

Approved: 2007-12-31

## **Part 1        General**

### **1.1            REFERENCES**

- .1 American Society for Testing and Materials International (ASTM)
  - .1 ASTM A653/A653M-06a, Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process.
  - .2 ASTM B29-03, Standard Specification for Refined Lead.
  - .3 ASTM B749-03, Standard Specification for Lead and Lead Alloy Strip, Sheet and Plate Products.
- .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 CSA-G40.20-04/G40.21-04, General Requirements for Rolled or Welded Structural Quality Steel/Structural Quality Steel.
  - .2 CSA W59-03, Welded Steel Construction (Metal Arc Welding).
- .4 Canadian Steel Door Manufacturers' Association (CSDMA)
  - .1 CSDMA, Recommended Specifications for Commercial Steel Doors and Frames, 2000.
  - .2 CSDMA, Selection and Usage Guide for Commercial Steel Doors, 1990.
- .5 National Fire Protection Association (NFPA)
  - .1 NFPA 80-99, Standard for Fire Doors and Fire Windows.
  - .2 NFPA 252-03, Standard Methods of Fire Tests of Door Assemblies.
- .6 Underwriters' Laboratories of Canada (ULC)
  - .1 CAN/ULC-S701-01, Standard for Thermal Insulation, Polystyrene, Boards and Pipe Covering.
  - .2 CAN/ULC-S702-97, Standard for Thermal Insulation, Mineral Fibre, for Buildings.
  - .3 CAN/ULC-S704-03, Standard for Thermal Insulation, Polyurethane and Polyisocyanurate Boards, Faced.
  - .4 CAN4-S104-M80, Standard Method for Fire Tests of Door Assemblies.
  - .5 CAN4-S105-M85, Standard Specification for Fire Door Frames Meeting the Performance Required by CAN4-S104.

### **1.2            ACTION AND INFORMATIONAL SUBMITTALS**

- .1 Provide submittals in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Provide shop drawings: in accordance with Section 01 33 00 - Submittal Procedures.

- .1 Submit drawings stamped and signed by professional engineer registered or licensed in Province of Manitoba, Canada.
- .2 Indicate each type of door, material, steel core thicknesses, mortises, reinforcements, location of exposed fasteners, openings, glazed, arrangement of hardware, fire rating and finishes.
- .3 Indicate each type frame material, core thickness, reinforcements, glazing stops, location of anchors and exposed fastenings, reinforcing, fire rating, and finishes.
- .4 Include schedule identifying each unit, with door marks and numbers relating to numbering on drawings and door schedule.

## **Part 2 Products**

### **2.1 MATERIALS**

- .1 Hot dipped galvanized steel sheet: to ASTM A653M, ZF75, minimum base steel thickness in accordance with CSDMA Table 1 - Thickness for Component Parts.
- .2 Reinforcement channel: to CSA G40.20/G40.21, Type 44W, coating designation to ASTM A653M, ZF75.
- .3 Composites: balance of core materials used in conjunction with lead: in accordance with manufacturers' proprietary design.

### **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/m<sup>3</sup> minimum sanded to required thickness.
  - .2 Stiffened: face sheets laminated, insulated core.
    - .1 Fibreglass: to CAN/ULC-S702, semi-rigid Type 1 density 24 kg/m<sup>3</sup>.
      - .1 Expanded polystyrene: CAN/ULC-S701, Type 1 density 16 to 32 kg/m<sup>3</sup>.
      - .2 Polyurethane: to CAN/ULC-S704 rigid, modified poly/isocyanurate, closed cell board. Density 32 kg/m<sup>3</sup>.
  - .3 Temperature rise rated (TRR): core composition to limit temperature rise on unexposed side of door to 250 degrees C at 60 minutes. Core to be tested as part of a complete door assembly, in accordance with CAN4-S104, 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 Polystyrene and polyurethane cores: heat resistant, epoxy resin based, low viscosity, contact cement.

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

## **2.4 PRIMER**

- .1 Touch-up prime CAN/CGSB-1.181.

## **2.5 PAINT**

- .1 Field paint steel doors and frames. Protect weatherstrips from paint. Provide final finish free of scratches or other blemishes.

## **2.6 ACCESSORIES**

- .1 Door silencers: single stud rubber/neoprene type.
- .2 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.
- .3 Metallic paste filler: to manufacturer's standard.
- .4 Fire labels: metal rivited.
- .5 Glazing: Refer to section 08 80 50.

## **2.7 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: 1.6mm welded type construction.
- .4 Blank, reinforce, drill and tap frames for mortised, templated hardware, [electronic hardware] using templates provided by finish hardware supplier. Reinforce frames for surface mounted hardware.
- .5 Manufacturer's nameplates on frames and screens are not permitted.
- .6 Conceal fastenings except where exposed fastenings are indicated.
- .7 Provide factory-applied touch up primer at areas where zinc coating has been removed during fabrication.
- .8 Insulate exterior frame components with polyurethane insulation.
- .9 Prepare frame for door silencers, 3 for single door, 2 at head for double door.

## **2.8 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.

## **2.9 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.

## **2.10 DOOR FABRICATION GENERAL**

- .1 Doors with fire rating requirements of more than 20 minutes: 1.2mm (18 gauge) flush hollow metal type, 45mm (1") thick.
- .2 Doors: swing type, flush, with provision for glass and/or louvre openings as indicated.
- .3 Blank, reinforce, drill doors and tap for mortised, templated hardware electronic hardware.
- .4 Factory prepare holes 12.7 mm diameter and larger except mounting and through-bolt holes, on site, at time of hardware installation.
- .5 Provide factory-applied touch-up primer at areas where zinc coating has been removed during fabrication.
- .6 Provide fire labelled doors for those openings requiring fire protection ratings, as scheduled. Test such products in conformance with CAN4-S104 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.
- .7 Manufacturer's nameplates on doors are not permitted.

## **2.11 HOLLOW STEEL CONSTRUCTION**

- .1 Form face sheets for interior doors from 1.2 sheet steel.
- .2 Reinforce doors with vertical stiffeners, securely welded to face sheets at 150 mm on centre maximum.

**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 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.

**3.4 DOOR INSTALLATION**

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

**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.

**3.6 GLAZING**

- .1 Install glazing for doors and frames in accordance with Section 08 80 50 - Glazing.

**END OF SECTION**

**Part 1 General**

**1.1 REFERENCES**

- .1 Architectural Woodwork Manufacturers Association of Canada (AWMAC).
  - .1 Quality Standards for Architectural Woodwork 1998.
- .2 Canadian General Standards Board (CGSB).
  - .1 CAN/CGSB-71.19-M88, Adhesive, Contact, Sprayable.
  - .2 CAN/CGSB-71.20-M88, Adhesive, Contact, Brushable.
- .3 Canadian Standards Association (CSA International).
  - .1 CSA A440.2-98, Energy Performance of Windows and Other Fenestration Systems.
  - .2 CSA O115-M1982(R2001), Hardwood and Decorative Plywood.
  - .3 CAN/CSA O132.2 Series-90(R1998), Wood Flush Doors.
  - .4 CAN/CSA-O132.5-M1992(R1998), Stile and Rail Wood Doors.
  - .5 CAN/CSA-Z808-96, A Sustainable Forest Management System: Guidance Document.
  - .6 CSA Certification Program for Windows and Doors 00.
- .4 National Fire Protection Association (NFPA).
  - .1 NFPA 80-1999, Standard for Fire Doors and Fire Windows.
  - .2 NFPA 252-1999, Standard Method of Fire Tests of Door Assemblies.
- .5 Underwriters' Laboratories of Canada (ULC).
  - .1 CAN-4S104M-80(R1985), Fire Tests of Door Assemblies.
  - .2 CAN4-S105M-85 (R1992), Fire Door Frames Meeting the Performance Required by CAN4-S104.

**1.2 ACTION AND INFORMATIONAL SUBMITTALS**

- .1 Product Data:
  - .1 Submit manufacturer's printed product literature, specifications and data sheet in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Shop Drawings:
  - .1 Submit shop drawings in accordance with Section 01 33 00 - Submittal Procedures.
  - .2 Indicate door types and cutouts for lights, louvres, sizes, core construction, transom panel construction and cutouts.

**1.3 SAMPLES**

- .1 Submit samples in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Submit one 300 x 300 mm corner sample of each type wood door.

- .3 Show door construction, core, glazing detail and faces.
- .4 Manufacturer's Instructions:
  - .1 Submit manufacturer's installation instructions.

#### **1.4 DELIVERY, STORAGE, AND HANDLING**

- .1 Storage and Protection:
  - .1 Protect doors from dampness. Arrange for delivery after work causing abnormal humidity has been completed.
  - .2 Store doors in well ventilated room, off floor, in accordance with manufacturer's recommendations.
  - .3 Protect doors from scratches, handling marks and other damage.
  - .4 Store doors away from direct sunlight.

#### **1.5 WASTE MANAGEMENT AND DISPOSAL**

- .1 Remove from site and dispose of packaging materials at appropriate recycling facilities.
- .2 Unused or damaged glazing materials are not recyclable and must not be diverted to municipal recycling programs.
- .3 Divert unused adhesive material from landfill to official hazardous material collections site approved by Departmental Representative.
- .4 Do not dispose of unused paint materials into sewer systems, into lakes, streams, onto ground or in locations where it will pose health or environmental hazard.

### **Part 2 Products**

#### **2.1 WOOD FLUSH DOORS**

- .1 Solid core: to CAN/CSA-O132.2.1.
  - .1 Construction:
    - .1 Acceptable Product:
      - .1 Baillargeon 8600-VE, or approved other.
    - .2 Stiles: 30mm total width, 3mm hardwood or thick veneer laminated to 22mm hardwood, type 1 structural glue. Cover with 0.7938mm wood veneer
    - .3 Rails: 30mm in wood.
    - .4 Core: Solid particle board.
    - .5 Faces: Wood veneer
    - .6 Veneer: Maple, quarter cut stained to match engineered hardwood flooring.
    - .7 Factory finish the acceptable product with stain to match engineered hardwood flooring. Provide samples to departmental Representative for review.
  - .2 Adhesive: Type I (waterproof) for interior doors.

## **2.2 FABRICATION**

- .1 Vertical edge strips to match face veneer.
- .2 Bevel vertical edges of single acting doors 3 mm in 50 mm]on lock side and 1.5 mm in 50 mm on hinge side.
- .3 Radius vertical edges of double acting doors to 60 mm radius.

## **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 INSTALLATION**

- .1 Unwrap and protect doors in accordance with CAN/CSA-O132.2 Series, Appendix A.
- .2 Install labelled fire rated doors to NFPA 80.
- .3 Install doors and hardware in accordance with manufacturer's printed instructions and CAN/CSA-O132.2 Series, Appendix A.
- .4 Adjust hardware for correct function.

### **3.3 ADJUSTMENT**

- .1 Re-adjust doors and hardware just prior to completion of building to function freely and properly.

### **3.4 CLEANING**

- .1 Perform cleaning as soon as possible after installation to remove construction and accumulated environmental dirt.
- .2 Remove traces of primer, caulking; clean doors and frames.
- .3 Clean glass and glazing materials with approved non-abrasive cleaner.
- .4 On completion of installation, remove surplus materials, rubbish, tools and equipment barriers.

**END OF SECTION**

**Part 1            General**

**1.1                ACTION AND INFORMATIONAL SUBMITTALS**

- .1    Provide submittals in accordance with Section 01 33 00 - Submittal Procedures.
- .2    Provide product data: in accordance with Section 01 33 00 - Submittal Procedures.
- .3    Provide shop drawings: in accordance with Section 01 33 00 - Submittal Procedures.
  - .1        Submit drawings stamped and signed by professional engineer registered or licensed in Province of Manitoba, Canada.
  - .2        Indicate materials, operating mechanisms, required clearances and electrical connections.
- .4    Provide samples: in accordance with Section 01 33 00 - Submittal Procedures.

**Part 2            Products**

**2.1                MATERIALS**

- .1    Products:
  - .1        Overhead Door – Thremacore 593 or approved other
    - .1            Panel: ribbed, textured panel
    - .2            Color: grey
    - .3            Glazing: aluminum sash section with DSB glazing. Underside of glazing to be minimum 2134mm – 0mm above finish grade.
    - .4            Chain drive
    - .5            Wall console.

**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**

- .1    Install doors and hardware.
- .2    Adjust door operating components to ensure smooth opening and closing of doors.
- .3    Adjust operable parts for correct function.
- .4    Adjust weatherstripping to form weathertight seal.

**3.3 FIELD QUALITY CONTROL**

.1 Manufacturer's Field Services:

- .1 Provide manufacturer's field services consisting of product use recommendations and periodic site visits for inspection of product installation in accordance with manufacturer's instructions.

**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 A156.8-2005, Door Controls - Overhead Stops and Holders.
  - .8 ANSI/BHMA A156.10-1999, Power Operated Pedestrian Doors.
  - .9 ANSI/BHMA A156.12-2005, Interconnected Locks and Latches.
  - .10 ANSI/BHMA A156.13-2002, Mortise Locks and Latches Series 1000.
  - .11 ANSI/BHMA A156.14-2002, Sliding and Folding Door Hardware.
  - .12 ANSI/BHMA A156.15-2006, Release Devices - Closer Holder, Electromagnetic and Electromechanical.
  - .13 ANSI/BHMA A156.16-2002, Auxiliary Hardware.
  - .14 ANSI/BHMA A156.17-2004, Self-closing Hinges and Pivots.
  - .15 ANSI/BHMA A156.18-2006, Materials and Finishes.
  - .16 ANSI/BHMA A156.19-2002, Power Assist and Low Energy Power - Operated Doors.
  - .17 ANSI/BHMA A156.20-2006, Strap and Tee Hinges and Hasps.
- .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 Hardware List:
  - .1 Submit contract hardware list.
  - .2 Indicate specified hardware, including make, model, material, function, size, finish and other pertinent information.
- .4 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 DELIVERY, STORAGE AND HANDLING**

- .1 Delivery and Acceptance Requirements: deliver materials to site in original factory packaging, labelled with manufacturer's name and address.
- .2 Package items of hardware including fastenings, separately or in like groups of hardware, label each package as to item definition and location.
- .3 Storage and Handling Requirements:
  - .1 Store materials off ground, 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 strippable coating.
  - .4 Replace defective or damaged materials with new.

## **Part 2 Products**

### **2.1 PRODUCT DATA**

- .1 Include with the hardware schedule all product data sheets and catalogue cuts required for any related trades sections.
- .2 Provide all templates required by related trade sections for the proper preparation of their product.
- .3 Provide a complete keying schedule. Co-ordinate the keying requirements for this project with the Departmental Representative.
- .4 Deliver to the project all hardware in the manufacturers packages with markings corresponding to the hardware schedule clearly shown.
- .5 Deliver directly to the fabricator any items, which are requested for their use in fabrications.
- .6 Store all finish hardware in its original packages in a secure, clean, dry and warm area, equipped with sufficient shelving.

- .7 Warranty all hardware for the period of one year. Door closers to be warranted for five years.

## 2.2 PRODUCTS

- .1 All hardware is to be installed with the standard fasteners supplied by the manufacturer unless called for otherwise in the hardware sets.
- .2 All hinges shall be Ives and of the size, type, and finish as indicated in the hardware sets.
- .3 Locks shall be cylindrical or mortise type as specified in the hardware sets. All locksets shall have lever handle.
- .4 Exit Devices shall be of the flush bar type. All devices whether rim or vertical rod to be surface mounted. All exit devices to be Adams Rite. No substitutes.
- .5 All door closers shall be surfaces mounted with full covers, unless otherwise specified in the hardware schedule. Manual closers with universal spring size must be adjusted to suit specific opening requirements. Follow manufacturer's instructions. Provide LCN Closers as specified. No Substitutes.
- .6 Kickplates to be of brass or bronze construction, 0.050 thick. Provide Ives series as specified. Screw mounted.
- .7 Pulls to be of brass or bronze construction. All pulls to be through bolt mounted. Provide Ives as specified.
- .8 Protective Plates, Push Plates: All plates to be of brass or bronze construction. To be 0.050 thick. Provide Ives as specified. All kickplates on the push side of the door shall be 38mm less than the door width. If other hardware interferes with the above recommendations, then the plate size shall be modified at the factory to suit the installation. Kickplates to be mounted behind vertical rod exit devices.
- .9 Door stopes and Holders: All floor stops to be solid brass or bronze with rubber bumpers. Stops fastened to brick or concrete shall have wood screws and lead shields. Stops fastened to walls or floors of wood construction shall have wood screws. Provide Ives stops as specified.
- .10 Thresholds and Weather-strip: All weather-strip, sweeps, automatic door bottoms, shall be anodized aluminum construction with polyurethane or neoprene gasketing as specified. All to be screw in mounting. K.N. Crowder as specified.

## 2.3 KEYING

- .1 All locks shall be provided Masterkeyed from the factory for a new system according to the owner's requirements. All locks and cylinders will be provided with two keys per lock and three master keys. All keys and cylinders shall have a visual key control on the keys and cylinders. Allow for three symbol per key or cylinder.
- .1 Key Control: Provide a wall mounted key control cabinet capable of holding all of the required ekys plus 20% for expansion. Provide cabinet complete with three way reference system.. Telkee AWC or approved other.

---

**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 Where door stop contacts door pulls, mount stop to strike bottom of pull.
- .5 Install key control cabinet.
- .6 Use only manufacturer's supplied fasteners.
  - .1 Use of "quick" type fasteners, unless specifically supplied by manufacturer, is unacceptable.
- .7 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 74 11 - 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 74 11 - Cleaning.

**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

Door Hardware Schedule  
 2016-39 - Gimli Search & Rescue Station  
 July 10th, 2017

Set #	Quantity	Unit	Description	Part Number	Finish	Make
<b>1 Privacy Set</b>						
	3	Ea	Hinge	3CB1 114mm x 102mm	630	Ives
	1	Ea	Lockset - Privacy	28-11U65-OL-26D	626	Sargent
	3	Ea	Silencer	SR64	GRY	Ives
	1	Ea	Floor Stop	FS434	604	Ives
<b>2 Passage Set</b>						
	3	Ea	Hinge	3CB1 114mm x 102mm	630	Ives
	1	Ea	Lockset - Passage	28-11U15-OL-26D	626	Sargent
	3	Ea	Silencer	SR64	GRY	Ives
	1	Ea	Floor Stop	FS434	604	Ives
<b>3 Storeroom</b>						
	3	Ea	Hinge	3CB1 114mm x 102mm	630	Ives
	1	Ea	Lockset - Storeroom	60-28-11G04-OL-26D	626	Sargent
	3	Ea	Silencer	SR64	GRY	Ives
	1	Ea	Floor Stop	FS434	604	Ives
<b>4 Office</b>						
	3	Ea	Hinge	3CB1 114mm x 102mm	630	Ives
	1	Ea	Lockset - Office	60-28-11G24-OL-26D	626	Sargent
	3	Ea	Silencer	SR64	GRY	Ives
	1	Ea	Floor Stop	FS434	604	Ives
<b>5 Pocket</b>						
	1	Ea	Sliding Door Kit	CC-2-993-X	-	KNC
	1	Ea	Flush Pull - Privacy	C-90T-X	630	KNC
	1	Ea	Flush Pull - Privacy	C-90E-X	630	KNC
<b>6 Garage</b>						
	3	Ea	Hinge	3CB1 114mm x 102mm	630	Ives
	1	Ea	Lockset - Hotel, Dorm	64-28-11G50-OL-26D	626	Sargent
	1	Ea	Surface Closer	4040XP-3049SCNS	689	LCN
	1	Ea	Kick Plate	8400 254mm x 38mm LDW	630	Ives
	1	Set	Weatherstrip	W-49	627	KNC
	1	Ea	Door Bottom	CT-54 36" with Shim	627	KNC
	1	Ea	Threshold	CT Series	627	KNC
<b>7 D101A Retrofit</b>						
	1	Ea	Power Operator	7100 Single	-	Horton
	1	Ea	Electric Strike	6200 Series - Fail Secure	630	VON
	1	Ea	Kick Plate	8400 254mm x 38mm LDW	630	Ives
	1	Set	Weatherstrip	W-49	627	KNC
	1	Ea	Door Bottom	CT-54 914mm with Shim	627	KNC
	1	Ea	Threshold	CT Series	627	KNC

To be installed on existing Metal Door and Frame at Door 101A.

The above hardware group codes represent the specific hardware required for installation on doors as listed on the door schedule in the drawings. The door hardware schedule is furnished for whatever assistance it may afford contractors. Examine drawings and specification, determine extent and hardware quality required. Should any particular door or item be omitted in any schedule hardware group, provide such a door or item with hardware same as required for similar purposes.

**END OF SECTION**

**Part 1            General**

**1.1                REFERENCES**

- .1    ASTM International
  - .1    ASTM C542-05, Standard Specification for Lock-Strip Gaskets.
  - .2    ASTM D790-07e1, Standard Test Methods for Flexural Properties of Unreinforced and Reinforced Plastics and Electrical Insulating Materials.
  - .3    ASTM D1003-07e1, Standard Test Method for Haze and Luminous Transmittance of Plastics.
  - .4    ASTM D1929-96(R2001)e1, Standard Test Method for Determining Ignition Temperature of Plastics.
  - .5    ASTM D2240-05, Standard Test Method for Rubber Property - Durometer Hardness.
  - .6    ASTM E84-10, Standard Test Method for Surface Burning Characteristics of Building Materials.
  - .7    ASTM E330-02, Standard Test Method for Structural Performance of Exterior Windows, Doors, Skylights and Curtain Walls by Uniform Static Air Pressure Difference.
  - .8    ASTM F1233-08, Standard Test Method for Security Glazing Materials and Systems.
- .2    Canadian General Standards Board (CGSB)
  - .1    CAN/CGSB-12.1-M90, Tempered or Laminated Safety Glass.
  - .2    CAN/CGSB-12.2-M91, Flat, Clear Sheet Glass.
  - .3    CAN/CGSB-12.3-M91, Flat, Clear Float Glass.
  - .4    CAN/CGSB-12.4-M91, Heat Absorbing Glass.
  - .5    CAN/CGSB-12.6-M91, Transparent (One-Way) Mirrors.
  - .6    CAN/CGSB-12.8-97, Insulating Glass Units.
  - .7    CAN/CGSB-12.8-97 (Amendment), Insulating Glass Units.
  - .8    CAN/CGSB-12.9-M91, Spandrel Glass.
  - .9    CAN/CGSB-12.10-M76, Glass, Light and Heat Reflecting.
  - .10    CAN/CGSB-12.11-M90, Wired Safety Glass.
  - .11    CAN/CGSB-12.12-M90, Plastic Safety Glazing Sheets.
  - .12    CAN/CGSB-12.13-M91, Patterned Glass.
- .3    Environmental Choice Program (ECP)
  - .1    CCD-045-95(R2005), Sealants and Caulking Compounds.
- .4    Glass Association of North American (GANA)
  - .1    GANA Glazing Manual - 2008.
  - .2    GANA Laminated Glazing Reference Manual - 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 glass, sealants, and glazing accessories and include product characteristics, performance criteria, physical size, finish and limitations.
- .3 Shop Drawings:
  - .1 Submit drawings stamped and signed by professional engineer registered or licensed in Province of Manitoba, Canada.
- .4 Samples:
  - .1 Submit for review and acceptance of each unit.

## **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 glazing for incorporation into manual.

## **1.4 DELIVERY, STORAGE AND HANDLING**

- .1 Deliver, store and handle materials in accordance 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 Storage and Handling Requirements:
  - .1 Store materials off ground, indoors, in dry location and in accordance with manufacturer's recommendations in clean, dry, well-ventilated area.
  - .2 Store and protect glazing and frames from nicks, scratches, and blemishes.
  - .3 Protect prefinished aluminum surfaces with strippable coating.
  - .4 Replace defective or damaged materials with new.

## **1.5 AMBIENT CONDITIONS**

- .1 Ambient Requirements:
  - .1 Install glazing when ambient temperature is 10 degrees C minimum. Maintain ventilated environment for 24 hours after application.
  - .2 Maintain minimum ambient temperature before, during and 24 hours after installation of glazing compounds.

## **Part 2 Products**

### **2.1 MATERIALS**

- .1 Exterior Glazing:

- .1 Insulated Wire Glass Units to CAN/CGSB-12.8, CAN/CGSB-12.11
  - .1 Glass polished both sides
  - .2 Square style mesh
  - .3 Dual pane
  - .4 Low-E
  - .5 Argon Fill
- .2 Interior Glazing (pass-through):
  - .1 Float glass to CAN/CGSB-12.3
  - .2 Dual pane

## 2.2 ACCESSORIES

- .1 General: Provide products of material, size and shape complying with referenced glazing standard, requirements of manufacturers of glass and other glazing materials for application indicated, and with a proven record of compatibility with surfaces contacted in installation.
- .2 Primer, Sealers, Cleaners: Types recommended by sealant or gasket manufacturer. Maximum VOC content 200g/L (less water) to SCAQMD Rule 1113.
- .3 Setting blocks: Elastomeric material with a Shore, Type A durometer hardness of 85, +/- 5, recommended by the manufacturer as being acceptable for use in the intended application, and compatible with glass and glazing materials.
- .4 Spacers: Elastomeric blocks or continuous extrusions of hardness required by glass manufacturer to maintain glass lights in place for installation indicated.
- .5 Edge blocks: Elastomeric material of hardness needed to limit glass lateral movement (side-walking).
- .6 Dense compression gaskets: Moulded or extruded gaskets of profile and hardness required to maintain watertight seal, manufacturer's standard to suit system, compatible with silicone glazing sealants. UV-resistant, and resistant to weathering, oxidation and permanent deformation.
- .7 Soft Compression Gaskets: Extruded or molded, close-cell integral-skinned EPDM, silicon, or thermoplastic polyolefin rubber gaskets complying with ASTM C 509, Type II, black; of profile and hardness required to maintain watertight seal.
  - .1 Application: Use where soft compression gaskets will be compressed by inserting dense compression gaskets on opposite side of glazing or pressure applied by means of pressure-glazing stops on opposite side of glazing.
- .8 Glazing Sealants – General:
  - .1 Compatibility: Provide glazing sealants that are compatible with one another and with other materials they will contact, including glass products, seals of insulation-glass units, fire-rated glass, and glazing channel substrates, under conditions of service and application, as demonstrated by sealant manufacturer based on testing and field experience.
  - .2 Suitability: Comply with sealant and glass manufacture's written instructions for selecting glazing sealants suitable for applications indicated and for conditions existing at time of installation.

- .3 Colors of exposed glazing sealants: as selected by Consultant from manufacturer's full range.
- .4 Maximum VOC content 100g/L (less water) to SCAMD Rule 1168.
- .9 Butt Glazing Sealant: as specified for SSG weather seal. Color selected by Departmental Representative.
- .10 Glazing tape: Preformed butyl compound, paper released backed.
  - .1 Acceptable product: Tremco 440 tape, color TBD.

### **Part 3 Execution**

#### **3.1 EXAMINATION**

- .1 Verification of Conditions: verify conditions of substrates previously installed under other Sections or Contracts are acceptable for glazing installation in accordance with manufacturer's written instructions.
  - .1 Verify that openings for glazing are correctly sized and within tolerance.
  - .2 Verify that surfaces of glazing channels or recesses are clean, free of obstructions, and ready to receive glazing.
  - .3 Visually inspect substrate in presence of Departmental Representative.
  - .4 Inform Departmental Representative of unacceptable conditions immediately upon discovery.
  - .5 Proceed with installation only after unacceptable conditions have been remedied and after receipt of written approval to proceed from Departmental Representative.

#### **3.2 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.

#### **3.3 INSTALLATION: EXTERIOR**

- .1 Manufacturer's Instructions: comply with manufacturer's written data, including product technical bulletins, product catalogue installation instructions, product carton installation instructions, and data sheets.

#### **3.4 CLEANING**

- .1 Progress Cleaning: clean in accordance with Section 01 74 11 - Cleaning.
  - .1 Leave Work area clean at end of each day.
    - .1 Remove traces of primer, caulking.
    - .2 Remove glazing materials from finish surfaces.
    - .3 Remove labels.

- .4 Clean glass and mirrors using approved non-abrasive cleaner in accordance with manufacturer's instructions.
- .2 Final Cleaning: upon completion remove surplus materials, rubbish, tools and equipment in accordance with Section 01 74 11 - Cleaning.

### **3.5 PROTECTION**

- .1 Protect installed products and components from damage during construction.
- .2 After installation, mark each light with an "X" by using removable plastic tape or paste.
  - .1 Do not mark heat absorbing or reflective glass units.
- .3 Repair damage to adjacent materials caused by glazing installation.

**END OF SECTION**