
Total required ventilation rate [CFM] = 45
Alternative compliance supplement [CFM] = 4
Infiltration credit [CFM] = 19
Required mechanical ventilation rate [CFM] = 30

Whole-Bldg Ventilation Run-Time Tool

Fan capacity [CFM] 150
Fan run-time per hour [min] = 12

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<http://www.residentialenergydynamics.com/Home.aspx>

Free Building Science Calculation Tools for Energy Professionals

What's New with RED Tools

ASHRAE 62.2-2013 video tutorials

- Watch the new video tutorials for the RED ASHRAE 62.2-2013 at the RED YouTube Channel. We have posted a **short version** and an **extended version**. Good stuff!

Canadian Weather Data added for 80 locations

- This new Canadian weather data is now available for the Advanced Infiltration (AIM-2) tool and the Weather Station Data tools.

What's Been Updated

Pitot Tube Airflow tool

- The second input for this tool, "Pitot tube correction (K) factor" has been renamed and the allowed ranges have been extended. As a result, the tool will accommodate averaging flow sensor pitot tubes requiring a K factor value for calculation of an accurate flow.
- The User Guide has been updated to incorporate the change mentioned above and also now includes more thorough guidance.

First-Time Users, Start Here. . .



RED Calc Free Help and Support Features

1. Watch this video tutorial at the **RED YouTube Channel**;
2. Read the **Getting Started** help document;
3. Use the RED Calc Free menu on the left to try any of the tools;
4. Click the "i" in the blue circle to the right of any tool name in the menu at the left for more information;
5. Click/touch any tool input or result label to see popup help when you need it; and
6. The advanced features of RED Calc Free™ will run on the latest versions of all common web browsers.

Watch these online video tutorials.

Read the Getting Started help document.



ASHRAE 62.2-2013

Questions

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