heat water to temperatures of 180 °F or higher.

**Packaged boiler** means a boiler that is shipped complete with heating equipment, mechanical draft equipment and automatic controls; usually shipped in one or more sections and does not include a boiler that is custom designed and field constructed. If the boiler is shipped in more than one section, the sections may be produced by more than one manufacturer, and may be originated or shipped at different times and from more than one location.

**R-value** means the thermal resistance of insulating material as determined based on ASTM Standard Test Method C177–97 or C518–91 and expressed in (°F·ft²·h/Btu).

**Standby loss** means the average hourly energy required to maintain the stored water temperature, expressed as applicable either (1) as a percentage (per hour) of the heat content of the stored water and determined by the formula for $S$ given in Section 2.10 of ANSI Z21.10.3-1998, denoted by the term “$S$,” or (2) in Btu per hour based on a 70 °F temperature differential between stored water and the ambient temperature, denoted by the term “$SL$.”

**Storage water heater** means a water heater that heats and stores water within the appliance at a thermostatically controlled temperature for delivery on demand and that is industrial equipment. Such term does not include units with an input rating of 4,000 Btu/hr or more per gallon of stored water.

**Tank surface area** means, for the purpose of determining portions of a tank requiring insulation, those areas of a storage tank, including hand holes and manholes, in its uninsulated or pre-insulated state, that do not have pipe penetrations or tank supports attached.

**Thermal efficiency** for an instantaneous water heater, a storage water heater or a hot water supply boiler means the ratio of the heat transferred to the water flowing through the water heater to the amount of energy consumed by the water heater as measured during the thermal efficiency test procedure prescribed in this subpart.

**Unfired hot water storage tank** means a tank used to store water that is heated externally, and that is industrial equipment.

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**§ 431.102 Definitions concerning commercial water heaters, hot water supply boilers, and unfired hot water storage tanks.**

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**Basic model** means all water heaters, hot water supply boilers, or unfired hot water storage tanks manufactured by one manufacturer within a single equipment class, having the same primary energy source (e.g., gas or oil) and that have essentially identical electrical, physical and functional characteristics that affect energy efficiency.

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**§ 431.104 Sources for information and guidance.**

(a) **General.** The standards listed in this paragraph are referred to in the DOE test procedures and elsewhere in this part but are not incorporated by reference. These sources are given here for information and guidance.

(b) **ASTM.** American Society for Testing and Materials, 100 Barr Harbor Drive, PO Box C700, West Conshohocken, PA, 19438-2959, 1-(877) 909-2786, or go to: http://www.astm.org/index.shtml.


EFFECTIVE DATE NOTE: At 78 FR 79599, Dec. 31, 2013, §431.102 was amended by revising the definition of “basic model”, effective Jan. 30, 2014. For the convenience of the user, the revised text is set forth as follows:

[77 FR 28995, May 16, 2012]

(a) General. DOE incorporates by reference the following test procedures into subpart G of part 431. The materials listed have been approved for incorporation by reference by the Director of the Federal Register in accordance with 5 U.S.C. 552(a) and 1 CFR part 51. Any subsequent amendment to the listed materials by the standard-setting organization will not affect the DOE regulations unless and until such regulations are amended by DOE. Materials are incorporated as they exist on the date of the approval, and a notice of any change in the materials will be published in the FEDERAL REGISTER. All approved materials are available for inspection at the National Archives and Records Administration (NARA). For information on the availability of this material at NARA, call (202) 741–6030, or go to: http://www.archives.gov/federal_register/ code_of_federal_regulations/ibr_locations.html. Also, this material is available for inspection at U.S. Department of Energy, Office of Energy Efficiency and Renewable Energy, Building Technologies Program, 6th Floor, 950 L’Enfant Plaza, SW., Washington, DC 20024, (202) 586–2945, or go to: http://www1.eere.energy.gov/buildings/appliance_standards. The referenced test procedure standards are listed below by relevant standard-setting organization, along with information on how to obtain copies from those sources.

(b) ANSI. American National Standards Institute, 25 W. 43rd Street, 4th Floor, New York, NY 10036, (212) 642–4900, or go to: http://www.ansi.org.


(3) [Reserved]

§ 431.106 Uniform test method for the measurement of energy efficiency of commercial water heaters and hot water supply boilers (other than commercial heat pump water heaters).

(a) Scope. This section covers the test procedures you must follow if, pursuant to EPCA, you are measuring the thermal efficiency or standby loss, or both, of a storage or instantaneous water heater or hot water supply boiler (other than a commercial heat pump water heater).

(b) Testing and Calculations. Determine the energy efficiency of each covered product by conducting the test procedure(s), set forth in the two rightmost columns of the following table, that apply to the energy efficiency descriptor(s) for that product: