

Part 1 General

1.1 REFERENCES

- .1 ASTM A123/A123M-08 - Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products.
- .2 ASTM A653/A653M-08 - Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process.
- .3 ASTM F1450-05, Standard Test Methods for Hollow Metal Swinging Door Assemblies for Detention Facilities.
- .4 CAN/CGSB 1.108-M89, Bituminous Solvent Type Paint.
- .5 CAN/CGSB 1.181, Ready-Mixed Organic Zinc-Rich Coating.
- .6 CAN/CGSB 12.1-M90, Tempered or Laminated Safety Glass.
- .7 NAAMM/HMMA (National Association of Architectural Metal Manufacturers/Hollow Metal Manufacturers Association)
 - .1 NAAMM/HMMA 863-04, Guide Specifications for Detention Security Hollow Metal Doors and Frames.

1.2 SYSTEM DESCRIPTION

- .1 Execute Work to assure a complete detention space that:
 - .1 Is vandal proof internally.
 - .2 Will resist escape attempts (without specialized tools).
 - .3 Has no components that can be removed or disabled without special tools or equipment.
 - .4 Has no sharp edges, rough jagged items, or protruding materials exposed within the detention space.

1.3 PERFORMANCE REQUIREMENTS

- .1 Construct doors to requirements of NAAMM/HMMA 863 and ASTM F1450, Grade 3.
- .2 Static load: Tested by centrally applied load of 4000 kg at quarter points on door.
 - .1 Maximum deflection: 30 mm.
 - .2 Maximum permanent set: 10 mm.
- .3 Rack test: Tested by concentrated load of 2645 kg on one unsupported corner of door.
 - .1 Door must not fail.
 - .2 Maximum deflection: 50 mm.

- .4 Impact load test: Tested to ASTM F1450, Grade 3, with door mounted in frame as in normal cell setting. Door subjected to series of impact loads of 271 Joules following pattern of targets from pendulum ram, delivered from push side of door. Number of impacts:
 - .1 200 lock or strike impacts.
 - .2 75 hinge impacts.
 - .3 100 corner panel impacts.

1.4 SUBMITTALS

- .1 Section 01 33 00: Submittal Procedures.
- .2 Product Data: Indicate door and frame configurations, location of cut-outs for hardware reinforcement.
- .3 Shop Drawings: Indicate door and frame elevations, reinforcement, hardware placement, and finishes.
- .4 Test Reports: Submit substantiating engineering data, test results of previous tests by independent laboratory which purport to meet performance criteria, and other supportive data.
- .5 Installation Data: Manufacturer's special installation requirements.

1.5 REGULATORY REQUIREMENTS

- .1 Conform to applicable code for detention occupancy requirements.

1.6 DELIVERY, STORAGE, AND PROTECTION

- .1 Section 01 61 00: Transport, handle, store, and protect products.
- .2 Protect pre-finished surfaces with wrapping or strippable coating.

Part 2 Products

2.1 MATERIALS

- .1 Swinging Cell Doors and Frames:
 - .1 Doors: Flush surface design, faces 2.0 mm thick hot rolled steel, 50 mm overall thickness, vertical steel tube frame for internal strength, full welded construction.
 - .2 Frames: 2.3 mm thick, hot rolled steel, welded construction.
 - .3 Frame Depth: Thickness of supporting wall (frame throat measurement), plus wrap around edges both sides.
 - .1 Confirm door thickness prior to ordering.
 - .4 Frame and doors mortised to accept security devices.
 - .5 Prepare frame with anchors, compatible with wall construction.

- .6 Metal Protection: ASTM A653/A653M hot dipped galvanized, Z275 (G90) coating designation.

2.2 HARDWARE

- .1 Lockset: Best 45H7ST15H-626.
- .2 Door Pulls: Surface mounted 'D' pull.
- .3 Door closer: Allegion LCN 4040XP-3077EDA-TBTRX.
 - .1 Extra Duty Arm.
 - .2 TB and TORX machine screws.
- .4 Door protection plates: Kick plate type 1.27 mm thick stainless steel, No. 4 finish; 250 mm (10 inch) height, full width of door. Provide with tamper-proof fasteners.
 - .1 Install one kick plate to each side of door.
- .5 Keying: Coordinate with Departmental Representative for keying.
 - .1 Key locks individually and supply maximum three keys for each lock.
 - .2 Each key shall be stamped with a code number and date;
 - .3 Deliver keys for detention hardware locks in a sealed container to the designated CSC Representative – typically the Security Maintenance Officer.
 - .4 Use separate construction key cylinders until substantial completion of the project.

2.3 ACCESSORIES

- .1 Fasteners: Tamper-proof screws, bolts, nuts and lock washers compatible with material being secured to substrate material.
- .2 Glazing for Doors: 12 mm thick tempered glass to CAN/CGSB 12.1.
- .3 Isolation coating: Bituminous paint to CAN/CGSB 1.108.

2.4 FABRICATION

- .1 Fabricate components in a secure fashion, consistent with security level of facility.
- .2 Fabricate frames and doors with internal hardware reinforcement welded securely.
- .3 Fabricate door with cuff port as indicated.

2.5 FINISHES

- .1 Touch-Up Primer for Galvanized Steel Surfaces: CAN/CGSB 1.181.

- .2 Concealed Steel Items: Galvanized in accordance with ASTM A123/A123M to 610 g/m² (2.0 oz/ft²).
- .3 Apply one (1) coat of bituminous paint to concealed metal surfaces in contact with cementitious or dissimilar materials.
- .4 Finish paint: Marine grade enamel paint, shop-applied.
 - .1 Colour: As selected by Departmental Representative.

Part 3 Execution

3.1 EXAMINATION

- .1 Verify existing conditions before starting work.
- .2 Verify that opening sizes and tolerances are acceptable.
- .3 Verify dimensions, tolerances, and method of attachment with other work.

3.2 INSTALLATION

- .1 Install components to manufacturer instructions.
- .2 Install frames, doors, and hardware by factory trained and authorized installers.
- .3 Install components, plumb and level.
- .4 Install frames within a positioning tolerance, plus or minus 1.5 mm (1/16 inch).
- .5 Solidly brace frames both vertically and horizontally and secure to opening framing to fully resist specified impact load.
- .6 Install glazing.
- .7 Touch-up factory finished doors with matching material and colours.

3.3 ADJUSTING

- .1 Adjust operating components for smooth operation.

END OF SECTION