

SECTION 15450 - WATER HEATERS

City of San Diego, CWP Guidelines

PART 1 -- GENERAL

1.1 WORK OF THIS SECTION

- A. The WORK of this Section includes providing gas and electric water heaters with water, gas, and electric connections and hook-ups.

1.2 RELATED SECTIONS

- A. The WORK of the following Section applies to the WORK of this Section. Other Sections of the Specifications, not referenced below, shall also apply to the extent required for proper performance of this WORK.

- 1. Section 15410 Plumbing Piping

1.3 CODES

- A. The WORK of this Section shall comply with the current editions of the following codes as adopted by the City of San Diego Municipal Code:

- 1. Uniform Plumbing Code

1.4 SPECIFICATIONS AND STANDARDS

- A. Products and installation of products shall be in conformance with recommendations and requirements of the following organizations:

- 1. American Gas Association (AGA)
- 2. American Society of Mechanical Engineers (ASME)
- 3. National Electrical Manufacturers' Association (NEMA)
- 4. Underwriters Laboratories (UL)

- B. Except as otherwise indicated, the current editions of the following apply to the WORK of this Section:

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|----|--------------|--|
| 1. | ANSI/ASME | Section 8D, Pressure Vessels |
| 2. | ANSI/NFPA 54 | National Fuel Gas Code |
| 3. | ANSI/NFPA 70 | National Electrical Code |
| 4. | ANSI/UL 1453 | Electric Booster and Commercial Storage Tank Water Heaters |

1.5 SHOP DRAWINGS AND SAMPLES

- A. Shop drawings shall be submitted in compliance with Section 01300, including the following:
 - 1. Dimension drawings of water heaters indicating components and connections to other equipment, piping and flues.
 - 2. Heat exchanger dimensions, size of tappings, and performance data.
 - 3. Dimensions of tanks, tank lining methods, anchors, attachments, lifting points, tappings, and drains.

1.6 REGULATORY REQUIREMENTS

- A. The WORK of this Section shall:
 - 1. Conform to [AGA] [ANSI/NFPA 54] [ANSI/NFPA 70] [UL 174] [ANSI/UL 1453] requirements for water heaters.
 - 2. Conform to [ANSI/NFPA 30] [ANSI/NFPA 31] for tanks.

1.7 PRODUCT DELIVERY, STORAGE, AND HANDLING

- A. **Delivery of Materials:** Products shall be delivered in original, unbroken packages, containers, or bundles bearing the name of the manufacturer.
- B. **Storage:** Products shall be carefully stored in a manner that will prevent damage and in an area that is protected from the elements.
- C. **Protection:** Inlet and outlet caps shall be provided and maintained in place until installation.

PART 2 -- PRODUCTS

2.1 GENERAL

- A. Water heaters shall be new first-quality products manufactured for the intended usage. Materials, capacities, features, and finishes shall be compatible with elements of the work to which they relate or connect.

2.2 GAS WATER HEATERS

- A. **General:** Gas water heaters shall include gas, cold water, and hot water connections; flue; 3/4-inch drain valve piped to drain; 3/4-inch (min.) temperature and pressure relief valve piped to drain; and aquastat. The tank shall be of welded steel construction designed for a working pressure of not less than 150 psi, glass-lined, with magnesium anode, minimum 1-inch-thick fiber glass insulation, enameled steel jacket, and feet. The gas burner shall be suitable for natural gas and shall include 100 percent safety shut-off, easily accessible non-lighting pilot, and fingertip temperature selection. The flue connection shall have a draft diverter.

- B. **Flue:** A flue shall be provided in accordance with the Uniform Plumbing Code, from the draft diverter to above the roof and shall include supports, roof flashing, and weather cap. The flue shall be of galvanized steel, double-wall pipe or other suitable, insulated material.
- C. **Heater Schedule:** Gas water heaters shall comply with the following requirements:

- 1. Identification Number []
- 2. Location []
- 3. Tank Capacity, Gal. []
- 4. Heater Input, BTUH []
- 5. Heater Output, BTUH []

2.3 ELECTRIC WATER HEATERS

- A. **General:** Electric water heaters shall include electric, cold and hot water connections; 3/4-inch drain valve piped to drain; 3/4-inch (min.) temperature and pressure relief valve, piped to sink or drain; and aquastat. The tank shall be of welded steel construction for a working pressure of not less than 150 psi, with magnesium anode, glass-lining, minimum 1-inch fiber glass insulation, enameled steel jacket, and feet. The burners shall be of the electric immersion type.
- B. **Heater Schedule :** Electric water heaters shall comply with the following requirements:

- 1. Identification Number []
- 2. Location []
- 3. Tank Capacity, Gal. []
- 4. No. Heaters Per Tank []
- 5. Capacity Each Heater, KW []
- 6. Electric Supply, Volts-Amps-Phase []

2.4 NAMEPLATES

- A. Water heaters shall include nameplates of stainless steel shall be engraved or stamped and fastened to the equipment in accessible locations. Nameplates shall contain the manufacturer's name, model, serialnumber, size, characteristics, and appropriate data describing the machine performance ratings.

2.5 MANUFACTURERS

- A. Products shall be manufactured by one of the following (or equal):
 - 1. Gas water heaters:

National Steel Const. Co.
A.O. Smith
State Industries, Inc.

2. Electric water heaters

National Steel Const. Co.
A.O. Smith
State Industries, Inc.

PART 3 -- EXECUTION

3.1 WATER HEATER INSTALLATION

- A. Water heaters shall be installed in accordance with manufacturer's printed instructions and the Uniform Plumbing Code.
- B. The WORK of this Section shall be coordinated with plumbing piping and related [fuel piping] [gas venting] [electrical] work.
- C. The WORK of this Section includes [steel pipe] [] support for tanks, independent of building structural framing members.
- D. Tank shall be cleaned and flushed [prior to delivery to site.] [after installation.]

** END OF SECTION **