INSTALLER and INSPECTOR QUICK-REFERENCE: 2025 NRCA-MCH-22-A Central Ventilation System Duct Leakage

Purpose and Scope of the Test

The objective of this acceptance test is to verify the leakage of a new central ventilation duct system(s) (Section 160.2(b)2Ci) that serve multiple dwelling units to meet the dwelling unit airflow requirements specified in Sections 160.2(b)2Aiv or 160.2(b)2Av. These test procedures are based on ASTM E1554/1554M-13 (2018) Method D – Total duct leakage test.

Test trigger

This test is restricted to multifamily buildings of four habitable stories or more with central ventilation systems that serve multiple dwelling units and provides continuous airflows or are part of a balanced ventilation system.

This test applies to both new or complete replacement central ventilation duct systems, or alterations to central ventilation system duct systems.

Relevant Energy Code References and Required Compliance Documents

Title 24, Part 6 of the California Building Standards Code, Building Energy Efficiency Standards (Energy Code) sections 160.2(b)2Aiv, 160.2(b)2Av, 160.2(b)2Ci, 180.2(b)5; and NA7.18.3.

Who Can Perform the Test

This test must be performed by an acceptance test technician certified by a CEC-approved Acceptance Test Technician Certification Provider, using compliance document NRCA-MCH-22-A.

Required Tools

- Performance of this test will require measuring duct leakage equipment:
  - Fan flowmeter (a fan with a calibrated orifice used to pressurize the ducts) accuracy within 3 percent of measured flow.
  - Digital manometer (pressure meter) accuracy within 0.2 pascals.
  - Digital thermometer.

Estimated Time to Complete Test

- Construction inspection: 0.5 to 4 hours, depending on duct access for visual inspections and availability of construction material documentation (designs, cut sheets, and the NRCC-MCH-E or NRCC-PRF-E as approved by the authority having jurisdiction).
- Functional testing: 3 to 10 hours, depending on how long it takes to seal all supply all grilles.

INSTALLER and INSPECTOR QUICK-REFERENCE:
2025 NRCA-MCH-22-A
Central Ventilation System Duct Leakage

Potential Issues and Cautions

- The duct leakage shall be determined by pressurizing the entire duct system ducts to 50 Pa (0.2 inches water) with respect to outside for ducts serving more than six dwelling units, and to 25 Pa (0.1 inches water) with respect to outside for ducts serving two to six dwelling units.
- If the test fan is on the roof, the static pressure probe will need to be connected to the measurement device at the test site with a tube long enough to make the connection.
- The leakage test can be conducted at rough-in or after the grilles or registers are installed. If the leakage test is conduct at rough-in, the spaces between the grille or register boots and the wallboard shall be sealed, and at least one grille or register must be removed to verify proper sealing.
- Ensure all diffusers/grilles are sealed tightly, all access panels are in place, and duct ends are sealed tightly before leakage testing.
- After the test, remember to remove all blockages from diffusers/grilles. Seal any holes drilled in the plenum for the static pressure probes.
-

Inspection Enforcement

Required:

- Verify one of the following:
  - The ATT is in receipt of one NRCA-MCH-22-A for EACH duct system constructed or modified.
  - The inspector is in receipt of one NRCA-MCH-22-A for EACH duct system constructed or modified.
- All NRCA forms for Mechanical Systems must have a water mark logo from a certified Mechanical ATTCP Provider.

Optional Equipment Check:

Verify that the installing technician or Acceptance Test Technician has access to the following equipment:

- Fan flowmeter (a fan with a calibrated orifice used to pressurize the ducts) accuracy within 3 percent of measured flow.
- Digital manometer (pressure meter) accuracy within 0.2 pascals.
- Digital thermometer.

Acceptance Criteria

- Based on total fan system flow rate:
  - Newly installed ducts do not leak more than 6 percent.

Follow the **Construction Inspection** and **Functional Testing** instructions on either NRCA-MCH-22-A (Acceptance Test Technician).