

SECTION 223300 - DOMESTIC-WATER HEATERS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section Includes:
 - 1. Commercial, storage, domestic-water heaters.

1.3 ACTION SUBMITTALS

- A. Product Data: For each type and size of domestic-water heater indicated submit Shop Drawings with rated capacities, operating characteristics, electrical characteristics, and furnished specialties and accessories.
- B. LEED Submittals:
 - 1. Product Data for Prerequisite EA 2: Documentation indicating that units comply with applicable requirements in ASHRAE/IESNA 90.1, Section 7, "Service Water Heating."
- C. Shop Drawings:
 - 1. Wiring Diagrams: For power, signal, and control wiring.

1.4 INFORMATIONAL SUBMITTALS

- A. Product Certificates: For each type of commercial, storage, domestic-water heater, from manufacturer.
- B. Domestic-Water Heater Labeling: Certified and labeled by testing agency acceptable to authorities having jurisdiction.
- C. Source quality-control reports.
- D. Field quality-control reports.
- E. Warranty: Sample of special warranty.

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1.5 CLOSEOUT SUBMITTALS

- A. Operation and Maintenance Data: For domestic-water heaters to include in emergency, operation, and maintenance manuals.

1.6 QUALITY ASSURANCE

- A. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.
- B. ASHRAE/IESNA Compliance: Applicable requirements in ASHRAE/IESNA 90.1.
- C. ASME Compliance: Where ASME-code construction is indicated, fabricate and label commercial, domestic-water heater storage tanks to comply with ASME Boiler and Pressure Vessel Code: Section VIII, Division 1.

1.7 COORDINATION

- A. Coordinate sizes and locations of concrete bases with actual equipment provided.

1.8 WARRANTY

- A. Special Warranty: Manufacturer's standard form in which manufacturer agrees to repair or replace components of gas, domestic-water heaters that fail in materials or workmanship within specified warranty period.
 - 1. Failures include, but are not limited to, the following:
 - a. Structural failures including storage tank and supports.
 - b. Faulty operation of controls.
 - c. Deterioration of metals, metal finishes, and other materials beyond normal use.
 - 2. Warranty Periods: From date of Substantial Completion.
 - a. Commercial, Gas, Storage, Domestic-Water Heaters:
 - 1) Storage Tank: Non-prorated Five (7) years.
 - 2) Heat Exchanger: Non-prorated Five (7) years.
 - 3) Controls and Other Components: Non-prorated One (1) year.

PART 2 - PRODUCTS

2.1 COMMERCIAL, GAS, STORAGE, DOMESTIC WATER HEATERS

- A. Commercial, Gas, Storage, Domestic-Water Heaters:
 - 1. Manufacturers: Subject to compliance with requirements, provide products by one of the following available manufacturers.

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2. Basis-of-Design Product: Subject to compliance with requirements, provide Hubbell Water Heaters Prime Model GSE. Substitutions must meet or exceed all aspects of the basis of design. Comparable product may be submitted for review by one of the following:
3. Tank Construction: Steel construction.
 - a. Tappings: Copper Silicon Alloy.
 - b. Pressure Rating: 150 psig
 - c. Interior Finish: Hydrastone concrete lining – minimum 1/2” thick over all interior tank wetted surfaces and extending into tank tappings.
4. Heat Exchanger/Burner: 316L stainless steel.
 - a. 316L stainless steel immersion burner/heat exchanger shall be horizontal, modular design that is fully removable, field serviceable, repairable and replaceable.
 - b. Fully modulating.
5. Temperature Controller:
 - a. Digital temperature controller, (120Volt 5 amp service required)
6. Factory-Installed Tank Appurtenances:
 - a. Drain Valve: ¾” complying with ASSE 1005.
 - b. Built-in Heat Trap
 - c. Insulation: High density polyurethane minimum of 2” thick.
 - d. Jacket: High impact colorized Composite Plastic.
 - e. Relief Valve: ASME rated and stamped for combination temperature-and-pressure relief valve. Setpoints of 210F with 150 psig.

B. Capacity and Characteristics:

1. Capacity: ____ gallons.
2. Recovery: 62 gph at 40 deg F to 140F temperature rise.
3. Power Demand: 55,000 btu per hour input @ 94% thermal efficiency.
4. Electrical Characteristics:
 - a. Volts: 120 volts
 - b. Phases: single
 - c. Hertz: 60
 - d. Full-Load Amperes: 5 amps.

2.2 DOMESTIC WATER HEATER ACCESSORIES

2.3 SOURCE QUALITY CONTROL

- A. Hydrostatically test commercial domestic-water heaters to minimum of one and one-half times pressure rating before shipment.
- B. Prepare test and inspection reports.