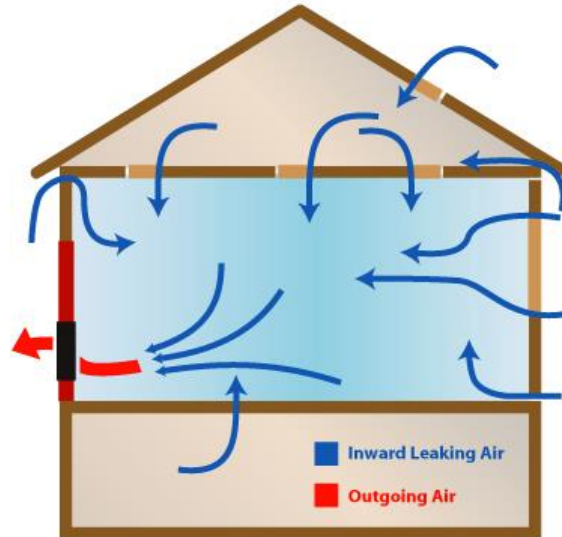




Blower Door and Duct Leakage Testing
Blower Door Test – Building envelope test.



$$ACH_{50} = \frac{CFM_{50} * 60}{VOLUME}$$

NYS Code 3 ACH50

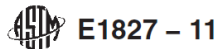


TABLE 1 Recommended Test Envelope Conditions

Building Component	Envelope Conditions	
	Occupied (Default)	Closed
Vented combustion appliance	Off	Off
Pilot light	As found	As found
Flue to nonwood combustion appliance	Sealed	No preparation
Flues for fireplaces and wood stoves with dampers	Closed	Closed
Flues for fireplaces and wood stoves without dampers	Ashes removed	Ashes removed
Fireplace and wood stove doors and air inlet dampers	Closed	Closed
Fireplace without firebox doors	No preparation	No preparation
Furnace room door for furnace outside test zone	Closed	Closed
Combustion air intake damper for wood stove or fireplace	Closed	Closed
Make up air intake damper for furnace inside test zone	Sealed	Closed
Make up air intake for furnace inside test zone without damper	Sealed	No preparation
Exhaust and supply fans	Off	Off
Fan inlet grills with motorized damper	Closed	Closed
Fan inlet grills without motorized damper	Sealed	No preparation
Ventilators designed for continuous use	Sealed	Sealed
Supply and exhaust ventilator dampers	Sealed	Held closed
Clothes dryer	Off	Off
Clothes dryer vent	No preparation	No preparation
Ventilation to other zones	Sealed	Sealed
Windows and exterior doors	Latched	Latched
Window air conditioners	Sealed	No preparation
Openings leading to outside the test zone	Closed	Closed
Openings within the test zone	Open	Open
Floor drains and plumbing traps	Filled	Filled

***The ONLY thing you seal off are the intake and exhaust of a continuously running ERV/HRV**



Blower Door Test Form

Customer Information:
 Name: _____
 Address: _____
 City: _____
 State/Zip: _____
 Phone: _____
 Email: _____

Test Conditions:
 Date: _____
 Time: _____
 Indoor Temperature (F): _____
 Outdoor Temperature (F): _____
 Floor Area (ft²): _____ ft²
 Conditioned Volume (ft³): _____ ft³

Building Address: (if different from above)
 Lot Number: _____
 Address: _____
 City: _____
 State/Zip: _____

Tester Information:
 Name: _____ Matt Bowers
 Company: _____ RPH Consulting
 Certification: _____ RESNET RTIN 425708
 Phone: _____ 585-750-8192

Comments: Blower Door Ring tolerances

Fan Configuration	Flow Range (cfm) for Model 3 Fan
Open (no Flow Ring)	6,300 - 2,430
Ring A	2,800 - 915
Ring B	1,100 - 300
Ring C	330 - 85

Blower Door Test

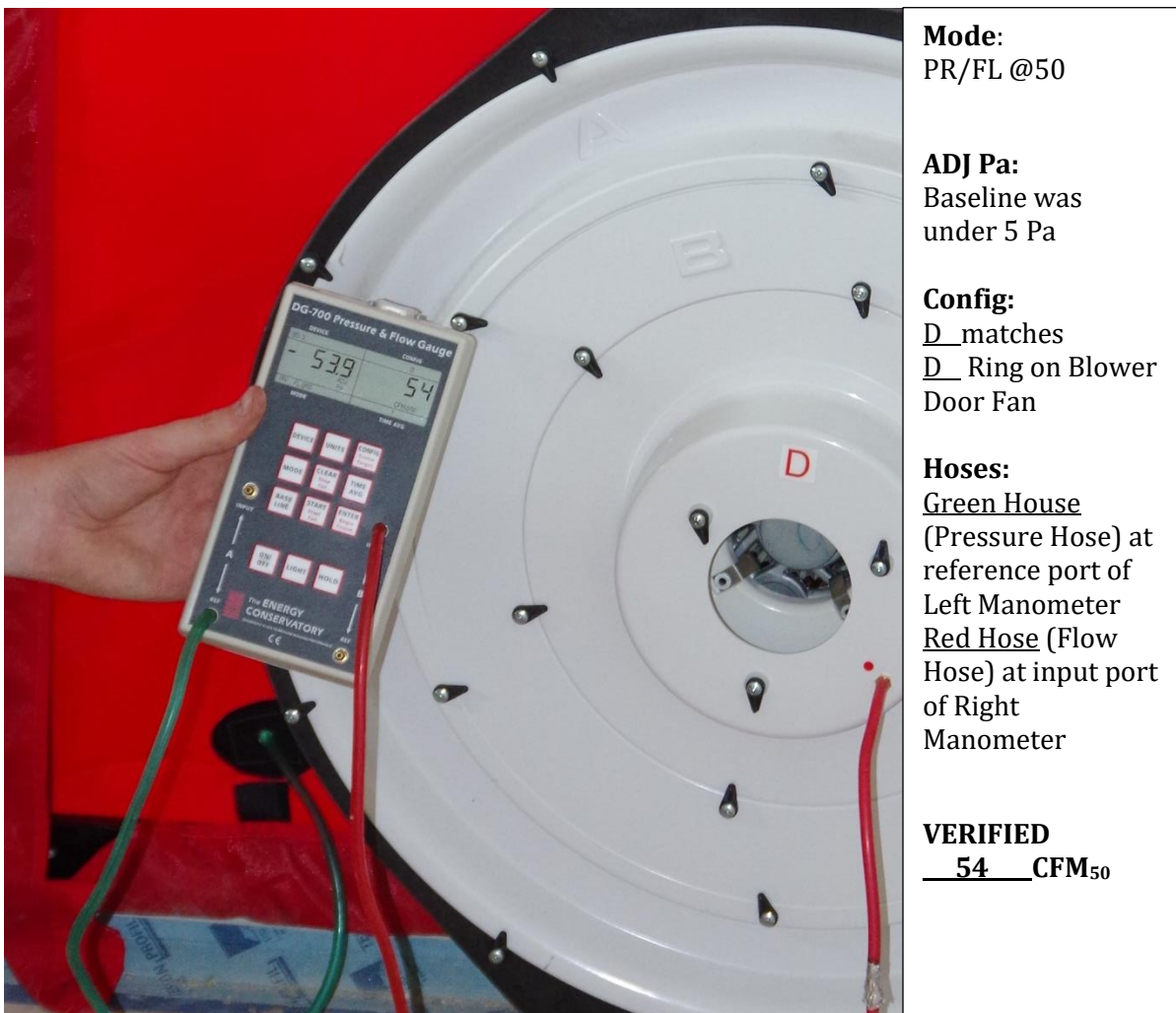
$ACH_{50} = \frac{CFM_{50} \times 60}{Volume}$ CFM₅₀ MAX based on 3 ACH₅₀ (Code Limit)
CFM₅₀ MAX = 0.05 × Volume

House Press.(Pa)	Flow Ring Installed	Flow (CFM ₅₀)

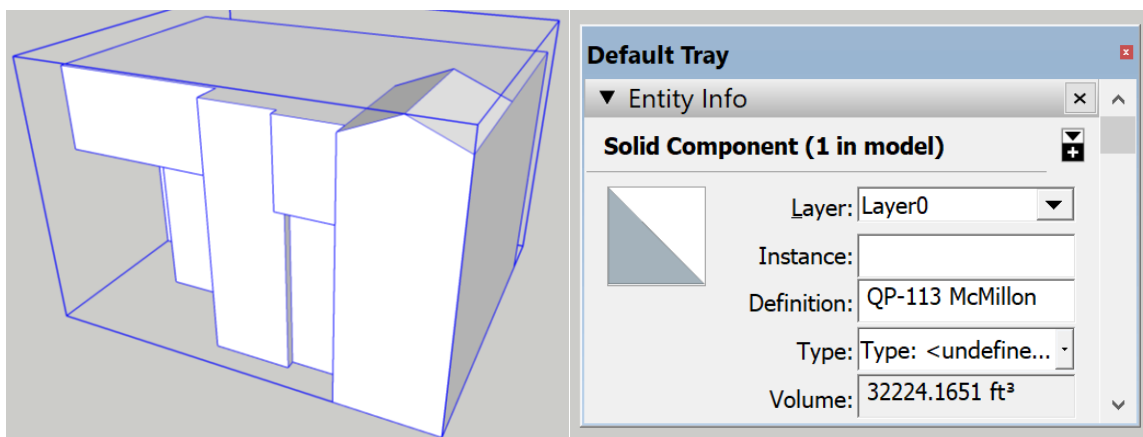
Volume = _____ ft³
 CFM₅₀ MAX = _____ cfm₅₀

Fan Model/SN: _____
 Manometer: _____

Results:
 Total Infiltration ACH₅₀ _____ **ACH₅₀**
 Pass / Fail



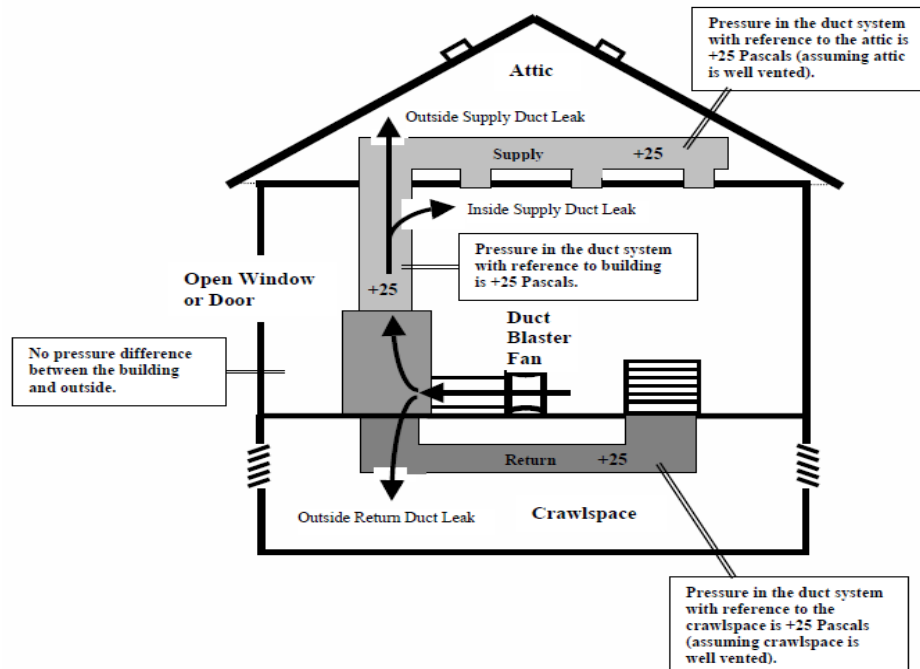
Volume Calculation: Done in Sketchup Make:



Total Volume: 32,224 cuft



Total Duct Leakage Test – Prescriptive Test



- Window is opened (equalize inside and outside pressures)
- Ductwork (and Air Handler) are pressurized with duct blaster fan to +25 Pascal's
- CFM is measured going through fan at that pressure – that is equivalent to CFM of leakage at that time.

This number is irrelevant without the square footage of the house. The square footage of the house is calculated including the basement.

$$CFM_{Total\ Leakage} = \frac{CFM_{25}}{Conditioned\ Floor\ Area\ (CFA)}$$

This test is only required if ductwork is outside the conditioned space

Option 1 – Post Construction Test	4 CFM / 100 sqft
Option 2 – Test at Rough In, with Air Handler installed	4 CFM / 100 sqft
Option 3 – Test at Rough In, without Air Handler installed	3 CFM / 100 sqft
Option 4 – Energy Rating Index – done by a HERS Rater	Varies

* If ductwork in an exterior wall or garage ceiling is insulated to the exterior with adequate foam sealed in place AND the insulated cavity is accounted for in the RESCHECK the ductwork is considered within the conditioned space.

* Most common houses that need this test are slab on grade with ductwork in the attic or attic truss bonus room.



Duct Blaster Test Form

Customer Information:
 Name: _____
 Address: _____
 City: _____
 State/Zip: _____
 Phone: _____
 Email: _____

Test Conditions:
 Date: _____
 Time: _____
 Indoor Temperature (F): _____
 Outdoor Temperature (F): _____
 Floor Area (ft²): _____
 Primary Location of Supply Ductwork: _____
 Primary Location of Return Ductwork: _____

Building Address: (if different from above)
 Lot Number: _____
 Address: _____
 City: _____
 State/Zip: _____

Tester Information:
 Name: Matt Bowers - RPH Consulting LLC.
 Certification: RESNET RTIN 4275708
 Phone: (585) 750-8192

Comments:
 Test Limits: - Total Duct Leakage
 - Leakage (3cfm/100 sqft): _____ CFM
 - Leakage (4cfm/100 sqft): _____ CFM
 Test Pressure is relative to Outside Pressure

Fan Configuration	Flow Range (cfm) for Series B DB fan
Open (no Flow Ring)	1,500 - 600
Ring 1	800 - 225
Ring 2	300 - 90
Ring 3	125 - 10

Total Leakage Test Depress/Press
 Test Pressure: _____ (Pa)
 Baseline Duct Pressure (optional) _____ (Pa)

Duct Press.(Pa)	Flow Ring Installed	Fan Press (Pa)	Flow (cfm)

Fan Model/SN: Minneapolis Duct Blaster Series B/4962

Results:
 Total Leakage (cfm): _____
 Total Leakage per 100 sqft: _____

Outside Leakage Test Depress/Press
 Test Pressure: _____ (Pa)

Duct Press.(Pa)	Flow Ring Installed	Fan Press (Pa)	Flow (cfm)

Fan Model/SN: Minneapolis Duct Blaster Series B/4962

Results:
 Outside Leakage (cfm): _____
 Outside Leakage per 100 sqft: _____