

MCAS CHERRY POINT, N.C. MECHANICAL POLICIES

1. Avoid rooftop HVAC equipment, unless absolutely unavoidable. Mechanical designs must consider the fragility of roofs. Equipment installed on grade is preferable.
2. If rooftop equipment must be used, utilize equipment manufacturer's standard curbs.
3. MCAS Cherry Point has a Base Exterior Architectural Plan (BEAP). Consider the BEAP when locating mechanical equipment.
4. Avoid use of chilled water fan coil (FCU) systems due the high maintenance associated with them and their poor latent capacity. Coil condensate drain pans are especially problematic. If FCU's are used, ensure adequacy of the drain system.
5. Avoid routing pipes above dropped ceilings, especially low temperature pipes (i.e. chilled water, coil condensate) that are subject to condensation/dripping.
6. Provide auxiliary coil drain pans below all cooling equipment installed above ceilings.
7. Install blow down valves on all strainers.
8. Avoid use of economizers (dry bulb or enthalpy). High humidity and poor control reliability prohibit success with economizers.
9. Year around steam is not available anywhere on base except for NADEP. If reheat is indicated be aware that steam may not be an available energy source. The heating season runs from 15 November to 15 March.
10. Provide phenolic coating or copper fins on copper tubes for all outdoor coils base wide. The heat transfer rating of phenolic-coated coils should be derated.
11. Do not use cooling towers.
12. Provide adequate thermal mass in chilled water systems to ensure proper control and longevity of chillers. Chiller manufacturers recommend 2 to 7 minute water loop return times; use a minimum of 5 minutes to size inertia tanks.
13. All equipment located within or outside mechanical rooms should be accessible for maintenance (including coils) and for removal with minimum disruption to occupants.

14. HVAC equipment should not be installed in attics or above suspended ceilings, unless absolutely necessary. When placement in an attic is dictated by necessity, provide stairs to access the attic; ships ladders are not permissible.
15. Air handling unit filter access doors should be specified as hinged and lockable with quarter-turn or half-turn thumb screws. Do not specify or approve access panels that are unhinged and/or retained by sheet metal screws.
16. Require contractors to provide a listing of the HVAC filters for each piece of equipment along with their dimensions (width, height and thickness) and types (permanent/washable, throwaway, etc).
17. Do not use plastic preinsulated pipe for buried dual temperature water distribution; use preinsulated copper pipe.
18. Do not specify mineral fiber or flexible unicellular insulation on chilled water pipes. Use rigid insulation on all pipes subject to being stepped on or damaged. Cellular glass polyisocyanurate up to 1-½ inches (40 mm) thick is preferred on chilled water pipes.
19. Automatic flow control balancing valves should only be used in conjunction with piping systems employing centrifugal separators. Use centrifugal separators regardless of pipe material (steel or copper).
20. Direct Digital Control (DDC) systems are the preferred HVAC control systems for new and replacement control systems. Pneumatics should only be used for applications such as for pilot operators on large control valves. Re-establish monitoring and control capabilities for replacement control systems. Contact John Fleming, telephone: (252) 466-4708; email: flemingJE@cherrypoint.usmc.mil, or Paul Cline, telephone: (252) 466-4707; email: clineJA@cherrypoint.usmc.mil, for the latest information for connecting to the base energy management system and the interface devices required.
21. Where DDC is not practical, such as with small unitary equipment, use programmable thermostats.
22. Equipment control cabinet should be located no higher than 5 ft above finished floors. Do not install control cabinets in high humidity spaces such as mechanical rooms with steam pipe and equipment.
23. Provide separate mechanical and electrical rooms with exterior, ground level entrances.
24. For HVAC systems utilizing gas (propane or natural) as the heating source, ensure the specifications for the HVAC units require the contractor to furnish units compatible with the gas source.

25. Do not install steam pits within mechanical rooms. Steam lines should be counter flowed from an exterior manhole.
26. Minimize use of steam manholes. Those required must be raised 18 inches (450 mm) above finish grade and equipped with a full grated top.
27. Do not use orifice type steam condensate traps.
28. Do not use FRP pipe for buried steam condensate lines. Use schedule 80 black steel pipe in buried condensate systems.
29. Equip steam manholes with steam ejector pumps. Add electric sump pumps where steam is turned off during the summer.
30. Use welded valves in steam pits. Inside buildings, flanged valves are permitted.
31. Use "Link Seals" on steam and condensate piping where they penetrate manhole walls.
32. Use in-line filters before regulators on low pressure steam.
33. Specify steam control valve actuators that can withstand heat conducted from steam lines and equipment. Do not specify, or approve, hydraulic powered actuators in steam applications.
34. Lubrication oil lines should not be installed below building floor slabs. Lubrication oil lines installed within service bays should be installed in trenches with removable tops.
35. Install shop air compressors in accessible locations with appropriate space for periodic service. Shop air compressors should not be installed within mechanical rooms since occupant access is prohibited by base maintenance. Shop air compressors should be provided with sufficient cooling ventilation. Install air compressors associated with building HVAC controls within mechanical rooms.