

**Part 1        General**

**1.1            REFERENCES**

- .1 American Society for Testing and Materials (ASTM International)
  - .1 ASTM A653/A653M, Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process.
  - .2 ASTM B29, Specification for Refined Lead.
  - .3 ASTM B749, Specification for Lead and Lead Alloy Strip, Sheet and Plate Products.
- .2 Canadian General Standards Board (CGSB)
  - .1 CAN/CGSB-1.181, Ready-Mixed Organic Zinc-Rich Coating.
  - .2 CGSB 41-GP-19M, Rigid Vinyl Extrusions for Windows and Doors.
- .3 Canadian Standards Association (CSA International)
  - .1 G40.20/G40.21, General Requirements for Rolled or Welded Structural Quality Steel/Structural Quality Steel.
  - .2 CSA W59, Welded Steel Construction (Metal Arc Welding).
- .4 Canadian Steel Door Manufacturers' Association, (CSDMA).
  - .1 CSDMA, Specifications for Commercial Steel Doors and Frames.
  - .2 CSDMA, Recommended Selection and Usage Guide for Commercial Steel Doors.
- .5 National Fire Protection Association (NFPA)
  - .1 NFPA 80, Standard for Fire Doors and Fire Windows.
  - .2 NFPA 252, Standard Methods of Fire Tests of Door Assemblies.
- .6 Underwriters' Laboratories of Canada (ULC)
  - .1 CAN4-S104, Fire Tests of Door Assemblies.
  - .2 CAN4-S105, Fire Door Frames Meeting the Performance Required by CAN4-S104.
- .7 CAN/ULC-S701, Thermal Insulation, Polystyrene, Boards and Pipe Covering.
- .8 CAN/ULC-S702, Thermal Insulation, Mineral Fibre, for Buildings.
- .9 CAN/ULC-S704, Thermal Insulation, Polyurethane and Polyisocyanurate Boards, Faced.

**1.2            DESIGN REQUIREMENTS**

- .1 Design exterior frame assembly to accommodate to expansion and contraction when subjected to minimum and maximum surface temperature of -35°C to 35°C.
- .2 Maximum deflection for exterior steel entrance screens under wind load of 1.2 kPa not to exceed 1/175th of span.

- .3 Steel fire rated doors and frames: labelled and listed by an organization accredited by Standards Council of Canada in conformance with CAN4-S104M for ratings specified or indicated.

### **1.3 SHOP DRAWINGS**

- .1 Submit shop drawings sealed by an engineer registered in the Province of Manitoba clearly indicating each type of door, material, steel core thicknesses, mortises, reinforcements, location of exposed fasteners, openings, arrangement of hardware, fire rating and finishes.

## **Part 2 Products**

### **2.1 MATERIALS**

- .1 Fabrication Standards Fabricate doors and frames to Canadian Manufacturing Specification for Steel Doors and Frames, except where specified otherwise.
- .2 Steel: Commercial grade steel to ASTM A568-81, Class 1, hot-dip galvanized to ASTM A527-80.

### **2.2 DOOR CONSTRUCTION**

- .1 Insulated core, welded seam: For exterior use. Reinforced construction. Provide urethane foam insulated cores to R.S.I. of 1.76 (R=10). Laminated by adhesive to face sheets. Reinforced for hardware.
- .2 Component part thickness: 1.2 mm (18 gauge).

### **2.3 FRAME CONSTRUCTION**

- .1 Mitred or mechanically jointed and continuously welded on the inside of the profile. Welded joints to be ground to a smooth uniform finish.
- .2 Component part thickness: 1.6 mm (16 gauge).
- .3 Butt joints of mullions and transoms: accurately cope, securely weld and grind smooth.
- .4 Blank, reinforce, drill and tap for mortised butts and strike. Protect cut-outs in masonry and concrete with mortar guard boxes. Reinforce for surface mounted hardware. Prepare each door for rubber bumpers, two for double door openings.
- .5 Top hinge reinforcement: weld in top hinge reinforcement with 20mm leg to hinge reinforcement, 25mm to frame.
- .6 Insulation: provide foam-in insulation in all exterior frame cavities.

### **2.4 DOOR HARDWARE**

- .1 Hinges CB1960 114 x 102 NRP 630 Stanley or approved equal in accordance with B7.

- .2 Passage Set D10S 626 Schlage or approved equal in accordance with B7
- .3 Deadbolt B860 626 Schlage or approved equal in accordance with B7 (tamperproof “Medeco” cylinder – keyed to match City requirements).
- .4 Flushbolts FB6 626 Glynn Johnson or approved equal in accordance with B7.
- .5 Weatherstrip 770C Reese or approved equal in accordance with B7.
- .6 Sweep Seals 773C Reese or approved equal in accordance with B7.
- .7 Astragal 275C Reese or approved equal in accordance with B7.
- .8 Threshold S205A Reese or approved equal in accordance with B7.
- .9 Door Stop/Holder F26 626 Glynn Johnson or approved equal in accordance with B7.

## **2.5 FRAME ANCHORS**

- .1 Frames for installation shall be provided with minimum four steel anchors of suitable design.

## **2.6 KEYING**

- .1 Keys to match The City’s existing “Medeco” system. The City to provide lock number before keying.
- .2 Provide The City with keys in triplicate for every lock.

## **Part 3 Execution**

### **3.1 INSTALLATION GENERAL**

- .1 Install labelled steel fire rated doors and frames to NFPA 80 except where specified otherwise.
- .2 Install doors and frames to CSDMA Installation Guide.

### **3.2 DOOR INSTALLATION**

- .1 Install doors and hardware in accordance with templates and manufacturer’s instructions.
- .2 Adjust operable parts for correct function.

### **3.3 FRAME INSTALLATION**

- .1 Set frames plumb, square, level and at correct elevation. Secure anchorages and connections to adjacent construction.
- .2 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. Make allowances for deflection of structure to ensure structural loads are not transmitted to frames

- .3 Caulk perimeter of frames between frame and adjacent material.
- .4 Maintain continuity of air barrier and vapour retarder.

### **3.4 FINISH**

- .1 Paint doors and frames in accordance with Section 09 91 23 - Painting in colour to match sheet metal roofing or as approved by Contract Administrator.

### **3.5 FINISH REPAIRS**

- .1 Touch up 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**