

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 .8 Underwriters' Laboratories of Canada (ULC)
- 1.1 REFERENCES (Cont'd)
- .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.
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- 1.2 SYSTEM DESCRIPTION .1 Design Requirements:
- 1.2 SYSTEM DESCRIPTION
- .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.
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- 1.3 ACTION AND INFORMATIONAL SUBMITTALS .1 Provide submittals in accordance with Section 01 33 00 - Submittal Procedures.
- 1.3 ACTION AND INFORMATIONAL SUBMITTALS
- .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.
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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.
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- 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 .1 Fabricate frames in accordance with CSDMA  
FABRICATION GENERAL
- .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.
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- 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.