SECTION 23 5700
HEAT EXCHANGERS FOR HVAC

PART 1 GENERAL

1.01 SECTION INCLUDES
   A. Shell and tube type heat exchangers.
   B. Plate type heat exchangers.
   C. Accessories and trim.

1.02 RELATED REQUIREMENTS
   A. Section 23 0913 - Instrumentation and Control Devices for HVAC.
   B. Section 23 2113 - Hydronic Piping.
   C. Section 23 2114 - Hydronic Specialties.
   D. Section 23 2213 - Steam and Condensate Heating Piping.
   E. Section 23 2214 - Steam and Condensate Heating Specialties.

1.03 REFERENCE STANDARDS
   A. ASME BPVC-VIII-1 - Boiler and Pressure Vessel Code, Section VIII, Division 1 - Rules for Construction of Pressure Vessels; 2015.

1.04 SUBMITTALS
   A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
   B. Product Data: Provide data with dimensions, locations, and size of tappings and performance data.
   C. Shop Drawings: Indicate dimensions, locations, and size of tappings and performance data.
      1. Design Data: Indicate in sufficient detail to verify that heat exchangers meet or exceed specified requirements.
      2. Test Reports: Indicate tube bundle pressure tests.
   D. Certificates: Certify that Products meet or exceed specified requirements.
   E. Manufacturer's Instructions: Indicate installation and support requirements.
   F. Operation and Maintenance Data: Include start up and shut down instructions, assembly drawings, and spare parts lists.
   G. Warranty: Submit manufacturer's warranty and ensure forms have been completed in Owner's name and registered with manufacturer.

1.05 REGULATORY REQUIREMENTS
   A. Conform to ASME BPVC-VIII-1 for manufacture of tubular heat exchangers and heat exchanger shells.

1.06 DELIVERY, STORAGE, AND HANDLING
   A. Protect internals from entry of foreign material by temporary caps on flanged openings.

1.07 WARRANTY
   A. See Section 01 7800 - Closeout Submittals, for additional warranty requirements.
   B. Provide five year manufacturer warranty for ________.

PART 2 PRODUCTS

2.01 SHELL AND TUBE TYPE HEAT EXCHANGER
   A. Manufacturers:
4. Substitutions: See Section 01 6000 - Product Requirements.

B. Tubes: Straight tube type with enhanced (spiral surface) copper tubes suitable for 150 psi working pressure.

C. Shell: Steel pipe with threaded or flanged piping connections and necessary tappings, steel saddle and attaching U-bolts, prime coated.

D. Heads: Cast iron or fabricated steel with steel or bronze tube sheets, threaded or flanged for piping connections.

E. Water Chamber and Tube Bundle: Removable for inspection and cleaning.

F. Design: Heating fluid in shell and heated fluid in tubes.

PART 3 EXECUTION

3.01 INSTALLATION

A. Install in accordance with manufacturer's instructions.

B. Install to permit removal of tube bundle with minimum disturbance to installed equipment and piping.

C. Pitch shell to completely drain condensate.

D. Pipe relief valves to nearest floor drain.

E. Pipe drain valves to nearest floor drain.

3.02 STEAM TO WATER HEAT EXCHANGER TRIM

A. Shell: Pressure gage tapping with pigtail siphon, vacuum breaker; refer to Section 23 2214.

B. Water Inlet: Thermometer well, pressure gage tapping, valved drain; refer to Section 23 2114.

C. Water Outlet: Thermometer well for temperature regulator sensor, ASME rated pressure and temperature relief valve, thermometer well, pressure gage tapping; refer to Section 23 2114.

END OF SECTION 23 5700