

CHAPTER 5

WATER HEATERS, SOLAR THERMAL ENERGY AND CHILLERS

Part I

501.0 General.

The regulations of this chapter shall govern the construction, location, and installation of water heaters heating potable water, use of solar thermal energy for solar space heaters, solar water heating and chillers. The minimum capacity for water heaters shall be in accordance with the first hour rating listed in Table 5-1. Design, construction, and workmanship shall be in conformity with accepted engineering practices, the manufacturer's installation instructions and applicable standards, and shall be of such character as to secure the results sought to be obtained by this code. No water heater shall be hereinafter installed that does not comply in all respects with the type and model of each size thereof approved by the Authority Having Jurisdiction. A list of accepted appliance standards are included in Table 14-1 or equivalent International Standard(s) acceptable to the Authority Having Jurisdiction.

502.0 Water Heaters.

502.1 Construction and Installation. Water heaters deriving heat from fuels or types of energy other than gas shall be constructed and installed in accordance with approved standards. For gas connections to water heaters shall be in accordance with ADNOC Standards. Vents for such appliances shall be approved types. An adequate supply of air for combustion and adequate ventilation of heater rooms or compartments shall be provided. Each such appliance shall be installed in a location approved by the Authority Having Jurisdiction.

502.1.1 Location. Water heaters shall be installed so as to provide for access, maintenance, and replacement.

502.1.2 Base. A water heater supported from the ground shall rest on level concrete or other approved base extending not less than 80mm (3 in.) above the adjoining ground level.

502.1.3 Pan. When a water heater is located in an attic, attic-ceiling assembly, floor-ceiling

assembly, or floor-subfloor assembly where damage results from a leaking water heater, a water-tight pan of corrosion-resistant materials shall be installed beneath the water heater with not less than 20mm (3/4 in.) diameter drain to an approved location. Discharge from a relief valve into a water heater pan shall be prohibited.

502.1.4 Valves. A fullway valve shall be installed on the cold water supply pipe to each water heater at or near the water heater.

502.1.5 Joints. Where two dissimilar metal materials are joined together at the water heater, an approved dielectric insulator shall be installed on the water piping connection to the water heater and related water heating equipment.

502.2 Electric Water Heaters. Electric water heaters shall comply with UL 174, UL 1453, or the equivalent International Standard(s) acceptable to the Authority Having Jurisdiction. Such water heaters shall be listed and labeled (third-party certified), in compliance with ASHRAE 90.1 or equivalent International Standards approved by the Authority Having Jurisdiction. The minimum capacity for water heaters shall be in accordance with the first hour rating listed in Table 5-1. A drain valve shall be provided for emptying the water heater and installed at the bottom of each tank type heater and storage tank.

502.3 Oil-Fired Water Heaters. Oil-fired water heaters shall be installed in accordance with NFPA 31, *Standard for the Installation of Oil-Burning Equipment* or the equivalent International Standard(s) acceptable to the Authority Having Jurisdiction

502.4 Indirect Fired Water Heaters.

502.4.1 Applicable Standards. Indirect-fired water heaters shall conform to applicable sections of the ASME *Boiler and Pressure Vessel Code*, one of the other applicable standards referenced in Table 14-1 or the equivalent International Standard(s) acceptable to the Authority Having Jurisdiction. Each water heater shall bear a label in accordance with ASME requirements, or an

TABLE 5-1¹ FIRST HOUR RATING

Number of Bathrooms	1 to 1.5			2 to 2.5				3 to 3.5			
Number of Bedrooms	1	2	3	2	3	4	5	3	4	5	6
First Hour Rating, ² L	159	204	204	204	254	254	303	254	303	303	303

Note:

¹ The first hour rating is found on the "Energy Guide" label.

² Non-storage and solar water heaters shall be sized to meet the appropriate first hour rating as shown in the table.

SI: 1L=0.26 gallons