

AIR TEST AND BALANCE PROCEDURE



PREPARE FIELD REPORTS

- Verify construction is complete and that system(s) are fully operational.
- Gather design and equipment engineering data.
- Mark plans and prepare field reports for testing and balancing.

ON SITE PREPARATION

- Walk the system and verify all work is 100% complete.
- You may need to begin a punch list of items needing attention.
- Verify that supply register and return grille counts match design.
- Verify balancing dampers are in full open position.
- Verify the fan and system are clean and in good condition.
- Assure clean, proper type and size filters are installed.
- Inspect and make adjustments or minor repairs as needed.
- Record equipment and nameplate data, verify fan speed setting.
- Install temperature and pressure test ports.
- Start system for balancing, set thermostat in cooling mode at 55° with the fan in the "On" position. Or in heating mode, set temperature at 90°.

BALANCING PROCEDURE

- Take and record initial supply and return grille airflow readings with an air balancing hood, or by airflow traverse as needed.
- Compare readings to total design cfm and for each grille and register.
- Assure register and grille airflow are within 70% to 130% of design airflow. If not, set fan airflow first.
- Determine your balancing order based on initial airflow measurements. If needed, refer to the *NCI Proportional Balancing Procedure*.
- Begin following your balancing order and begin making damper adjustments.
- Pass through the system again, adjusting damper settings to achieve airflow + or – 10% of required airflow at each register.
- Mark final damper settings.

FINAL TESTING AND CALCULATIONS

- Change fan speed as needed to achieve design airflow.
- Measure and set outside air to meet specified design intent.
- Measure and record final total external static pressure and pressure drops.
- Measure system and equipment temperatures.
- Measure fan motor rpm, amperage and voltage.
- Record final airflow readings and record any system deficiencies.
- Make final calculations to verify balance has been achieved.
- Verify report is complete.
- Assure all controls are returned to normal operating conditions and inform occupants work is done.

PUBLISH FINAL REPORT

- Enter final test data and calculations into the *Air Test and Balance Report*.
- Complete the *Report Cover Letter* including the NCI certification statement.
- Draft a *Deficiency Report* should unresolved defects remain in the system.
- Prepare a marked and numbered *System Diagram*.
- Include any *Auxiliary Test Reports* completed during the air balance.
- Attach copies of the *Instrument Calibration Report* and *NCI Certificate*.