

Design Standard Water to Air Heat Pumps

Purpose:

Water to air heat pumps are an essential element of the mechanical space ventilation, cooling, and heating systems. This design standard has the purpose of creating a consistent application of water to air heat pump requirements throughout the East Side Union High School District, therefore achieving a standard of quality for maintenance, energy efficiency, and reliability throughout all renovation and new building projects.

Design Standard:

Design and specify work to include materials, installation and testing of water to air heat pump units for a complete and operating system

- Water source and geothermal heat pumps shall be provided with ECM motors and two stage compressors (where available by size).
- Consider utilizing free cooling economizer coil system.
- Horizontal/vertical water source heat pump: Each unit ARI rated, ETL and CSA listed as a horizontal/vertical water source heat pump. Each unit fully tested at the factory. Each unit to include the refrigeration system, fan assembly, motor, DDC controls with interface to campus DDC EMS.
- Console water source heat pump: Furnish and install water source heat pump units. Each unit ARI rated and ETL and CSA listed. Each unit fully tested at the factory. The unit to consist of a subbase/backwrap for floor mounting and attachment to the back wall or floor, a cabinet front capable of attachment to the backwrap and a slide-out chassis for mounting on the subbase. The chassis to include the refrigeration system, fan assembly, motor, DDC controls with interface to campus wide controls system.
- Horizontal/vertical geothermal water source heat pump: Each unit ARI rated, ETL and CSA listed as a horizontal/vertical geothermal water source heat pump. Each unit fully tested at the factory. Each unit to include the refrigeration system, fan assembly, motor, DDC controls with interface to campus wide controls system

Approved Manufacturers:

- Water Source Heat Pumps
 - Carrier
 - Climate Master

- Florida Heat Pump
- Trane
- McQuay
- Geothermal Water Source Heat Pumps
 - Climate Master
 - Florida Heat Pump
 - Waterfurnace

Substitutes Allowed:

Yes, if performance and quality equivalency can be evidenced.

Associated Design Standards and Construction Specifications

- Division 23 HVAC Design Standards
- 23 05 29 - Hangers and Supports for HVAC Piping and Equipment
- 23 05 48 - Vibration and Seismic Controls for HVAC Piping and Equipment
- 23 05 53 - Identification for HVAC Piping and Equipment
- 23 05 93 - Testing, Adjusting and Balancing
- 23 09 23 – Direct Digital Controls System for HVAC
- 23 31 00 – Ductwork

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