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**Guidance Type:** Test Procedures

**Category:** Commercial and Industrial Equipment

**Product:** Automatic Commercial Ice Makers

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**Q: Does the DOE test procedure for automatic commercial ice makers allow use of temporary baffles to reduce or prevent recirculation of air between the ice maker's air outlet and inlet during testing?**

**A: The DOE test procedure for automatic commercial ice makers** is found in the Code of Federal Regulations at 10 CFR 431.134, Subpart H, and incorporates by reference AHRI Standard 810–2007 with Addendum 1, (AHRI 810), *Performance Rating of Automatic Commercial Ice-Makers*, March 2011 and ANSI/ASHRAE Standard 29–2009, (ANSI/ASHRAE 29), *Method of Testing Automatic Ice Makers* (including Errata Sheets issued April 8, 2010 and April 21, 2010). The DOE test procedure requires that the ambient air temperature be maintained at  $90^{\circ}\text{F} \pm 1^{\circ}\text{F}$ ; there is also an exception for batch equipment during the first five minutes of each freeze cycle, during which the ambient air temperature must be maintained at  $90^{\circ}\text{F} \pm 2^{\circ}\text{F}$ . The test procedure specifies that this ambient air temperature shall be measured with two temperature measuring devices centered 1 foot from the air inlet or inlets. On January 28, 2013, DOE published a draft guidance document and asked for comments and suggestions. In response, DOE received one industry comment which agreed with DOE's proposed approach, which is adopted below as final guidance.

For the purposes of this guidance discussion, a baffle is a partition (usually made of flat material like cardboard, plastic, or sheet metal) that reduces or prevents recirculation of warm air from an ice maker's air outlet to its air inlet—or, for remote condensers, from the condenser's air outlet to its inlet. This discussion specifically addresses baffles that are temporarily mounted externally to the ice maker during testing. DOE has developed this guidance because the DOE test procedure does not explicitly indicate whether such temporary baffles may be used during testing of automatic commercial ice makers. Because the baffle may reduce the average temperature of the air entering the inlet, use of such temporary baffles during testing could result in a lower measured energy use that is not representative of the energy use of the unit as operated by the end user.

Section 4.1.4 of AHRI 810-2007 states that the unit will be “set up for testing per the manufacturer's written instructions provided with the unit” and “no adjustments of any kind shall be made to the test unit prior to or during the test that would affect the ice capacity, energy usage, or water usage of the test sample”. The test procedure therefore does not allow the use of temporary baffles for testing that are not either (a) part of the ice maker or (b) shipped with the ice maker to be installed according to manufacturers' installation instructions. The use of temporary baffles is not consistent with the requirements of the DOE test procedure for automatic commercial ice makers and the use of such temporary baffles for the purpose of testing would be considered a failure to test the automatic

commercial ice maker in conformance with the applicable test requirements, a prohibited act under 10 CFR 429.102(a)(2).

DOE is aware that warm air discharged from the ice maker can affect the ambient air temperature measurement such that it fluctuates outside the maximum allowed  $\pm 1$  °F or  $\pm 2$  °F range and that baffles can prevent such fluctuation. However, baffles may not be installed temporarily for testing to mitigate this issue. If the fluctuations cannot be maintained within the required tolerances, temperature measuring devices may be shielded so that the indicated temperature will not be affected by the intermittent passing of warm discharge air at the measurement location. However, the shields must not block recirculation of this air into the condenser or ice maker inlet.