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INTERNATIONAL ASSOCIATION OF PLUMBING AND MECHANICAL OFFICIALS

IAPMO GUIDE CRITERIA

FOR

HEAT EXCHANGE SYSTEM

IGC 280 – 2010

1. PURPOSE

- 1.1** The purpose of this standard is to establish a generally acceptable standard for heat exchange systems. Its purpose is to serve as a guide for producers, distributors, architects, engineers, contractors, installers, inspectors and users; to promote understanding regarding materials, manufacture and installation; and to ensure that the product meets basic safety guidelines.
- 1.2** The provisions of this standard are not intended to prevent the use of any alternate material or method of construction, provided any such alternate meets the intent of this standard.

2. SCOPE

- 2.1** This standard covers requirements for heat exchange systems. This standard covers material and physical requirements along with the methods of marking and identification.

3. REFERENCED STANDARDS

- 3.1** The following standards are referenced in this Standard:

ANSI Z21.10.3	Gas Water Heaters - Volume III - Storage, with Input Ratings Above 75,000 BTU per Hour, Circulating and Instantaneous Water Heaters
ASME	Boiler and Pressure Vessel Code
ASME B1.20.1	Pipe Threads, General Purpose (Inch)
ASSE 1016	Automatic Compensating Valves for Individual Showers and Tub/Shower Combinations
ASSE 1017	Temperature Actuated Mixing Valves for Hot Water Distribution Systems
ASTM E 84	Surface Burning Characteristics of Building Materials
IAPMO IGC 157	Ball Valves

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IAPMO PS 92
NSF/ANSI 61
SRCC Standard 100

UL 207

Heat Exchangers
Drinking Water System Components - Health Effects
Test Methods and Minimum Standards for Certifying Solar
Collectors
Refrigerant-Containing Components and Accessories,
Nonelectrical

4. DEFINITIONS

- 4.1 Heat exchange system.** Any system that utilizes thermal mass stored at atmospheric pressure for heating and/or hot water production. The system may be used in conjunction with pressurized systems through the use of heat exchangers which may include expansion tank. In addition to the system vessel, the system may contain a circulation pump, valves, piping, and electronic components.
- 4.2 System vessel.** Any container with a capacity of greater than 7 gallons in the system used to store thermal energy at atmospheric pressure

5. GENERAL REQUIREMENTS

- 5.1** The heating system shall be supplied with means to control the output of external hot water source to a maximum temperature of 120°F and shall shut down when a temperature of 190°F is reached unless specified differently by the manufacturer.
- 5.1.1** A system shall be designed in such a manner that a power failure or water pressure failure at ambient temperature above the rated minimum operating temperature of the will not result in consequential damage to the system or its surroundings.
- 5.1.2** Controls shall maintain the system with the temperature operating limits as required by design.
- 5.1.3** The system shall include such provision for bypass, adjustment, or override of manual or automatic controls as is required to facilitate installation, startup, operation, shutdown, and maintenance and shall be designed so that, in the event of a power failure or a failure of any of the components in the system, the temperature or pressures, or both, will not be damaging to any of the components of the external heat source and the building or present a danger to the occupants. The fail-safe requirements of the control system shall be tested accordance with Section 6.4
- 5.2** The inner walls of the vessel shall be capable of handling boiling point temperatures.

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