SECTION 10 21 13

TOILET COMPARTMENTS MCBCL-PWD 01/07

PART 1 GENERAL

1.1 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to within the text by the basic designation only.

ALUMINUM ASSOCIATION (AA)

AA DAF45	(2003	3; I	Reaff	irmed	2009)	Designation	System
	for A	Alur	minum	Fini	shes		

ASTM INTERNATIONAL (ASTM)

ASTM A123/A123M	(2013) Standard Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products
ASTM A167	(2011) Standard Specification for Stainless and Heat-Resisting Chromium-Nickel Steel Plate, Sheet, and Strip
ASTM A336/A336M	(2015) Standard Specification for Alloy Steel Forgings for Pressure and High-Temperature Parts
ASTM A385/A385M	(2011) Standard Practice for Providing High-Quality Zinc Coatings (Hot-Dip)
ASTM A653/A653M	(2015; E 2016) Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process
ASTM B221	(2014) Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes
ASTM B221M	(2013) Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes (Metric)
ASTM B36/B36M	(2013) Standard Specification for Brass Plate, Sheet, Strip, and Rolled Bar
ASTM B456	(2011; E 2011) Standard Specification for Electrodeposited Coatings of Copper Plus Nickel Plus Chromium and Nickel Plus

Chromium

- ASTM B86 (2013) Standard Specification for Zinc and Zinc-Aluminum (ZA) Alloy Foundry and Die Castings
- ASTM D6386 (2016) Standard Practice for Preparation of Zinc (Hot-Dip Galvanized) Coated Iron and Steel Product and Hardware Surfaces for Painting
- ASTM D7611/D7611M (2013; E 2014) Standard Practice for Coding Plastic Manufactured Articles for Resin Identification
- ASTM E2129 (2010) Standard Practice for Data Collection for Sustainability Assessment of Building Products

INTERNATIONAL CODE COUNCIL (ICC)

ICC A117.1 COMM (2009) Standard And Commentary and Usable Buildings and Facilities

SOCIETY OF AUTOMOTIVE ENGINEERS INTERNATIONAL (SAE)

SAE AMS2460 (2013; Rev A) Plating, Chromium

U.S. GENERAL SERVICES ADMINISTRATION (GSA)

CID A-A-60003 (Basic) Partitions, Toilet, Complete

U.S. GREEN BUILDING COUNCIL (USGBC)

- LEED BD+C (2009; R 2010) Leadership in Energy and Environmental Design(tm) Building Design and Construction (LEED-NC)
 - U.S. NATIONAL ARCHIVES AND RECORDS ADMINISTRATION (NARA)

36 CFR 1191 Americans with Disabilities Act (ADA) Accessibility Guidelines for Buildings and Facilities; Architectural Barriers Act (ABA) Accessibility Guidelines

1.2 SUBMITTALS

Government approval is required. Submit the following in accordance with Section 01 33 00 SUBMITTAL PROCEDURES:

SD-02 Shop Drawings

Fabrication Drawings Installation Drawings;

SD-03 Product Data

Cleaning and Maintenance Instructions Colors And Finishes

Anchoring Devices and Fasteners Hardware and Fittings Brackets Door Hardware

Toilet Enclosures Room Entrance Screens Urinal Screens Pilaster Shoes

SD-04 Samples

Colors and Finishes; Hardware and Fittings Anchoring Devices and Fasteners

SD-07 Certificates

Warranty

SD-11 Closeout Submittals

1.3 REGULATORY REQUIREMENTS

Conform to ICC All7.1 COMM code for access for the handicapped operation of toilet compartment door and hardware.

1.4 DELIVERY, STORAGE, AND HANDLING

Deliver materials in the manufacturer's original unopened packages with the brand, item identification, and project reference clearly marked. Store components in a dry location that is adequately ventilated; free from dust, water, other contaminants, and damage during delivery, storage, and construction.

1.5 WARRANTY

Provide certification or warranties that toilet partitions will be free of defects in materials, fabrication, finish, and installation and will remain so for a period of not less than 1 year after completion.

PART 2 PRODUCTS

2.1 SYSTEM REQUIREMENTS

Provide a complete and usable toilet partition system, including toilet enclosures, room entrance screens, urinal screens, system of panels, hardware, and support components. Furnish the partition system from a single manufacturer, with a standard product as shown in the most recent catalog data. Submit Fabrication Drawings for toilet partitions and urinal screens consisting of fabrication and assembly details to be performed in the factory. Submit manufacturer's Cleaning and Maintenance Instructions with Fabrication Drawings for review.

2.1.1 Plastic Identification

Verify that plastic products to be incorporated into the project are labeled in accordance with ASTM D7611/D7611M. Where products are not labeled, provide product data indicating polymeric information in the Operation and Maintenance Manual.

Type 1	Polyethylene Terephthalate (PET, PETE)
Type 2	High Density Polyethylene (HDPE)
Туре 3	Vinyl (Polyvinyl Chloride or PVC)
Type 4	Low Density Polyethylene (LDPE)
Type 5	Polypropylene (PP)
Туре б	Polystyrene (PS)
Type 7	Other. Use of this code indicates that the package in question is made with a resin other than the six listed above, or is made of more than one resin listed above, and used in a multi-layer combination.

2.2 MATERIALS

2.2.1 Galvanized Steel Sheet

For concealed conditions if requiered provide galvanized steel sheet cold-rolled, stretcher-level, commercial quality material, conforming to ASTM A653/A653M. Conform surface preparation of material for painting to ASTM D6386, Method A.

2.2.2 Anchoring Devices and Fasteners

Provide steel anchoring devices and fasteners hot-dipped galvanized after fabrication, in conformance with ASTM A385/A385M and ASTM A123/A123M. Conceal all galvanized anchoring devices.

2.2.3 Brackets

Wall brackets shall be two-ear panel brackets, T-style, 25 mm 1-inch stock. Provide stirrup style panel-to-pilaster brackets.

2.2.4 Hardware and Fittings

2.2.4.1 General Requirements

Conform hardware for the toilet partition system to CID A-A-60003 for the specified type and style of partitions. Provide hardware finish highly resistant to alkalis, urine, and other common toilet room acids. Comply latching devices and hinges for handicap compartments with 36 CFR 1191; provide stainless steel devices and hinges with door latches that operate without either tight grasping or twisting of the wrist of the operator. Submit three samples of each item, including anchoring devices and

fasteners. Approved hardware samples may be installed in the work if properly identified.

Material	Conformance Standard
Cold-rolled sheet steel	ASTM A336/A336M commercial quality
	norm noot, commercial quartey
Zinc-base allov	ASTM B86, Allov AC41-A
Brass	ASTM B36/B36M Allow C26800
Drubb	
Aluminum	ASTM B221M ASTM B221
Corrosion-resistant steel	ASTM A167 Type 304

2.2.4.2 Finishes

- a. Corrosion-resistant steel shall have a No. 4 finish.
- b. Exposed fasteners shall match the hardware and fittings.

2.2.5 Door Hardware

2.2.5.1 Hinges

Hinges shall be adjustable to hold in-swinging doors open at any angle up to 90 degrees and outswinging doors to 10 degrees. Provide self-lubricating hinges with the indicated swing. Hinges shall be the cutout-insert type. have the following type of return movement:

- a. Gravity return movement
- 2.2.5.2 Latch and Pull

Latch and pull shall be a combination rubber-faced door strike and keeper equipped with emergency access.

2.2.5.3 Coat Hooks

Coat hooks shall be combination units with hooks and rubber tipped pins.

2.3 PARTITION PANELS AND DOORS

Fabricate partition panels and doors not less than 25 mm 1 inch thick with face sheets not less than 1.006 mm 0.0396 inch thick.

2.3.1 Toilet Enclosures

Conform toilet enclosures to CID A-A-60003, Type I, Style A, floor supported. Furnish width, length, and height of toilet enclosures as shown. Provide a width of 25 mm 1 inch. Finish surface of panels shall be HDPE (High densisty solid polyethylene), Finish 5; water resistant; graffiti resistant; non-absorbent; 6 mm 1/4 inch radius beveled edges. Reinforce panels indicated to receive toilet paper holders or grab bars for mounting of the items required. Provide grab bars to withstand a bending stress, shear stress, shear force, and a tensile force induced by 1112 N 250 lbf. Grab bars shall not rotate within their fittings.

2.3.2 Room Entrance Screens

Conform room entrance screens to CID A-A-60003, Type II, Style A,or floor anchored as sbown in construction documents. Finish surface of screens shall be HDPE (High density solid polyethylene), Finish 5; water resistant; graffiti resistant; non-absorbent; 6 mm1/4 inch radius beveled edges. Furnish length and height of screens as shown. Provide thickness of 25 mm 1 inch. Fabricate screens from the same types of panels, pilasters, and fittings as the toilet partitions.

2.3.3 Urinal Screens

Conform urinal screens to CID A-A-60003, Type III, Style A, floor supported. Provide finish for surface of screens as HDPE (High density solid polyethylene), Finish 5 ; water resistant; graffiti resistant; non-absorbent; 6 mm 1/4 inch radius beveled edges. Furnish width and height of urinal screens as shown. Provide thickness of 25 mm 1 inch. Secure wall hung urinal screens with a minimum of three wall stirrup brackets.1050 mm 42 inch long, continuous flanges. Fabricate screens from the same types of panels and pilasters as the toilet partitions. Use corrosion-resistant steel fittings and fasteners.

2.4 FLOOR-ANCHORED PARTITIONS

Pilasters shall be not less than 31.75 mm 1-1/4 inch thick with face sheets not less than 1.613 mm 0.0635 inch thick. Provide anchoring device at the bottom of the pilaster consisting of a steel bar not less than 12.7 by 22.2 mm 1/2 by 7/8 inch welded to the reinforced face sheets and having not less than two 9.5 mm 3/8 inch round anchorage devices for securing to the floor slab. Provide anchorage devices complete with threaded rods, expansion shields, lock washers, and leveling-adjustment nuts. Trim piece at the floor shall be 76.2 mm 3 inch high and fabricated from not less than 0.76 mm 0.030 inch thick corrosion-resistant steel.

2.5 OVERHEAD-BRACED PARTITIONS

Pilasters shall be not less than 31.75 mm 1-1/4 inch thick with face sheets not less than 1.0 mm 0.0393 inch thick. Provide anchoring device at the bottom of the pilaster consisting of a channel-shaped floor stirrup fabricated from not less than 1.6 mm 0.0635 inch thick material and a leveling bolt. Secure the stirrup to the pilaster with not less than a 4.76 mm 3/16 inch bolt and nut after the pilaster is leveled. Secure the stirrup to the floor with not less than two lead expansion shields and sheetmetal screws. Fabricate overhead brace from a continuous extruded aluminum tube not less than 25.4 mm 1 inch wide by 38.1 mm 1-1/2 inch high, 3.2 mm 0.125-inch wall thickness. Finish shall be AA-C22A31 in accordance with AA DAF45. Set and secure brace into the top of each pilaster. Fabricate 76.2 mm 3 inch high trim piece at the floor from not less than 0.76 mm 0.030 inch thick corrosion-resistant steel.

2.6 PILASTER SHOES

Provide shoes at pilasters to conceal floor-mounted anchorage. Pilaster shoes shall be stainless steel. Height shall be 76 mm 3 inches minimum.

2.7 HARDWARE

Provide hardware for the toilet partition system that conforms to CID A-A-60003 for the specified type and style of partitions. Provide hardware pre-drilled by manufacturer. Use a hardware finish that is highly resistant to alkalis, urine, and other common toilet room acids. Hardware includes: chrome plated non ferrous cast pivot hinges, gravity type, adjustable for door close positioning; nylon bearings; black anodized aluminum door latch; door strike and keeper with rubber bumper; and cast alloy chrome plated coat hook and bumper. Provide latching devices and hinges for handicap compartments complying with 36 CFR 1191 and stainless steel door latches that operate without either tight grasping or twisting of the wrist of the operator. Use stainless steel, tamper proof type screws and bolts. Wall mounting brackets must be continuous, full height, stainless steel, in accordance with toilet compartment manufacturer's instructions. Provide floor-mounted anchorage consisting of corrosion-resistant anchoring assemblies with threaded rods, lock washers, and leveling adjustment nuts at pilasters for structural connection to floor.

2.8 COLORS AND FINISHES

2.8.1 Colors

Provide manufacturer's full range color charts of finishes for toilet partition system components.

2.8.2 Finish No. 5

Provide solid plastic fabricated of polymer resins (polyethylene) formed under high pressure rendering a single component section not less than 25.4 mm one inch thick. Colors shall extend throughout the panel thickness. Provide exposed finish surfaces: smooth, waterproof, non-absorbent, and resistant to staining and marking with pens, pencils, or other writing devices. Solid plastic partitions shall not show any sign of deterioration when immersed in the following chemicals and maintained at a temperature of 27 degrees C 80 degrees F for a minimum of 30 days:

Acetic Acid (80 percent)	Hydrochloric Acid (40 percent)
Acetone	Hydrogen Peroxide (30 percent)
Ammonia (liquid)	Isopropyl Alcohol
Ammonia Phosphate	Lactic Acid (25 percent)
Bleach (12 percent)	Lime Sulfur
Borax	Nicotine
Brine	Potassium Bromide

Caustic Soda	Soaps
Chlorine Water	Sodium Bicarbonate
Citric Acid	Trisodium Phosphate
Copper Chloride	Urea; Urine
Core Oils	Vinegar

PART 3 EXECUTION

3.1 PREPARATION

Take field measurements prior to the preparation of drawing and fabrication to ensure proper fits. Verify that field measurements, surfaces, substrates and conditions are as required, and ready to receive work. Verify correct spacing of plumbing fixtures. Verify correct location of built in framing, anchorage, and bracing. Report in writing to Contracting Officer prevailing conditions that will adversely affect satisfactory execution of the work of this section. Do not proceed with work until unsatisfactory conditions have been corrected.

3.2 INSTALLATION

Install partitions rigid, straight, plumb, and level, with the panels centered between the fixtures. Provide a panel clearance of not more than 13 mm 1/2 inch and secure the panels to walls and pilasters with not less than two wall brackets attached near the top and bottom of the panel. Locate wall brackets so that holes for wall bolts occur in masonry or tile joints. Secure Panels to pilasters with brackets matching the wall brackets. Provide for adjustment due to minor floor variations. Locate head rail joints at pilaster center lines. Install adjacent components for consistency of line and plane. Equip each door with hinges, one door latch, and one coat hook and bumper. Align hardware to uniform clearance at vertical edges of doors.

- a. Secure panels to hollow plastered walls with toggle bolts using not less than M6x1 1/4-20 screws of the length required for the wall thickness. Toggle bolts shall have a load-carrying strength of not less than 2668.9 N 600 pounds per anchor.
- b. Secure panels to ceramic tile on hollow plastered walls or hollow concrete-masonry walls with toggle bolts using not less than M6x1 1/4-20 screws of the length required for the wall thickness. Toggle bolts shall have a load-carrying strength of not less than 2668.9 N 600 pounds per anchor.
- c. Secure panels to solid masonry or concrete with lead or brass expansion shields designed for use with not less than M6x1 1/4-20 screws, with a shield length of not less than 38.1 mm 1-1/2 inch. Expansion shields shall have a load-carrying strength of not less than 2668.9 N 600 pounds per anchor.

d. Submit Installation Drawings for metal toilet partitions and urinal screens showing plans, elevations, details of construction, hardware, reinforcing and blocking, fittings, mountings and escutcheons. Indicate on drawings the type of partition, location, mounting height, cutouts, and reinforcement required for toilet-room accessories.

3.3 FLOOR-ANCHORED PARTITIONS

Secure pilasters to the floor with the anchorage device specified. Make all leveling devices readily accessible for leveling, plumbing, and tightening the installation. Level tops of doors with tops of pilasters when doors are in a closed position. Expansion shields shall have a minimum 50.8 mm 2-inch penetration into the concrete slab.

3.4 OVERHEAD-BRACED PARTITIONS

Secure pilasters to the floor with the anchorage device specified. Make all leveling devices readily accessible for leveling, plumbing, and tightening the installation. Secure overhead brace to the pilaster face with not less than two fasteners per face. Expansion shields shall have a minimum 50.8 mm 2-inch penetration into the concrete slab. Make tops of doors parallel with the overhead brace when doors are in a closed position.

3.5 FINAL ADJUSTMENT

After completion of the installation, make final adjustments to the pilaster-leveling devices, door hardware, and other working parts of the partition assembly. Doors shall have a uniform vertical edge clearance of approximately 5 mm 3/16 inch and shall rest open at approximately 30 degrees when unlatched.

3.6 CLEANING

Baked enamel finish shall be touched up with the same color of paint that was used for the finish. Clean all surfaces of the work, and adjacent surfaces soiled as a result of the work, in an approved manner compliant

with the manufacturer's recommended cleaning and protection from damage procedures until accepted. Remove all equipment, tools, surplus materials, and work debris from the site.

-- End of Section --