

# Technical Bulletin

## Conducting Accurate Airflow Measurements on Systems with Multiple Returns

### Flow Hood

With design air filters installed, measure each return and add all values together for total system airflow.

### Flow Grid

#### Option 1: Filter Slot at Air Handler Cabinet

- 1) With design air filters installed, record NSOP reading using HSPP/PSPP at supply plenum.
- 2) Remove all air filters.
- 3) Insert metering plate in the filter slot at air handler cabinet.
- 4) Record total system airflow.

#### Option 2: Return Filter Grilles

- 1) With design air filters installed, record NSOP reading using HSPP/PSPP at supply plenum.
- 2) Remove all air filters.
- 3) Insert metering plate at *each* return filter grille simultaneously. This will require multiple metering plates. (Metering plates shall not be moved from a return filter grille to another return filter grille during testing.)
- 4) Move manometer to each metering plate, set manometer to corresponding *config*. All values shall be added together for total system airflow.

### Plenum Pressure Matching

- 1) With design air filters installed, record NSOP reading using HSPP/PSPP at supply plenum.
- 2) Seal off return ducts.  
*Note: When there is any length of return ducting, it will be important to seal off the return side of the system as close to the air handler cabinet as possible. Return duct leakage can impact and reduce airflow volume.*
- 3) Connect duct tester to air handler cabinet and conduct plenum pressure matching.  
*Note: If the airflow exiting from the duct tester is severely obstructed by the air handler fan or air handler components, this may significantly reduce the total flow capacity of the duct tester. If this is a problem, try attaching the duct tester fan to the blower compartment access opening using a small cardboard box rather than a flat piece of cardboard. This will tend to increase the duct tester fan flow by providing less restriction to air flow as it enters the air handler blower compartment.*

Additional questions about HERS verification of airflow may be directed to CalCERTS support:  
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