

Electrical Upgrades  
Black Duck Cove, NL  
P/N: 705619

## PART 1 - GENERAL

### 1.1 REFERENCES

- .1 Codes and Standards referenced in this section refer to the latest edition thereof.
- .2 American Society for Testing and Materials (ASTM)
  - .1 ASTM A653/A653M, Specification for Steel Sheet Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvanized) by the Hot Dip Process.
- .3 Canadian General Standards Board (CGSB)
  - .1 CAN/CGSB-1.181, Ready-Mixed Organic Zinc-Rich Coating.
- .4 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).
- .5 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.
- .6 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.
- .7 Underwriters' Laboratories of Canada (ULC)
  - .1 CAN4-S104M, Fire Tests of Door Assemblies.
  - .2 CAN4-S105M, Fire Door Frames Meeting the Performance Required by CAN4-S104.
- .8 CAN/ULC-S701, Thermal Insulation, Polystyrene, Boards and Pipe Covering.
- .9 CAN/ULC-S702, Thermal Insulation, Mineral Fibre, for Buildings.

### 1.2 SHOP DRAWINGS

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

### 1.3 DELIVERY STORAGE AND HANDLING

- .1 Deliver, store, handle and protect doors and frames in accordance with Section 01 61 00 - Common Product Requirements.
- .2 Deliver, handle and store doors and frames at the job site in such a manner as to prevent damage.
- .3 Store doors and frames under cover with doors stored in a vertical position on blocking, clear of floor and with blocking between doors to permit air circulation.

### 1.4 QUALITY ASSURANCE

- .1 Conform to requirements to ANSI A117.1.

### 1.5 WARRANTY

- .1 Provide a written warranty for work of this section from manufacturer for failure due to defective materials for five (5) years.

### 1.6 REQUIREMENTS

- .1 Steel fire rated doors and frames: labeled and listed by an organization accredited by Standards Council of Canada in conformance with CAN4-S104M NFPA 252 for ratings specified or indicated.
- .2 Provide fire labeled frame products for those openings requiring fire protection ratings, as scheduled. Test products in strict conformance with CAN4-S104, ASTM E152 or 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.

## PART 2 - PRODUCTS

### 2.1 MATERIALS

- .1 Clear frame opening: 914mm. Clear frame height: 2134mm. Door to suit clear openings.
- .2 Hot dipped galvanized steel sheet: to ASTM A653M, ZF75, minimum base steel thickness in accordance with CSDMA Table 1 - Thickness for Component Parts.

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- .2 Reinforcement channel: to CSA G40.20/G40.21, Type 44W, coating designation to ASTM A653M, ZF75.

## 2.2 DOOR CORE MATERIALS

- .1 Stiffened: face sheets welded insulated core.
  - .1 Expanded polystyrene: CAN/ULC-S701, density 16 to 32 kg/m<sup>3</sup>.
- .2 Temperature rise rated (TR): core composition to limit temperature rise on unexposed side of door to 250°C at 60 minutes. Core to be tested as part of a complete door assembly, in accordance with CAN4-S104, ASTM E152 or NFPA 252, covering Standard Method of Tests of Door Assemblies and listed by nationally recognized testing agency having factory inspection service.
- .3 Thermal Insulation material must:
  - .1 Not require being labeled as poisonous, corrosive, flammable or explosive under the Consumer Chemical and Container Regulations of the Hazardous Products Act.
  - .2 Be manufactured using a process that uses chemical compounds with the minimum ozone depletion potential (ODP) available.

## 2.3 ADHESIVES

- .1 Polystyrene cores: heat resistant, epoxy resin based, low viscosity, contact cement.

## 2.4 PRIMER

- .1 Touch-up primer to CAN/CGSB-1.181.

## 2.5 ACCESSORIES

- .1 Top and bottom caps steel.
- .2 Door bottom seal: to Section 08 71 00 - Door Hardware.
- .3 Fire labels: metal riveted.
- .4 Sealant: as per manufacturers instructions.

## 2.6 FRAMES FABRICATION GENERAL

- .1 Fabricate frames in accordance with CSDMA specifications.
- .2 Fabricate frames to provide clear opening space of 914mm and height of 2134mm.
- .3 Interior frames: 1.2 mm welded type construction.
- .4 Protect mortised cutouts with steel guard boxes.
- .5 Manufacturer's nameplates on frames and screens are not permitted.
- .6 Conceal fastenings except where exposed fastenings are indicated.
- .7 Provide factory-applied touch up primer at areas where zinc coating has been removed during fabrication.

## 2.7 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.

## 2.8 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.

## 2.9 DOOR FABRICATION GENERAL

- .1 Doors: swing type.
- .2 Doors: insulated, hollow steel construction.
- .3 Fabricate doors with longitudinal edges locked seam. Seams: grind welded joints to a flat plane, fill with metallic paste filler and sand to a uniform smooth finish.
- .4 Doors: manufacturers' proprietary construction, tested and/or engineered as part of a fully operable assembly, including door, frame, gasketing and hardware in accordance with ASTM E330.
- .5 Blank, reinforce, drill doors and tap for mortised, templated hardware and electronic hardware.
- .6 Factory prepare holes 12.7 mm diameter and larger except mounting and through-bolt holes, on site, at time of hardware installation.
- .7 Provide inverted, recessed, spot welded channels to top and bottom of interior doors.
- .8 Provide factory-applied touch-up primer at areas where zinc coating has been removed during fabrication.
- .9 Provide fire labeled doors for those openings requiring fire protection ratings, as scheduled. Test such products in strict conformance with CAN4-S104 ASTM E152 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.
- .10 Manufacturer's nameplates on doors are not permitted.

## 2.10 HOLLOW STEEL CONSTRUCTION

- .1 Form each face sheet for exterior doors from 1.2 mm sheet steel.

- .2 Form each face sheet for interior doors from 1.2 mm sheet steel.
- .3 Reinforce doors with vertical stiffeners, securely welded to each face sheet at 150 mm on centre maximum.
- .4 Fill voids between stiffeners of exterior doors with polystyrene core.
- .5 Fill voids between stiffeners of interior doors with honeycomb core.

### PART 3 - EXECUTION

#### 3.1 INSTALLATION GENERAL

- .1 Install labeled steel fire-rated doors and frames to NFPA 80 except where specified otherwise.
- .2 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 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 Seal around all frames with foam insulation.
- .6 Caulk perimeters of frames between frame and adjacent material.
- .7 Maintain continuity of air barrier and vapour retarder.

#### 3.3 DOOR INSTALLATION

- .1 Install doors and hardware in accordance with hardware templates and

manufacturer's instructions.

- .2 Provide even margins between doors and jambs and doors and finished floor as follows.
  - .1 Hinge side: 1.0 mm.
  - .2 Latch side and head: 1.5 mm.
  - .3 Finished floor: 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.

### 3.5 COMMISSIONING

- .1 Instruct maintenance personnel in operation and maintenance of doors and hardware.
- .2 Confirm operation and function for all doors and hardware.
- .3 Commissioning will be witnessed by Site Representative and Certificate will be signed by Contractor and Site Representative.