SECTION 15750 - HEAT TRANSFER

PART 1 - GENERAL

1.1 SCOPE OF SECTION:

This section contains the requirements relating to heat transfer equipment and terminal heat transfer units.

1.2 HEAT EXCHANGERS:

A. GENERAL:

1. Swimming Pools: Shell and tube shall be 316 Stainless Steel only.

2. Heating Hot Water: Shell and tube with copper tube.

3. Chilled Water: Shell and tube or plates. 316 Stainless Steel tubes or plates.

B. EQUIPMENT COOLING: Domestic potable water shall not be used as a once-through cooling agent for equipment cooling. Equipment cooling shall be accomplished using properly designed heat exchangers connected to the chilled water distribution.

C. STEAM COILS: Design Pressure: Design steam coils for 30 psig maximum. Provide reducing stations as required.

D. CHILLED WATER COILS:

1. Coil Design Requirements: Design chilled water coils for 18 degree Fahrenheit temperature rise minimum and 20 degree Fahrenheit for 100% outside air, or higher if requested by the UF Project Manager when connected to a central chilled water plant. Design for chilled water supply temperature available from the particular chiller plant at the building (typically 46°F).

2. Provide inlet and outlet pressure gauges (for Delta P).

3. Provide inlet and outlet thermometers and wells (for Delta T).

4. Provide access for inspection or calibration of temperature testing devices.

5. Coil Drains and Air Vents: All chilled water coils shall have properly installed drains (nipple, valves, valve plug, etc.) and only brass type automatic air vents piped to a drain.

6. For CHW coils designed for variable volume operation (two way valves), select coils such that flow does not become laminar at 50% turndown from design CHW flow.

E. HEATING HOT WATER COILS:

1. Prohibition of Dissimilar Piping: There shall be no mixing of piping. The entire piping system shall be copper piping throughout.

2. Coil Drains and Air Vents: All heating hot water coils shall have properly installed drains (nipple, valves, valve plug, etc.) and only brass type (automatic for HSC) air vents (manually operated) piped to a drain.

3. All heating hot water coils are to have "Y" strainers with blow down valve and plug installed in the supply water side to the coil.

1.3 FAN COIL UNITS:

A. ACCESS: Adequate clearance shall be provided for all service, repairs and component replacement.

B. LUBRICATION: Specify externally accessible fittings for lubrication.

C. DRAIN PANS: Drain pans shall be trapped and angled to ensure proper drainage.

1. Primary Drain Pan: Material shall be 316L stainless steel with a 24 volt float switch installed.

2. Auxiliary Drain Pan: Unless the Fan Coil Unit is located in a room with a floor drain, an auxiliary drain pan shall be provided to catch the overflow if the primary drain clogs. Material shall be galvanized steel. Auxiliary drain pan shall extend underneath the chilled water control valve. The auxiliary pan shall be piped to drain in a manner that shall serve as a signal to occupants that there is a problem; however, its draining shall not cause damage, even if it drains for several days. A 24 volt float switch shall be installed and wired in series with the primary drain pan switch to close the chilled water control valve.

D. FILTRATION: All new fan coil ductwork installations shall have a 24"x24" lay in Filter Backed Grill in the ceiling grid instead of having the filter installed at the fan coil unit above the ceiling. The only exception to this rule is when the makeup air is not filtered. Where certain applications should arise, a variance shall be submitted for approval prior to the installation of said fan coil unit.

E. ACCEPTABLE MANUFACTURERS: Airtherm; Carrier; Trane; York; McQuay

1.4 HUMIDIFIERS:

A. APPROVED TYPES:

1. Steam Grid Type: Steam grid type with stainless steel distribution.

2. Other Types: Other types of humidifiers, besides the steam grid type, may be used with PPD's written approval.

B. PROHIBITED TYPES: Spray types are not allowed.

1.5 PLUMBING EQUIPMENT:

A. EXPANSION TANKS – HEATING HOT WATER:

1. Expansion tanks shall be an ASME galvanized welded steel tank with sight glass and valves
2. Expansion tanks sized 15 through 60 gallons shall have a maximum pressure rating of 150 psi.

END OF SECTION