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## **Joint Appendix JA9**

# **Appendix JA9 – Qualification Requirements for Low Leakage Air-Handling Units**

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### **JA9.1 Purpose and Scope**

Joint Appendix JA9 provides the qualification requirements for air-handling units to meet the requirements for low leakage air-handling unit compliance credit(s) available in the performance standards set forth in Title 24, Part 6, Sections 150.1(b) and 140.1. Joint Appendix JA9 is applicable to air-handling units intended for installation in ducted forced-air space conditioning systems. Joint Appendix JA9 is applicable to air-handling units that are rated by the manufacturer to move less than 3,000 cfm (1400 L/s) of air.

Air-handling unit equipment types include:

- (a) furnaces
- (b) heat pumps
- (c) air conditioners

Joint Appendix JA9 does not apply to coil boxes, filter boxes, or other duct system components that are not an integral part of the air-handling unit cabinet or enclosure certified by the manufacturer.

Joint Appendix JA9 does not apply to ducts, plenums, or other field-constructed components.

## **JA9.2 Qualification Requirements**

To qualify as a low leakage air-handling unit for use for compliance with applicable performance compliance credits, the air-handling unit shall be certified to the Energy Commission according to the following requirements:

### **JA9.2.1 Method of Test**

The air-handling unit shall be tested in accordance with the requirements given in ASHRAE Standard 193.

### **JA9.2.2 Testing Laboratory Requirements**

The Air-Handling Unit shall be tested in a laboratory that has demonstrated compliance with ISO Standard 17025, General Criteria for the Competence of Testing and Calibration Laboratories, and is accredited for the ASHRAE Standard 193 test methods. The accreditation body shall be a signatory to the International Laboratory Accreditation Cooperation Mutual Recognition Arrangement (ILAC MRA) [www.ilac.org](http://www.ilac.org).

### **JA9.2.3 Nominal Air-Handling Unit Airflow**

The nominal air-handling unit airflow used for determining the leakage criterion for qualification shall be as follows:

- (a) For heating-only systems the nominal air-handling unit airflow shall be 21.7 cfm per kBtu/hr of rated heating output capacity.
- (b) For systems that provide space cooling, the nominal air-handling unit airflow shall be 400 cfm per nominal ton of cooling capacity as specified by the manufacturer, or the heating-only value, whichever is greater.

### **JA9.2.4 Leakage Criterion for Qualification**

Allowable leakage for qualification as a Low Leakage Air-Handling Unit shall be equal to or less than 1.4 percent of the nominal air-handling unit airflow determined by Section JA9.2.3.