

1 GENERAL

1.01 REFERENCES

- .1 American Society for Testing and Materials International (ASTM)
 - .1 ASTM A 653/A 653M-15, Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process.
- .2 Canadian Standards Association (CSA International)
 - .1 CSA-G40.20-13/G40.21-13, General Requirements for Rolled or Welded Structural Quality Steel/Structural Quality Steel.
 - .2 CSA W59-13, Welded Steel Construction (Metal Arc Welding).
- .3 Canadian Steel Door Manufacturers' Association (CSDMA)
- .4 National Fire Protection Association (NFPA)
 - .1 NFPA 80-2010, Standard for Fire Doors and Fire Windows.
- .5 Underwriters' Laboratories of Canada (ULC)
 - .1 CAN/ULC-S104-10, Standard Method for Fire Tests of Door Assemblies.
 - .2 CAN/ULC-S105-09, Standard Specification for Fire Door Frames Meeting the Performance Required by CAN4-S104.

1.02 SUBMITTALS

- .1 Provide submittals in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Provide shop drawings:
 - .1 Indicate each type of door, material, steel core thicknesses, mortises, reinforcements, location of exposed fasteners, glazed and louvred openings, arrangement of hardware, fire ratings and finishes.
 - .2 Indicate each type frame material, core thickness, reinforcements, glazing stops, location of anchors and exposed fastenings, reinforcing, fire ratings and finishes
 - .3 Include schedule identifying each unit, with door marks and numbers relating to numbering on drawings and door schedule.

2 PRODUCTS

2.01 MATERIALS

- .1 Hot dipped galvanized steel sheet: to ASTM A 653M, Z275 for exterior installations, minimum nominal base steel thickness in accordance with the following:
 - .1 Door face sheets: 1.6mm
 - .2 Frames: 1.6 mm

2.02 DOOR CORE MATERIALS

- .1 Exterior Doors: face sheets welded, with a core composed of rigid modified polyisocyanurate, closed cell type; minimum density of 32 kg/m and RSI of 1.9.

2.03 ADHESIVES

- .1 Steel components: heat resistant, spray grade, resin reinforced neoprene/rubber (polychloroprene) based, low viscosity, contact cement.

2.04 PRIMER

- .1 Low VOC type recommended by door and frame manufacturer.

2.05 PAINT

- .1 Field paint steel doors and frames in accordance with Section 09 91 99 - Painting. Protect weather strips from paint. Provide final finish free of scratches or other blemishes.

2.06 ACCESSORIES

- .1 Door silencers: single stud rubber/neoprene type.
- .2 Metallic paste filler: to manufacturer's standard.
- .3 Sealant: in accordance with Section 07 92 00 - Sealants

2.07 FRAMES FABRICATION GENERAL

- .1 Fabricate frames in accordance with CSDMA specifications.
- .2 Fabricate frames to profiles and maximum face sizes as indicated.
- .3 Exterior frames: 1.6 mm welded type construction, thermally broken.
- .4 Factory blank, reinforce, drill and tap frames for surface, recessed, mortised, templated and electronic hardware as required using templates provided by finish hardware supplier.
- .5 Protect mortised cutouts with steel guard boxes.
- .6 On site modifications are not acceptable.
- .7 Prepare frame for door silencers, 3 for single door, 2 at head for double door.
- .8 Manufacturer's nameplates on frames and screens are not permitted.
- .9 Conceal fastenings except where exposed fastenings are indicated.
- .10 Provide factory-applied touch up primer at areas where zinc coating has been removed during fabrication.

2.08 FRAME ANCHORAGE

- .1 Provide appropriate anchorage to floor and wall construction.
- .2 Locate each wall anchor immediately above or below each hinge reinforcement on hinge jamb and directly opposite on strike jamb.
- .3 Provide 2 anchors for rebate opening heights up to 1520 mm and 1 additional anchor for

each additional 760 mm of height or fraction thereof.

- .4 Locate anchors for frames in existing openings not more than 150 mm from top and bottom of each jambs and intermediate at 660 mm on centre maximum.

2.09 FRAMES: WELDED TYPE

- .1 Welding in accordance with CSA W59.
- .2 Accurately mitre or mechanically joint frame product and securely weld on inside of profile.
- .3 Cope accurately and securely weld butt joints of mullions, transom bars, centre rails and sills.
- .4 Grind welded joints and corners to a flat plane, fill with metallic paste and sand to uniform smooth finish.
- .5 Securely attach floor anchors to inside of each jamb profile.
- .6 Weld in 2 temporary jamb spreaders per frame to maintain proper alignment during shipment.
- .7 Provide thermally broken frames at all exterior doors.

2.10 DOOR FABRICATION GENERAL

- .1 Doors: swing type, flush.
- .2 Fabricate doors with longitudinal edges lock seamed and adhesive assisted.
- .3 Factory blank, reinforce, drill and tap doors for surface, recessed, mortised, templated and electrified hardware as required using templates provided by finish hardware supplier.
- .4 On site modifications are not acceptable.
- .5 Factory reinforce doors as required for hardware.
 - .1 Provide recessed channels top and bottom of interior doors, spot welded in-place
- .6 Provide factory-applied touch-up primer at areas where zinc coating has been removed during fabrication.
- .7 Manufacturer's nameplates on doors are not permitted.
- .8 Provide insulated doors at all exterior locations.

3 EXECUTION

3.01 INSTALLATION GENERAL

- .1 Install doors and frames to CSDMA Installation Guide.

3.02 FRAME INSTALLATION

- .1 Set frames plumb, square, level and at correct elevation.
- .2 Secure anchorages and connections to adjacent construction.
- .3 Brace frames rigidly in position while building-in. Install temporary horizontal wood spreader at third points of door opening to maintain frame width. Provide vertical support at centre of head for openings over 1200 mm wide. Remove temporary spreaders after frames are built-in.
- .4 Make allowances for deflection of structure to ensure structural loads are not transmitted to frames.
- .5 Caulk perimeter of frames between frame and adjacent material.

3.03 DOOR INSTALLATION

- .1 Install doors and hardware in accordance with hardware templates and manufacturer's instructions and Section 08 71 00 - Door Hardware.
- .2 Provide even margins between doors and jambs and doors and finished floor surface as follows.
 - .1 Hinge side: 1.0 mm.
 - .2 Latchside and head: 1.5 mm.
 - .3 Finished floor surface: 13 mm.
- .3 Adjust operable parts for correct function.

3.04 FINISH REPAIRS

- .1 Touch up with primer finishes damaged during installation.
- .2 Fill exposed frame anchors and surfaces with imperfections with metallic paste filler and sand to a uniform smooth finish.

END OF SECTION

Part 1 - General

- 1.1 RELATED SECTIONS** .1 Section 08 11 00 - Metal Doors and Frames
- 1.2 REFERENCES** .1 Canadian Steel Door and Frame Manufacturers' Association (CSDFMA).
.1 CSDFMA Canadian Metric Guide for Steel Doors and Frames (Modular Construction: Standard hardware location dimensions, or as indicated for special conditions).
.2 American National Standards Institute / Builders Hardware Manufacturers Association:
.1 ANSI/BHMA A156.1-2006 Butts and Hinges.
.2 ANSI/BHMA A156.5-2010 Auxiliary Locks & Associated Products.
.3 ANSI/BHMA A156.18-2006 Materials and Finishes.
.4 ANSI/BHMA A156.21-2009 Thresholds.
.5 ANSI/BHMA A156.22-2005 Door Gasketing and Edge Seal Systems.
- 1.3 SUBMITTALS** .1 Product Data:
.1 Submit manufacturer's printed product literature, specifications and data sheets indicating hardware proposed, including ANSI function where ANSI used in this specification, grade, type, series, BHMA finish, fire label listing, in accordance with Section 01 33 00 – Submittal Procedures.
.2 Samples:
.1 Submit samples of each type of hardware specified in accordance with Section 01 33 00 – Submittal Procedures.
.2 Identify each sample by label indicating applicable specification paragraph number, brand name and number, finish and hardware package number.
.3 After approval samples will be returned for incorporation in the Work.
.3 Hardware List:
.1 Submit a typewritten Finishing Hardware

- schedule in accordance with Section 01 33 00 – Submittal Procedures.
 - .2 Indicate specified hardware, including make, model, base material, function, size, finish and other pertinent information.
 - .4 Manufacturer's Instructions:
 - .1 Submit manufacturer's installation instructions.
- 1.4 QUALITY ASSURANCE**
 - .1 Regulatory Requirements:
 - .1 Use hardware for doors in fire separations and exit doors certified by a Canadian Certification organization accredited by Standards Council of Canada.
 - .2 All fire and life safety codes shall be met as required by the authority having jurisdiction.
 - .3 Use lock and latchsets with lever handles meeting requirements of CAN/CSA- B651, Barrier Free Design, unless specified otherwise.
 - .4 Pre-installation Meetings: conduct pre-installation meeting to verify project requirements, manufacturer's installation instructions and manufacturer's warranty requirements.
- 1.5 DELIVERY, STORAGE AND HANDLING**
 - .1 Packing, Shipping, Handling and Unloading:
 - .1 Deliver, store, handle and protect materials in accordance with Section 01 61 00 – Common Products Requirements.
 - .2 Package each item of hardware including fastenings, separately or in like groups of hardware, label each package as to item definition and location.
 - .2 Storage and Protection:
 - .1 Store finishing hardware in locked, clean and dry area.
- 1.6 WASTE DISPOSAL AND MANAGEMENT**
 - .1 Remove from site and dispose of all packaging materials at appropriate recycling

facilities.

- .2 Dispose of all packaging material in appropriate on-site bin for recycling in accordance with site waste management program.

Part 2 - Products

2.1 HARDWARE ITEMS

- .1 Only door hardware certified to ANSI/BHMA standards is acceptable for use on this project.
- .2 Use one manufacturer's products only for all similar items.

2.2 DOOR HARDWARE

- .1 Butts and Hinges shall comply with ANSI/BHMA A156.1
 - .1 A2112 - Brass material with stainless steel pin, full mortise, exposed anti-friction ball bearing, Grade 2, standard weight.
 - .2 Supply 1-1/2 pair per door leaf for doors up to 2285mm in height. Supply one additional hinge for each additional 762mm of height or fraction thereof.
Doors, 45mm thickness, up to 914mm in width, supply 114mm high hinges; over 914mm to 1220mm, supply 127mm high hinges.
 - .3 NRP - non removable pin.
- .2 Threshold shall comply with ANSI/BHMA A156.21
 - .1 Type J32100. Extruded aluminum. Oversized in length to allow coping around exterior pressed steel frame faces. Width to suit jamb and floor conditions. Refer to architectural details.
- .3 Door Sweep shall comply with ANSI/BHMA A156.22
 - .1 Type R3A436. Aluminum extrusion c/w insert of black nylon bristles. Applied to exterior face of door.

Predrilled with oblong holes for adjustment. Length to suit width of door.

- .4 Weatherstripping shall comply with ANSI/BHMA A156.22
 - .1 Type R3C296. Extruded aluminum with neoprene insert. Type R3E296 with silicone rubber insert where fire label is required. Predrilled with oblong screw holes for adjustment. Designed to provide continuous weather seal at head. Surface hardware to be attached to frame through weatherstrip section. Confirm frame stop width sufficient to support 38.1±mm wide extrusion. Provide shim as required.
 - .2 Type R3C296*. Extruded aluminum with neoprene insert. Additional support leg of extrusion prevents buckling. Predrilled with oblong screw holes for adjustment. Screw attachment does not interfere with neoprene.
- .5 Auxilliary Locks and Associated Products. Deadlocks to ANSI/BHMA A156.5.
 - .1 Grade 1 small case mortise deadbolt with 25mm throw bolt. Deadbolt operated by key from inside. No trim on opposite side.

2.4 FASTENINGS

- .1 All hardware is to be installed using manufacturers' supplied fasteners. Failure to comply may void warranties and applicable licensed labels. Self tapping/tek screws will not be acceptable on this project.
- .2 Supply screws, bolts, expansion shields and other fastening devices required for satisfactory installation and operation of hardware.
- .3 Exposed fastening devices to match finish hardware.

2.5 KEYING

- .1 All locks shall be keyed into an existing keying System.
- .2 Supply (3) Master keys
- .3 With the exception of the construction master keys, which are to be given to the Contractor, all permanent keys are to be

delivered directly to the Departmental Representative.

- .4 All cylinders are to be supplied with cams / tailpieces suitable for specified lock functions. Supply all compression rings, trim collars and blocking rings to suit.

2.6 FINISHES

- .1 Materials and Finishes shall comply with ANSI/BHMA A156.18

Hinges	626	satin chromium plating on brass
Deadlocks	626	satin chromium plated
Threshold & W/Stripping	AL	clear anodized aluminum

Part 3 - Execution

3.1 MANUFACTURER'S INSTRUCTIONS

- .1 Compliance: comply with manufacturer's written data, including product technical bulletins, product catalogue installation instructions, product carton installation instructions and data sheets.
- .2 When requested, furnish metal door and frame manufacturers with complete instructions and templates for preparation of their work to receive hardware.
- .3 Furnish manufacturer's instructions for proper installation of each hardware component.

3.2 INSTALLATION

- .1 Install hardware to standard hardware location dimensions in accordance with Canadian Metric Guide for Steel Doors and Frames (Modular Construction) prepared by Canadian Steel Door and Frame Manufacturers' Association, or as indicated for special conditions.
- .2 Thresholds are to be coped around the pressed steel frames. Installer to caulk threshold base to ensure proper seal.
- .3 Weatherstripping is not to be installed until final coat of paint has been applied to the door and frame and is completely dry.

- .4 Door Supplier, when templating, must consider surface mounted w/stripping which is 8.0±mm thick. Exit device strikes, door closer parallel arm brackets and overhead stop/holder brackets will mount on top of the weatherstripping.

3.3 ADJUSTING

- .1 Adjust door hardware for optimum, smooth operating condition, safety and for weather tight closure.
- .2 Lubricate hardware, operating equipment and other moving parts.
- .3 Adjust door hardware to provide tight fit at contact points with frames.

3.4 CLEANING

- .1 Perform cleaning after installation to remove construction and accumulated environmental dirt.
- .2 Clean hardware with damp cloth and approved non-abrasive cleaner. Polish hardware in accordance with manufacturer's instructions.
- .3 Remove protective material from hardware items where present.
- .4 Upon completion of installation, remove surplus materials, rubbish, tools and equipment barriers.

3.6 HARDWARE SCHEDULE

- .1 The following is a list of hardware to be used to define required standards on this project.

3	EA	HINGE	A2112 114 x 101mm NRP	626
1	EA	DEADLOCK	L464P x 10-079 STRIKE	626
1	LEN	THRESHOLD	J32100 x 1016mm	AL
1	EA	DOOR SWEEP	R3A436 x 915mm	AL
2	LEN	W/STRIPPING	R3C296* x 2150mm (JAMBS)	AL
1	LEN	W/STRIPPING	R3C296 x 915mm (HEAD)	AL
INSTALL BEFORE DOOR CLOSER				

END OF SECTION