

**PART 1 GENERAL**

**1.1 SECTION INCLUDES**

- .1 Non-rated, fire rated and thermally insulated steel frames.
- .2 Glass and glazing.
- .3 Exterior glazed light frames.

**1.2 RELATED SECTIONS**

- .1 Section 08 71 00 - Door Hardware: Hardware, silencers, and weather-stripping.
- .2 Section 09 91 00 - Painting: Field painting of frames.

**1.3 REFERENCES**

- .1 ANSI A117.1 - Specifications for Making Buildings and Facilities Accessible to and Usable by Physically Handicapped People.
- .2 ASTM A653/A653M - Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process.
- .3 ASTM E152 - Methods of Fire Tests of Door Assemblies.
- .4 CSDFMA (Canadian Steel Door and Frame Manufacturers Association).
- .5 DHI - Door Hardware Institute: The Installation of Commercial Steel Doors and Steel Frames, Insulated Steel Doors in Wood Frames and Builder's Hardware.
- .6 NFPA 80 - Fire Doors and Windows.
- .7 NFPA 252 - Fire Tests for Door Assemblies.
- .8 SDI-100 - Standard Steel Doors and Frames.
- .9 UL 10B - Fire Tests of Door Assemblies.

**1.4 SUBMITTALS**

- .1 Section 01 33 00: Submission procedures.
- .2 Product Data: Indicate frame configuration and finishes. Indicate door configurations, location of cut-outs for hardware reinforcement.
- .3 Shop Drawings: Indicate frame elevations, reinforcement, anchor types and spacings, location of cut-outs for hardware, and finish. Indicate door elevations, internal reinforcement, closure method, and cut-outs for glazing, louvers, and finishes.

**1.5 QUALITY ASSURANCE**

- .1 Conform to requirements of CSDFMA SDI-100 and ANSI A117.1.

- .2 Manufacturer: Company specializing in manufacturing the Products specified in this section with minimum three years documented experience.

## **1.6 REGULATORY REQUIREMENTS**

- .1 Fire Rated Frame Construction: Conform to UL 10B.
- .2 All doors in fire walls rated 2 hours or more shall be listed and labelled with a maximum temperature rise limitation of 250 C degrees after 30 minutes in accordance with the National Building Code.
- .3 Installed Door and Frame Assembly: Conform to NFPA 80 for fire rated class as scheduled.

## **1.7 PROJECT CONDITIONS**

- .1 Coordinate the work with frame opening construction, door, and hardware installation.
- .2 Sequence installation to ensure wire connections are achieved in an orderly and expeditious manner.

## **PART 2 PRODUCTS**

### **2.1 ACCEPTABLE MANUFACTURERS**

- .1 Fleming
- .2 Shanahans
- .3 Allmar

### **2.2 FRAMES**

- .1 Frames: 0.058 inch thick material, base metal thickness with ZF75 Colour bond coating.
- .2 Removable Stops: Rolled steel shape, mitered corners; prepared for countersink style tamper proof screws.
- .3 Anchors: purpose made to rigidly secure frames, 3 per jamb.
- .4 Mortar Guard Boxes: 0.03 inch welded in place.
- .5 Bituminous Coating: Fibered asphalt emulsion.
- .6 Primer: Zinc chromate type.
- .7 Silencers: Resilient rubber set in steel fitted into drilled hole.
- .8 Insulation: Fibreglass.

## **2.3 DOORS**

- .1 Insulated Core Doors: minimum, 0.048 inch surface sheets, and top and bottom end channels; cores filled with insulation.
- .2 Honeycomb Core Doors: minimum, 0.048 inch surface sheets and, top and bottom end channels; cores filled with honeycomb material laminated under pressure to surface sheets.
- .3 Fire Rated Doors: Minimum, 0.048 inch surface sheets and, top and bottom end channels, of ULC label requirements indicated on drawings.
- .4 Reinforcement for hardware:
  - .1 Locks: minimum 0.060 inch steel.
  - .2 Butts: minimum 0.13 inch steel.
  - .3 Flush Bolts: minimum 0.13 inch steel.
  - .4 Door Closures: minimum 0.075 inch steel.
- .5 Glazing Stops: 0.036 inch rolled steel channel shape, butted corners; 5/8 inch high profile; prepared for countersink screws.

## **2.4 GLAZING**

- .1 Glass and Glazing Materials.
  - .1 Insulating Glass (SG-1): double pane; 5 mm outer pane of clear tempered glass; 5 mm inner pane of clear tempered glass with Low E, argon filled cavities. Total unit thickness 1 inch.
  - .2 Insulating Glass (SG-2): double pane; 5 mm outer pane of clear glass; 5 mm inner pane of clear glass with Low E, argon filled cavities. Total unit thickness 1 inch.
  - .3 Low E coating: ACG Comfort-Ti-AC40; PPG Solarban 60 coating.
  - .4 Edge Seal Construction: silicone spacer; Architectural S class Superspacer manufactured by Edgetech, colour to be black.
- .2 Sealant Materials:
  - .1 Polyurethane Sealant: ASTM C920, single component, chemical curing, non-staining, non-bleeding, Elongation Capability 25 percent, non-sagging ; Tremco Dymonic; PRC RC-1; Sonneborn NP-1; Vulkem 931. Colour as selected by Contract Administrator.
  - .2 Joint Backing: ASTM C1330; round, closed cell polyethylene foam rod; oversized 30 to 50 percent larger than joint width.

## **2.5 HARDWARE**

- .1 Hardware: as specified in Section 08 71 00 - Door Hardware.

## **2.6 FABRICATION FRAMES**

- .1 Fabricate frames as welded unit.

- .2 Mullions for Double Doors: Fixed type, of same profiles as jambs.
- .3 Fabricate frames with hardware reinforcement plates welded in place. Provide mortar guard boxes.
- .4 Reinforce frames wider than 48 inches with roll formed steel channels fitted tightly into frame head, flush with top.
- .5 Prepare frames for silencers. Provide three single silencers for single doors and mullions of double doors on strike side. Provide two single silencers on frame head at double doors without mullions.
- .6 Attach fire rated label to each fire rated door unit.
- .7 Provide drywall returns on all frames.
- .8 Attach channel spreaders at bottom of frames for shipping.

## **2.7 FABRICATION - DOORS**

- .1 Fabricate metal doors and panels in accordance with requirements of "Canadian Manufacturing Standards for Steel Doors and Frames" produced by the Canadian Steel Door and Frame Manufacturer's Association and as indicated on Drawings. Fabricate doors with hardware reinforcement welded in place.
- .2 Longitudinal seams: Mechanically interlocked, continuously welded, filled and sanded with no visible edge seams. Top and bottom of doors closed with end channels recessed and spot welded in place.
- .3 Reinforce and prepare doors to receive hardware. Refer to Section 08 71 00 for hardware requirements.

## **PART 3 EXECUTION**

### **3.1 EXAMINATION**

- .1 Verify that opening sizes and tolerances are acceptable.

### **3.2 INSTALLATION**

- .1 Install frames in accordance with CSDFMA.
- .2 Coordinate with masonry, gypsum board, concrete wall construction for anchor placement.
- .3 Install metal door frames in fire rated gypsum board walls in accordance with NFPA 80 and the Manitoba Building code.
- .4 Coordinate installation of glass and glazing.
- .5 Coordinate installation of doors and frames with installation of hardware specified in Section 08 71 00

- .6 Install roll formed steel reinforcement channels between two abutting frames. Anchor to structure and floor.
- .7 After installation, touch up all scratched or damaged surface and prime.
- .8 Insulate all frames exposed to the exterior.
- .9 Install door louvers, plumb and level.

### **3.3 ERECTION TOLERANCES**

- .1 Maximum Diagonal Distortion: 1/16 inch measured with straight edges, crossed corner to corner.
- .2 Clearance on steel doors at head and jambs shall be: 1/8 inch maximum, and 1/8 inch maximum between pairs of doors

### **3.4 ADJUSTING**

- .1 Adjust door for smooth and balanced door movement.

END OF SECTION

**Part 1            General**

**1.1            SECTION INCLUDES**

- .1            Access door and frame units.

**1.2            RELATED SECTIONS**

- .1            Section 09 21 16 – Gypsum Board and Assemblies

**1.3            REFERENCES**

- .1            ULC - Fire Resistance Directory.

**1.4            PERFORMANCE REQUIREMENTS**

- .1            Fabricate floor access assemblies to support live load of 100 lb/sq ft with deflection not to exceed 1/180 of span.

**1.5            ADMINISTRATIVE REQUIREMENTS**

- .1            Section 01 31 00: Project management and coordination procedures.
- .2            Coordination: Coordinate with other work having a direct bearing on work of this section.
  - .1            Coordinate the work with other work requiring access doors.

**1.6            SUBMITTALS FOR REVIEW**

- .1            Section 01 33 00: Submission procedures.
- .2            Product Data: Provide sizes, types, finishes, hardware, scheduled locations, and details of adjoining work.
- .3            Shop Drawings: Indicate exact position of all access door units.

**1.7            SUBMITTALS FOR INFORMATION**

- .1            Section 01 33 00: Submission procedures.
- .2            Installation Data: Manufacturer's special installation requirements, and rough-in dimensions

**1.8            CLOSEOUT SUBMITTALS**

- .1            Section 01 78 10: Submission procedures.
- .2            Record Documentation: Record actual locations of all access units.

**1.9            QUALITY ASSURANCE**

- .1            Perform Work in accordance with ULC Assembly requirements.

**1.10          REGULATORY REQUIREMENTS**

- .1            Conform to applicable code for fire rated access doors.

- .2 Provide certificate of compliance from authority having jurisdiction indicating approval of fire rated doors.

**Part 2 Products**

**2.1 ACCESS UNITS - WALLS**

- .1 Non-Fire Rated Hatch and Frame Unit: Formed steel: 24" x 24"
  - .1 In Concrete wall

**2.2 FABRICATION - WALL UNITS**

- .1 Fabricate frames and anchors of steel 16 gauge thickness.
- .2 Fabricate hatches of 16 gauge single thickness steel; reinforced with formed steel channels; smooth surface finish.
- .3 Fabricate hatches of 16 gauge double steel, with integral, smooth surface finish.
- .4 Weld, fill, and grind joints to assure flush and square unit.
- .5 Hardware:
  - .1 Hinge: 175 degree steel hinges with removable pin.
  - .2 Lock: Screw driver slot for quarter turn cam lock.

**2.3 FINISHES**

- .1 Base Metal Protection: Galvanized, hot dipped finish.
- .2 Base Metal Protection: Prime coat units with alkyd primer.
- .3 Finish: Two (2) coats baked enamel, colour as selected.

**Part 3 Execution**

**3.1 EXAMINATION**

- .1 Section 01 71 00: Verify existing conditions before starting work.
- .2 Verify that rough openings for door and frame are correctly sized and located.

**3.2 INSTALLATION**

- .1 Install units to manufacturer's written instructions.
- .2 Install frames plumb and level in opening. Secure rigidly in place.
- .3 Position unit to provide convenient access to concealed work requiring access.

**END OF SECTION**

**Part 1            General**

**1.1                SECTION INCLUDES**

- .1        Hardware for hollow steel, aluminum doors.
- .2        Thresholds.
- .3        Weatherstripping, seals, and door gaskets.

**1.2                RELATED SECTIONS**

- .1        Section 08 11 00 - Metal Doors and Frames.

**1.3                REFERENCES**

- .1        AWI/AWMAC - Quality Standards Illustrated (QSI), current edition.
- .2        BHMA (Builders Hardware Manufacturers Association) - A156 series.
- .3        CSDFMA (Canadian Steel Door and Frame Manufacturers Association).
- .4        DHI (Door Hardware Institute) - A115 series.
- .5        DHI (Door Hardware Institute) - WDHS.3 - Hardware Locations for Wood Flush Doors.
- .6        NFPA 252 - Fire Tests of Door Assemblies.
- .7        UL 10B - Fire Tests of Door Assemblies.

**1.4                SUBMITTALS FOR REVIEW**

- .1        Section 01 33 00: Submission procedures.
- .2        Shop Drawings:
  - .1        Indicate locations and mounting heights of each type of hardware, schedules, catalogue cuts, electrical characteristics and connection requirements.
  - .2        Submit manufacturer's parts lists, and templates.

**1.5                SUBMITTALS AT PROJECT CLOSEOUT**

- .1        Section 01 78 10: Submission procedures.
- .2        Maintenance Data: Include data on operating hardware, lubrication requirements, and inspection procedures related to preventative maintenance.
- .3        Keys: Deliver with identifying tags to City by security shipment direct from hardware supplier.



**1.6 QUALITY ASSURANCE**

- .1 Hardware Supplier Qualifications: Company specializing in supplying approved by manufacturers.

**1.7 DELIVERY, STORAGE, AND PROTECTION**

- .1 Package hardware items individually; label and identify each package with door opening code to match hardware schedule.

**1.8 PROJECT CONDITIONS**

- .1 Coordinate the work with other directly affected sections involving manufacture or fabrication of internal reinforcement for door hardware and recessed items.
- .2 Sequence installation to ensure utility connections are achieved in an orderly and expeditious manner.
- .3 Coordinate City's keying requirements during the course of the Work.

**1.9 MAINTENANCE PRODUCTS**

- .1 Provide special wrenches and tools applicable to each different or special hardware component.
- .2 Provide maintenance tools and accessories supplied by hardware component manufacturer.

**Part 2 Products**

**2.1 MANUFACTURERS**

- .1 Refer to hardware schedule listed at the end of this specification section.
- .2 Automatic Door Operators:
  - .1 Acceptable Manufacturers: Horton Automatics

**2.2 DOOR HARDWARE**

- .1 Butts; Provide 1 - ½ pair for all doors, except doors over 900 mm wide or over 2200 mm high are to have 2 pair.

**2.3 KEYING**

- .1 Door Locks: Keyed to existing building.

**2.4 FINISHES**

- .1 Finishes: Identified in Schedule at end of section.

**Part 3 Execution**

**3.1 EXAMINATION**

- .1 Verify that doors and frames are ready to receive work and dimensions are as instructed by the manufacturer.
- .2 Verify that electric power is available to power operated devices and is of the correct characteristics.

**3.2 INSTALLATION**

- .1 Install hardware in accordance with manufacturer's instructions.
- .2 Use templates provided by hardware item manufacturer.
- .3 Mounting heights for hardware from finished floor to centre line of hardware item:
  - .1 Locksets: 40 5/16" inch.
  - .2 Push/Pulls: 42 inch.
  - .3 Dead Locks: 47 1/4 inch.
  - .4 Exit Devices: 39 13/16 inch.
  - .5 All other door operating devices to be mounted as per DHI A115 Series, except maximum height to be limited to 43 5/16 inch.

**3.3 ADJUSTING**

- .1 Adjust hardware for smooth operation.

**3.4 PROTECTION OF FINISHED WORK**

- .1 Do not permit adjacent work to damage hardware or finish.

**3.5 SCHEDULES**

- .1 Door Hardware Group No.1

For use on door #(s):

B01A	B01B	B05A	B05B		
3 EA	HW HINGE		3CB1HW 114 X 114 NRP	652	IVE
1 EA	CLASSROOM D.BOLT		B663P	626	SCH
1 EA	PUSH PLATE		8200 205MM X 405MM	630	IVE
1 EA	PULL PLATE		8303 255MM 150MM X 405MM	630	IVE
1 EA	OH STOP		90S	630	GLY
1 EA	SURFACE CLOSER		4040XP EDA ST-2731	689	LCN
1 EA	KICK PLATE		8400 254MM X 40MM LDW	630	IVE
3 EA	SILENCER		SR64	GRY	IVE

.2 Door Hardware Group No.2

For use on door #(s):

B02

3	EA	HINGE	3CB1 114 X 102	652	IVE
1	EA	STOREROOM LOCK	ND80PD RHO	626	SCH
1	EA	SURFACE CLOSER	1461	689	LCN
1	EA	KICK PLATE	8400 254MM X 40MM LDW	630	IVE
1	EA	FLOOR STOP	FS434	604	IVE
3	EA	SILENCER	SR64	GRY	IVE

.3 Door Hardware Group No.3

For use on door #(s):

B07

B08

3	EA	HW HINGE	3CB1HW 114 X 114	652	IVE
1	EA	FIRE EXIT HARDWARE	98-L-BE-F-06	626	VON
1	EA	SURFACE CLOSER	4040XP	689	LCN
1	EA	KICK PLATE	8400 254MM X 40MM LDW	630	IVE
1	EA	WALL STOP	WS406/407CVX	630	IVE
1	SET	WEATHERSTRIP	W-21	BLK	KNC
1	EA	DOOR BOTTOM	CT-54 36" W/SHIM	627	KNC

.4 Door Hardware Group No.4

For use on door #(s):

105

111

B06

B01C

3	EA	HINGE	3CB1 114 X 102	652	IVE
1	EA	STOREROOM LOCK	ND80PD RHO	626	SCH
1	EA	SURFACE CLOSER	1461	689	LCN
1	EA	KICK PLATE	8400 254MM X 40MM LDW	630	IVE
1	EA	FLOOR STOP	FS434	604	IVE
3	EA	SILENCER	SR64	GRY	IVE

.5 Door Hardware Group No.5

For use on door #(s):

112A

3	EA	HW HINGE	3CB1HW 127 X 114 NRP	652	IVE
1	EA	STOREROOM LOCK	ND80PD RHO	626	SCH
1	EA	ELECTRIC STRIKE	6211 FSE CON	630	VON
1	EA	AUTO OPERATOR	9542 MS	ANCLR	LCN
1	EA	ACTUATOR, WALL MT	8310-856	630	LCN
1	EA	WALL STOP	WS406/407CVX	630	IVE
1	SET	WEATHERSTRIP	W-21	BLK	KNC
1	EA	DOOR BOTTOM	CT-54 36" W/SHIM	627	KNC
1	EA	FLUSH MT KEYPAD	KP2000E		SCE
1	EA	DOOR CONTACT	679-05HM	BLK	SCE

Operational Description

Electric strike is released when power is applied (Fail Secure). With Connector Access by Keypad Exterior or key - Auto Operator operable at all times by Actuator Interior, and upon valid code at exterior keypad.

.6 Door Hardware Group No.6

For use on door #(s):

101

6	EA	HW HINGE	3CB1HW 127 X 114 NRP	626	IVE
1	EA	REMOVABLE MULLION	4854	689	VON
2	EA	PANIC HARDWARE	98-TP	626	VON
2	EA	RIM CYLINDER	20-021 EV C	626	SCH
1	EA	ELECTRIC STRIKE	6111 FSE CON	630	VON
1	EA	OH STOP	90S	630	GLY
1	EA	SURFACE CLOSER	4040XP EDA ST-2731	689	LCN
1	EA	AUTO OPERATOR	9542 MS	ANCLR	LCN
2	EA	ACTUATOR, WALL MT	8310-856	630	LCN
2	EA	KICK PLATE	8400 254MM X 40MM LDW	630	IVE
2	EA	HEAD SEAL	W-20N TO SUIT DOOR WIDTH	627	KNC
2	SET	WEATHERSTRIP	W-49 2 pcs - To Suit Door Height	627	KNC
2	EA	DOOR SWEEP	W-13S 48"	628	KNC
1	EA	THRESHOLD	CT-45 To Suit Door Width	627	KNC

Operational Description

Free Egress at all times. Pressing Push Bar retracts latchbolts. Latchbolt retracted by thumbpiece unless locked by key. Key locks and unlocks thumbpiece. Dogging by hex key, locks down the pushbar or crossbar so the latchbolt remains retracted. Self-Closing.

.7 Door Hardware Group No.7

For use on door #(s):

104A

3	EA	HINGE	3CB1 114 X 102	652	IVE
1	EA	CLASSROOM D.BOLT	B663P	626	SCH
1	SET	PULL PLATE	PR 8303 255MM 150MM X 405MM J-N	630	IVE
1	EA	AUTO OPERATOR	9542 MS	ANCLR	LCN
2	EA	ACTUATOR, WALL MT	8310-856	630	LCN
1	EA	KICK PLATE	8400 254MM X 40MM LDW	630	IVE
1	EA	FLOOR STOP	FS434	604	IVE
1	SET	WEATHERSTRIP	W-21	BLK	KNC
1	EA	DOOR BOTTOM	CT-54 36" W/SHIM	627	KNC
1	EA	KEYSWITCH	653-04 CYL	630	SCE

.8 Door Hardware Group No.8

For use on door #(s):

112B

3	EA	HW HINGE	3CB1HW 127 X 114 NRP	626	IVE
1	EA	PANIC HARDWARE	98-TP	626	VON
1	EA	RIM CYLINDER	20-021 EV C	626	SCH
1	EA	ELECTRIC STRIKE	6111 FSE CON	630	VON
1	EA	AUTO OPERATOR	9542 MS	ANCLR	LCN
2	EA	ACTUATOR, WALL MT	8310-856	630	LCN
1	EA	KICK PLATE	8400 254MM X 40MM LDW	630	IVE
1	EA	HEAD SEAL	W-20N TO SUIT DOOR WIDTH	627	KNC
1	SET	WEATHERSTRIP	W-49 2 pcs - To Suit Door Height	627	KNC
1	EA	DOOR SWEEP	W-13S 48"	628	KNC
1	EA	THRESHOLD	CT-45 To Suit Door Width	627	KNC
1	EA	KEYSWITCH	653-04 CYL	630	SCE

Operational Description

Free Egress at all times. Pressing Push Bar retracts latchbolts. Latchbolt retracted by thumbpiece unless locked by key. Key locks and unlocks thumbpiece. Dogging by hex key, locks down the pushbar or crossbar so the latchbolt remains retracted. Keyswitch to control.

.9 Door Hardware Group No.9

For use on door #(s):

104B		107		108			
3	EA	HW HINGE		3CB1HW 114 X 114 NRP		626	IVE
1	EA	PANIC HARDWARE		98-EO		626	VON
1	EA	OH STOP		90S		630	GLY
1	EA	SURFACE CLOSER		4040XP EDA ST-2731		689	LCN
1	EA	KICK PLATE		8400 254MM X 40MM LDW		630	IVE
1	EA	HEAD SEAL		W-20N TO SUIT DOOR WIDTH		627	KNC
1	SET	WEATHERSTRIP		W-49 2 pcs - To Suit Door Height		627	KNC
1	EA	DOOR SWEEP		W-13S 36"		628	KNC
1	EA	THRESHOLD		CT-45 To Suit Door Width		627	KNC

.10 Door Hardware Group No.10

For use on door #(s):

110		114					
3	EA	HINGE		3CB1 114 X 102		652	IVE
1	EA	PRIVACY LOCK		ND40S RHO		626	SCH
1	EA	SURFACE CLOSER		1461		689	LCN
1	EA	WALL STOP		WS406/407CCV		630	IVE
3	EA	SILENCER		SR64		GRY	IVE

.11 Door Hardware Group No.10R

For use on door #(s):

113R							
3	EA	HINGE		3CB1 114 X 102		652	IVE
1	EA	CYL X TURN D. LOCK		L9460P 06A L583-363 XL11-886 x 09-611		626	SCH
1	EA	AUTO OPERATOR		4642		689	LCN
2	EA	ACTUATOR, WALL MT		8310-856		630	LCN
2	EA	ESCUTCHEON		8310-874		689	LCN
1	EA	KICK PLATE		8400 254MM X 40MM LDW		630	IVE
1	EA	WALL STOP		WS406/407CCV		630	IVE
3	EA	SILENCER		SR64		GRY	IVE
1	EA	LATCH MONITOR		LML-2			SEC

Operational Description

Inside lever retracts deadbolt. Outside lever is fixed, c/w ADA Thumbturn.  
 Deadbolt thrown will indicate "Occupied" and actuators are shunted.  
 Auto Operator Automatically Opens & Closes Door.

.12 Door Hardware Group No.11

For use on door #(s):

101B	102	103A	103B	109A
109B	109C	115		

EXISTING DOOR, FRAME AND HARDWARE TO REMAIN

**END OF SECTION**