

**1 General****1.1 RELATED SECTIONS**

- .1 Section 07 92 00 - Joint Sealants.
- .2 Section 08 71 00 - Door Hardware.
- .3 Section 09 91 23 - Interior Painting.

**1.2 REFERENCES**

- .1 American Society for Testing and Materials (ASTM).
  - .1 ASTM A 653/A 653M-15e1, Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process.
  - .2 ASTM B 29-14, Specification for Refined Lead.
  - .3 ASTM B 749-14, Specification for Lead and Lead Alloy Strip, Sheet and Plate Products.
- .2 Canadian General Standards Board (CGSB).
  - .1 CAN/CGSB-1.181-99, Ready-Mixed Organic Zinc-Rich Coating.
- .3 Canadian Standards Association (CSA).
  - .2 CSA W59-03 (R2008), Welded Steel Construction (Metal Arc Welding).
- .4 Canadian Steel Door and Frame Manufacturers' Association, (CSDMA).
  - .1 CSDMA, Recommended Specifications for Commercial Steel Doors and Frames, 2006.
  - .2 CSDMA, Selection and Usage Guide for Commercial Steel Doors, 2009.

**1.3 DESIGN REQUIREMENTS**

- .1 Design door frame assembly to accommodate to expansion and contraction when subjected to minimum and maximum surface temperature of -35°C to 35°C.

**1.4 ACTION AND INFORMATIONAL SUBMITTALS**

- .1 Submit shop drawings in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Indicate each type frame material, core thickness, reinforcements, glazing stops, location of anchors and exposed fastenings and reinforcing fire rating finishes.
- .3 Include schedule identifying each unit, with door marks and numbers relating to numbering on drawings and door schedule.
- .4 Submit test and engineering data, and installation instructions.

**1.5 SAMPLES**

- .1 Submit samples in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Submit one 300 x 300 mm corner sample of each type of frame.
  - .1 Show glazing stops.

**1.6 WASTE MANAGEMENT AND DISPOSAL**

- .1 Separate and recycle waste materials.
- .2 Place materials defined as hazardous or toxic waste in designated containers.

- .3 Ensure emptied containers are sealed and stored safely for disposal away from children.
- .4 Place materials defined as hazardous or toxic waste in designated containers, and place used sealant and adhesive tubes and containers in areas designated for hazardous waste.
- .5 Return solvent and oil soaked rags, used during installation, for contaminant recovery, proper disposal, or appropriate cleaning with no contaminant release to water systems.
- .6 Close and seal tightly all partly used sealant and adhesive containers and store protect in well ventilated fire-safe area at moderate temperature.
- .7 Separate corrugated cardboard and place in designated areas for recycling.
- .8 Fold up metal banding, flatten, and place in designated area for recycling.
- .9 Collect wood packing shims and pallets and place in designated area for recycling and reuse.
- .10 Do not dispose of paints or solvents by pouring on the ground. Place in designated containers and ensure proper disposal in accordance with federal, provincial and municipal regulations.
- .11 Solvent based paints, which cannot be reused must be treated as hazardous waste and disposed of in an appropriate manner in accordance with hazardous waste regulations. Empty paint cans are to be dry prior to disposal or recycling (where available).
- .12 Where paint recycling is available collect all waste paint by type and provide for delivery to recycling or collection facility.
- .13 Paints and finishes are regarded as hazardous products and are subject to regulations for their disposal. Information on these controls can be obtained from the Provincial Ministries of Environment and Regional levels of Government.

## **2 Products**

### **2.1 MATERIALS**

- .1 Hot dipped galvanized steel sheet: to ASTM A 653M, ZF75, minimum base steel thickness in accordance with CSDFMA Table 1 - Thickness for Component Parts.
- .2 Composites: balance of core materials used in conjunction with lead: in accordance with manufacturers' proprietary design.
- .3 The manufacturing process must adhere to Lifecycle Assessment Standards as per CAN/CSA-ISO 14040-06 (R2016).

### **2.2 PRIMERS**

- .1 Touch-up prime CAN/CGSB-1.181-99.

### **2.3 ACCESSORIES**

- .1 Door silencers: single stud rubber/neoprene type.
- .2 Metallic paste filler: to manufacturer's standard.
- .3 Fabricate glazing stops as formed channel, minimum 16 mm height, accurately fitted, butted at corners and fastened to frame sections with counter-sunk oval head sheet metal screws.

- .4 Glazing:
  - .1 Clear Safety Glass:
    - .1 GL-1 6mm tempered
    - .2 GL-2 9mm tempered.
  - .2 Wired glass; 6mm thick, square pattern mesh style.

## **2.4 FRAMES FABRICATION GENERAL**

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

## **2.5 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 o.c. maximum.

## **2.6 FRAMES: WELDED TYPE**

- .1 Welding in accordance with CSA W59-03 (R2008).
- .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 Securely attach lead to inside of frame profile from return to jamb soffit (inclusive) on door side of frame only.

### **3 Execution**

#### **3.1 INSTALLATION GENERAL**

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

#### **3.2 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 1150 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.

#### **3.3 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**

**1 General****1.1 RELATED WORK**

- .1 Section 08 11 00 – Metal Doors & Frames

**1.2 REFERENCE STANDARDS**

- .1 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.
- .2 CAN/CGSB-69.18-M90/ANSI/BHMA A156.1-2013, Butts and Hinges.
- .3 CAN/CGSB-69.19-93/ANSI/BHMA A156.3-2014, Exit Devices.
- .4 CAN/CGSB-69.20-M90/ANSI/BHMA A156.4-2013, Door Controls (Closers).
- .5 CAN/CGSB-69.22-M90/ANSI/BHMA A156.6-2010, Architectural Door Trim.
- .6 CAN/CGSB-69.24-M90/ANSI/BHMA A156.8-2010, Door Controls - Overhead Holders.
- .7 CAN/CGSB-69.29-93/ANSI/BHMA A156.13-2017, Mortise Locks and Latches.
- .8 CAN/CGSB-69.31-M89/ANSI/BHMA A156.15-2016 Closer/Holder Release Device.
- .9 CAN/CGSB-69.32-M90/ANSI/BHMA A156.16-2013, Auxiliary Hardware.
- .10 CAN/CGSB-69.34-93/ANSI/BHMA A156.18-2016, Materials and Finishes.

**1.3 REQUIREMENTS REGULATORY AGENCIES**

- .1 Hardware for doors in fire separations and exit doors certified by a Canadian Certification Organization accredited by Standards Council of Canada.

**1.4 SAMPLES**

- .1 Submit samples 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.

**1.5 HARDWARE LIST**

- .1 Submit contract hardware list in accordance with Section 01 33 00 - Submittal Procedures.

- .2 Indicate specified hardware, including make, model, material, function, size, finish and other pertinent information.

## **1.6 MAINTENANCE DATA**

- .1 Provide operation and maintenance data for door closers, locksets, door holders and fire exit hardware for incorporation into manual specified in Section 01 78 00 - Closeout Submittals.
- .2 Brief maintenance staff regarding proper care, cleaning, and general maintenance.

## **1.7 MAINTENANCE MATERIALS**

- .1 Provide maintenance materials in accordance with Section 01 78 00 - Closeout Submittals.
- .2 Supply two sets of wrenches for door closers, locksets and fire exit hardware.

## **1.8 DELIVERY AND STORAGE**

- .1 Store finishing hardware in locked, clean and dry area.
- .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 Products**

### **2.1 HARDWARE ITEMS**

- .1 Use one manufacturer's products only for all similar items.

### **2.2 DOOR HARDWARE**

- .1 Locks and latches:
  - .1 Mortise locks and latches: to CAN/CGSB-69.29, series 1000 mortise lock, grade 1, designed for function and keyed to base building standard.
  - .2 Lever handles: Plain flat face design with return to 12 mm from door face
  - .3 Roses: Plain, max 54 mm diameter round design.
  - .4 Normal strikes: box type, lip projection.
  - .5 Cylinders: key into existing keying system as directed.
  - .6 Finished to 630
- .2 Butts and hinges:

- .1 Butts and hinges: to CAN/CGSB-69.18, designated by letter A and numeral identifiers, followed by size and finish, listed in Hardware Schedule.
- .2 All hinges to be supplied complete with flat button tips.
- .3 Door Closers and Accessories:
  - .1 Door controls (closers): to CAN/CGSB-69.20, designated by letter C and numeral identifiers listed in Hardware Schedule, cast iron body 41 mm cover projection finished to 689.
  - .2 Door controls - overhead holders: to CAN/CGSB-69.24, designated by letter C and numeral identifiers listed in Hardware Schedule, finished to 630.
- .4 Architectural door trim: to CAN/CGSB-69.22, designated by letter J and numeral identifiers listed in Hardware Schedule, finished to 630.
  - .1 Door protection plates: kick plate and push plates 1.27 mm thick, Tape, Stainless Steel.
- .5 Auxiliary hardware: to CAN/CGSB-69.32, designated by letter L and numeral identifiers as listed in Hardware Schedule, finished to 630.
- .6 Gaskets and sound seals:
  - .1 Head and jamb seal: Heavy duty extruded aluminum frame with adjusting screws and solid closed cell neoprene insert, clear anodized finish.
  - .2 Door bottom: Heavy duty extruded aluminum frame, felt insert, surface mounted.

## **2.3 FASTENINGS**

- .1 Supply screws, bolts, expansion shields and other fastening devices required for satisfactory installation and operation of hardware.
- .2 Exposed fastening devices to match finish of hardware.
- .3 Use fasteners compatible with material through which they pass.

## **2.4 KEYING**

- .1 All locksets to be keyed differently and/or keyed alike in groups, master keyed, grand master keyed to existing system as directed. Prepare detailed keying schedule in conjunction with Departmental Representative.
- .2 Provide keys in duplicate for every lock in this Contract.
- .3 Provide three master keys for each MK or GMK group.
- .4 Stamp keying code numbers on keys and cylinders.

**3 Execution****3.1 INSTALLATION INSTRUCTIONS**

- .1 Furnish metal door and frame manufacturers with complete instructions and templates for preparation of their work to receive hardware.
- .2 Furnish manufacturers' instructions for proper installation of each hardware component.
- .3 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.
- .4 Where door stop contacts door pulls, mount stop to strike bottom of pull.

**3.2 SCHEDULE**

- .1 Door D01; Interlocked with Dx05 and D02, no visible hardware on Corridor side.
 

|    |                         |                                       |     |
|----|-------------------------|---------------------------------------|-----|
| 1. | (3) Hinges              | A8111 114 x 114                       | 630 |
| 2. | (1) Electrified lockset | Mortise body-lever style              | 630 |
| 3. | (1) Door closer         | CO2011 PT4C, PT4D                     | 689 |
| 4. | (2) Kickplate           | J102 305mm x Door Width-self adhesive | 630 |
| 5. | (1) Power supply        | c/w controller and relays             |     |
| 6. | (1) Status Indicator    | Red/Green                             |     |
| 7. | (1) Door Contact        | GE1078N                               | WH  |
- .2 Door D02; interlocked with D01 and Dx05
 

|    |                         |  |     |
|----|-------------------------|--|-----|
| 1. | (3) Hinges              | A8111 114 x 114                        | 630 |
| 2. | (1) Electrified lockset | Mortise body-lever style               | 630 |
| 3. | (1) Door closer         | CO2011 PT4C, PT4D                      | 689 |
| 4. | (2) Kickplate           | J102 305mm x Door Width -self adhesive | 630 |
| 5. | (1) Floor stops         | L02161                                 | 630 |
| 6. | (1) Power supply        | c/w controller and relays              |     |
| 7. | (2) Status Indicator    | Red/Green                              |     |
| 8. | (1) Door Contact        | GE1078N                                | WH  |
- .3 Door D03;
 

|    |             |                           |     |
|----|-------------|---------------------------|-----|
| .1 | (3) Hinges  | A8111 114 x 114           | 630 |
| .2 | (1) Passage | Mortise body-lever style. | 630 |



|    |  |  |     |
|----|--|--|-----|
| .3 | (1) Door closer  | CO2011 PT4C, PT4D                      | 689 |
| .4 | (2) Kickplate  | J102 305mm x Door Width -self adhesive | 630 |
| .5 | (1) Floor stops  | L02161                                 | 630 |
| .4 | Door D04;  |  |     |
| .1 | (3) Hinges   | A8111 114 x 114                        | 630 |
| .2 | (1) Passage  | Mortise body-lever style.              | 630 |
| .3 | (1) Floor stops  | L02161                                 | 630 |
| .5 | Door Dx02;   |  |     |
| .1 | Existing Hinges  |  |     |
| .2 | (1) Exit Device  | 3828                                   | 630 |
| .6 | Door Dx03;   |  |     |
| .1 | Existing Hinges  |  |     |
| .2 | Re-use and reinstall existing salvaged lever set from Dx07 |  |     |
| .7 | Door Dx04; Card Reader                                     |  |     |
| 1. | Existing Hinges  |  |     |
| 2. | Existing Lockset   |  |     |
| 3. | Existing Door closer                                       |  |     |
| 4. | (2) Kickplate  | J102 305mm x Door Width -self adhesive | 630 |
| 5. | (1) Card Reader  |  |     |
| 6. | (1) Electric Strike  | 1006                                   | 630 |
| 7. | (1) Door Contact   | GE1078N                                | WH  |
| 8. | (1) Request to Exit  |  |     |
| .8 | Door Dx05; interlocked with D01 and D02                    |  |     |
| 1. | (3) Hinges   | A8111 114 x 114                        | 630 |
| 2. | (1) Electrified lockset                                    | Mortise body-lever style               | 630 |
| 3. | (1) Door closer  | CO2011 PT4C, PT4D                      | 689 |
| 4. | (2) Kickplate  | J102 305mm x Door Width -self adhesive | 630 |
| 5. | (1) Floor stops  | L02161                                 | 630 |
| 6. | (1) Power supply   | c/w controller and relays              |     |
| 7. | (2) Status Indicator                                       | Red/Green                              |     |

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|     |                              |  |         |     |
|-----|------------------------------|--|---------|-----|
|     | 8.                           | (1) Door Contact   | GE1078N | WH  |
| .9  | Door Dx06;                   |  |         |     |
|     | .1                           | Existing Hinges  |         |     |
|     | .2                           | (1)Exit Device   | 3828    | 630 |
| .10 | Door Dx07;                   |  |         |     |
|     | .1                           | Existing Hinges  |         |     |
|     | .2                           | (1)Exit Device   | 3828    | 630 |
| .11 | Door Dx08;                   |  |         |     |
|     | .1                           | Existing Hinges  |         |     |
|     | .2                           | (1)Exit Device   | 3828    | 630 |
| .12 | Door Dx09; Existing Hardware |  |         |     |
| .13 | Door Dx10;                   |  |         |     |
|     | .1                           | Existing Hinges  |         |     |
|     | .2                           | Re-use and reinstall existing salvaged lever set from Dx02 |         |     |

**END OF SECTION**