INSTALLER and INSPECTOR QUICK-REFERENCE:
2025 NRCA-PRC-14-F Series
Lab Exhaust Ventilation System

Purpose and Scope of the Test

Verify the design and installation of the laboratory exhaust system in operation to limit excessive energy use, without sacrificing operator safety.

The Laboratory Exhaust Summary must be made available to the authority having jurisdiction upon completion. All other laboratory exhaust controls acceptance tests must be made available to the authority having jurisdiction upon request.

Test trigger

A newly installed fan exhaust system serving a laboratory or factory with a design exhaust fan system airflow rate greater than 10,000 cfm must meet all discharge requirements in ANSI Z9.5-2022, Section 6.4.

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 140.9(c)3; NA7.16; NRCC-PRC-E; NRCI-PRC-E. The exhaust fan system must be designed to meet either Section 140.9(c)3B, Section 140.9(c)3C, or Section 140.9(c)3D. If Section 140.9(c)3D is the designed objective, then the variable exhaust airflow rate control system must use the procedures and system definitions included in ANSI Z9.5 (2022) Appendix 3 for either Simple Turndown, Wind Responsive, or Contaminant Monitoring.
NOTE: System design is the exclusive responsibility of the Responsible Person signatory on the Covered Process Systems certificate of compliance (2025-CEC-NRCC-PRC-E).

Who Can Perform the Test

There are no restrictions. The installing contractor will typically perform these tests.

Note that the contractor can complete the test, and ATTCP certification is not required for this test at this time.

Required Tools

- Room measurement device (tape measure or a more sophisticated system).
- S-pilot tube, 2-D or 3-D pilot tube.
- Voltmeter, anemometer, manometer, exhaust fan flow meter, pressure/flow gauge, and Stopwatch.
- Fan with variable speed control (should hold a simulated wind speed within 2 percent of target speed for the duration of the test).

Estimated Time to Complete Test

Construction Inspection: 1 hour.

Functional testing: 2 hours.

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Potential Issues and Cautions

Air dispersion modeling is highly recommended to be completed prior to testing the system.

The Laboratory Exhaust Summary (2025-CEC-NRCA-PRC-14a-F) and the Laboratory Test and Balance Report (2025-CEC-NRCA-PRC-14b-F) acceptance tests must be performed and completed for all cases.

If one of the control systems (Simple Turndown, Wind Responsive, or Contaminant Monitoring) is selected, then the corresponding acceptance tests (2025-CEC-NRCA-PRC-14c1-F, 2025-CEC-NRCA-PRC-14c2-F, or 2025-CEC-NRCA-PRC-14c3-F) must be performed and completed as well.

Test and Balance Report (2025-CEC-NRCA-PRC-14b-F): If multiple factory or laboratory spaces are served by the same fan exhaust system, then a separate version of this compliance document must be completed for each factory or laboratory space served.

Simple Turndown Controls (2025-CEC-PRC-14c1-F): If control signals have been calibrated to measure flow rates and power consumption, recorded control signals are an acceptable method of measurement.

Inspection Enforcement

Required:

- The Field Technician must have access to all necessary specifications, manufacturer documentation, permit application, and the certificate of compliance 2025-CEC-NRCC-PRC-E as approved by the authority having jurisdiction.
- All relevant equipment must be installed and ready for operation.
- Construction must be sufficiently completed to allow for the necessary acceptance testing.
- All required construction inspection must be successfully completed prior to functional testing for each acceptance test.
- All measurements taken must be within the tolerance of the measurement devices used.

Acceptance Criteria

Each acceptance test includes acceptance criteria for both the construction inspection and functional testing. Both must be satisfied for all applicable acceptance tests.