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**Washroom Buildings Recapitalization  
Buildings 32, 34 & 38  
Newman Sound Campground  
Terra Nova National Park, NL  
Proj. No.: R.079272.001**

Issued April 4, 2016

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## PART 1 - GENERAL

### **1.1 Related Sections**

- .1 Section 07 90 00 - Joint Sealing.
- .2 Section 08 71 10 - Door Hardware - General.
- .3 Section 09 91 23 - Interior Painting.

### **1.2 References**

- .1 American Society for Testing and Materials (ASTM).
  - .1 ASTM A 653/A 653M-09, Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process.
- .2 Canadian General Standards Board (CGSB).
  - .1 CAN/CGSB-1.181-99, Ready-Mixed Organic Zinc-Rich Coating.
- .3 Canadian Standards Association (CSA).
  - .1 CSA G40.21-04, Structural Quality Steels.
  - .2 CSA W59-03 (R2008), Welded Steel Construction (Metal Arc Welding).
- .4 Canadian Steel Door and Frame Manufacturers' Association, (CSDFMA).
  - .1 CSDFMA, Specifications for Commercial Steel Doors and Frames, Latest Edition.
  - .2 CSDFMA, Recommended Selection and Usage Guide for Commercial Steel Doors, Latest Edition.
- .5 National Fire Protection Association (NFPA).
  - .1 ANSI/NFPA 80-2010, Fire Doors and Windows.
  - .2 ANSI/NFPA 252-2007, Door Assemblies, Fire Tests of.
- .6 Underwriters' Laboratories of Canada (ULC).
  - .1 CAN4-S104-M80, Fire Tests of Door Assemblies.
  - .2 CAN4-S105-09, Fire Door Frames.

### **1.3 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.

### **1.4 Shop Drawings**

- .1 Submit shop drawings in accordance with Section 01 33 00 - Submittal Procedures.

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## **1.5 Samples**

- .1 Submit samples in accordance with Section 01 33 00 - Submittal Procedures.

## **1.6 Requirements of Regulatory Agencies**

- .1 Steel fire rated doors and frames: labelled and listed by an organization accredited by Standards Council of Canada in conformance with CAN4-S104 for ratings specified or indicated.
- .2 Provide fire labelled frame products for those openings requiring fire protection ratings, as scheduled. Test products in strict conformance with CAN4-S104, ASTM E 152 or ANSI/NFPA 252 and list by nationally recognized agency having factory inspection service and construct as detailed in Follow-Up Service Procedures/Factory Inspection Manuals issued by listing agency to individual manufacturers.

## **1.7 Waste Management and Disposal**

- .1 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).
- .2 Where paint recycling is available, collect all waste paint by type and provide for delivery to recycling or collection facility.
- .3 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.

## **PART 2 - PRODUCTS**

### **2.1 Materials**

- .1 Hot dipped galvanized steel sheet: to ASTM A 653/A 653M, ZF75, minimum base steel thickness in accordance with CSDFMA Table 1 - Thickness for Component Parts.
- .2 Reinforcement channel: to CSA G40.21, Type 44W, coating designation to ASTM A 653/A653M, ZF75.

### **2.2 Door Core Materials**

- .1 Honeycomb construction:
  - .1 Structural small cell, 24.5 mm maximum kraft paper 'honeycomb', weight: 36.3 kg per ream minimum, density: 16.5 kg/m<sup>3</sup> minimum sanded to required thickness.

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### **2.3 Adhesives**

- .1 Select Adhesives which:
  - .1 Do not contain volatile organic compounds in excess of 5 % by weight as measured by EPA Method 24-24A, 40 C.F.R., Part 60, Appendix A, Environmental Protection Agency Method 8240 GC/MS Method for Volatile Organics, September 1986;
  - .2 are accompanied by detailed instructions for proper application so as to minimize health concerns and maximize performance;
  - .3 are accompanied by information describing proper disposal methods for containers.
- .2 Honeycomb cores and steel components: heat resistant, spray grade, resin reinforced neoprene/rubber (polychloroprene) based, low viscosity, contact cement.
- .3 Lock-seam doors: fire resistant, resin reinforced polychloroprene, high viscosity, sealant/adhesive.

### **2.4 Primers**

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

### **2.5 Paint**

- .1 Steel doors and frames shall be field painted in accordance with Sections 09 91 23.

### **2.6 Accessories**

- .1 Door silencers: single stud rubber/neoprene type.
- .2 Fire labels: metal rivetted.
- .3 Metallic paste filler: to manufacturer's standard.

### **2.7 Frames Fabrication General**

- .1 Fabricate frames in accordance with CSDFMA specifications.
- .2 Fabricate frames to profiles and maximum face sizes as indicated.
- .3 Interior frames: 1.6 mm welded type construction.

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- .4 Blank, reinforce, drill and tap frames for mortised, templates hardware, and electronic hardware using templates provided by finish hardware supplier. Reinforce frames for surface mounted hardware. Reinforce frames across the head, where a closer is to be installed with a continuous 6 mm thick steel plate welded to both sides of frame. Reinforce frames at each hinge and strike point with a minimum 6 mm steel plate of sufficient length to be welded at each end of hinge and strike opening. Reinforce heads of frames wider than 1,200 mm.
  - .1 Provide min. reinforcing for detention doors as follows:
    - .1 Hinge: 5.0 mm,
    - .2 Strike: 3.5 mm,
    - .3 Accessories: 3.5 mm,
    - .4 Lock housings: 2.3 mm.
- .5 Protect mortised cutouts with steel guard boxes.
- .6 Prepare frame for door silencers, 3 for single 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.

## **2.8 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.

## **2.9 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.

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- .6 Weld in 2 temporary jamb spreaders per frame to maintain proper alignment during shipment.

## **2.10 Door Fabrication General**

- .1 Doors: swing type, flush, with provision for glass and/or louvre openings as indicated.
- .2 Interior doors: honeycomb construction.
- .3 Fabricate doors with longitudinal edges welded. Seams: grind welded joints to a flat plane, fill with metallic paste filler and sand to a uniform smooth finish.
- .4 Blank, reinforce, drill doors and tap for mortised, templated hardware and electronic hardware.
- .5 Prime paint doors after fabrication.
- .6 Manufacturer's nameplates on doors are not permitted.
- .7 Factory prepare holes 12.7 mm diameter and larger except mounting and through-bolt holes, on site, at time of hardware installation.
- .8 Bevel hinge and lock edges of doors 3 mm in 50 mm. Provide the active leaf of each set of double doors complete with a steel astragal mounted on the edge of the door.
- .9 Reinforce doors where required, for surface mounted hardware. Provide flush steel top caps to exterior doors. Provide inverted, recessed, spot welded channels to top and bottom of interior doors.
- .10 Provide factory-applied touch-up primer at areas where zinc coating has been removed during fabrication.
- .11 Provide fire labelled doors for those openings requiring fire protection ratings, as scheduled. Test such products in strict conformance with CAN4-S104, ASTM E 152 or ANSI/NFPA 252 and list by nationally recognized agency having factory inspection service and construct as detailed in Follow-Up Service Procedures/Factory Inspection Manuals issued by listing agency to individual manufacturers.

## **2.11 Doors: Honeycomb Core Construction**

- .1 Form each face sheet for interior doors from 1.3 mm sheet steel with honeycomb - core laminated under pressure to face sheets.

## **PART 3 - EXECUTION**

### **3.1 Installation General**

- .1 Install labeled steel fire rated doors and frames to ANSI/NFPA 80 except where specified otherwise.

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- .2 Install doors and frames to CSDFMA 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 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.
- .7 Silicone in place rubber door stops.

### **3.3 Door Installation**

- .1 Install doors and hardware in accordance with hardware templates and manufacturer's instructions and Section 08 71 10 - Door Hardware - General.
- .2 Provide even margins between doors and jambs and doors and finished floor and thresholds as follows.
  - .1 Hinge side: 1.0 mm.
  - .2 Latchside and head: 1.5 mm.
  - .3 Finished floor, and thresholds: 13 mm.
- .3 Adjust operable parts for correct function.

### **3.4 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.