

RECTANGULAR DUCT TRAVERSE PROCEDURE



TESTING CONDITIONS

- When a balancing hood cannot be used on a grille, the next best option is to take a traverse of the duct feeding the grille.
- When reading is critical, or when a diagnostic or balancing decision may depend on it, perform a proper traverse using the NBC Airflow Traverse Forms.
- To be certain the probe is testing correctly, rotate the handle until the highest velocity is read. At that point, the probe is reading properly.

TESTING PROCEDURE

- Textbook testing requires a duct that runs straight for 10 times the diameter of the duct being traversed.
- Since that amount of straight duct is rarely found, traverse where the longest length of straight duct is available.
- Measure 80% downstream and 20% upstream of the straight section of duct and drill 3 to 24 - 3/8" test holes for testing rectangular duct.
- The number of test holes in one side of a rectangular duct depends on the amount of turbulence in the duct. The more turbulence, the greater the number of test holes.
- Insert the hot wire anemometer, holding the probe perpendicular to the airflow and take velocity readings in an equal cross section throughout the duct. Record velocity readings.
- Refer to NBC Rectangle Traverse Report form for hole location and how far to insert probe and record readings
- Add together all of the velocity readings and divide by the number of readings to obtain the average velocity through the duct.
- Multiply the average velocity times the area of the duct in square feet. The answer is Cubic Feet per Minute.

VARIATIONS

- A traverse of the trunk duct from and air handler minus the total of all readings downstream equals duct leakage.
- To determine mass air movement for diagnostics, a traverse can be performed through a window, hall or doorway in a similar manner.
- An outside air inlet can be traversed where the outside air hood eyebrow meets the equipment or duct.
- Filters, and coil faces can also be traversed.
- See *AK Factor Procedure* when measuring a grille.