APPENDIX E-3C
Duct sealing. Duct air leakage test (Section N1103.2.2)

Sample Worksheet

N1103.2.2 Sealing. All ducts, air handlers, filter boxes and building cavities used as ducts shall be sealed. Joints and seams shall comply with Part V – Mechanical, Section 603.9 of the *North Carolina Residential Code.*

Duct tightness shall be verified as follows:

Total duct leakage less than or equal to 6 CFM (18 L/min) per 100 ft² (9.29 m²) of conditioned floor area served by that system when tested at a pressure differential of 0.1 inches w.g. (25 Pa) across the entire system, including the manufacturer's air handler enclosure.

During testing:

1. Block, if present, the ventilation air duct connected to the conditioning system.
2. The duct air leakage testing equipment shall be attached to the largest return in the system or to the air handler.
3. The filter shall be removed and the air handler power shall be turned off.
4. Supply boots or registers and return boxes or grilles shall be taped, plugged, or otherwise sealed air tight.
5. The hose for measuring the 25 Pascals of pressure differential shall be inserted into the boot of the supply that is nominally closest to the air handler.
6. Specific instructions from the duct testing equipment manufacturer shall be followed to reach duct test pressure and measure duct air leakage.

Testing shall be performed and 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. A single point depressurization, not temperature corrected, test is sufficient to comply with this provision, provided that the duct testing fan assembly has been certified by the manufacturer to be capable of conducting tests in accordance with ASTM E1554-07.

The duct leakage information, including duct leakage result, tester name, date, company and contact information, shall be included on the certificate described in Section N1101.9.

For the Test Criteria, the report shall be produced in the following manner: perform the HVAC system air leakage test and record the CFM25. Calculate the total square feet of Conditioned Floor Area (CFA) served by that system. Multiply CFM25 by 100, divide the result by the CFA and record the result. If the result is less than or equal to [6 CFM25/100 SF] the HVAC system air tightness is acceptable.

Complete one duct leakage report for each HVAC system serving the home:

Property Address: _____

HVAC System Number: _____ Describe area of home served: _____

CFM25 Total _____. Conditioned Floor Area (CFA) served by system: _____ s.f.

CFM25 × 100 divided by CFA = _____ CFM25/100SF (e.g. 100 CFM25 × 100/2,000 CFA = 5 CFM25/100SF)

Fan attachment location _____

Company Name _____

Contact Information: _____

_____

_____ _____

Signature of Tester Date

Permit Holder, North Carolina Licensed General Contractor, North Carolina Licensed HVAC Contractor, North Carolina Licensed Home Inspector, Registered Design Professional, Certified BPI Envelope Professional, or Certified HERS Rater **(circle one)**