

PART 1 - GENERAL

1.1 GENERAL REQUIREMENTS

- .1 Comply with requirements of Division 1.

1.2 RELATED SECTIONS

- .1 Section 07 92 00: Joint Sealing.
- .2 Section 09 91 00: Painting.

1.3 REFERENCES

- .1 Canadian Standards Association (CSA).
 - .1 CSA A101, Thermal Insulation, Mineral Fibre, for Buildings.
 - .2 CAN/CSA-G40.20/G40.21-13, General Requirements for Rolled or Welded Structural Quality Steel/Structural Quality Steel.
 - .3 CSA W59-13, Welded Steel Construction (Metal Arc Welding).
- .2 Canadian General Standards Board (CGSB).
 - .1 CAN/CGSB-1.181-99, Ready-Mixed Organic Zinc-Rich Coating.
- .3 American Society for Testing and Materials (ASTM).
 - .1 ASTM A653/653M-09, Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process.
 - .2 ASTM E 152-13, Methods for Fire Tests of Door Assemblies.
- .4 Underwriters' Laboratories of Canada (ULC).
 - .1 CAN/ULC-S702-09, Standard for Thermal Insulation, Mineral Fiber for Buildings.
 - .2 CAN/ULC-S704-11, Standard for Thermal Insulation, Polyurethane and Polyisocyanurate Boards, Faced.
- .5 Canadian Steel Door Manufacturers' Association, (CSDMA).
 - .1 CSDMA, Recommended Specifications for Commercial Steel Doors and Frames.
 - .2 CSDMA, Selection and Usage Guide for Commercial Steel Doors.

1.4 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.

1.5 SUBMITTALS

- .1 Submit shop drawings in accordance with Section 01 33 00 – Submittal Procedures.
- .2 Indicate each type of door, material, steel core thicknesses, mortises, reinforcements, location of anchors and exposed fasteners, openings, glazed, louvres, arrangement of hardware and fire rating.
- .3 Indicate each type of frame material, core thickness, reinforcements, glazing stops, location of anchors and exposed fastenings and finishes.

1.5 SHOP DRAWINGS (continued)

- .4 Include schedule identifying each unit, with door marks and numbers relating to numbering on drawings and door schedule.

1.6 DELIVERY, STORAGE AND HANDLING

- .1 Deliver, store and handle materials in accordance with Section 01 61 00 – Common Product Requirements.
- .2 Tag doors and frames at shop with identification marks indicating proper location for installation.
- .3 Deliver, store and handle components so as to prevent damage, distortion and corrosion. Store components off the ground and under cover in a dry protected area. Stack doors and frames to prevent twisting. Do not enclose components in plastic covers without venting.

1.7 WASTE MANAGEMENT AND DISPOSAL

- .1 Separate and recycle waste materials 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: Hot dipped galvanized steel sheet: commercial quality to ASTM A 653M, minimum base steel thickness in accordance with CSDMA Table 1 - Thickness for Component Parts.
- .2 Reinforcement channel: to CAN/CSA-640.20/G40.21, Type 44W, coating designation to ASTM A653M, ZF75.
- .3 Sheet steel: cold rolled, commercial quality to ASTM A366, with matt finish.
- .4 Doors and Frames:
 - .1 Acceptable products:
 - .1 Apex Machine Works Limited
 - .2 Baron Metal Industries Ltd.
 - .3 Artek Door (1985) Ltd.
 - .4 S.W. Fleming Ltd.
 - .5 Ali-Porte Manufacturers of Steel Frames and Metal Doors, St. Laurent, Que.
 - .6 or approved equal
- .5 Doors:
 - .1 Door face sheets 1.6 mm base thickness.

2.1 MATERIALS (continued)

- .6 Door Core Materials:
 - .1 Exterior Doors – Insulated Core:
 - .1 Mineral fibre: to CAN/ULC-S702, semi-rigid type, density 24 kg/m³.
 - .2 Expanded polystyrene: CAN/ULC-S701, density 16 to 32 kg/m³.
 - .3 Polyurethane: to CAN/ULC-S704 rigid, modified poly/isocyanurate, closed cell board. Density 32 kg/m³.
- .7 Frames: Steel frames 1.6 mm base thickness.
- .8 Provide other door and frame components in accordance with CSDMA requirements.
- .9 Touch-up Primer: to CAN//CGSB-1.181.
- .10 Adhesives:
 - .1 Polystyrene and polyurethane cores: heat resistant, epoxy resin based, low viscosity, contact cement, low VOC.
 - .2 Lock-seam doors: fire resistant, resin reinforced polychloroprene, high viscosity, sealant/adhesive, low VOC.
- .11 Accessories:
 - .1 Door silencers: single stud rubber/neoprene type.
 - .2 Top and bottom caps (exterior and interior doors): rigid polyvinyl chloride extrusion conforming to CGSB 41-GP-19Ma.
 - .3 Metallic paste filler: to manufacturer's standard.
 - .4 Fire labels: metal, riveted.

2.2 FRAME FABRICATION – GENERAL

- .1 Fabricate frames to Canadian Steel Door Manufacturers' Association, (CSDMA) Canadian Manufacturing Specifications for Steel Doors and Frames; except where specified otherwise.
- .2 Fabricate frames to profiles and maximum face sizes as indicated.
- .3 Exterior frames: 1.6 mm, welded, thermally broken type construction.
- .4 Reinforce frames to suit door hardware requirements. Blank, reinforce, drill and tap frames for mortised templated hardware, using templates provided by door hardware supplier.
- .5 Protect mortised cutouts with steel guard boxes.
- .6 Prepare frames 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

2.2 FRAME FABRICATION – GENERAL (continued)

- .10 Insulate thermally broken frame components.

2.3 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.

2.4 FRAMES: WELDED

- .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 corners and joints to flat plane, fill with metallic paste filler and sand to uniform smooth finish.
- .5 Securely attach adjustable floor anchors to inside of each jamb profile for fixing at floor.
- .6 Weld in 2 temporary jamb spreaders per frame to maintain proper alignment during shipment.

2.5 DOOR FABRICATION – GENERAL

- .1 Fabricate doors to Canadian Steel Door Manufacturers' Association, (CSDMA) Canadian Manufacturing Specifications for Steel Doors and Frames; except where specified otherwise. Reinforce doors to suit door hardware requirements.
- .2 Doors: swing type, flush.
 - .1 Exterior doors: thermally broken construction.
- .3 Fabricate doors with longitudinal edges locked seamed. Seams: fill with metallic paste filler and sand to a uniform smooth finish. Construct rail and stile doors in same manner as flush doors. Construct matching panels in same manner as doors.
- .4 Blank, reinforce, drill doors and tap for mortised, templated hardware and electronic hardware.

2.5 DOOR FABRICATION – GENERAL (continued)

- .5 Factory prepare holes 12.7 mm diameter and larger except mounting and through-bolt holes, on site, at time of hardware installation. Reinforce doors where required, for surface mounted hardware. Hardware reinforcements shall be minimum 3.42 mm (10 Ga.) thick.
- .6 Provide inverted, flush, steel, spot welded channels to top and bottom of exterior doors.
- .7 Provide factory-applied touch-up primer at areas where zinc coating has been removed during fabrication.
- .8 Manufacturer's nameplates on doors are not permitted.

2.8 THERMALLY BROKEN DOORS AND FRAMES

- .1 Fabricate thermally broken doors by using insulated core and separating exterior parts from interior parts with continuous interlocking thermal break.
- .2 Thermal break: rigid polyvinylchloride extrusion conforming to CGSB 41-GP-19Ma.
- .3 Fabricate thermally broken frames separating exterior parts from interior parts with continuous interlocking thermal break.
- .4 Apply insulation.

PART 3 - EXECUTION

3.1 INSTALLATION – GENERAL

- .1 Install doors and frames to Canadian Steel Door Manufacturers' Association, (CSDMA) Installation Guide.

3.2 FRAME INSTALLATION

- .1 Set frames plumb, square, level and at correct elevation. Secure anchorages and connections to adjacent construction.
- .2 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.
- .3 Make allowances for deflection of structure to ensure structural loads are not transmitted to frames.
- .4 Caulk perimeter of frames between frame and adjacent material.
- .5 Maintain continuity of air barrier and vapour retarder.
- .6 Install door silencers.

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 and thresholds as follows:
 - .1 Hinge side: 1.0 mm.
 - .2 Latchside and head: 1.5 mm.
 - .3 Finished floor noncombustible sill and thresholds: 13 mm.
- .3 Adjust operable parts for correct function.

3.4 FINISH REPAIRS

- .1 Touch up with primer galvanized finish damaged during installation.
- .2 Fill exposed frame anchors and surfaces with imperfections with metallic paste filler and sand to a uniform smooth finish.
- .3 Protect installed doors and frames from damage by other trades until completion of the Work.

END OF SECTION