

APPENDIX R3B
Air sealing: Testing option (Section R402.4.2.2)
Sample Worksheet

R402.4.2 Air sealing. Building envelope air tightness shall be demonstrated by compliance with Section R402.4.2.1 or R402.4.2.2:

R402.4.2.2 Testing option. Building envelope tightness shall be considered acceptable when items providing insulation enclosure in Section R402.2.14 and enclosure and air sealing in Section R402.2.15 and air sealing in Section R402.4.1 are addressed and when tested air leakage is less than or equal to one of the two following performance measurements:

1. 0.30 CFM50/Square Foot of Surface Area (SFSA) or
2. Five (5) air changes per hour (ACH50).

When tested with a blower door fan assembly, at a pressure of 33.5 psf (50 Pa). A single point depressurization, not temperature corrected, test is sufficient to comply with this provision, provided that the blower door fan assembly has been certified by the manufacturer to be capable of conducting tests in accordance with ASTM E779—03. Testing shall occur after rough in and after installation of penetrations of the building envelope, including penetrations for utilities, plumbing, electrical, ventilation and combustion appliances. Testing shall be reported by the permit holder, a North Carolina licensed general contractor, a North Carolina licensed HVAC contractor, a North Carolina licensed Home Inspector, a *registered design professional*, a certified *BPI Envelope Professional* or a certified *HERS rater*.

During testing:

1. Exterior windows and doors, fireplace and stove doors shall be closed, but not sealed;
2. Dampers shall be closed, but not sealed, including exhaust, backdraft, and flue dampers;
3. Interior doors shall be open;
4. Exterior openings for continuous ventilation systems, air intake ducted to the return side of the conditioning system, and energy or heat recovery ventilators shall be closed and sealed;
5. Heating and cooling system(s) shall be turned off; and
6. Supply and return registers shall not be sealed.

The air leakage information, building air leakage result, tester name, date, and contact information, shall be included on the certificate described in Section R401.3.

For Test Criteria 1 above, the report shall be produced in the following manner: Perform the blower door test and record the *CFM50* _____. Calculate the total square feet of surface area for the building thermal envelope (all floors, ceilings, and walls including windows and doors, bounding conditioned space) and record the area _____. Divide CFM50 by the total square feet and record the result below. If the result is less than or equal to [0.30 CFM50/SFSA] the envelope tightness is acceptable; or

For Test Criteria 2 above, the report shall be produced in the following manner: Perform a blower door test and record the *CFM50* _____. Multiply the CFM50 by 60 minutes to create CFHour50 and record _____. Then calculate the total conditioned volume of the home and record _____. Divide the CFH50 by the total volume and record the result below. If the result is less than or equal to [5 ACH50] the envelope tightness is acceptable.

Property Address: _____

Fan attachment location _____ Company Name _____

Contact Information: _____

Signature of Tester _____

Date _____

Permit Holder, NC Licensed General Contractor, NC Licensed HVAC Contractor, NC Licensed Home Inspector,
Registered Design Professional, Certified BPI Envelope Professional, or Certified HERS Rater

(circle one)