

PART 1 – GENERAL

1.1 REFERENCE

- A. Work under this Section is subject to requirements of Contract Documents including General Conditions of Contract, Supplementary Conditions, and sections under Division 01 General Requirements.

1.2 QUALITY ASSURANCE

- A. Water heating equipment shall conform to State and Local Codes, meet national standards, and be certified by respective organization and bear its stamp.

1.3 SUBMITTALS

- A. Shop drawings on items specified herein.

PART 2 – PRODUCTS

2.1 Materials specified herein shall be new unless otherwise noted.

2.2 Helical feed forward, domestic water heat exchangers.

- A. Manufacturers: Hubbell, - (add other alternates based on size)
- B. The heat exchangers (water heater) shall be instantaneous feed forward design with steam in the shell and water in the tubes. The water heater (s) shall be factory assembled, packaged, and ready for service connections. The entire unit shall be factory piped and supplied with the necessary structural support stand to raise the heater the proper distance off the ground to allow for immediate installation in the field. The unit must be designed and fabricated in conformance with the ASME code section VIII, Division I and stamped, certified, and registered with the National Board of Boiler and Pressure Vessel Inspectors. The heating coil and all other water carrying components shall be rated for 150 psi (225 psi TP) working pressure. The unit shall not contain any storage capacity nor require the use of thermoplastic control devices. The heater(s) shall be capable of maintaining the set temperature within +/- 4° F over a flow range of a few percent to 100% rated capacity.
- C. The Blending Valve is based on the feed-forward method of operation utilizing a 3-way blending valve which blends cold and hot water to provide desired outlet temperature. Control shall be accomplished by sensing flow demand through differential pressure, not by sensing changes in outlet temperature. Units utilizing the feed-back method of operation will not be acceptable.
- D. The heating coil shall heat water from 40° F to 140°F @ ##gpm when supplied with 15 psig of steam to the heater. The heating coil shall be constructed of single, wall copper tubes spirally wound and brazed/welded into the manifold rated for a working pressure of 150 psi. The coil must be capable of being removed for inspection and service without breaking any threaded steam or water connections or removing the unit from its installed position.
- E. The shell shall be Cast Steel construction rated for a working pressure of 150 psi. The shell shall be factory insulated or field insulated.

- F. The water heater shall be supplied with all steam condensate controls factory assembled, piped, and tested, including a drip trap, main condensate trap, and strainers. The heater(s) shall incorporate an integral safety system, which automatically suppresses over-temperature conditions without the use of electrically operated devices. A steam pressure gauge (30" Hg – 30 psig) and a combination water temperature/pressure gauge (70 - 270°F, 0-200 psi) are supplied and shipped loose for in-the-field installation.

3.1 INSTALLATION

- A. Install water heaters as recommended by manufacturer. Provide final connections as required. Coordinate water heater location with other Contractors.
- B. The water heater shall be guaranteed for a period of five (5) years from date of shipment. Specifically, the coil assembly shall carry an unconditional, Non-Pro Rated five (5) year guarantee from failure due to thermal shock, mechanical failure, or erosion. Additionally, the heat exchanger shell shall be warranted against all failures for the same five (5) year period. All other components including the blending valve and components shall be warranted for a period of one (1) year against failure due to defects in materials or workmanship.
- C. All fabrication and assembly shall be performed in the U.S.A.
- D. Initial start-up shall be provided by representative of manufacturer.

END OF SECTION