

October 22, 2019

The requirements in this amendment supersede the corrosion protection requirements in the Marianas Navy and Marine Corps Design and Construction Standards (MDACS) v.SEP2017 and are effective immediately for all new projects and should be incorporated into existing projects where feasible.

MDACS Amendment:

D30 HVAC

SUSTAINABLE DESIGN STRATEGIES

- q.) Where possible, provide the outdoor mechanical HVAC enclosure on the **Leeward** side of the building opposite of the prevailing or trade winds that carry salt-laden air that would speed up the corrosion process.
- r.) Provide screen walled enclosure with reinforced concrete canopy for all mechanical HVAC outdoor equipment with the recommended manufacturer clearances around and above the mechanical equipment for proper air flow circulation. Concrete canopy for cooling towers is not required. Design the access gate large enough to remove mechanical equipment during future replacement.

DD3030.9 Corrosion Protection Coating

a. UNITARY AIR-CONDITIONING EQUIPMENT:

For unitary air-conditioning equipment located outdoor including air-cooled condensing units and packaged units, **under 3-tons**, provide a **copper tube/aluminum fin** condenser coil with a **10,000-hour salt spray test per ASTM B117 standard** or better for both condenser coil, cabinet casings, chassis, and internal components and an ultra violet (UV) top coat on the coating to prevent UV degradation. **Spray-on application** is acceptable by a certified applicator for the coating product inside a shop in a controlled environment. No field or job site coating application allowed. Provide with **stainless steel** fasteners only.

For unitary air-conditioner equipment located outdoors, **3-tons and above**, including all air-cooled chillers, provide **copper tube/copper fin** condenser coil with a **10,000-hour salt spray test or better per ASTM B117 standard, factory E-COAT** process with an additional ultra violet

(UV) top coat on the coating to prevent UV degradation and additional protection. Provide a **10,000-hour ASTM B117 standard spray-on application coating** for the cabinet casings, chassis, and internal components by a certified applicator for the coating product inside a shop in a controlled environment. No field or job site coating application allowed. Provide with stainless steel fasteners only.

b. DEDICATED OUTDOOR AIR SYSTEMS (DOAS):

For all packaged Dedicated Outdoor Air Systems (DOAS) provide **copper tube/copper fin** condenser and evaporator coils with a **10,000-hour salt spray test** or better per ASTM B117 standard, **factory E-COAT process with an additional ultra violet (UV) top coat on the coating to prevent UV degradation** on both the condenser and evaporator coils if AHU UV lights are used. Provide a **10,000-hour ASTM B117 standard** spray-on application coating for the cabinet casings, chassis, and internal components by a certified applicator for the coating product inside a shop in a controlled environment. No field or job site coating application allowed. Provide with stainless steel fasteners only. For a split-system DOAS, provide the same as above for outdoor unit and provide the same **10,000-hour coating with a UV top coat** for the **evaporator coil** and a **10,000-hour coating** or better for the indoor air handling-unit cabinet casings and internal components if located in an unconditioned mechanical room.

c. MISCELLANEOUS EXTERIOR HVAC RELATED EQUIPMENT (PUMPS, EXPANSION TANKS, POT FEEDERS, ETC.):

For all other HVAC related equipment such as pumps that are exposed to the exterior, provide a **10,000-hour salt spray test or better per ASTM B117** standard coating. Spray-on application is acceptable by a certified applicator for the coating product inside a shop in a controlled environment. No field or job site coating application allowed. Provide with stainless steel fasteners only.

DD3070 HVAC Installation, Start-up, Testing, Equipment Commissioning, and Training

a. 20-Tons and Above:

For all Air Conditioning Equipment 20 tons size or larger, provide a Manufacturer's Representative to supervise the installation, startup and commissioning of the equipment. Manufacturer's Representative must be an employee of the equipment manufacturer with a

minimum of 15 years' experience with installation, startup, commissioning and maintenance of the similar equipment to that proposed.

b. Below 20-Tons:

For all Air Conditioning Equipment smaller than 20 tons size, an approved manufacturer-trained technician shall supervise the installation, startup and commissioning of the equipment. The manufacturer-trained technician must have a minimum of 15 years' experience with installation, startup, commissioning and maintenance of the similar equipment to that proposed.

c. Training:

Training on the operation and maintenance of the system shall be conducted by a factory-trained technician for equipment smaller than 5 tons. For equipment 5 tons are larger, training will be conducted by the approved Manufacturer's Representative.

-End of Amendment-