

Part 1: General**1.01 GENERAL REQUIREMENTS**

- A. Conform to requirements specified under Division 1.
- B. Refer to Door Schedule for door and screen frame locations, types and required fire ratings.
- C. Refer to Section 08710 for conditions of the Hardware Allowance.
- D. Consultant will provide a Colour Schedule and Colour Schedule Drawings for painted and stained finishes

1.02 SCOPE OF WORK

- A. Supply and install all hollow metal doors, hollow metal doorframes and screens and knock down steel frames.
- B. Supply and install all wood doors. All solid core Suite Entry wood doors to have Maple Veneer with medium stain.
- C. Install all access doors as supplied under Division 15 and 16.
- D. Install hardware supplied under Section 08710 as specified. Obtain templates from the hardware supplier for accurate shop fabrication.
- E. All glass and glazing in doors, view windows and screen shall be supplied and installed under Section 08800.

1.03 SHOP DRAWINGS

- A. Submit shop drawings in accordance with the requirements of Division 1
- B. Clearly indicate each type of door, material, thicknesses, mortises, reinforcements, and location of exposed fasteners.

1.04 RELATION TO OTHER TRADES

- A. Cooperate with other trades whose work is affected by this trade.
- B. Coordinate schedule of installation with all related trades.

1.05 MEASUREMENTS

- A. All items fitting to structural parts of the building must be fabricated from measurements taken on the Site and verified from the work as it is built.
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1.06 STANDARDS

- A. Unless specified otherwise, steel door and frame construction shall conform to the Canadian Manufacturing Standards recommended by the Canadian Steel Door & Frame Manufacturer's Association.

1.07 GUARANTEE

- A. Steel doors are to be guaranteed against defects for a period of three (3) years from the date of Substantial Completion of the contract
 - B. Wood doors are to be guaranteed against defects for a period of three (3) years from the date of Substantial Completion of the contract.
 - C. Any door found to be defective or unfit for use under normal conditions must be replaced free of charge by the manufacturer.
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PART 2: PRODUCTS**2.01 MATERIALS**

A. Hollow Metal Doors, Frames, and Screens: Shall be as manufactured by All Steel Doors or equivalent products from Artek, Daybar, or Trillium Steel Door in conformance with the following specifications:

1. All materials shall be new and in perfect condition, free from defects impairing strength, durability, or appearance. All anchors, straps and shapes for steel frames shall be of hot rolled structural steel. All exposed metal fastenings and accessories shall be of the same material, texture, colour and finish as the base metal to which it is applied.

B. Hollow Metal Frames and Screens

1. Sheet steel shall be of minimum 1.5mm (16ga) core thickness and conform to cold rolled commercial grade to ASTM A653/A653M Class 1 with ZF075 (A25) coating. All floor anchors, channel spreaders and wall anchors shall be of a minimum 1.5mm (.06") core thickness.
 2. Frames shall be of welded construction as per details on drawings. All miters shall be neatly welded and dimensions shall accommodate the various finishes on partitions.
 3. Frames which are to be installed in masonry walls shall be equipped with not less than six wall plate anchors to suite the various wall conditions shown on details.
 4. Frames which are to be installed in steel stud partitions shall have base plates designed with two anchor holes to prevent rotation, anchorage to floor shall be by two power driven anchors or equivalent per plate. Four jamb anchors shall be provided on each jamb, welded to trim returns.
 5. Provide jamb anchors to suit the partition system manufacture's detail stud and frame anchorage.
 6. Latch side of all frame rebates shall be fitted with two rubber bumpers. Remove all bumpers from frames if required, previous to doors and frames being finished and reinstalled when finishes have completely dried.
 7. Screws are to be self-tapping type with flat countersunk heads.
 8. Labeled frame assemblies shall be provided for all openings requiring fire protection ratings including all door frames, door frames with transoms or sidelights, view windows, etc., or any combination thereof. Such frame assemblies shall be constructed as tested and approved by the Underwriter's Laboratories of Canada.
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9. Frames manufactured from C.R.S. shall be chemically treated for good paint adhesion and shop coated with a corrosion resistant steel primer. Frames manufactured from zinc coated steel shall have a factory applied touch up at welded areas where coating has been removed due to disc sanding,
10. Weld in place all frame back boxes, provided by 08710, for electric hardware. Boxes shall be centered around the electric hardware preparation.
11. Provide ½" conduit to all electric hardware locations in mullions and mid-rails. Coordinate exact locations with Section 08710.
12. Provide full height, 10 gauge reinforcing, welded 6" on centre for any frames in which continuous hinges will be used. The reinforcement shall be covered with a ½" thick mortar guard for frames located in concrete or masonry walls.

C. Hollow Metal Doors

- 1.1 Doors shall be hollow steel construction having each face of the door formed from sheet steel of minimum 1.2mm (18ga.) core thickness. Commercial grade cold rolled to ASTM A653/A653M Class 1 with ZF075 coating. Longitudinal joints shall be welded the full height of the door, filled and ground smooth with no visible seams.
 - 1.2 Interior doors shall be honeycomb. Structural small cell 25.4mm (1") maximum kraft paper "honeycomb". Weight 36.3 kg (80lb.) per ream minimum, density: 16.5kg/m³ (1.03 pcf) minimum, sanded to required thickness.
 - 1.3 Exterior doors shall be Polystyrene, rigid extruded fire retardant, closed cell board. Density: 16 to 32 kg/m³ (1 to 2 pcf), thermal values: RSI 1.0 (R 6.0) minimum, Type 1, in accordance with ASTM C578
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2. Labeled doors shall be provided for those doors requiring fire protection ratings as shown on the Door Schedule. Such doors shall be constructed as tested and approved by the Underwriter's Laboratories of Canada.
 3. Channel type wrap-around glazing detail will be acceptable. Formed channels glazing bead shall be minimum 16mm high.
 4. All doors shall be reinforced, mortised, drilled and tapped to receive templated hardware and reinforced for surface mounted hardware.
 5. All components are to be assembled by means of adequate spot welding or arc welding in accordance with current C.S.A Standard W59 to provide a finished door, square and true and free from defects and distortions.
 6. Exterior doors shall have extended P.V.C. flush cal closing off head rail conforming to CGSB 41-GP-19Ma.
 7. Hardware Reinforcing:

Hinges	10ga. hi-frequency
Continuous Hinges	10ga. Full height edge to suit "adjusta-screw" fasteners
Lock	14ga. Lock box (86 edge) with centering clips
Exit Device	14ga. Reinforcing boxes
Closer	14ga. 4-1/2" integral reinforcing box
 8. All doors to be reinforced and prepped for electric door hardware. Provide internal door raceways and pull strings thru 1/2" diameter conduit to necessary hardware locations.
 9. Provide door louver cut-outs where required.
 10. Primer shall conform to the current CGSB Standard 1-GP-181M.
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- D. Knock Down Steel Frames:
1. Fabricate knock-down frames for simple field assembly of frame elements to ensure square, rigid, tightly-fitted, and securely locked joints which will keep members aligned, both during erection and while in place.
 2. Make joints by tenons and splices bolted together and nut lock fastened, or by concealed interlocking connections.
 3. Anchor frames to studs by clips at tops of jambs, 300mm below tops, and otherwise at 610mm o.c. Anchor floor clips by two fastenings at a minimum 75mm o.c..
 4. Fabricate frames of 1.2mm thick steel.
 5. Latch side of all frame rebates shall be fitted with two rubber bumpers.
- E. Hardware Reinforcing: Shall be minimum 3.5mm (10ga.) for hinges, 2.7mm (12ga.) for surface hardware and 1.5mm (16ga.) for other items.
- F. Primer: Shall conform to the current CGSB Standard 1-GP-181M
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PART 3: EXECUTION**3.01 STEEL FRAME FABRICATION**

- A. Form frames in accordance with details, approved shop drawings, and ULC requirements.
- B. Mortise, reinforce, drill and tap frames and reinforcements to receive hardware using template provided.
- C. Protect strike and hinge reinforcement completely by guard boxes welded to frame.
- D. Weld in two temporary channel spreaders per frame to ensure proper frame alignment.
- E. Where frames terminate at finish floor, provide floor plates for anchorage to structural slab.
- F. Cut miters accurately and weld continuously on inside of frame profile.
- G. Grind welded corners to a flat plane, fill with metallic paste filler and sand to uniform smooth finish.
- H. Fill surface depressions and butted joints with metallic paste filler and sand to uniform smooth finish.
- I. Reinforce heads of frames wider than 1219mm (4'-0") with 3.4mm (10ga.) reinforcing.
- J. Reinforce all frames to receive surface door closers.
- K. Provide ULC labels on frames for fire-rated doors.
- L. Touch up frames by priming areas where galvanizing is damaged prior to delivery.

3.02 STEEL DOOR FABRICATION

- A. Construct doors in accordance with reviewed shop drawings and ULC requirements.
 - B. Make provisions for grilles and glass and provide necessary glazing stops. Removable glazing stops shall be screw-fixed with countersunk heads.
 - C. Undercut doors where shown on Door Schedule
 - D. Touch up doors with primer where galvanized finish is damaged during fabrication.
 - E. Provide astragals for pairs of doors in accordance with ULC requirements.
 - F. Provide ULC labels for all fire-rated doors.
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3.03 FRAME INSTALLATION

- A. Set frames plumb, square, level, free from warp, twist and superimposed loads and at a correct elevation.
- B. Secure anchorage and connections to adjacent construction, in a manner not restricting thermal movement. Finalize anchor settings after alignment.
- C. Brace frames solidly in position while being built-in. Install a temporary horizontal wood spreader at mid-height of door opening to maintain frame width until adjacent work completed. For frames over 1219mm (4'-0") in width, provide temporary vertical support at center of head. Remove temporary spreaders and supports only after completion of adjacent work.
- D. Fill first core of concrete masonry units adjacent to door jambs solid with concrete mortar. Fill jambs and head of all hollow metal frames, which occur in concrete masonry unit partitions, with concrete mortar.
- E. Make allowances for deflection of structure to ensure structural loads are not transmitted to frames.
- F. Install hardware in accordance with templates and hardware manufacturer's instructions.
- G. Adjust operable parts for correct function.

3.04 DOOR INSTALLATION

- A. Install doors and hardware in accordance with hardware templates and manufacturer's instructions.
- B. Adjust operable parts for correct function.
- C. Install grilles where indicated.

3.05 WORKMANSHIP

- A. All workmanship shall be first-class in every way, the various parts of the work being accurately fitted and fabricated with surfaces free from warp, wave, buckle, or other defects.

3.06 CLEAN-UP

- A. At completion of work of this Section, remove all tools, equipment, surplus materials, and debris from Job Site.

END OF SECTION 08150