

PART 1 - GENERAL

1.1 REFERENCES

- .1 American Society for Testing and Materials International (ASTM)
    - .1 ASTM A 653/A 653M-06a, Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process.
  - .2 Canada Green Building Council (CaGBC)
    - .1 LEED Canada-NC-2009, LEED (Leadership in Energy and Environmental Design): Green Building Rating System Reference Package For New Construction and Major Renovations.
  - .3 Canadian General Standards Board (CGSB)
    - .1 CAN/CGSB-1.181-99, Ready-Mixed Organic Zinc-Rich Coating.
    - .2 CGSB 41-GP-19Ma-84, Rigid Vinyl Extrusions for Windows and Doors.
  - .4 Canadian Standards Association (CSA International)
    - .1 CSA-G40.20-04/G40.21-04, General Requirements for Rolled or Welded Structural Quality Steel/Structural Quality Steel.
    - .2 CSA W59-03, Welded Steel Construction (Metal Arc Welding).
  - .5 Canadian Steel Door Manufacturers' Association (CSDMA)
    - .1 CSDMA, Recommended Specifications for Commercial Steel Doors and Frames, 2000.
    - .2 CSDMA, Selection and Usage Guide for Commercial Steel Doors, 1990.
  - .6 National Fire Protection Association (NFPA)
    - .1 NFPA 80-99, Standard for Fire Doors and Fire Windows.
    - .2 NFPA 252-03, Standard Methods of Fire Tests of Door Assemblies.
  - .7 South Coast Air Quality Management District (SCAQMD), California State
    - .1 SCAQMD Rule 1113-04, Architectural Coatings.
    - .2 SCAQMD Rule 1168-05, Adhesives and Sealants Applications.
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1.1 REFERENCES  
(Cont'd)

- .8 Underwriters' Laboratories of Canada (ULC)
  - .1 CAN/ULC-S701-01, Standard for Thermal Insulation, Polystyrene, Boards and Pipe Covering.
  - .2 CAN/ULC-S702-97, Standard for Thermal Insulation, Mineral Fibre, for Buildings.
  - .3 CAN/ULC-S704-03, Standard for Thermal Insulation, Polyurethane and Polyisocyanurate Boards, Faced.
  - .4 CAN4-S104-M80, Standard Method for Fire Tests of Door Assemblies.
  - .5 CAN4-S105-M85, Standard Specification for Fire Door Frames Meeting the Performance Required by CAN4-S104.

1.2 SYSTEM  
DESCRIPTION

- .1 Design Requirements:
  - .1 Provide fire labelled frames for openings requiring fire protection ratings. Test products in conformance with CAN4-S104, and NFPA 252 and listed by nationally recognized agency having factory inspection services.

1.3 ACTION AND  
INFORMATIONAL  
SUBMITTALS

- .1 Provide submittals in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Provide product data: in accordance with Section 01 33 00 - Submittal Procedures.
- .3 Provide shop drawings: in accordance with Section 01 33 00 - Submittal Procedures.
  - .1 Indicate each type of door, material, steel core thicknesses, mortises, reinforcements, location of exposed fasteners, openings, glazed, louvred, arrangement of hardware and fire rating and finishes.
  - .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.

1.3 ACTION AND  
INFORMATIONAL  
SUBMITTALS  
(Cont'd)

- .4 Sustainable Design Submittals:  
.1 LEED Canada Submittals: in accordance  
with Section 01 35 21 - LEED Requirements.

1.4 SUSTAINABLE  
REQUIREMENTS

- .1 Materials and products in accordance with  
Section 01 35 21 - LEED Requirements.

1.5 DELIVERY,  
STORAGE AND  
HANDLING

- .1 Deliver, store and handle materials in  
accordance with Section 01 61 00 - Common  
Product Requirements.  
.2 Waste Management and Disposal:  
.1 Separate waste materials for reuse and  
recycling in accordance with Section 01 74 21  
- Construction/Demolition Waste Management and  
Disposal.

PART 2 - PRODUCTS

2.1 MATERIALS

- .1 Hot dipped galvanized steel sheet: to  
ASTM A 653M, ZF75, minimum base steel  
thickness in accordance with CSDMA Table 1 -  
Thickness for Component Parts.  
.2 Reinforcement channel: to CSA G40.20/G40.21,  
Type 44W, coating designation to ASTM A 653M,  
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.

- 2.3 ADHESIVES .1 Honeycomb cores and steel components: heat resistant, spray grade, resin reinforced neoprene/rubber (polychloroprene) based, low viscosity, contact cement.  
.1 Adhesive: maximum VOC content 50 g/L to SCAQMD Rule 1168.
- .2 Lock-seam doors: fire resistant, resin reinforced polychloroprene, high viscosity, sealant/adhesive.
- 2.4 PRIMER .1 Touch-up prime CAN/CGSB-1.181.  
.1 Maximum VOC limit 50 g/L to GC-03.
- 2.5 PAINT .1 Field paint steel doors and frames in accordance with Sections 09 91 00 - Interior Painting. Protect weatherstrips from paint. Provide final finish free of scratches or other blemishes.  
.1 Maximum VOC emission level 50 g/L to SCAQMD Rule 1113.
- 2.6 ACCESSORIES .1 Door silencers: single stud rubber/neoprene type.
- .2 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.
- .3 Metallic paste filler: to manufacturer's standard.
- .4 Fire labels: metal rivited.
- .5 Sealant: to Specification Section 08 71 00 - Door Hardware.  
.1 Maximum VOC limit 250 g/L to SCAQMD Rule 1168.
- .6 Glazing: to Specification Section 08 80 50 - Glazing.
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2.6 ACCESSORIES                      .7    Make provisions for glazing as indicated and  
      (Cont'd)

2.7 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 cutouts 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.

2.8 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.

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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.
- .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 locked seamed, adhesive assisted 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 Factory prepare holes 12.7 mm diameter and larger except mounting and through-bolt holes, on site, at time of hardware installation.
- .6 Reinforce doors where required, for surface mounted hardware. Provide inverted, recessed, spot welded channels to top and bottom of interior doors.
- .7 Provide factory-applied touch-up primer at areas where zinc coating has been removed during fabrication.

2.10 DOOR  
FABRICATION GENERAL  
(Cont'd)

- .8 Provide fire labelled doors for those openings requiring fire protection ratings, as scheduled. Test such products in conformance with CAN4-S104 and 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.
- .9 Manufacturer's nameplates on doors are not permitted.

2.11 DOORS:  
HONEYCOMB CORE  
CONSTRUCTION

- .1 Form face sheets for interior doors from 1.2 mm sheet steel with honeycomb core laminated under pressure to face sheets.

PART 3 - EXECUTION

3.1 MANUFACTURER'S  
INSTRUCTIONS

- .1 Compliance: comply with manufacturer's written recommendations or specifications, including product technical bulletins, handling, storage and installation instructions, and datasheets.

3.2 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.

3.3 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

3.3 FRAME  
INSTALLATION  
(Cont'd)

- .3 (Cont'd)  
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.
- .6 Maintain continuity of air barrier and vapour retarder.

3.4 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 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.
- .4 Install louvres.

3.5 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.

3.6 GLAZING

- .1 Install glazing for doors and frames in accordance with Section 08 80 50 - Glazing.