



Add-a-Hole Air Leakage Measurement

If you are unsure of the location and severity of air leaks after the simpler diagnostic tests, you can use the add-a-hole procedure to estimate the actual airflow in CFM50 between the house and attic.

To do this test, you'll need an accessible attic hatch that you can slide to the side to create a rectangular opening that you can effectively measure. If the hatch is not configured so you can create a measurable opening, you can set the hatch aside and use a piece of cardboard.

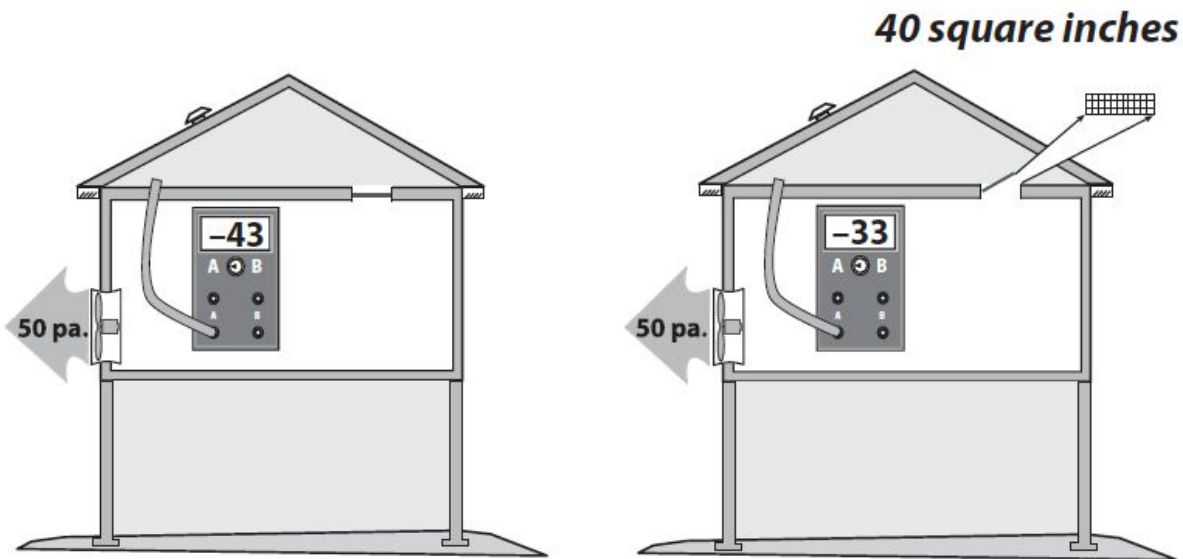
Based on the original house-to-attic pressure you measure, the table below allows you to choose one of three pressure drops (5, 10, and 15 pascals) that you create by sliding the attic hatch aside, or other creating another opening between the house and attic. You then the area of the opening required to achieve that pressure drop. The table provides a multiplier to convert square inches of opening to air leakage in CFM50 that is leaking between the house and the tested zone.

The Procedure

- Set up hoses into attic (or other zone) for measuring house WRT attic. Depressurize house to -50 pascals. This is the standard blower door set-up. Record the house leakage in CFM50.
- Measure and record the house-to-attic pressure (or other zone pressure). It's easiest to use a second manometer for this. Locate that house-to-zone pressure in the House-to-Zone column of table. For each initial pressure there are values for CFM50 per square inch of opening for three specific pressure drops, 5, 10, and 15 pascals.
- Reduce the pressure you found in the step above (house-to-zone) by 5, 10, or 15 pascals by opening the attic hatch while increasing the blower door's speed to maintain -50 pascals house-to-outdoors pressure difference. You can set your manometer on Cruise Control to hold this pressure, or manually control the speed to hold -50 .
- Estimate the area of the opening you made by sliding the attic hatch aside. Multiply the estimated area of the opening (in square inches) by the factor in table to find the air leakage in CFM50 that's leaking between house and attic.



Measured Pressure in Pascals		Pressure Drop			Measured Pressure in Pascals		Pressure Drop		
House to zone	Zone to outdoors	5 Pa	10 Pa	15 Pa	House to zone	Zone to outdoors	5 Pa	10 Pa	15 Pa
49	1	3	1.7	1.1	35	15	19	9	6.8
48	2	5	2.8	1.9	34	16	19	9	6.9
47	3	7	4	2.5	33	17	19	9	7.0
46	4	9	5	3.1	32	18	19	9	7.1
45	5	11	6	3.6	31	19	20	9	7.1
44	6	12	6	4.1	30	20	20	9	7.1
43	7	13	7	4.5	29	21	20	8	7.0
42	8	14	7	4.9	28	22	19	8	7.0
41	9	15	7	5.3	27	23	19	8	6.8
40	10	16	8	5.6	26	24	18	8	6.7
39	11	17	8	5.9	25	25	18	8	6.5
38	12	17	8	6.2	20	30	15	6	--
37	13	18	8	6.5	15	35	10	3	--
36	14	18	8	6.6	10	40	5	--	--



Formula: opening area (sq.inch) x factor from table = leakage (CFM50)

Example: 40 sq.in. x 7 (factor) = 280 CFM50 between house and attic