

PART 1 - GENERAL

These standards apply to the installation of aircraft preconditioned air systems including air handling units, chillers and components.

1.01 DESIGN CRITERIA

A. Drawings and Specifications:

1. Indicate unit dimensions, weight loading, required clearances, electrical characteristics and connection requirements.
2. Include equipment schedules: Identification tag, capacities, Balancing requirements, electrical requirements, weights, etc.
3. Indicate service access requirements on plans.
4. Indicate control valves and DDC control panel locations.
5. Provide air and water flow diagrams.
6. Provide valves with unions or flanges at each piece of equipment arranged to allow servicing, maintenance, and equipment removal without system shutdown.
7. Provide isolation valves on all equipment. Locate valves, control valves, balancing valves and control components for accessibility.
8. Safety Valves: Set at pressure and locate vents required by code.
9. Expansion: Indicate pipe expansion loops, guides and anchors.
10. Testing: Hydrostatic testing at 150 percent above maximum operating pressure or 100 psig minimum, whichever is greater.

B. Design:

1. Capacity: Units shall be designed to condition the cabin temperature to 72 degrees F cooling and 70 degrees F heating for the largest type of aircraft capable of using the bridge with a 10 to 15-percent additional capacity at design conditions. Design shall be based on outdoor temperatures of 90 degrees F for cooling and 17 degrees F for heating. PCA glycol system design at 24 degrees F with the capability to operate at 20 degrees F.
2. Piping: Size main piping distribution system with future capacity provided. Maximum water velocity = 8 feet per second, maximum water pressure drop 4-feet per 100 lf.

3. All pre-conditioned air piping systems shall be designed and constructed to meet ASME B31.1 Power Piping.
4. For all pre-conditioned air piping system provide radiographic testing for at least 25% of field welds and 10% of shop welds. If any of the welds do not pass the test all remaining welds shall be radiographically tested.
5. Controls: Direct Digital Controls shall be utilized. Valve Actuators shall be pneumatic with existing compressed air system extended.
6. Seismic Restraints: Secure unit, components and accessories in accordance with International Building Code.
7. Provide freeze protection, including freezestat, and control sequence to modulate heating coil and glycol chilled water coil open during freezing conditions.
8. Do Not Use the following:
 - a. Grooved piping, valves, fittings.
 - b. Dielectric Couplings (use Dielectric Nipples).
 - c. Steam Heating Coils.

PART 2 -PRODUCTS

2.01 AIR HANDLING UNITS

- A. Manufacturer: Cavotec or approved equal.
- B. Shall be mounted at the rotunda so that servicing can be accomplished without impeding the use of the jetway. Air duct shall be routed beside the jetway and attached in such a manner as to allow full extension, contraction and rotation of the jetway. Weight of standard units is 2,000 lbs; wide body unit is 3,000 lbs.
- C. Units shall be constructed to operate to 20 degree F glycol for cooling.

END OF SECTION