CORROSION PREVENTION & CONTROL (CPC) DOORS Knowledge Area

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*Marianas Navy and Marine Corps Design and Construction Standards (MDACS)* Summary Information for Doors (September 2011)

The following excerpts from *MDACS* demonstrate the decisions made in extreme environmental severity zones. Note that while not all locations are as severe as the Marianas, *MDACS* was developed to require materials that are necessarily corrosion-resistant due to this zone’s extremely corrosive environment. The requirements include:

* According to section B2030.6, page 56, of *MDACS*, “Provide the services of an Architectural Hardware Consultant (AHC), Certified Door Consultant (CDC), or an Electrified Hardware Consultant (EHC) to assist the Designer of Record in preparation of the door hardware schedule and product selection. The hardware consultant shall sign and seal the door hardware construction submittal. Provide, as far as possible, door hardware of one manufacturer's make. All hardware shall be clearly and permanently marked by the manufacturer where it will be visible after installation.
	+ “All hardware [and fasteners] shall be 316L stainless steel. If 316L is not available as either standard or as a custom option, then the next highest corrosion resistant stainless steel shall be used.
	+ “Exterior doors shall have seal and door bottom to prevent wind driven rain from entering.
	+ “All exterior door hardware shall be designed meet the requirements for Guam's typhoon winds, wind driven rains, wind borne flying debris, wind topographic effect, corrosion and seismic loads as per *UFC* and *ASCE 7* criteria and sections *4.3 Wind, 4.4 Seismic*, and *4.5 Corrosion*.”
* Section 5.2.3.4, *Doors* in *MDACS* states, “Due to the corrosive environment, all exterior doors and frames shall be aluminum doors with dark bronze anodized finish (at all facilities except residential) and fiberglass doors with simulated wood finish (single family residential only) or galvanized painted steel interior garage fire doors / frames that swing out into the garage where fire resistive requirements dictate. All exterior doors shall meet the wind requirements in sections 4.3 (wind), 4.4 (seismic) and 4.5 (corrosion). All exterior and interior door hardware, fasteners, etc. shall be 316L unless not available by special order, then order the next highest corrosive stainless steel available and as last choice, hot dipped galvanized with factory painted high corrosive resistant coatings. Hardware shall include threshold, door bottom, and weather seal. All exterior doors shall have concrete step detail that prevents water from being driven directly under door sills and thresholds, and comply with accessibility. Exterior doors and garage doors shall have weather seals and automatic door bottoms (swing doors) to prevent wind-driven rain from entering facility spaces.”
* Section 5.2.3.4 of *MDACS* provides the following as minimum exterior door requirements:
	+ “Main entrances: Medium stile, full glazed aluminum door with aluminum frame. Provide pair of doors at major facilities and where required.
	+ Side entrances: Flush aluminum door; and provide side-lite/vision panel where required.
	+ Utility and other exterior doors: Flush aluminum door. Provide pair of doors only where required.
	+ Unless otherwise noted in the project requirements, all exterior doors shall be 3'x7'.
	+ Exterior doors shall be protected with sun/rain shade/overhang.
	+ It is required that storefronts and doors with glazing are protected with typhoon shutters.
	+ Glazing requirements at exterior door openings shall meet *IBC* and *ASCE* 7 requirements (latest adopted editions at time of project award). Do not install vision panels in exterior doors unless required by code or UFC criteria. Exterior doors with typhoon-rated vision panels that exceed 100 square inches in area shall require typhoon-rated shutters.
	+ Exterior swing doors shall swing out to allow frame rabbet to act as a stop to prevent door from blowing in and having door seals compress by door against door frame side and to rabbets. Doors to have handicap rated weather sealed thresholds and automatic door bottoms or door shoe with drip. Door threshold shall have concrete recessed seat and 316L stainless steel door sill pan flashing with end dams, rear leg and turned-down front leg. Top of door to have 316L stainless steel (or most corrosive resistant stainless steel available) drip with hook at top of exterior door frame.
	+ For Overhead Roll-up Doors the material shall be 316L stainless steel; metal doors, frames, tracks, angles, plates, torsion springs and accessories shall be hot dipped galvanized and painted.” (paragraph B2030.5, page 55, *MDACS*)