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period, as required by section 8.7.2 of ANSI/ASHRAE 118.1-2012, skip to section 5.3 of this appendix.

5.2.1.4. If the outlet water temperature condition as specified in section 8.7.2 of ANSI/ASHRAE 118.1-2012 is not achieved, adjust the water flow rate over the range of the pump's capacity. If, after varying the water flow rate, the outlet water temperature is maintained at $120\text{ }^{\circ}\text{F} \pm 5\text{ }^{\circ}\text{F}$ with no variation in excess of $2\text{ }^{\circ}\text{F}$ over a three-minute period, as required by section 8.7.2 of ANSI/ASHRAE 118.1-2012, skip to section 5.3 of this appendix.

5.2.1.5. If, after adjusting the water flow rate within the range that is achievable by the pump, the outlet water temperature condition as specified in section 8.7.2 of ANSI/ASHRAE 118.1-2012 is still not achieved, then change the supply water temperature to $110\text{ }^{\circ}\text{F} \pm 1\text{ }^{\circ}\text{F}$ and repeat the instructions from sections 5.2.1.2 and 5.2.1.4 of this appendix.

5.2.1. 6. If the outlet water temperature condition cannot be met, then a test procedure waiver is necessary to specify an alternative set of test conditions.

5.2.2. For direct geo-exchange, indoor water-source, ground-source closed-loop, and ground water-source CHPWHs use the following steps:

5.2.2.1. Set the condenser supply water temperature to $110\text{ }^{\circ}\text{F} \pm 1\text{ }^{\circ}\text{F}$. The water pressure must not exceed the maximum working pressure rating for the equipment under test.

5.2.2.2. Use the provisions in section 8.7.1 of ANSI/ASHRAE 118.1-2012 to set the tank thermostat for CHPWHs equipped with an integral storage tank.

5.2.2.3. Follow the steps specified in section 8.7.2 of ANSI/ASHRAE 118.1-2012 to obtain an outlet water temperature of $120\text{ }^{\circ}\text{F} \pm 5\text{ }^{\circ}\text{F}$ with no variation in excess of $2\text{ }^{\circ}\text{F}$ over a three-minute period.

5.3. Conduct the test as per section 9.1.1, "Full Input Rating," of ANSI/ASHRAE 118.1-2012. The flow rate, "FR," referred to in section 9.1.1 of ANSI/ASHRAE 118.1-2012 is the flow rate of water through the CHPWH expressed in gallons per minute obtained after following the steps in section 5.2 of this appendix. Use the evaporator side rating conditions specified in section 4.6 of this appendix to conduct the test as per section 9.1.1 of ANSI/ASHRAE 118.1-2012.

5.4. Calculate the COP_h of the CHPWH according to section 10.3.1 of the ANSI/ASHRAE 118.1-2012 for the "Full Capacity Test Method." For all calculations, time differences must be expressed in minutes.

[81 FR 79346, Nov. 10, 2016]

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Subpart H—Automatic Commercial Ice Makers

SOURCE: 70 FR 60415, Oct. 18, 2005, unless otherwise noted.

§ 431.131 Purpose and scope.

This subpart contains energy conservation requirements for commercial ice makers, pursuant to Part C of Title III of the Energy Policy and Conservation Act, as amended, 42 U.S.C. 6311-6317.

§ 431.132 Definitions concerning automatic commercial ice makers.

Automatic commercial ice maker means a factory-made assembly (not necessarily shipped in 1 package) that—

(1) Consists of a condensing unit and ice-making section operating as an integrated unit, with means for making and harvesting ice; and

(2) May include means for storing ice, dispensing ice, or storing and dispensing ice.

Baffle means 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.

Basic model means all units of a given type of covered product (or class thereof) manufactured by one manufacturer, having the same primary energy source, and which have essentially identical electrical, physical, and functional (or hydraulic) characteristics that affect energy consumption, energy efficiency, water consumption, or water efficiency.

Batch type ice maker means an ice maker having alternate freezing and harvesting periods.

Condenser water use means the total amount of water used by the condensing unit (if water-cooled), stated in gallons per 100 pounds (gal/100 lb) of ice, in multiples of 1.

Continuous type ice maker means an ice maker that continually freezes and harvests ice at the same time.

Energy use means the total energy consumed, stated in kilowatt hours per one-hundred pounds (kWh/100 lb) of ice, in multiples of 0.01. For remote condensing (but not remote compressor)

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automatic commercial ice makers and remote condensing and remote compressor automatic commercial ice makers, total energy consumed shall include the energy use of the ice-making mechanism, the compressor, and the remote condenser or condensing unit.

Harvest rate means the amount of ice (at 32 degrees F) in pounds produced per 24 hours.

Ice hardness factor means the latent heat capacity of harvested ice, in British thermal units per pound of ice (Btu/lb), divided by 144 Btu/lb, expressed as a percent.

Ice-making head means automatic commercial ice makers that do not contain integral storage bins, but are generally designed to accommodate a variety of bin capacities. Storage bins entail additional energy use not included in the reported energy consumption figures for these units.

Portable automatic commercial ice maker means an automatic commercial ice maker that does not have a means to connect to a water supply line and has one or more reservoirs that are manually supplied with water.

Potable water use means the amount of potable water used in making ice, which is equal to the sum of the ice harvested, dump or purge water, and the harvest water, expressed in gal/100 lb, in multiples of 0.1, and excludes any condenser water use.

Refrigerated storage automatic commercial ice maker means an automatic commercial ice maker that has a refrigeration system that actively refrigerates the self-contained ice storage bin.

Remote compressor means a type of automatic commercial ice maker in which the ice-making mechanism and compressor are in separate sections.

Remote condensing means a type of automatic commercial ice maker in which the ice-making mechanism and condenser or condensing unit are in separate sections.

Self-contained means a type of automatic commercial ice maker in which the ice-making mechanism and storage

compartment are in an integral cabinet.

[70 FR 60415, Oct. 18, 2005, as amended at 71 FR 71371, Dec. 8, 2006; 76 FR 12503, Mar. 7, 2011; 77 FR 1613, Jan. 11, 2012; 87 FR 65899, Nov. 1, 2022]

TEST PROCEDURES

§ 431.133 Materials incorporated by reference.

Certain material is incorporated by reference into this subpart with the approval of the Director of the Federal Register in accordance with 5 U.S.C. 552(a) and 1 CFR part 51. To enforce any edition other than that specified in this section, the U.S. Department of Energy (DOE) must publish a document in the FEDERAL REGISTER and the material must be available to the public. All approved incorporation by reference (IBR) material is available for inspection at DOE and at the National Archives and Records Administration (NARA). Contact DOE at: the U.S. Department of Energy, Office of Energy Efficiency and Renewable Energy, Building Technologies Program, Sixth Floor, 950 L'Enfant Plaza SW, Washington, DC 20024, (202)-586-9127, Buildings@ee.doe.gov, www.energy.gov/eere/buildings/building-technologies-office. For information on the availability of this material at NARA, email: fr.inspection@nara.gov, or go to: www.archives.gov/federal-register/cfr/ibr-locations.html. The material may be obtained from the following sources:

(a) *AHRI*. Air-Conditioning, Heating, and Refrigeration Institute, 2111 Wilson Blvd., Suite 500, Arlington, VA 22201; (703) 524-8800; ahri@ahrinet.org; www.ahrinet.org.

(1) AHRI Standard 810 (I-P)-2016 with Addendum 1, *Performance Rating of Automatic Commercial Ice-Makers*, January 2018; IBR approved for § 431.134.

(2) [Reserved]

(b) *ASHRAE*. American Society of Heating, Refrigerating and Air-Conditioning Engineers, Inc., 1791 Tullie Circle NE, Atlanta, GA 30329; (404) 636-8400; ashrae@ashrae.org; www.ashrae.org.

(1) ANSI/ASHRAE Standard 29-2015, *Method of Testing Automatic Ice Makers*, approved April 30, 2015; IBR approved for § 431.134.