

Design Standard HVAC Equipment

Revisions Log:

Version	Date	Description of changes/updates
2	April 28, 2015	<ul style="list-style-type: none"> • Additional language clarifying condensate drainage for Ductless Underceiling Split System Air Conditioner

Purpose:

This design standard has the purpose of creating a consistent application of HVAC equipment 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.

Not every type of HVAC equipment at ESUHSD is standardized. However, certain ubiquitous types of HVAC equipment exist throughout the District by virtue of having been installed repeatedly over decades of capital construction and maintenance projects. Maintenance staff are trained and familiar with this equipment, and store spare parts for this equipment. For the purpose of efficacy and efficiency in maintenance operations, this specific equipment will continue to be specified and installed at ESUHSD, and no substitutes will be allowed.

Where a specific manufacturer and model is not specified in this design standard, the mechanical engineer shall specify at least three acceptable commercial industrial grade equipment, and allow for “equal” equipment via a substitution request process. In the event that only one manufacturer/model of equipment meets ESUHSD and project-specific criteria, that manufacturer/model shall be the basis of design, and the mechanical engineer shall entertain “or equal” proposals via the substitution request process.

Design Standard:

1. Decentralized Rooftop HVAC Units

- a. Carrier Weathermaker® 48TC
 - i. Single-packaged rooftop unit
 - ii. Standard efficiency
 - iii. Gas heating / electric cooling

- iv. Puron[®] (R-410A) refrigerant
- v. 3 to 27.5 nominal tons
- b. Carrier WeatherExpert[®] 48LC series
 - i. Single package rooftop unit and single zone VAC
 - ii. Ultra high efficiency
 - iii. Gas heating / electric cooling
 - iv. Puron[®] (R-410A) refrigerant
 - v. 3 to 23 nominal tons

2. Unit Heaters

- a. Reznor UDAS, UDBS, or UEAS (size according to need)
 - i. Gas fired
 - ii. Separated combustion
 - iii. Stainless steel heat exchanger
 - iv. 83%, 83% and 93% (respectively) gas fuel efficiency
- b. Sterling brand unit heaters are acceptable
- c. Modine brand unit heaters are acceptable

3. Ductless Underceiling Split System Air Conditioner

- a. Carrier 40QAC/38HDR
- b. 18,000 to 60,000 Btuh
- c. Specify a wired thermostat (remote t-stats not allowed)
- d. Puron[®] (R-410A) refrigerant
- e. Special design requirements:
 - i. Application: IDF/MDF rooms
 - ii. Condensate pump: Where gravity drainage is not possible due to space configuration limitations, the preference is for an external condensate pump for ease of service access. The preferred condensate pump is Little Giant 554200 VCC-20ULS, 1/30 HP, 115 volt with 6' power cord, 80 gph capacity. Install pump and power outlet NEXT TO the fan coil unit, not below it. Specify nylon reinforced flexible hose for condensate drainage; upsize by one size larger than manufacturer's recommendation. Design condensate drain hose installation such that in the event of failure there is no drainage onto equipment. Design drainage to exit the building into an adjacent landscape planting area whenever possible.

4. Fire and Smoke Dampers

- a. Belimo actuators

Approved Manufacturers:

- Decentralized Rooftop HVAC
 - Carrier
- Unit Heaters
 - Reznor, Sterling, Modine
- Ductless Split System Air Conditioner
 - Carrier

Substitutes Allowed:

No substitutes allowed.

Pursuant to Section 3400 of the Public Contract Code: Carrier decentralized rooftop HVAC units are now in use on the particular public improvement described as East Side Union High School District. At each instance in these specifications that a decentralized rooftop HVAC unit is designated by the brand name “Carrier”, that product is designated to support the existing HVAC systems that are in place at East Side Union High School District. The Contractor will furnish and install only “Carrier” decentralized rooftop HVAC units as required, and no substitutions shall be deemed to be “or equal” or allowed.

Pursuant to Section 3400 of the Public Contract Code: Reznor unit heaters, Sterling unit heaters, and Modine unit heaters are now in use on the particular public improvement described as East Side Union High School District. At each instance in these specifications that a unit heater is designated by the brand name “Reznor”, “Sterling” or “Modine”, that product is designated to support the existing HVAC systems that are in place at East Side Union High School District. The Contractor will furnish and install only “Reznor”, “Sterling” and “Modine” unit heaters as required, and no substitutions shall be deemed to be “or equal” or allowed.

Pursuant to Section 3400 of the Public Contract Code: Carrier ductless split system air conditioners are now in use on the particular public improvement described as East Side Union High School District. At each instance in these specifications that a ductless split system air conditioner is designated by the brand name “Carrier”, that product is designated to support the existing HVAC systems that are in place at East Side Union High School District. The Contractor will furnish and install only “Carrier” ductless split system air conditioners as required, and no substitutions shall be deemed to be “or equal” or allowed.



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Associated Design Standards and Construction Specifications

- Division 23 HVAC Design Standards

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