

Total Duct Leakage Test

Tools needed: duct tester, micro-manometer, register sealing tape/cardboard

1. Definitions

Pa. (Pascals). Standard unit of air pressure measurement. Approximately 1/250" water gauge.

WRT. (With Reference To). When measuring pressure differences one zone will be the reference zone. The pressure measured in the other zone will be WRT the reference zone. For example when house is -50 Pa WRT outside, the house pressure is 50 Pa. lower than outside.

2. House preparation

- A. Turn Air Handler OFF and insure air handler will not operate during this test.
- B. Seal all registers and grills.
- C. Open at least one window/door to the outside in Main Body of the house so that house pressure will be equal to outside.
- D. Open all interior doors.
- E. Turn OFF all exhaust fans.
- F. Remove furnace filter, including any pre-filters or remote-mounted filter-grills.
- G. Close off any outside air ducted to return if possible.

2. Equipment set-up

- A. Attach Duct Tester to air handler cabinet or closest large return register.
- B. Set up gauge(s) to measure Ducts WRT Outside (same as house) and Duct Tester Fan WRT Outside (same as house).

Place end of hose measuring duct pressure in supply plenum (or closest supply duct at least 3 feet from duct tester attachment point).

Avoid placing the end of the hose facing the air flow.

- C. Run Duct Tester to check air tightness of duct tester attachment and register/grill seals.

3. Test Procedure

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|--|--------|-------|------|
| A. Pressurize Ducts WRT Outside (same as house) to +50 Pa. | before | after | |
| B. Record Duct Tester configuration (ring: none, 1, 2, 3). | _____ | _____ | Pa. |
| C. Measure Duct Tester Fan WRT house: | _____ | _____ | ring |
| | | | Pa. |

If Fan WRT Outside pressure is not below -25 Pa.
retest with next smaller ring.

- D. Determine fan flow from chart or manometer:
Total Duct Leakage: _____ CFM50

E. If ducts cannot reach 50 Pa., use multipliers below to convert actual test CFM achieved to estimated CFM50 Pa.

Can't Reach 50 Pa. Multipliers

- 25 Pa. — 1.6
- 20 Pa. — 1.8
- 15 Pa. — 2.2
- 10 Pa. — 2.9
- 5 Pa. — 4.5