

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.

- 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.
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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) provide necessary glazing stops.
- 2.7 FRAMES .1 Fabricate frames in accordance with CSDMA
FABRICATION GENERAL 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.
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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.