



# Duct & Building Air Leakage/Ventilation Testing & Compliance Certification Form

HVAC Contractor \_\_\_\_\_ HVAC Cert # \_\_\_\_\_

DET Verifier \_\_\_\_\_ DET Cert # \_\_\_\_\_

City \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_

Phone \_\_\_\_\_ Email \_\_\_\_\_

Property owner \_\_\_\_\_ Phone \_\_\_\_\_ Email \_\_\_\_\_

Address \_\_\_\_\_ City \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_

Builder/Contractor \_\_\_\_\_ Permit # \_\_\_\_\_

## Building Envelope Tightness Verification

| Fan Flow @ 50 Pascals (CFM <sub>50</sub> ) | Total Conditioned Volume | *ACH <sub>50</sub> | Code Compliant           |
|--|--------------------------|--------------------|--------------------------|
|  |                          |                    | <input type="checkbox"/> |

\* IECC R402.4.1.2 (Modified for Zones 2 and 3) The building or dwelling unit shall have an air leakage rate not exceeding 5 air changes per hour (@ 50 pascals).

## Duct Tightness Verification

| System | *Test | *Max. % Leakage | CFM <sub>25</sub> | Floor Area (ft <sup>2</sup> ) | % Leakage | Code Compliant           |
|--------|-------|-----------------|-------------------|-------------------------------|-----------|--------------------------|
| 1      |       |                 |                   |                               |           | <input type="checkbox"/> |
| 2      |       |                 |                   |                               |           | <input type="checkbox"/> |
| 3      |       |                 |                   |                               |           | <input type="checkbox"/> |
| 4      |       |                 |                   |                               |           | <input type="checkbox"/> |

\* Duct Testing is Mandatory (IECC R403.3.3)

Exception - No test is required where the ducts and air handlers are located entirely within the building envelope.

NTR = No Test Required Maximum % Leakage N/A

Maximum Leakage per 100 square feet of conditioned floor area. (IECC R403.3.4)

RITnah = Rough in total Leakage with no air handler or furnace installed Maximum % Leakage 3%

RIT = Rough in total leakage with air handler or furnace installed Maximum % Leakage 4%

PCT = Post construction total leakage with system complete Maximum % Leakage 4%

PCO = Post construction total leakage to the outside with system complete Maximum % Leakage 4%

## Continuous Whole House Ventilation Requirement

## \*Intermittent Rate Factor

| Floor Area                | Bedrooms | Continuous Ventilation Required (CFM) | Run-Time %          | Factor |
|---------------------------|----------|---------------------------------------|---------------------|--------|
|                           |          |                                       |                     |        |
| <b>Ventilation Method</b> |          |                                       | <b>Measured CFM</b> |        |

\* IRC M1507.3.3 Mechanical ventilation rate. The whole-house mechanical ventilation system shall provide outdoor air to each habitable space at a continuous rate of not less than that determined in accordance with Table M1507.3.3(1).

Exception: The whole-house mechanical ventilation system is permitted to operate intermittently where the system has controls that enable operation for not less than 25% of each 4-hour segment and the "Continuous Ventilation Required (CFM)" is multiplied by the "Factor".

I certify that I have inspected the duct work associated with the HVAC unit referenced by the permit listed above (if applicable and where required) and found it complies with the requirements of chapter 305-2-4 of the Administrative Code of Alabama, known as the Alabama Energy and Residential Code.

Contractor Signature \_\_\_\_\_

Date \_\_\_\_\_

# Formulas and Tables

## Building Envelope Tightness Verification

$$ACH_{50} = (CFM_{50} \times 60) / \text{House Volume}$$

## Duct Tightness Verification

$$\% \text{ Duct Leakage} = (\text{Total CFM}_{25} / \text{Floor Area Served}) \times 100$$

## Continuous Whole House Ventilation Requirement

| Reproduced From Table M1507.3.3 (1) in the 2015 IRC                              |                    |       |       |       |     |
|--|--------------------|-------|-------|-------|-----|
| Continuous Whole - House Mechanical Ventilation System Airflow Rate Requirements |                    |       |       |       |     |
| Dwelling Unit<br>Floor Area<br>(square feet)                                     | Number of Bedrooms |       |       |       |     |
|  | 0 - 1              | 2 - 3 | 4 - 5 | 6 - 7 | > 7 |
|  | Airflow in CFM     |       |       |       |     |
| > 1,500  | 30                 | 45    | 60    | 75    | 90  |
| 1,501 - 3,000  | 45                 | 60    | 75    | 90    | 105 |
| 3,001 - 4,500  | 60                 | 75    | 90    | 105   | 120 |
| 4,501 - 6,000  | 75                 | 90    | 105   | 120   | 135 |
| 6,001 - 7,500  | 90                 | 105   | 120   | 135   | 150 |
| > 7,500  | 105                | 120   | 135   | 150   | 165 |

| Reproduced From Table M1507.3.3 (2) in the 2015 IRC                      |     |     |     |     |     |      |
|--|-----|-----|-----|-----|-----|------|
| Intermittent Whole - House Mechanical Ventilation Factors <sup>a,b</sup> |     |     |     |     |     |      |
| Run Time Percentage In<br>Each 4 - Hour Segment                          | 25% | 33% | 50% | 66% | 75% | 100% |
| Factor <sup>a</sup>  | 4   | 3   | 2   | 1.5 | 1.3 | 1    |

a. For ventilation system run time values between those given, the factors are permitted to be determined by interpolation.

b. Extrapolation beyond the table is prohibited.

## Ventilation Methods

|             |  |
|-------------|--|
| Supply Only | Outside Air Provided By Dedicated Fan                    |
| Supply Only | Outside Air Duct to Return Air                           |
| Balanced    | Outside Air Duct to Return Air w/Interlocked Exhaust Fan |
| Balanced    | Supply and Exhaust Fans                                  |
| Balanced    | Energy Recovery Ventilator (ERV)                         |
| Balanced    | Ventilating Dehumidifier                                 |