

SECTION 15621CAST IRON HOT WATER BOILER - BURNER UNITPART 1 - GENERAL1.1 DESCRIPTION

- A. Work Included: Provide and install, where shown on the Drawings, a sectional cast iron hot water heating plant with a forced draft liquid propane gas power burner.
- B. Related Work Specified Elsewhere (When Applicable):
 - 1. Cast-in-place concrete is specified in Division 3.
 - 2. Piping, valves, insulation, etc. is specified in the appropriate Sections of this Division.
 - 3. Prefabricated chimney is specified in Section 15616 in this Division.
 - 4. Electrical is specified in Division 16.
- C. Function of Equipment: The System shall be a forced circulation hot water system with boiler and burner, unit heaters, circulating pumps, air exhaust system, insulation, temperature controls, boiler controls, burner controls and the customary specialties, valves, piping, ducts, grilles, etc., as specified or required to make a complete installation.

1.2 QUALITY ASSURANCE

- A. Requirements of Regulatory Agencies: Obtain, at no additional cost to the Owner, all licenses or permits, pay all fees, and comply with all local and state rules and regulations, as well as those of The National Fire Protection Association Sections 54 (30 and 31), 1987.
- B. Verification of Unit Output: Have the boiler and burner manufacturer's representatives supervise start-up and within ten days thereof furnish a written report to the Engineer, certifying operation conforming to these Specifications.
- C. Acceptable Manufacturers; Boiler:
 - 1. H.B. Smith.
 - 2. Weil McLain.
 - 3. Or approval equal.

1.3 SUBMITTALS

- A. Shop Drawings: Submit shop drawings as stated in the General Conditions of the Construction Contract.
- B. Submit complete manufacturer's installation instructions.
- C. Submit all certified reports of verification of unit output test.

1.4 DELIVERY, STORAGE AND HANDLING

- A. Delivery: Deliver equipment in manufacturer's original unopened protective packaging or skids as job progress requires.

- B. Storage: Store equipment in original protective packaging in a clean and dry environment to keep it clean and free of damage of any nature.
- C. Handle to prevent damage of any nature to the equipment during installation and storage.

1.5 JOB CONDITIONS

- A. Power Characteristics: Provide 120 volt, 1 phase, 60 cycle power wiring to the boiler control panel. Provide wiring to all control and safety devices in accordance with Division 16.
- B. Protection:
 - 1. The Contractor shall be completely responsible for the care and protection of all materials and mechanical work until the project is accepted by the Owner.
 - 2. Remove all damaged or destroyed materials and equipment from the site and replace in full compliance of the specification at no additional cost to the Owner.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Boiler size and capacity shall be as shown on the Drawings.
- B. Boiler output shall be minimum gross rating.
- C. Boiler: Provide:
 - 1. Sectional cast iron, pressure fired.
 - 2. Constructed in accordance with ASME requirements for low pressure heating boilers and bear ASME label.
 - 3. Ceramic fiber rope seals between sections.
 - 4. Factory or field assembled.
 - 5. Wet base construction.
 - 6. Tappings as required.
- D. Burner: Provide:
 - 1. Arranged to fire liquid propane gas.
 - 2. Forced draft flame retention type.
 - 3. UL (and American Gas Association) labeled.
 - 4. 2 stage fuel pump.
- E. Controls: Provide:
 - 1. Complete package as required by the Maine Fuel Gas Code, NFPA 54 (31), 1987 and UL listed.
 - 2. Low water shut-off, flame failure, timed pre-purge, control burner primary control as required.
 - 3. Gas train as required by the applicable Gas Code and for proper operation of the Power Burner.
 - 4. Cadmium sulfide flame detection.
 - 5. Summer control when furnished with tankless heater, low fire start, high fire run.
- F. Casing: Provide:
 - 1. Painted steel with fiberglass insulation.
 - 2. Designed to permit installation after connections have been made.

3. Extension type with burner enclosure.
- G. Accessories: Provide:
 1. ASME relief valve.
 2. Immersion aquastat.
 3. Combination altitude gage and thermometer.
 4. Drain valve.

PART 3 - EXECUTION

3.1 PREPARATION

- A. Provide all piping, electrical, etc., in the boiler room to facilitate the installation of the Boiler-burner Unit.

3.2 PREPARATION

- A. Install boiler and burner in strict accordance with manufacturer's installation instructions, as directed by the Engineer and as shown on the Drawings.
- B. Install the boiler on a 3½-inch high concrete pad.
- C. Provide and install necessary gas train and pressure regulator(s).
- D. Provide and install necessary gas safety shut-offs.
- E. Provide and install 16 GA welded steel flue from boiler to chimney.
- F. Provide and install counter balanced backdraft damper in chimney below flue inlet if required by boiler manufacturer.

3.3 INSTALLATION

- A. After the installation is complete and ready for operation, test the system under normal operating conditions in the presence of the Engineer.

3.4 CLEANING

- A. Clean boiler and burner as directed by the Engineer and as required by the boiler manufacturer.
- B. Upon completion of the installation, remove all of the refuse and surplus materials from the site and leave the building neat and clean.

END OF SECTION