Part 1 General

1.1 RELATED SECTIONS

.1 Section 04 04 99 – Masonry for Minor Works: Building-in and grouting frames in masonry

.2 Section 06 08 99 - Rough Carpentry for Minor Works: Wood blocking

.3 Section 07 21 19 - Foamed-in-Place Insulation

.4 Section 07 92 00 - Joint Sealants: Caulking of joints between frames and other building components

.5 Section 08 71 00 - Door Hardware - General: Supply of finish hardware.

.6 Section 08 80 50 - Glazing

.7 Section 09 21 16 - Gypsum Board Assemblies: Building-in frames into steel stud walls

.8 Section 09 91 23 - Interior Painting

1.2 REFERENCES

.1 ASTM International (ASTM)

.1 ASTM A653/A653M-11, Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process

.2 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

.3 Canadian Standards Association (CSA International)

.1 CAN/CSA G40.20/G40.21-04, General Requirements for Rolled or Welded Structural Quality Steel/Structural Quality Steel

.2 CSA W59-03(R2008), Welded Steel Construction (Metal Arc Welding) (Metric Version)

.4 Canadian Steel Door Manufacturers' Association, (CSDMA)

.1 CSDMA, Specifications for Commercial Steel Doors and Frames, 2009

.2 CSDMA, Recommended Selection and Usage Guide for Commercial Steel Doors, 2009

.5 National Fire Protection Association (NFPA)

.1 NFPA 80-2010, Standard for Fire Doors and Fire Windows

.2 NFPA 252-2008, Standard Methods of Fire Tests of Door Assemblies

.6 Underwriters' Laboratories of Canada (ULC)

.1 CAN4-S104-10, Fire Tests of Door Assemblies

.2 CAN4-S105-09, Fire Door Frames Meeting the Performance Required by CAN4-S104

.3 CAN/ULC-S704-03, Thermal Insulation, Polyurethane and Polyisocyanurate Boards, Faced

1.3 SUBMITTALS

.1 Provide submittals in accordance with Section 01 33 00 – Submittal Procedures.

.2 Action Submittals:

.1 Shop Drawings:

.1 Provide for each type of door and frame, elevations of all doors and frames, jamb and head details for all frame types, meeting and style details on pairs of doors, material, steel core thicknesses, mortises, reinforcements, location of exposed fasteners, glazed openings, door grilles, arrangement of hardware, fire rating, method of anchorage, junction boxes and conduit for electrical hardware and wiring.

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

1.4 DELIVERY, STORAGE, AND HANDLING

.1 Deliver hollow metal work palletized, wrapped, or crated to provide protection during transit and Project-site storage. Do not use non-vented plastic.

.1 Provide additional protection to prevent damage to finish of factory-finished units.

.2 Deliver welded frames with two removable spreader bars across bottom of frames, tack welded to jambs and mullions.

.3 Store hollow metal work under cover at Project site. Place in stacks of five units maximum in a vertical position with heads up, spaced by blocking, on minimum 100 mm high wood blocking. Do not store in a manner that traps excess humidity.

.1 Provide minimum 6-mm space between each stacked door to permit air circulation.

.4 Waste management and disposal requirements: Refer to Section 01 74 21 – Construction/Demolition Waste Management and Disposal.

1.5 SITE CONDITIONS

.1 Field Measurements: Verify actual dimensions of openings by field measurements before fabrication.

Part 2 Products

2.1 REGULATORY REQUIREMENTS

.1 Steel fire rated doors and frames: labelled and listed by an organization accredited by Standards Council of Canada in conformance with CAN/ULC-S104M for ratings specified or indicated.

.2 Provide fire labelled frame products for those openings requiring fire protection ratings, as scheduled. Test products in strict conformance with CAN/ULC-S104, ASTM E152 or 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.

2.2 DESIGN REQUIREMENTS

.1 Design exterior frame assembly to accommodate to expansion and contraction when subjected to minimum and maximum surface temperature of -35 deg C to 35 deg C.

.2 Maximum deflection for exterior steel entrance screens under wind load of 1.2 kPa not to exceed 1/175th of span.

2.3 MATERIALS

.1 Hot dipped galvanized steel sheet: commercial grade, cold rolled, annealed, stretcher levelled, to ASTM A653M, ZF75, minimum base steel thickness in accordance with CSDMA Table 1 - Thickness for Component Parts, except where specified otherwise.

.2 Accessories including reinforcement, anchors: to CSA G40.20/G40.21, Type 300W, coating designation to ASTM A653M, ZF75, minimum base steel thickness in accordance with CSDMA Table 1 - Thickness for Component Parts, except where specified otherwise.

2.4 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 Insulated construction:

.1 Polyurethane: to CAN/ULC-S704 rigid, modified polyisocyanurate, minimum RSI 2.3, closed cell board. Density 32 kg/m3.

2.5 ADHESIVES

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

.2 Polyurethane cores: heat resistant, epoxy resin based, low viscosity, contact cement.

.3 Lock-seam doors: fire resistant, resin reinforced polychloroprene, high viscosity, sealant/adhesive.

2.6 PRIMER

.1 Touch-up primer to zinc coated sheet steel CAN/CGSB-1.181.

.2 Primer to reinforcing: to CAN/CGSB-1.40.

2.7 ACCESSORIES

.1 Door silencers: single stud, black rubber/neoprene type.

.2 Shipping jamb spreader: minimum 1.2 mm thick.

.3 Frame Thermal Breaks: Rigid PVC extrusion conforming to CGSB 41-GP-19MA.

.4 Top caps:

.1 Exterior: flush, rigid polyvinylchloride extrusion conforming to CGSB 41-GP-19Ma.

.2 Interior top: flush, steel, spot welded channel closure.

.5 Bottom caps: inverted, recessed, channels, minimum 25 mm deep, spot welded to both door faces.

.6 Reinforcements:

.1 Hinge reinforcement: minimum 4.5 mm thick, full height, full cavity width.

.2 Strike reinforcement: minimum 2.66 mm thick.

.3 Surface applied hardware reinforcement: minimum 2.66 mm thick.

.4 Lock reinforcement: minimum 1.52 mm thick.

.7 Floor and Wall Anchors: minimum 1.52 mm thick.

.8 Door bottom seal: as specified in Door Hardware Schedule.

.9 Metallic paste filler: to manufacturer's standard.

.10 Fire labels: metal riveted to doors and frames.

.11 Sealant: as specified in Section 07 92 00 – Joint Sealants.

.12 Grout: Comply with ASTM C476, with a slump of 100 mm for standard steel door frames, as measured according to ASTM C143/C143M.

.13 Glazing stops: fabricate as formed channel, minimum 1.00 mm coated steel, 16 mm height, accurately fitted, butted at corners, and fastened to frame with counter-sunk oval head sheet metal screws, ZF075 (wipe coat) zinc coating.

2.8 FRAMES FABRICATION GENERAL

.1 Fabricate frames:

.1 In accordance with CSDMA specifications, except where specified otherwise.

.2 To profiles and maximum face sizes as indicated.

.3 To accommodate doors with applied finishes, where indicated.

.2 Frames:

.1 General: Welded, 1.60 mm thick, ZF75 coated steel.

.2 Exterior: Thermally broken

.3 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.

.4 Protect mortised cutouts with steel guard boxes. Protection is not required for dry wall applications.

.5 Reinforce frame heads without loose lintels provided by others, with bent plate channels, minimum 3 mm thick. Reinforce frame heads wider than 1200 mm.

.6 Top hinge reinforcement: weld in top hinge reinforcement with 19 mm leg to hinge reinforcement, 25 mm leg to frame.

.7 Prepare frame for door silencers as follows:

.1 Three for single doors.

.2 Two at head for double doors.

.8 Manufacturer's nameplates on frames may be permitted on hinge of frame concealed from view.

.9 Conceal fastenings except where exposed fastenings are indicated.

.10 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 corrugated, perforated, adjustable steel jamb anchors, Underwriter approved type, welded in door frames installed in masonry walls.

.4 Provide steel jamb anchors, suitable design, securely welded inside each jamb, to door and sidelight frames in steel stud partitions.

.5 Weld base/floor anchors inside, full width jamb profile, punched for 6 mm diameter expansion bolts for fixing to floor slab.

.6 Provide two anchors for rebate opening heights up to 1520 mm, and one additional anchor for each additional 760 mm of height thereof.

.7 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.

2.10 FRAMES, WELDED TYPE

.1 Welding in accordance with CSA W59.

.2 Accurately mitre or mechanically joint frame product.

.3 Perimeter corner joints: as defined in Appendix 2 of CSDMA, "Recommended Specifications for Commercial Steel Door and Frame Products", except as specified otherwise:

.1 Face welded; continuously weld profile faces. Fill and grind exposed faces to smooth, uniform, seamless surface.

.4 Joints at mullions, sills and centre rails:

.1 Accurately coped, butted and tightly fitted.

.2 At intersecting flush profile faces: securely welded on inside of frame, filled and ground to smooth, uniform, seamless surface.

.3 At intersecting recessed profile faces: securely welded on inside of frame to concealed reinforcements, with exposed hairline face seams.

.4 At other intersecting profile elements: exposed hairline face seams.

.5 Securely attach floor anchors to inside of each jamb profile.

.6 Weld in two temporary jamb spreaders per frame to maintain proper alignment during shipment.

.7 Sleeve and weld joint of field splices of frame sections requiring assembly on site. Mechanical fastening of field splices not permitted. Make field splices inconspicuous after assembly.

.8 Provide head/transom rail to suit concealed overhead door closers, automatic door operators. Co-ordinate with adjacent construction over door head.

2.11 DOOR FABRICATION, GENERAL

.1 Doors: swing type, flush, with provision for openings as indicated.

.2 Exterior doors: Form each face sheet for exterior doors from 1.60 mm thick ZF75 coated steel with polyurethane core laminated under pressure to face sheets.

.3 Interior doors: Form each face sheet for interior doors from 1.60 mm thick ZF75 coated steel with honeycomb core laminated under pressure to face sheets.

.4 Fabricate doors with longitudinal edges mechanically interlocked and tack welded. Tack weld using welds minimum 6 mm long, top and bottom of door, above and below each cutout and at 150 mm oc maximum spacing. Fill seam with metallic paste filler and sand to uniform finish.

.5 Blank, reinforce, drill doors and tap for mortised and templated hardware.

.6 Factory prepare holes 12.7 mm diameter and larger except mounting and through-bolt holes, on site, at time of hardware installation.

.7 Reinforce doors where required, for surface mounted hardware. Provide closer reinforcement both sides all doors, including doors not scheduled to receive closers.

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

.9 Provide fire labeled doors for those openings requiring fire protection ratings, as scheduled. Test such products in strict conformance with CAN/ULC-S104, ASTM E152 or 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.

.10 Manufacturer's nameplates on doors are permitted only on hinge side of door, concealed from view.

2.12 SHOP PAINTING

.1 Clean metal surfaces of loose scale, shavings, filings, dirt, dust, other objectionable materials. Use wire brushes, other approved methods. Remove grease, oil with benzene, other similar Xylol cleaners.

.2 Factory touch up galvanized finish damaged during fabrication and cleaning.

.3 Apply one shop coat light grey coloured primer to reinforcing, attachment steel surfaces, two shop coats where in contact with concrete or masonry.

Part 3 Execution

3.1 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.

3.2 FRAME INSTALLATION

.1 Set frames plumb, square, level and at correct elevation. Maximum diagonal distortion of 1.6 mm.

.2 Secure anchorages and connections to adjacent construction.

.3 Remove shipping spreaders prior to installation.

.4 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.

.5 During setting of frame product, check and correct for opening width, opening height, square, alignment, twist, and plumb in accordance with CSDMA, "Recommended Dimensional Standards for Commercial Steel Doors and Frames".

.6 Make allowances for deflection of structure to ensure structural loads are not transmitted to frames.

.7 Caulk perimeter of frames between frame and adjacent material, on both sides of opening.

.8 Fit throat return flanges tight to finished wall surfaces.

.9 Maintain continuity of air/vapour barrier.

.10 Insulate exterior frame components with spray foam insulation specified in Section 07 21 19, injected into frame after installation.

.11 Install spray foam sealant as specified in Section 07 21 19 – Foamed-in-Place Insulation in shim spaces around full perimeter, to maintain continuity of thermal barrier.

.12 Fully grout frames in cast-in-place concrete and concrete masonry unit walls with non-shrink grout. Co-ordinate grouting of frames to adjacent concrete construction. Use hand-troweling methods. Brace frames so pressure of grout before setting will not deform frames. Install door silencers in frames before grouting.

3.3 DOOR INSTALLATION

.1 Install doors and hardware in accordance with hardware templates and manufacturer's instructions and Section 08 71 00 - Door Hardware - General.

.2 Provide clearances for swinging doors as follows, with a minus 2 mm tolerance:

- .1 Along top: 3 mm.
- .2 Hinge and latch jambs: 3 mm.
- .3 Along meeting edge of doors in pairs: 3 mm.
- .4 At bottom edge of single swing door: 10 mm.
- .5 At bottom edge of pair of doors: 6 mm.

.3 Adjust operable parts for correct function.

3.4 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.

3.5 GLAZING

.1 Install glazing in doors in accordance with Section 08 80 50 – Glazing.

END OF SECTION

Part 1 General

1.1 REFERENCES

.1 American National Standards Institute (ANSI) / Builders Hardware Manufacturers Association (BHMA)

.1 ANSI/BHMA A156.1-2000, American National Standard for Butts and Hinges.

.2 ANSI/BHMA A156.2-2003, Bored and Preassembled Locks and Latches.

.3 ANSI/BHMA A156.3-2001, Exit Devices.

.4 ANSI/BHMA A156.4-2000, Door Controls - Closers.

.5 ANSI/BHMA A156.5-2001, Auxiliary Locks and Associated Products.

.6 ANSI/BHMA A156.6-2005, Architectural Door Trim.

.7 ANSI/BHMA A156.16-2002, Auxiliary Hardware.

.8 ANSI/BHMA A156.18-2006, Materials and Finishes.

.2 Canadian Steel Door and Frame Manufacturers' Association (CSDMA)

.1 CSDMA Recommended Dimensional Standards for Commercial Steel Doors and Frames - 2009.

1.2 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.

.3 Samples:

.1 Submit for review and acceptance of each unit.

.2 Samples will be returned for inclusion into work.

.3 Identify each sample by label indicating applicable specification paragraph number, brand name and number, finish and hardware package number.

.4 After approval samples will be returned for incorporation in Work.

.4 Hardware List:

.1 Submit contract hardware list.

.2 Indicate specified hardware, including make, model, material, function, size, finish and other pertinent information.

.5 Test Reports: certified test reports showing compliance with specified performance characteristics and physical properties.

.6 Manufacturer's Instructions: submit manufacturer's installation instructions.

1.3 CLOSEOUT SUBMITTALS

.1 Submit in accordance with Section 01 78 00 - Closeout Submittals.

.2 Operation and Maintenance Data: submit operation and maintenance data for door hardware for incorporation into manual.

1.4 MAINTENANCE MATERIALS SUBMITTALS

.1 Extra Stock Materials:

.1 Supply maintenance materials in accordance with Section 01 78 00 - Closeout Submittals.

.2 Tools:

.1 Supply 2 sets of wrenches for door closers, locksets and fire exit hardware.

1.5 QUALITY ASSURANCE

.1 Regulatory Requirements:

.1 Hardware for doors in fire separations and exit doors certified by a Canadian Certification Organization accredited by Standards Council of Canada.

.2 Certificates: product certificates signed by manufacturer certifying materials comply with specified performance characteristics and criteria and physical requirements.

1.6 DELIVERY, STORAGE AND HANDLING

.1 Deliver, store and handle materials in accordance with Section 01 61 00 - Common Product Requirements 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 Replace defective or damaged materials with new.

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 Mortise locks and latches: to ANSI/BHMA A156.13, series 1000 mortise lock, grade 1, designed for function and keyed as stated in Hardware Schedule.

.2 Lever handles : plain design.

.3 Escutcheons : square.

.4 Normal strikes: box type, lip projection not beyond jamb.

.5 Cylinders: key into keying system.

.6 Finished to C26D.

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

.1 A5112 - stainless steel material with stainless steel pin, full mortise, exposed anti-friction ball bearing, Grade 2, standard weight.

.2 A8112 - steel base metal, full mortise, exposed anti-friction ball bearing, grade 2, standard weight.

.3 Supply 1-1/2 pair per door leaf for doors up to 2285mm in height. Supply one additional hinge for each additional 762mm of height or fraction thereof.

.4 Doors, 45mm thickness, up to 914mm in width, supply 114mm high hinges; over 914mm to 1220mm, supply 127mm high hinges.

.5 NRP - non removable pin.

.3 Bored and Preassembled Locks and Latches shall comply with ANSI/BHMA A156.2

.1 Heavy duty cylindrical type. Series 4000, grade 1. . Pressure cast zinc lever with wrought rose. Lever design to have flat face (124mm long), 64mm overall projection with end returning to 13mm from face of door. 87mm diameter round roses. Functions as specified. Push button locking. Provide dust boxes behind all strikes.

.4 Mortise Locks and Latches, Series 1000 shall comply with ANSI/BHMA A156.13

.1 Heavy duty mortise type. Series 1000, grade 1. Lever design to have flat face (117mm long), 73mm overall projection, with end returning to 13mm from face of door. 65mm diameter round wrought roses. Provide dust boxes behind all strikes. Functions as specified.

.5 Exit devices: to ANSI/BHMA A156.3,

.1 Rim push pad type, grade 1modern-narrow stile finished to 626.

.2 Functions:

.1 01 - exit only, no trim or blank escutcheon.

.2 14 - entrance by trim when latch bolt is released by lever. Always active, no cylinder.

.3 Lever trim to match cylindrical and mortise locks.

.6 Door Controls (Closers) and Accessories to ANSI/BHMA A156.4:

.1 Heavy duty. Full rack and pinion hydraulic action. Cast iron cylinder body.

.2 Adjustable spring power and back check. Full plastic cover.

.3 EDA - extra duty arm

.4 PT4G - built-in factory dead stop

.7 Floor / Wall stops shall comply with ANSI/BHMA A156.16

.1 Cast brass or bronze material.

.2 Heavy duty one piece cast floor stops. Rise to suit door undercut.

.8 Threshold shall comply with ANSI/BHMA A156.21

.1 Type J32130. Extruded aluminum. Slope and height to comply with barrier free requirements.

.2 Width to suit jamb and floor conditions.

.9 Door Sweep shall comply with ANSI/BHMA A156.22

.1 Type R3A436. Aluminum extrusion c/w insert of black nylon bristles.

.2 Applied to exterior face of door. Predrilled with oblong holes for adjustment.

.3 Length to suit width of door.

.10 Weatherstripping shall comply with ANSI/BHMA A156.22

.1 Type R3E296. Extruded aluminum with silicone rubber insert. Predrilled with oblong screw holes for adjustment. Designed to provide continuous weather seal at head and jambs. Surface hardware to be attached to frame through weatherstrip sufficient to support 38.1±mm wide extrusion. Provide shim as required. Fire labelled where required.

.11 Architectural door trim: to ANSI/BHMA A156.6, designated by letter J and numeral identifiers, finished to C26D

.1 Door protection plates: kick plate type, 1.27 mm thick stainless steel finished to C26D.

.2 Push plates: 1.27 mm thick stainless steel finished to 630.

.3 Push/Pull units: stainless steel finished to 630.

.12 Thresholds: 127mm wide x full width of door opening, extruded aluminum mill finish, serrated surface.

2.3 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.

2.4 KEYING

.1 Door locks to be master keyed as directed. Prepare detailed keying schedule in conjunction with Departmental Representative.

.2 Supply keys in duplicate for every lock in this Contract.

.3 Supply 3 master keys for each master key or grand master key group.

.4 Stamp keying code numbers on keys and cylinders.

.5 Supply construction cores.

.6 Hand over permanent cores and keys to Departmental Representative.

.7 All cylinders are to be supplied with cams / tailpieces suitable for specified lock functions. Supply all compression rings, trim collars and blocking rings to suit.

.8 The Contractor is responsible for providing locks and cylinders as required for his own use during the period of construction.

2.5 FINISHES

.1 Materials and Finishes shall comply with ANSI/BHMA A156.18

Hinges	628	clear anodized aluminum
	630	stainless steel metal, satin
	652	satin chromium plating on steel
Locksets	626	satin chromium plated
Exit Devices	626	chromium, dull
Surface Bolts	626	satin chromium plated
Door Closers	689	powder coat aluminum
Kick Plates	630	stainless steel, satin
Overhead Stops	630	stainless steel, satin
Floor & Wall Stops	626	satin chrome
Threshold & W/Stripping	AL	clear anodized aluminum

2.6 ABBREVIATIONS

HMD	hollow metal door
INS. HMD	insulated hollow metal door
PSF	pressed steel frame
LH	left hand
RH	right hand
LHR	left hand reverse
RHR	right hand reverse
MS	machine screw
HR/FR	minute fire rated

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 CSDFMA Canadian Metric Guide for Steel Doors and Frames (Modular Construction).

.5 Where door stop contacts door pulls, mount stop to strike bottom of pull.

.6 Install key control cabinet.

.7 Use only manufacturer's supplied fasteners.

.1 Use of "quick" type fasteners, unless specifically supplied by manufacturer, is unacceptable.

.8 Remove construction cores locks when directed by Departmental Representative.

.1 Install permanent cores and ensure locks operate correctly.

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 00 10 – General Instructions: Cleaning.

- .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 00 10 – General Instructions: Cleaning.

3.4 DEMONSTRATION

.1 Keying System Setup and Cabinet:

- .1 Set up key control system with file key tags, duplicate key tags, numerical index, alphabetical index and key change index, label shields, control book and key receipt cards.
- .2 Place file keys and duplicate keys in key cabinet on their respective hooks.
- .3 Lock key cabinet and turn over key to Departmental Representative.

.2 Maintenance Staff Briefing:

- .1 Brief maintenance staff regarding:
  - .1 Proper care, cleaning, and general maintenance of projects complete hardware.
  - .2 Description, use, handling, and storage of keys.
  - .3 Use, application and storage of wrenches for door closers locksets and fire exit hardware.

.3 Demonstrate operation, operating components, adjustment features, and lubrication requirements.

3.5 PROTECTION

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

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

3.6 SCHEDULE

BIRKS & BATES BUILDINGS

.1 Hardware Group No. 1 (Door G101C):

.1	1-1/2 pr butts A5112, 127 x 101 mm NRP	630.
.2	1 closer C02021 EDA PT4G (CUSH)	689
.3	1 Exit device, Type 1 - F - 01 x LEVER	626
.4	1 Kick Plate J102 304.8 x L.T.S. x MS	630
.5	1 Door Sweep R3A436 x 916±mm	AL
.6	1Set W/Stripping R3E296 x 1/916± + 1/2242±mm Install before exit device & door closer	AL
.7	1 Threshold	AL

.2 Hardware Group No. 2 (Doors B301, B101A, B101B, G101A, G101B, M101):

.1	1-1/2 pr butts A8111, 114 x 101 mm	646.
.2	1 closer C02021 EDA PT4G (CUSH)	689
.3	1 Exit device, Type 1 - F - 14 x LEVER	626
.4	1 Kick Plate J102 304.8 x L.T.S. x MS	630
.5	1 Floor stop L12161	626

.3 Hardware Group No. 3 (Doors B112, B303, B306, B315, G103, G127, G141, G142, G143, G145, M103):

.1	1-1/2 pr butts A8111, 114 x 101 mm	646.
.2	1 closer C02021 EDA PT4G (CUSH)	689
.3	1 Storeroom Lockset, F86 x LEVER x ASA STRIKE 70mm BS	626
.4	1 Kick Plate J102 304.8 x L.T.S. x MS	630
.5	1 Floor stop L12161	626

.4 Hardware Group No. 4 (Doors G126, B113, B208, B307, M104):

.1	1-1/2 pr butts A8111, 114 x 101 mm	646.
.2	1 closer C02021 EDA PT4G (CUSH)	689
.3	1 Passage Lockset F86 x LEVER x ASA STRIKE 70mm BS	626
.4	1 Kick Plate J102 304.8 x L.T.S. x MS	630
.5	1 Floor stop L12161	626

BROUSE BUILDING

.5 Hardware Group No. 5 (Doors B102, G101C, G105A):

.1	1-1/2 pr butts A8111, 114 x 101 mm	646.
.2	1 closer C02021 EDA PT4G (CUSH)	689
.3	1 Exit device, Type 1 - F - 14 x LEVER	626
.4	1 Kick Plate J102 304.8 x L.T.S. x MS	630
.5	1 Floor stop L12161	626

.6 Hardware Group No. 6 (Doors G104):

.1	1-1/2 pr butts A8111, 114 x 101 mm	646.	
.2	1 closer C02021 EDA PT4G (CUSH)	689	
.3	1 Storeroom Lockset, F86 x LEVER x ASA STRIKE 70mm BS	626	
.4	1 Kick Plate J102 304.8 x L.T.S. x MS	630	
.5	1 Floor stop L12161	626	

.7 Hardware Group No. 7 (Doors B104):

.1	1-1/2 pr butts A8111, 114 x 101 mm	646.	
.2	1 closer C02021 EDA PT4G (CUSH)	689	
.3	1 Passage Lockset F86 x LEVER x ASA STRIKE 70mm BS		626
.4	1 Kick Plate J102 304.8 x L.T.S. x MS	630	
.5	1 Floor stop L12161	626	

.8 Hardware Group No. 8 (Doors B105):

.1	1-1/2 pr butts A8111, 114 x 101 mm	646.	
.2	1 closer C02021 EDA PT4G (CUSH)	689	
.3	1 Privacy Lockset F86 x LEVER x ASA STRIKE 70mm BS		626
.4	1 Kick Plate J102 304.8 x L.T.S. x MS	630	
.5	1 Floor stop L12161	626	

.9 Hardware Group No. 9 (Doors G105B):

.1	1-1/2 pr butts A8111, 114 x 101 mm	646.	
.2	1 closer C02021 EDA PT4G (CUSH)	689	
.3	1 Passage Lockset F86 x LEVER x ASA STRIKE 70mm BS		626
.4	1 Deadbolt lockset	626	
.5	1 Kick Plate J102 304.8 x L.T.S. x MS	630	
.6	1 Floor stop L12161	626	

END OF SECTION

Part 1 General

1.1 RELATED SECTIONS

.1 Section 07 92 00 - Joint Sealing.

.2 Section 08 11 00 - Steel Doors and Frames.

1.2 REFERENCES

.1 American Society for Testing and Materials (ASTM)

.1 ASTM D 2240, Test Method for Rubber Property - Durometer Hardness.

.2 Canadian General Standards Board (CGSB)

.3 CAN/CGSB-12.1-M90, Tempered or Laminated Safety Glass.

.4 CAN/CGSB-12.11-M90, Wired Safety Glass.

.5 Flat Glass Manufacturers Association (FGMA), Glazing Manual

1.3 SUBMITTALS

.1 Submit shop drawings, product data and samples in accordance with Section 01 33 00 - Submittal Procedures.

.2 Product Data:

.1 Submit manufacturer's printed product literature, specifications and data sheets.

.3 Manufacturer's Instructions:

.1 Submit manufacturer's installation instructions.

1.4 CLOSEOUT SUBMITTALS

.1 Provide maintenance data including cleaning instructions for incorporation into manual specified in Section 01 78 00 - Closeout Submittals.

1.5 QUALITY ASSURANCE

.1 Certificates: product certificates signed by manufacturer certifying materials comply with specified performance characteristics and criteria and physical requirements.

Part 2 Products

2.1 MATERIALS: FLAT GLASS

.1 Safety glass: to CAN/CGSB-12.1, transparent 8 mm thick.

.1 Type: 2-tempered.

.2 Class B-float.

.3 Category 11.

.2 Wired glass: to CAN/CGSB-12.11, 6 mm thick.

.1 Type 1-Polished both sides (transparent).

.2 Wire mesh styles 3-Square.

2.2 MATERIALS AND ACCESSORIES

.1 Primer, sealers, cleaners: to manufacturer's standard.

.2 Setting blocks: Neoprene, 70-90 Shore A durometer hardness to ASTM D 2240, 100 mm long x 6 mm high x width to suit glass thickness.

.3 Spacer shims: Neoprene or silicone, 50-60 Shore A durometer hardness to ASTM D 2240, 75 mm long x one half height of glazing stop x thickness to suit application. Self-adhesive on one face.

.4 Glazing tape:

.1 Preformed butyl compound, paper released backed.

Part 3 Execution

3.1 MANUFACTURER'S INSTRUCTIONS

.1 Compliance: Comply with manufacturer's written data, including product technical bulletins, product catalogue installation instructions, product carton installation instructions, and data sheets.

3.2 EXAMINATION

.1 Examine framing glazing, with Installer present, for compliance with the following:

.1 Manufacturing and installation tolerances, including those for size, squareness, and offsets at corners.

.2 Minimum required face or edge clearances.

.3 Effective sealing between joints of glass-framing members.

.2 Proceed with installation only after unsatisfactory conditions have been corrected.

3.3 PREPARATION

.1 Clean contact surfaces with solvent and wipe dry.

.2 Seal porous glazing channels or recesses with substrate compatible primer or sealer.

.3 Prime surfaces scheduled to receive sealant.

3.4 GLAZING, GENERAL

.1 Comply with combined written instructions of manufacturers of glass, sealants, gaskets, and other glazing materials, unless more stringent requirements are indicated, including those in referenced glazing publications.

.2 Glazing channel dimensions, provide necessary bite on glass, minimum edge and face clearances, and adequate sealant thicknesses, with reasonable tolerances. Adjust as required by Site conditions during installation.

.3 Protect glass edges from damage during handling and installation. Remove damaged glass from site and legally dispose of off site. Damaged glass is glass with edge damage or other imperfections that, when installed, could weaken glass and impair performance and appearance.

.4 Apply primers to joint surfaces where required for adhesion of sealants, as determined by preconstruction sealant-substrate testing.

.5 Install setting blocks in sill rabbets, sized and located to comply with referenced glazing publications, unless otherwise required by glass manufacturer. Set blocks in thin course of compatible sealant suitable for heel bead.

.6 Do not exceed edge pressures stipulated by glass manufacturers for installing glass lights.

.7 Provide spacers for glass lights where length plus width is larger than 1270 mm as follows:

.1 Locate spacers directly opposite each other on both inside and outside faces of glass. Install correct size and spacing to preserve required face clearances, unless gaskets and glazing tapes are used that have demonstrated ability to maintain required face clearances and to comply with system performance requirements.

.2 Provide 3-mm minimum bite of spacers on glass and use thickness equal to sealant width. With glazing tape, use thickness slightly less than final compressed thickness of tape.

.8 Provide edge blocking where indicated or needed to prevent glass lights from moving sideways in glazing channel, as recommended in writing by glass manufacturer and according to requirements in referenced glazing publications.

.9 Set glass lights in each series with uniform pattern, draw, bow, and similar characteristics.

.10 Where wedge-shaped gaskets are driven into one side of channel to pressurize sealant or gasket on opposite side, provide adequate anchorage so gasket cannot walk out when installation is subjected to movement.

.11 Square cut wedge-shaped gaskets at corners and install gaskets in a manner recommended by gasket manufacturer to prevent corners from pulling away; seal corner joints and butt joints with sealant recommended by gasket manufacturer.

3.5 INSTALLATION: INTERIOR - DRY METHOD (TAPE AND TAPE)

.1 Cut glazing tape to length and set against permanent stops, projecting 1 mm above sight line.

.2 Place setting blocks at 1/4 points, with edge block maximum 150 mm from corners.

.3 Rest glazing on setting blocks and push against tape for full contact at perimeter of light or unit.

.4 Place glazing tape on free perimeter of glazing in same manner described.

.5 Do not remove release paper from tape until just before each glazing unit is installed.

.6 Install removable stop without displacement of tape. Exert pressure on tape for full continuous contact.

.7 Knife trim protruding tape.

3.6 CLEANING

.1 Perform cleaning after installation to remove construction and accumulated environmental dirt.

.2 Remove traces of primer, caulking.

.3 Remove glazing materials from finish surfaces.

.4 Remove labels after work is complete.

.5 Clean glass using approved non-abrasive cleaner in accordance with manufacturer's instructions.

.6 Upon completion of installation, remove surplus materials, rubbish, tools and equipment barriers.

3.7 PROTECTION OF FINISHED WORK

.1 After installation, mark light with an "X" by using removable plastic tape or paste.

END OF SECTION