

**Instantaneous Water Heater Series "ECO-PACK"
Suggested Specification****1. CODE REQUIREMENTS**

- A. The Instantaneous Water Heater series "ECO-PACK", its installation, and all equipment associated with the operation of the unit(s) shall comply with all applicable codes. The Contractor is cautioned that all aspects of the installation shall meet the requirement of: ASME latest revision, The National Electrical Code (NEC), Local Authorities Code.
- B. The installation and any modifications shall be in accordance with the practices recommended by the American Society of Heating, Refrigeration, and Air Conditioning Engineers.
- C. Unit(s) shall be ASME code constructed and stamped in accordance with Section VIII, Division 1.
- D. Unit(s) shall be registered with the National Board of Boiler and Pressure Vessel Inspectors, and signed copy of shop inspection report shall be furnished.

2. PERFORMANCE

- A. Furnish and install The Alstrom Corporation Instantaneous Water Heater Series "ECO-PACK" Model _____ to heat GPM water from _____ deg F to deg _____ F in the tube bundle and control the outlet within 5 deg F of the set point using steam entering @ _____ deg F and _____ psig pressure in the shell.
- B. Design pressure and temperature:

Tube side _____ psig, _____ deg F.
Shell side _____ psig, _____ deg F.

3. GENERAL DESIGN

- A. Instantaneous Water Heater series "ECO-PACK" shall be furnished as a complete package ready for installation including all necessary components for operation.
- B. For heating service water unit(s) shall have tube bundle with 316L stainless steel tubes expanded into and seal welded to 304 stainless steel tube sheet with fabricated stainless steel head. (For closed heating system carbon steel head and tubesheet may be used). Unit(s) with not seal welded tube bundle will be not accepted. Each tube bundle shall be capable of being disassembled and removed for inspection and service.

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- C. For cross-non-contaminating requirement shall used double tubesheet model with seal chamber filled with inert liquid with pressure gauge or transmitter for leak detecting (Optional). Inner Tube sheet shall be double grooved for quality expansion.
- D. Unit(s) shell shall be carbon steel.
- E. All unit(s) components subject to the generated hot water shall be of stainless steel construction. Component piping on generated hot water side shall be stainless steel or bronze.
- F. Unfired Hot Water Generator(s) shall be factory mounted, wired, piped, and hydrostatically tested prior to the shipment.
- G. Unit(s) shall be furnished with minimum 1 ½" high-density fiberglass thermal insulation and enameled metal or stainless steel not less than 20ga jacket. Unit(s) shall be mounted on a suitable stand. Stand design shall permits vertical or horizontal installation depending on available space as well as easy tube bundle replacement. A label on the unit should indicate compliance

4. CONTROLS AND ACCESSORIES

- A. Instantaneous Water Heater series "ECO-PACK" shall be furnished with:
 - Steam Strainer
 - Modulating Temperature Control Valve with self-operated, pilot operated, air or electric operated system
 - Steam pressure gauge
 - Condensate Strainer
 - Float & Thermostatic Steam Trap
 - Well for Temperature Regulator
 - Cold and Hot Water Temperature Gauges
 - Vacuum Breaker for Steam Side
 - Pressure Relief Valve (or P&T Relief Valve-Optional)
 - Air Vent
 - Drip Trap
 - Tri-way temperature regulating valve (Optional for unit heating water above 140 deg. F.)
 - Check valve after steam traps (Optional)
 - Water inlet strainer (Optional)

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5. QUALITY ASSURANCE

- A.** All equipment or components of this specification section shall meet or exceed the requirements and quality of the items herein specified, or as denoted on the drawings.
- B.** Ensure equipment pressure ratings are at least equal to system's maximum operating pressure at point where installed, but not less than specified.
- C.** Equipment manufacturer shall be a company specializing in manufacture, assembly, and field performance of provided equipment with a minimum of 5 years experience.
- D.** Equipment provider shall be responsible for providing certified equipment start-up and, when noted, an in the field certified training session. New equipment start-up shall be for the purpose of determining equipment operation.

6. WARRANTY

- A.** In addition to one (1) year standard equipment warranty manufacturer shall provide an extended (3) three year warranty for pressure vessel and tube bundle.