

PART 1 - GENERAL

- .1 The requirements of Division 01 form part of this section.
- .2 Division 05 Structural Steel.
- .3 Section 07 90 00 - Joint Sealants
- .4 Section 08 71 00 - Door Finish Hardware
- .5 Section 09 21 99 - Partitions for minor works.
- .6 Section 09 91 99 - Interior Painting for minor works.
- .7 Division 26 Electrical.
- .8 Division 28 Electronic Safety and Security.

1.1 REFERENCES

- American National Standards Institute (ANSI):
- .1 ANSI/BHMA A156.16-2008, Auxiliary Hardware.
 - .2 American Society for Testing and Materials International (ASTM)
 - .1 ASTM A653/A653M-15e1, Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process.
 - .2 ASTM B29-14, Standard Specification for Refined Lead.
 - .3 ASTM B749-14, Standard Specification for Lead and Lead Alloy Strip, Sheet and Plate Products.
 - .5 ASTM E413-16, Classifications for Rating Sound Insulation.
 - .6 ASTM E1332-16, Standard Classification for Rating Outdoor-Indoor Sound Attenuation.
 - .3 Canadian General Standards Board (CGSB)
 - .1 CAN/CGSB-1.181-99, Ready-Mixed Organic Zinc-Rich Coating.
 - .4 Canadian Standards Association (CSA International)
 - .1 CSA G40.20-13/G40.21-13, General Requirements for Rolled or Welded Structural Quality Steel/Structural Quality Steel.
 - .2 CSA W59-13, Welded Steel Construction (Metal Arc Welding).
 - .5 Canadian Steel Door Manufacturers' Association (CSDMA)
 - .1 CSDMA, Recommended Specifications for Commercial Steel Doors and Frames, 2006.
 - .2 CSDMA, Selection and Usage Guide for Commercial Steel Door and Frame Products, 2009.
 - .6 National Fire Protection Association (NFPA)

- .1 NFPA 80-2016, Standard for Fire Doors and Other Opening Protectives.
- .2 NFPA 252-2017, Standard Methods of Fire Tests of Door Assemblies.

.7 South Coast Air Quality Management District (SCAQMD), California State

- .1 SCAQMD Rule 1113-16, Architectural Coatings.
- .2 SCAQMD Rule 1168-05, Adhesives and Sealants Applications.

.8 Underwriters' Laboratories of Canada (ULC)

- .1 CAN/ULC-S104-15, Standard Method for Fire Tests of Door Assemblies.
- .2 CAN/ULC-S105:2016, Standard Specification for Fire Door Frames Meeting the Performance Required by CAN/ULC-S104.

.4 CAN/ULC-S702-14, Standard for Thermal Insulation, Mineral Fibre, for Buildings.

.5 CAN/ULC-S704-11, Standard for Thermal Insulation, Polyurethane and Polyisocyanurate Boards, Faced.

.9 Underwriters Laboratories Inc. (UL)

- .1 UL10C Positive Pressure Fire Tests of Door Assemblies.
- .2 UL10B Fire Tests of Door Assemblies.

1.2 SYSTEM DESCRIPTION

.1 Design Requirements:

.1 Steel fire rated doors and frames: labelled and listed by an organization accredited by Standards Council of Canada in conformance with CAN4 S104M and CAN4 S105M, NFPA 252 for ratings specified or indicated.

.4 Provide fire labelled frames for openings requiring fire protection ratings. Test products in conformance with CAN/ULC-S104, ASTM E152 or NFPA 252 and listed by nationally recognized agency having factory inspection services.

1.3 QUALIFICATIONS

- .1 The manufacturer of steel doors and frames supplied under this section will be a member of the CSDMA - Canadian Steel Door Manufacturers Association.

1.4 SUBMITTALS

- .1 Provide submittals in accordance with Section 01 33 00.

- .2 Provide product data: in accordance with Section 01 33 00.

- .3 Provide shop drawings: in accordance with Section 01 33 00.

.1 Indicate each type of door, material, steel core thicknesses, mortises, reinforcements, location of exposed fasteners, openings, glazed, arrangement of

hardware, fire rating and finishes.

.2 Indicate each type frame material, core thickness, reinforcements, glazing stops, location of anchors and exposed fastenings, reinforcing and fire rating finishes.

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

1.5 DELIVERY,
STORAGE AND
HANDLING

.1 Deliver, store and handle materials in accordance with Section 01 00 10

.2 Waste Management and Disposal:

.1 in accordance with Section 01 00 10, 01 74 11.

PART 2 - PRODUCTS

2.1 MATERIALS

.1 Metal Faces: tension levelled sheet steel to ASTM A568/A568M, Class 1, with ZF075 zinc coating on both sides designation to ASTM A653/A653M, minimum 30% total recycled content.

.2 Reinforcement Channels: To CAN/CSA G40.20/G40.21, Type 44W, coating designation to ASTM A653M; ZF075.

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/m³ minimum sanded to required thickness.

.2 Continuous interlocking steel ribs: 0.9 mm thick continuous interlocking steel stiffeners at 150 mm O.C., securely welded to each face sheet 150 mm O.C. maximum.

.1 Voids between stiffeners Fibreglass: loose batt type, density: 24 kg/m³ minimum, to CAN/ULC-S702, Type 1. Ecologo certified.

.3 Insulated: bonded core of expanded polystyrene or isocyanurate insulation board.

4. Temperature rise rated (TRR): core composition to limit temperature rise on unexposed side of door to 250°C at 30 60 minutes. Core to be tested as part of a complete door assembly, in accordance with CAN/ULC-S104, ASTM E152 or NFPA 252, covering Standard Method of Tests of Door Assemblies and listed by nationally recognized testing agency having factory inspection service.

2.3 ADHESIVES

- .1 Honeycomb cores and steel components: heat resistant, spray grade, resin reinforced neoprene/rubber (polychloroprene) based, low viscosity, contact cement.

2.4 PRIMER

- .1 Primer: zinc rich, organic, ready mix to CAN/CGSB-1.181, Ecologo certified.

2.5 PAINT

- .1 Field paint steel doors and frames in accordance with Section 09 91 99. Protect weatherstrips from paint. Provide final finish free of scratches or other blemishes.

2.6 GLAZING

- .1 Interior Glazing(Narrow Lites for Hollow Metal Doors):
 - .1 Tempered Glass: To CAN/CGSB 12.1, Type 2, Class-B - float, min. 6mm thick. except where wired glass required.
 - .2 Wired Glass for fire rated doors: To CAN/CGSB 12.11, Type 1, wire mesh style 3 (Georgian), min. 6mm thick.
 - .3 Glass mouldings: formed steel.
 - .4 Setting blocks: neoprene, Shore "A" 80 durometer hardness to ASTM D2240-05(2010), 100 x 6 mm x width to suit glass.
 - .5 Glazing tape: preformed butyl with continuous spacer, Shore "A" 10-15 durometer hardness, paper release, black colour, 3 x 9.5 mm.
 - .6 Gasket: black neoprene to ASTM C542-05(2011), "U" cavity type with lock strip.
 - .7 Sealant: one part silicone to ASTM C920-11, Type S, Grade NS, Class 50.
 - .8 Make provisions for glazing as indicated and provide necessary glazing stops.
 - .9 Provide removable stainless steel glazing beads for use with glazing tapes and compounds and secured with countersunk stainless steel screws.
 - .10 Design exterior side glazing stops to be tamperproof.

2.7 ACCESSORIES

- .1 Door silencers: to ANSI/BHMA-A156.16, type L03011 single stud rubber/neoprene type.
- .2 Exterior and interior top and bottom caps: steel.
- .3 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.

- .4 Door bottom seal: as specified in Section - 08 71 00
- .5 Metallic paste filler: to manufacturer's standard polyester based.
- .6 Fire labels: As indicated and in accordance with listing requirements. Provide ULC or WHI labels. Metal rivited.
- .7 Sealant: as specified in Section - 07 92 00.

2.8 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, knocked-down, or slip-on type construction.
- .4 Floor anchors, channel spreaders, and wall anchors: Galvanized sheet steel min. 1.5mm base thickness.
- .5 Blank, reinforce, drill and tap frames for mortised, templated hardware, and electronic hardware using templates provided by finish hardware supplier.
- .6 Reinforce frames for surface mounted hardware.
- .7 Protect mortised cutouts with steel guard boxes.
- .8 Prepare frame for door silencers, 3 for single door, 2 at head for double door.
- .9 Reinforcing channel: To CAN/CSA G40.21, type 300W hot dip galvanized with minimum zinc coating to CSA G164 of 380 gm/sq.m.
- .10 Clip angles: min. 3.0mm base thickness (11ga.) Z275 galvanized sheet steel.
- .11 Repair any surface depressions, butted joints, and tube and screw anchor points with metallic paste filler. Sand to uniform smooth finish.
- .12 Fabricate glazing stops, glazing channels and other components free of sharp corners and edges and fit tightly to adjacent components.
- .13 Manufacturer's nameplates on frames and screens are not permitted.
- .14 Conceal fastenings except where exposed fastenings are

indicated.

- .15 Provide factory-applied touch up primer at areas where zinc coating has been removed during fabrication.

2.9 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 on centre maximum.

2.10 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.

2.11 FRAMES: KNOCKED-DOWN TYPE

- .1 Ship knocked-down type frames unassembled.
- .2 Provide frames with mechanical joints which inter-lock securely and provide functionally satisfactory performance when assembled and installed in accordance with CSDMA Recommended Installation Guide for Steel Doors and Frames.
- .3 Securely attach floor anchors to inside of each jamb profile.

2.12 FRAMES: SLIP-ON TYPE

- .1 Ship slip-on type frames unassembled.
- .2 Provide frames with mechanical joints which inter-lock securely and provide functionally satisfactory performance when installed in accordance with CSDMA

Recommended Installation Guide for Steel Doors and Frames and manufacturers' instructions.

2.13 DOOR
FABRICATION GENERAL

- .3 Provide slip-on frames with manufacturers' proprietary design of wall anchorage comprising single, adjustable tension type per jamb and provision for secure attachment of each jamb base to stud runners.
- .1 Doors: swing type, flush, with provision for glazing lite's as indicated.
- .3 Fabricate doors with longitudinal edges 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 Reinforce doors where required, for surface mounted hardware. Provide flush steel top caps to exterior doors. Provide inverted, recessed, spot welded channels to top and bottom of interior doors.
- .6 Provide factory-applied touch-up primer at areas where zinc coating has been removed during fabrication.
- .7 Provide fire labelled doors for those openings requiring fire protection ratings, as scheduled. Test such products in conformance with CAN/ULC-S104 ASTM E152 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.
- .8 Manufacturer's nameplates on doors are not permitted.

2.14 DOORS:
HONEYCOMB CORE
CONSTRUCTION

- .1 Form face sheets for interior doors from 1.6 mm sheet steel with honeycomb temperature rise rated core laminated under pressure to face sheets.

2.15 HOLLOW STEEL
CONSTRUCTION

- .1 Form face sheets for interior doors from 1.6 sheet steel.
- .2 Reinforce doors with vertical stiffeners, securely welded to face sheets at 150 mm on centre maximum.
- .3 Fill voids between stiffeners of interior doors with fibreglass honeycomb temperature rise rated core.

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 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.

3.4 DOOR INSTALLATION

- .1 Install doors and hardware in accordance with hardware templates and manufacturer's instructions and Section 08 71 00.
- .2 Provide even margins between doors and jambs and doors and finished floor as follows.
 - .1 Hinge side: 1.0 mm.
 - .2 Latchside and head: 1.5 mm.
 - .3 Finished floor, top of vinyl tile] : 13 mm.
- .3 Adjust operable parts for correct function.

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.

END OF SECTION

PART 1 - GENERAL

1.1 RELATED
REQUIREMENTS

- .1 The requirements of Division 01 form part of this section.
- .2 Section 08 11 00: Steel hollow metal doors, frames and screens.
- .3 Section 09 21 99 - Partitions for minor works.
- .4 Section 09 91 99 - Interior Painting.
- .5 Division 26 Electrical.
- .6 Division 28 Electronic Safety and Security.

1.2 REFERENCES

SPEC NOTE: Edit the following paragraphs for this specific project.

- .1 American National Standards Institute (ANSI) / Builders Hardware Manufacturers Association (BHMA)
 - .1 ANSI/BHMA A156.1-2013, American National Standard for Butts and Hinges.
 - .2 ANSI/BHMA A156.2-2011, Bored and Preassembled Locks and Latches.
 - .3 ANSI/BHMA A156.3-2014, Exit Devices.
 - .4 ANSI/BHMA A156.4-2013, Door Controls - Closers.
 - .5 ANSI/BHMA A156.5-2014, Auxiliary Locks and Associated Products.
 - .6 ANSI/BHMA A156.6-2010, Architectural Door Trim.
 - .7 ANSI/BHMA A156.8-2010, Door Controls - Overhead Stops and Holders.
 - .8 ANSI/BHMA A156.10-2011, Power Operated Pedestrian Doors.
 - .9 ANSI/BHMA A156.12-2013, Interconnected Locks and Latches.
 - .10 ANSI/BHMA A156.13-[2012], Mortise Locks and Latches Series 1000.
 - .12 ANSI/BHMA A156.15-[2011], Release Devices - Closer Holder, Electromagnetic and Electromechanical.
 - .13 ANSI/BHMA A156.16-2013, Auxiliary Hardware.
 - .14 ANSI/BHMA A156.17-2014, Self-closing Hinges and Pivots.
 - .15 ANSI/BHMA A156.18-2012, Materials and Finishes.
 - .16 ANSI/BHMA A156.19-2013, Power Assist and Low Energy Power - Operated Doors.
 - .19 ANSI/BMHA A156.22-2012, Door Gasketing and Edge Seal Systems.
- .2 Canadian Steel Door Manufacturers' Association (CSDMA)
 - .1 CSDMA Recommended Dimensional Standards for Commercial Steel Doors and Frames - 2009.

1.3 ACTION AND
INFORMATIONAL
SUBMITTALS

- .1 Submit in accordance with Section 01 33 00 Submittal Procedures
- .2 Product Data:
 - .1 Submit manufacturer's instructions, printed product literature and data sheets for door hardware and include product characteristics, performance criteria, physical size, finish and limitations.
 - .2 Product data sheets shall consist of catalogue cuts, manufacturer's name and number, finish and reference identification to specified standard.
- .3 Hardware List:
 - .1 Submit contract hardware list in accordance with Section 01 33 00 Submittal Procedures and Section 01 78 00 - Closeout Submittals.
 - .2 Indicate specified hardware, including make, model, material, function (ANSI Function where ANSI used in this specification), Grade, Type, Series, BHMA finish, trim, ULC listing, UL listing, manufacturer and other pertinent information. Indicate which model or accessory is being provided where more than one model or accessory appears on a page.
- .5 Manufacturer's Instructions: submit manufacturer's installation instructions.

1.4 CLOSEOUT
SUBMITTALS

- .1 Submit in accordance with Section 01 78 00.
- .2 Operation and Maintenance Data: submit operation and maintenance data for door hardware for incorporation into manual.
- .3 Submit schematic diagrams of electrical components for inclusion in maintenance manual specified in Section 01 11 01.

1.5 MAINTENANCE
MATERIALS
SUBMITTALS

- .1 Extra Stock Materials:
 - .1 Supply maintenance materials in accordance with Section 01 78 00.
 - .2 Tools:
 - .1 Supply 2 sets of wrenches for door closers locksets and fire exit hardware.

1.6 QUALITY
ASSURANCE

- .1 Regulatory Requirements:
 - .1 Use ULC listed and labeled hardware for doors in fire rated partitions and fire exits.
 - .2 Use UL 437 listed cylinders in locking devices to security rating indicated.

1.7 DELIVERY,
STORAGE AND
HANDLING

- .1 Deliver, store and handle materials in accordance with Section 01 61 00 and with manufacturer's written instructions.
- .2 Delivery and Acceptance Requirements: deliver materials to site in original factory packaging, labelled with manufacturer's name and address.

- .3 Package items of hardware including fastenings, separately or in like groups of hardware, label each package as to item definition and location.
- .4 Storage and Handling Requirements:
 - .1 Store materials indoors in dry location and in accordance with manufacturer's recommendations in clean, dry, well-ventilated area.
 - .2 Store and protect door hardware from nicks, scratches, and blemishes.
 - .3 Protect prefinished surfaces with wrapping strippable coating.
 - .4 Replace defective or damaged materials with new.
- .5 Develop Construction Waste Management Plan related to Work of this Section and in accordance with Section 01 00 10 and 01 74 11.
- .6 Packaging Waste Management:] in accordance with Section 01 74 11.

PART 2 - PRODUCTS

2.1 HARDWARE ITEMS

- .1 Use one manufacturer's products only for similar items.

2.2 DOOR HARDWARE

- .1 Locks and latches:
 - .1 Lock and latch set (bored): to ANSI/BHMA-A156.2-2011, Series 4000, Grade 1, bolted through door, ANSI door prep ANSI/BHMA-A156.115- 2006 for steel doors and frames, dead latching bolt, function indicated, 630 stainless steel, UL 437 listed cylinder, Security.
 - .2 Interconnected locks and latches: to ANSI/BHMA A156.12, series 5000 interconnected lock, grade 1,1 function as stated in Hardware Schedule.
 - .3 Mortise locks and latches: to ANSI/BHMA A156.13, series 1000 mortise lock, grade 1, designed for functionas stated in Hardware Schedule.Security Grade 1
 - .4 Lever handles: lock trim lever and escutcheon with cylinder on exteriorlock trim lever on interior,
 - .5 Escutcheons: square.
 - .7 Cylinders: UL 437 listed cylinder
 - .8 Finished to stainless steel 630.
- .3 Lock and latch set (electric mortised): to ANSI/BHMA-A156.13-2012, Operational Grade 1, Series 1000, fail secure electric lock with monitoring, 24 volt, 19 mm latch throw, continuous duty solenoid, interconnected to alarm system.
 - .1 Function: Outside lever continuously locked by 24V current. Latchbolt retracted by key outside or by lever inside. Switch or power failure allows outside lever to retract

latchbolt. Auxiliary latch deadlocks latchbolt when door is closed. Inside lever always free for immediate exit. Inside lever is always free for immediate egress.

.1 Butts and hinges:

.1 Butts and hinges: to ANSI/BHMA A156.1, designated by letter A and numeral identifiers, followed by size and finish, listed in Hardware Schedule.

.3 Exit devices: to ANSI/BHMA A156.3, type 3, function 03, grade 1, modern covers finished to stainless steel 630].

.1 Auxiliary items: door co-ordinator, type 21, for pairs of doors with overlapping astragals.

.4 Door Closers and Accessories:

.1 Door closers: to ANSI/BHMA A156.4-2013, designated by letter C and numeral identifiers listed in Hardware Schedule, size size to suit door width and mass, dead stop, integral shock absorbing back check, variable backcheck position valve, heavy-duty shock-absorber arm as indicated. Closers will have been tested to 10,000,000 cycles without failure where required by hardware schedule. Disabled access doors: to operate at a minimum pressure not exceeding 38 N for exterior doors, 22 N for interior doors and close in not less than 5 seconds from an open position of 90°.

[in accordance with ANSI/BHMA A156.4, table A1, finished to sprayed enamel finish, metallic 689 aluminum.

.5 Strikes

.1 Normal strikes: box type, lip projection not beyond jamb ASA dimensions.

.2 Electric strikes as stated in Hardware Schedule: to ANSI/BHMA-A156.31, Grade 1, fail secure, 4.8 mm horizontal adjustment capability, dual monitor switches, silent operation, E59321 - Mortised: for use with locks not having dead bolts, use also with mortise exit devices. E59331 - Mortised: for use with locks on single doors having latch bolts and 25 mm throw dead bolts.

.3 Strike bucket: strike bucket accepting a 25 mm throw deadlock. Grouted or wedged in the area of the strike bucket to prevent spreading.

.6 Auxiliary locks and associated products: to ANSI/BHMA

.1 Auxiliary dead lock (bored): to ANSI/BHMA-A156.5-2014, operated by key outside and by turn from inside. Function E0151. UL 437 listed cylinder,

Security.

- .7 Architectural door trim: to ANSI/BHMA A156.6, designated by letter J and numeral identifiers listed in Hardware Schedule listed below, finished to 630 .
 - .1 Door protection plates:
 - .1 kick plate type to ANSI/BHMA-A156.6-2010, 1.27 mm thick, size as listed in Hardware Schedule, finished to stainless steel 630, all edges to be beveled.
- .9 Auxiliary hardware: to ANSI/BHMA A156.16, as listed in Hardware Schedule as listed below,
 - .1 Keeper switch: limit switch built into door frame for indicating the lock bolt is in the locked or unlocked position, for use with standard ASA strike plate, will accept one- inch bolt throw. Position switch is adjustable for mortise or cylindrical locksets. Depth of switch tripper is adjustable for bolt throw.
 - .2 Lock protector/latch guard: 2 mm thick stainless steel, with security frame pin to prevent separation of door and frame, no exposed fasteners on face, S-6 finish to match bronze anodized doors, 630 stainless steel elsewhere.
 - .3 Door mounted stop: to ANSI/BHMA-A156.16-2013, dome type, cushion secured by concealed fasteners, anti-rotation stud, type L22141 finish 626 for doors without threshold and type L22161, finish 626 for doors with threshold.
 - .4 Auto flush bolts, type 2, [finish to [ANSI 156.3 Stainless steel 630.
 - .5 Door silencer: type Rubber for metal frames.
- .12 Weather stripping:
 - .1 Automatic door bottom (mortised): operable and automatic door seal of aluminum frame and neoprene seals, automatic retract mechanism when door is open, listed and labelled for use in 45 min. fire doors, in accordance with ASTM E2074-00e1 and CAN/ULC-S104-10.
 - .2 Smoke/sound seal gasketing: to ANSI/BHMA-A156.22-2012, Function ROY154, solid neoprene or silicone tube, self adhesive, tested to ASTM E283-04(2012), cUL 1-1/2 hours.
 - .1 Head and jamb seal:
 - .1 Extruded aluminum frame and silicone rubber insert, clear anodized finish.
 - .2 Door bottom seal:
 - .1 Extruded aluminum frame and silicone vinyl sweep, clear anodized finish. ULC listed at rated doors.
 - .3 Astragal: overlapping, extruded aluminum frame with vinyl pile insert, ULC listed for rated doors.

- .4 Control boxes: complete with electric strike relay.
- .5 Actuation of operators by card readers motion detectors.
- .6 Electrical box and actuator: Hardwired low voltage actuator with stainless steel 114 mm round plate, engraved blue filled with handicap symbol. Box 51 mm wide x 102 mm high x 50 mm deep single gang electrical box, flush mounted in wall, locations indicated.
- .7 Supply switched line voltage to control box. Locate switch adjacent to box.
- .8 Supply low voltage wiring to each actuator and 6 mm diameter air tubing to each operator.
- .9 Mount control box in location as directed by Departmental Representative

2.2
HARDWARE BY SECURITY

- .1 Exit motion detector device: to Section 28 13 27.
- .2 T-Rex Exit Detector: to Section 28 13 33
- .3 Door contact: to Section 28 16 00.
- .4 Card reader: to Section 28 13 27.
- .5 Key Pad Lock: to Section 28 13 33

2.4 FASTENINGS

- .1 Use only fasteners provided by manufacturer. Failure to comply may void warranties and applicable licensed labels.
- .2 Supply screws, bolts, expansion shields and other fastening devices required for satisfactory installation and operation of hardware.
- .3 Exposed fastening devices to match finish of hardware.
- .4 Where pull is scheduled on one side of door and push plate on other side, supply fastening devices, and install so pull can be secured through door from reverse side. Install push plate to cover fasteners.
- .5 Use fasteners compatible with material through which they pass.

2.5 KEYING

- .1 Doors, padlocks and cabinet locks to be keyed differently as directed. Prepare detailed keying schedule in conjunction with Departmental Representative.
- .2 Supply keys in duplicate for every lock in this Contract.
- .3 Supply construction cores.
- .4 Hand over permanent cores and keys to Departmental Representative.

PART 3 - EXECUTION

3.1 INSTALLATION

- .1 Manufacturer's Instructions: comply with manufacturer's written recommendations, including product technical bulletins, product catalogue installation instructions, product carton installation instructions, and data sheets.
- .2 Supply metal door and frame manufacturers with complete instructions and templates for preparation of their work to receive hardware.
- .3 Supply manufacturers' instructions for proper installation of each hardware component.
- .4 Install hardware to standard hardware location dimensions in accordance with CSDMA Canadian Metric Guide for Steel Doors and Frames (Modular Construction).
- .5 Where door stop contacts door pulls, mount stop to strike bottom of pull.

3.2 ADJUSTING

- .1 Adjust door hardware, operators, closures and controls for optimum, smooth operating condition, safety and for weather tight closure.
- .2 Lubricate hardware, operating equipment and other moving parts.
- .3 Adjust door hardware to ensure tight fit at contact points with frames.

3.3 CLEANING

- .1 Progress Cleaning: clean in accordance with Section 01 74 11.
 - .1 Leave Work area clean at end of each day.
 - .2 Clean hardware with damp rag and approved non-abrasive cleaner, and polish hardware in

accordance with manufacturer's instructions.

.3 Remove protective material from hardware items where present.

.4 Final Cleaning: upon completion remove surplus materials, rubbish, tools and equipment in accordance with Section 01 74 11.

.2 Waste Management: separate waste materials for reuse and recycling in accordance with Section 01 74 11 01 00 10.

.1 Remove recycling containers and bins from site and dispose of materials at appropriate facility.

3.4 PROTECTION

.1 Protect installed products and components from damage during construction.

.2 Repair damage to adjacent materials caused by door hardware installation.

3.5 SCHEDULE

.1 **Double Doors D120**
(2)965 x 2440 x 44 - HM DR w/ PS FR
- LH RH F.R.R. 45 min provide all F.R rated hardware required.

- .1 8 ea. standard hinges, A5111, NRP, 127 x 101 mm C26D 630 Stainless steel.
- .2 1 electric strike to suit lockset.
- .3 1 keeper switch.
- .3 1 mortise lock set with hotel function. (mortise lockset with interconnected deadbolt)
- .4 1 permanent cylinder, 6 pin UL437-rated high security cylinder.
- .5 12ga steel latch guard.
- .6 1 Auto flush bolt ANSI 156.3 Type 25 for steel door.
- .7 1 dust proof strike
- .8 1 flush bolt extended for top leaf
- .9 2 surface closers C02011 hinge side mounted.
- .10 2 mounting plates.
- .11 4 ((1) per side of each door)" armor type" stainless steel kick plates 915 mm x 927 mm
- .12 2 neoprene gasketed UL rated door bottom seals.
- .13 continuous surface mounted silicone rubber weather stripping around rabbet of jambs and head of door frame.
- .14 2 965mm surface door sweeps at base of door.(surface mounted on push side)
- .15 1 Full length astragal(mount on push side of inactive leaf)aluminum with silicone.
- .16 1 ea. Coordinator ANSI 156.3 Type 21
- .17 1 ea. Power Transfer (concealed)

Security Hardware (By Security Contractor.)

Security Door Contacts, Access Key Pad, TREX, Card Reader, Motion Security Detector.

.2 **Single Door 120a**

(1)1220 x 2440 x 44 - HM DR w/ PS FR -RH F.R.R. 45 min

- .1 3 ea. standard hinges A5111,
NRP, 127 x 101 mm 630 stainless steel.
- .2 1 electric strike to suit lockset.
- .3 1 keeper switch.
- .4 1 permanent cylinder,6 pin UL437-rated high
security cylinder.
- .5 12ga steel latch guard.
- .6 1 exit device Rim ANSI 156.3-2001 grade 1 / ANSI
Function 03 x 4'0" c/w lever to match existing
- .7 1 surface closer C02011 (hinge side mounted).
- .8 1 mounting plate.
- .9 1 " mop type" stainless steel kick plate 305 mm
x 1182mm. (push side)
- .11 1 neoprene gasketed UL rated door bottom seals.
- .12 Continuous surface mounted silicone rubber
weather stripping around rabbet of jambs and head
of door frame.
- .13 1 1220 mm surface door sweep at base of
door (pull side regular mounted).

Security Hardware (By Security Contractor.)

Security Door Contacts, Access Key Pad, TREX
Card Reader, Motion Security Detector

.3 **Single Door 120b**

(1)965 x 2135 x 44 - HM DR w/ PS FR
-LH F.R.R. 45 min

- .1 3 ea. standard hinges A5111,
NRP, 127 x 101 mm 630 Stainless steel.
- .2 1 electric strike
- .3 1 keeper switch
- .4 1 exit device Rim ANSI 156.3-2001 grade 1 / ANSI
Function 03 c/w lever to match existing.
- .5 permanent cylinder,6 pin UL437-rated high
security cylinder.
- .6 12ga steel latch guard
- .7 1 surface closer (pull side regular mounted)..
- .8 1 mounting plate.
- .9 1 " mop type" stainless steel kick plate 305 mm
x 927 mm (push side)
- .10 1 neoprene gasketed UL rated door bottom seals.
- .11 Continuous surface mounted silicone rubber
weather stripping around rabbet of jambs and head
of door frame. Ensure closer can be mounted on
head gasketing for continuous seal.
- .12 1 956mm surface door sweep at base of
door(surface mounted on push side.

Security Hardware (By Security Contractor.)

Security Door Contacts, TREX, Card Reader, Motion
Security Detector

.4 Single Door 110D

(1)965 x 2150 x 44 - HM DR w/ PS FR
-RH F.R.R. 45 min

- .1 3 ea. standard hinges A5111,
NRP, 127 x 101 mm 630 Stainless steel.
- .2 1 electric strike to suit lockset
- .3 1 mortise lock set with storeroom function
- .4 12ga steel latch guard
- .5 1 surface closer C02011 (pull side regular
mounted).
- .6 1 mounting plate.
- .7 1 door mounted articulating stop.

Security Hardware (By Security Contractor.)

Security Door Contacts, TREX, Card Reader

.5 Double Doors D110c

(2)965 x 2135 x 44 - HM DR w/ PS FR
- LH RH

- .1 6 pairs standard hinges A5111,
NRP, 127 x 101 mm 630 Stainless steel.
- .2 1 electric strike.3 1 mortise lock set with
storeroom or service function.
- .3 1 flush bolt ANSI 156.16, L04251 top
- .4 1 flush bolt ANSI 156.16, L04251 bottom.
- .5 1 dust proof strike.
- .6 1 pull plate J405 100 x 400.
- .7 1 push plate J301, 100x 400.
- .8 1 surface closers C02011 - Active leaf only.
- .9 1 mounting plates.
- .10 2 ((1) per side of each door)" mop type"
stainless steel kick plates 305mm x 927 mm
- .11 2 neoprene gasketed door bottom seals.
- .12 continuous surface mounted silicone rubber
weather stripping around rabbet of jambs and head
of door frame
- .13 2 965mm surface door sweeps at base of
door(surface mounted on push side)
- .14 1 Full length astragal(mount on push side of
inactive leaf)aluminum with silicone.
- .15 1 ea. Power Transfer (concealed)

Security Hardware (By Security Contractor.)

Card Reader

**.6 Single Doors 121 RH, 124 LH (opex and bantec technician
office)**

(1)965 x 2135 x 44 - HM(insulated) DR w/ PS FR

- .1 3 ea. standard hinges A5111
NRP, 127 x 101 mm 630 Stainless steel.
- .2 1 bored lock set with classroom function
- .3 1 normal strike
- .4 1 surface closer C02011. (pull side regular
mounted).
- .5 1 mounting plate

- .6 1 " mop type" stainless steel kick plate 305 mm
x 927 mm (push side)
- .7 1 door mounted stop.

No Security Hardware

.7 **Single Door 125 (mechanical room)**

(1)965 x 2135 x 44 - HM(insulated) DR w/ PS FR RH

- .1 3 ea. standard hinges A5111,
NRP, 127 x 101 mm, 630 Stainless steel.
- .2 1 bored lock set with storeroom function.
- .3 1 normal strike.
- .4 1 surface closer C02011 (pull side regular
mounted).
- .5 1 mounting plate.
- .6 1 " mop type" stainless steel kick plate 305 mm
x 965mm (push side)
- .7 1 neoprene gasketed door bottom seals.
- .8 Continuous surface mounted silicone rubber.
weather stripping around rabbet of jambs and head
of door frame.
- .9 965mm surface door sweeps at base of
door(surface mounted on push side).
- .10 1 door mounted stop.

No Security Hardware