

**Part 1      General**

**1.1          Related Sections**

- .1      Section 01 33 00 - Submittal Procedures.
- .2      Section 07 92 00 - Joint Sealing: Caulking of joints between frames and other building components.
- .3      Section 08 71 00 - Door Hardware - General: Supply of finish hardware, including weather stripping and mounting heights.
- .4      Section 08 80 50 - Glazing.
- .5      Section 09 91 23 - Interior Painting.

**1.2          References**

- .1      American Society for Testing and Materials (ASTM International)
  - .1      ASTM A653/A653M-01a, Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process.
  - .2      ASTM B29-92(1997), Specification for Refined Lead.
  - .3      ASTM B749-97, 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      G40.20/G40.21-98, General Requirements for Rolled or Welded Structural Quality Steel/Structural Quality Steel.
  - .2      CSA W59-M1989(R2001), Welded Steel Construction (Metal Arc Welding) (Metric Version).
- .4      Canadian Steel Door Manufacturers' Association, (CSDMA).
  - .1      CSDMA, Specifications for Commercial Steel Doors and Frames, 1990.
  - .2      CSDMA, Recommended 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 252-99, Standard Methods of Fire Tests of Door Assemblies.
- .6      Underwriters' Laboratories of Canada (ULC)
  - .1      CAN4-S104-80(R1985), Fire Tests of Door Assemblies.
  - .2      CAN4-S105-85(R1992), Fire Door Frames Meeting the Performance Required by CAN4-S104.

- .7 CAN/ULC-S701-01, Thermal Insulation, Polystyrene, Boards and Pipe Covering.
- .8 CAN/ULC-S702-97, Thermal Insulation, Mineral Fibre, for Buildings.
- .9 CAN/ULC-S704-01, Thermal Insulation, Polyurethane and Polyisocyanurate Boards, Faced.

### **1.3 Design Requirements**

- .1 Design exterior frame assembly to accommodate to expansion and contraction when subjected to minimum and maximum surface temperature of -35°C to 35°C.
- .2 Maximum deflection for exterior steel entrance screens under wind load of 1.2 kPa not to exceed 1/175th of span.
- .3 Steel fire rated doors and frames: labelled and listed by an organization accredited by Standards Council of Canada in conformance with CAN4-S104 NFPA 252 for ratings specified or indicated.
- .4 Provide fire labelled frames for openings requiring fire protection ratings. Test products in conformance with CAN4-S104, ASTM E152 or NFPA 252 and listed by nationally recognized agency having factory inspection services.

### **1.4 REGULATORY REQUIREMENTS**

- .1 Installed Door and Frame Assembly: Conform to NFPA 80 for fire rated class as scheduled.
- .2 Installed Door and Frame Assembly: Conform to ANSI/ICC A117.1

### **1.5 DELIVERY, STORAGE AND HANDLING**

- .1 Deliver, store and handle materials in accordance with Section 01 61 00 - Common Product Requirements.
- .2 Section 01 61 00: Transport, handle, store, and protect products.
- .3 Comply with HMMA 840.
- .4 Weld minimum two temporary jamb spreaders per frame prior to shipment.
- .5 Remove doors and frames from wrappings or coverings upon receipt on site and inspect for damage.
- .6 Store in vertical position, spaced with blocking to permit air circulation between components.
- .7 Store materials out of water and covered to protect from damage.
- .8 Clean and touch up scratches or disfigurement caused by shipping or handling with zinc-rich primer.
- .9 Waste Management and Disposal: Dispose of packaging and waste materials in appropriate on-site bins for recycling in accordance with Section 01 74 21 - Construction/Demolition Waste Management and Disposal.

### **1.6 OPENING SIZE DEFINITIONS**

- .1 Width: Widths of openings shall be measured from inside to inside of frame jamb rabbets. (Referred to as "frame rabbet width" or "nominal door width").

- .2 Height: Heights of openings shall be measured from the finished floor (exclusive of floor coverings) to the head rabbet of the frame. (Referred to as "frame rabbet height" or "nominal door height")
- .3 Door Sizes: Doors shall be sized so as to fit the above openings and allow a 3 mm (0.125") nominal clearance at jambs and head of frame. A clearance of 19 mm (0.75") maximum shall be allowed between the bottom of the door and the finished floor (exclusive of floor coverings).
- .4 Tolerances: Doors and frame product shall be manufactured and installed in accordance with the CSDMA's, "Recommended Dimensional Standards for Commercial Steel Doors and Frames".
- .5 Door frame positioning to anticipate floor finish in designated areas.

## **1.7 QUALITY ASSURANCE**

- .1 Perform Work to requirements of CSDMA (Canadian Steel Door Manufacturers Association).
- .2 Manufacturer: Minimum 5 years documented experience manufacturing hollow metal door assemblies.

## **1.8 Shop Drawings**

- .1 Submit shop drawings in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Indicate each type of door, material, steel core thicknesses, mortises, reinforcements, location of exposed fasteners, openings, glazed, arrangement of hardware and fire rating and finishes.
- .3 Indicate each type frame material, core thickness, reinforcements, glazing stops, location of anchors and exposed fastenings and finishes.
- .4 Include schedule identifying each unit, with door marks and numbers relating to numbering on drawings and door schedule.
- .5 Indicate required fire-rating.
- .6 Submit test and engineering data, and installation instructions.

## **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.
  - .1 18ga. manufacturer's standard or as indicated in door schedule.
- .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.

- .4 The manufacturing process must adhere to Lifecycle Assessment Standards as per CAN/CSA-ISO 14040.

## 2.2 Door Core Materials

- .1 Interior doors:
- .1 Honeycomb: Structural small cell 25.4 mm (1") maximum kraft paper 'honeycomb'. Weight: 36.3 kg (80 lb.) per ream minimum, density: 16.5 kg/m<sup>3</sup> (1.03 pcf) minimum, sanded to required thickness.
- .2 Exterior doors:
- .1 Polyisocyanurate: Rigid, modified polyisocyanurate, closed cell board. Density; 32 kg/m<sup>3</sup> (2.0 pcf) minimum, thermal values; RSI 1.9 (R 11.0) minimum, in accordance with ASTM C591 (un-faced) or C 1289 (faced).

## 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.
- .4 Edge seams: tack welded and ground smooth. Do not body fill.

## 2.4 Primer

- .1 Prime and paint doors in accordance with Section 09 91 23 – Painting.
- .1 Protect weatherstrips from paint.
- .2 Provide final finish free of scratches or other blemishes.
- .2 Touch-up prime CAN/CGSB-1.181.
- .1 Rust-inhibitive.

## 2.5 Accessories

- .1 Door silencers: single stud rubber/neoprene type.
- .2 Exterior and interior top and bottom caps: rigid polyvinylchloride extrusion conforming to CGSB 41-GP-19Ma steel.
- .3 Fabricate glazing stops as formed channel, minimum 16mm height, accurately fitted, butted at corners and fastened to frame sections with counter-sunk oval head sheet metal screws.
- .4 Door bottom seal: Section 08 71 00 – Door Hardware – General.
- .5 Metallic paste filler: to manufacturer's standard.
- .6 Fire labels: metal riveted.
- .7 Sealant: Section 07 92 00 – Joint Sealing.
- .8 Glazing: Section 08 80 50 – Glazing.

- .9 Make provisions for glazing as indicated and provide necessary glazing stops.
  - .1 Provide removable steel glazing beads for use with glazing tapes and compounds and secured with countersunk stainless steel screws dry glazing of snap-on type.
  - .2 Design exterior glazing stops to be tamperproof.

## 2.6 FRAME FABRICATION - GENERAL

- .1 Exterior frame product shall be 16ga, welded type construction, thermally broken.
- .2 Interior frames product shall be 18ga, welded type construction.
- .3 Interior transom frames shall be welded type construction. Interior sidelight assemblies shall be welded type construction.
- .4 Frame product shall be mortised, blanked, reinforced, drilled and tapped at the factory for templated hardware only, in accordance with the approved hardware schedule and templates provided by the hardware supplier.
- .5 Mortised cutouts shall be protected with steel guard boxes (may be omitted on dry wall applications).
- .6 Frame product shall be reinforced where required, for surface mounted hardware, anchor hinges, thrust pivots, pivot reinforced hinges, or non-templated hardware. Drilling and tapping is by others, on site, at time of installation.
- .7 Provide anchorage appropriate to floor, wall and frame construction. Each wall anchor shall be located immediately above or below each hinge reinforcement on the hinge jamb and directly opposite on the strike jamb. For rebate opening heights up to and including 1520 mm provide two (2) anchors, and an additional anchor for each additional 760 mm of height or fraction thereof, except as indicated below. Frames in previously placed concrete, masonry or structural steel shall be provided with anchors located not more than 150 mm from the top and bottom of each jamb, and intermediate anchors at 660 mm on centre maximum. Fasteners for such anchors shall be provided by others.
- .8 Minimum reinforcing, anchor and other component gauges shall be in accordance with Table 1 of the CSDMA, "Recommended Specifications for Commercial Steel Door and Frame Products".
- .9 Each door opening shall be prepared for single stud rubber door silencers, three (3) for single door openings, two (2) for double door openings, except on gasketed frame product.
- .10 Provide factory-applied touch up primer at areas where zinc coating has been removed during fabrication.
- .11 Fire-rated frame products shall be provided for rated openings:
  - .1 Frames, transom and sidelight assemblies shall be listed for conformance with CAN4-S104.
  - .2 Window assemblies shall be listed for conformance with CAN4-S106.
  - .3 All fire-rated frame products shall bear the label of, and be listed by a nationally recognized testing agency having a factory inspection service. Labeling shall be in accordance with NFPA 80, the listing authority's policies and label materials, and shall identify the manufacturer.

- .4 Fire-rated frame products shall be constructed as listed for labeling in the Follow-Up Service Procedures/Factory Inspection Manuals issued by the listing agency to individual manufacturers.
- .12 Welded Type Frame Construction:
  - .1 Frame product shall be accurately mitered or mechanically jointed.
  - .2 As defined in Appendix 2 of the CSDMA, "Recommended Specifications for Commercial Steel Door and Frame Products", frame product perimeter corner joints shall be:
    - .1 Face welded; continuously welded on the profile faces, with exposed faces filled and ground to a smooth, uniform, seamless surface.
  - .3 Joints at mullions, sills and center rails shall:
    - .1 Be coped accurately, butted and tightly fitted.
    - .2 At intersecting flush profile faces, be securely welded, filled and ground to a smooth, uniform, seamless surface.
    - .3 At intersecting recessed profile faces, be securely welded to concealed reinforcements, with exposed hairline face seams.
    - .4 At all other intersecting profile elements, have exposed hairline face seams.
  - .4 Welding shall conform to CSA W59.
  - .5 Where frame product is to be installed prior to the adjacent partition, a floor anchor shall be securely attached to the inside of each jamb profile. Each floor anchor shall be provided with two (2) holes for securing to the floor. For conditions that do not permit the use of a floor anchor, an additional wall anchor, located within 150 mm (6") of the base of the jamb, shall be substituted.
  - .6 Weld in two (2) temporary jamb spreaders per door opening to maintain proper alignment during shipment and handling, which shall not be used for installation.
  - .7 Glazing stops shall be formed steel channel, minimum 16 mm height, accurately fitted, butted at corners and fastened to frame sections with counter-sunk oval head sheet metal screws.
  - .8 When required due to site access, when advised by the Contractor responsible for coordination or installation, as specified on the Architectural drawings or due to shipping limitations, frame product for large openings shall be fabricated in sections as designated on the approved submittal drawings, with splice joints for field assembly and welding by others.
  - .9 Prior to shipment, mark each frame product with an identification number as shown on the approved submittal drawings.

## **2.7 DOOR FABRICATION - GENERAL**

- .1 Longitudinal edges shall be:
  - .1 Mechanically interlocked, tack welded at top and bottom of door, above and below each edge cutout and at 150 mm (6") on center with visible edge seams.
- .2 Doors shall be mortised, blanked, reinforced, drilled and tapped at the factory for templated hardware only, in accordance with the approved hardware schedule and templates provided by the hardware supplier.

- .3 Holes 12.7 mm diameter and larger shall be factory prepared, except mounting and through-bolt holes, which are by others, on site, at time of hardware installation. Holes less than 12.7 mm diameter shall be factory prepared only when required for the function of the device (for knob, lever, cylinder, thumb or turn pieces) or when these holes over-lap function holes.
- .4 Doors shall be reinforced where required, for surface mounted hardware, anchor hinges, thrust pivots, pivot reinforced hinges, or non-templated hardware. Drilling and tapping is by others, on site, at time of installation.
- .5 Top and bottom of doors shall be provided with inverted, recessed, welded steel channels. Exterior doors, and where otherwise scheduled by the Contract Administrator, shall be provided with flush steel top caps.
- .6 Minimum reinforcing and component gauges shall be in accordance with Table 1 of the CSDMA, "Recommended Specifications for Commercial Steel Door and Frame Products".
- .7 Provide factory-applied touch-up primer at areas where zinc coating has been removed during fabrication.
- .8 Fire-rated doors shall be listed for conformance with CAN4-S104.
  - .1 All fire-rated doors shall bear the label of, and be listed by a nationally recognized testing agency having a factory inspection service. Labeling shall be in accordance with NFPA 80, the listing authority's policies and label materials, and shall identify the manufacturer.
  - .2 Fire-rated doors shall be constructed as listed for labeling in the Follow-Up Service Procedures/Factory Inspection Manuals issued by the listing agency to individual manufacturers.
  - .3 Prior to shipment, mark each door with an identification number as shown on the approved submittal drawings.
- .9 Laminated Core Construction.
  - .1 Exterior Doors: Both face sheets for exterior doors shall be formed from a sheet of steel with polyisocyanurate core, laminated under pressure to face sheets.
  - .2 Interior Doors: Both face sheets for interior doors shall be formed from a sheet steel with honeycomb, vertical steel stiffener core or temperature rise rated core, (as indicated elsewhere or as specified on the door schedule), laminated under pressure to face sheets.
- .10 Manufacturer's nameplates shall be on hinge face and concealed from exposed view when the door is in a closed position.

## **2.8 HOLLOW STEEL CONSTRUCTION**

- .1 Form each face sheet for exterior doors from 1.6 mm thickness sheet steel.
- .2 Form each face sheet for interior doors from 1.2 mm thickness sheet steel.
- .3 Fill voids between stiffeners of exterior doors with polyurethane core.
- .4 Fill voids between stiffeners of exterior doors with honeycomb temperature rise rated core.

**Part 3 Execution**

**3.1 MANUFACTURER'S INSTRUCTIONS**

- .1 Compliance: comply with manufacturer's written recommendations or specifications, including product technical bulletins, handling, storage and installation instructions, and datasheets.

**3.2 MATERIALS**

- .1 Doors and frame product shall be removed from their wrappings or coverings upon receipt on site, be stored in a vertical position, and be spaced with blocking to permit air circulation between them.
- .2 All materials shall be thoroughly inspected upon receipt and all discrepancies, deficiencies and/or damages shall be immediately reported, in writing, to the supplier.
- .3 All damages incurred during shipment shall be noted on the carrier's Bill of Lading and immediately reported, in writing, to the supplier.
- .4 Any scratches or disfigurement of doors or frame product caused by shipping or handling shall be promptly cleaned and touched-up with a zinc-rich primer.
- .5 All materials shall be properly stored on planks or dunnage, out of water and covered to protect from damage from any cause.

**3.3 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 Prior to installation, remove temporary shipping spreaders.
- .4 Prior to installation, the area of floor on which the frame is to be installed, and within the path of the door swing, shall be checked and corrected for flatness.
- .5 Door and frame product shall be checked for correct size, swing, rating and opening number.
- .6 The supplier shall be advised of any discrepancies prior to installation.
- .7 Set frames plumb, square, level and at correct elevation.
- .8 Secure anchorages and connections to adjacent construction.
- .9 Brace frames rigidly in position while building-in. Install wood spreaders at third points of frame rebate height to maintain frame width. Provide vertical support at centre of head for openings exceeding 1200 mm width.
- .10 During the setting of frame product, check and correct as necessary for opening width, opening height, square, alignment, twist and plumb, in accordance with the CSDMA, "Recommended Dimensional Standards for Commercial Steel Doors and Frames".
- .11 Remove wood spreaders after frames have been built-in.
- .12 Make allowance for deflection to ensure structural loads are not transmitted to frame product.

- .13 Install doors, and hardware in accordance with hardware templates and manufacturer's instructions.
- .14 Adjust operable parts for correct clearances and function.
- .15 Install louvers, glazing and door silencers.
- .16 Finish paint in accordance with Section 09 91 23 – Painting.
- .17 Caulk perimeter of frames between frame and adjacent material in accordance with 07 92 00 - Joint Sealants.
- .18 Maintain continuity of air barrier and vapour retarder.

### **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 - General.
  - .1 Hardware heights and clearances in accordance with the latest edition of the Manitoba Building Code and City of Winnipeg Accessibility Standards, including all amendments.
- .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 and thresholds: 13 mm.
- .3 Adjust operable parts for correct function.

### **3.5 Finish Repairs**

- .1 Touch up with primer finishes damaged during installation.
- .2 Fill exposed frame anchors and surfaces with imperfections with metallic paste filler and sand to a uniform smooth finish.

### **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 Aluminum Association (AA), Designation System for Aluminum Finishes (2000)
- .2 Canadian General Standards Board (CGSB)
  - .1 CAN/CGSB-1.40-97, Anticorrosive Structural Steel Alkyd Primer.
  - .2 CAN/CGSB-79.1-M91, Insect Screens.
- .3 Canadian Standards Association (CSA) International
  - .1 CSA-A440-00/A440.1-00, A440-00, Windows / Special Publication A440.1-00, User Selection Guide to CSA Standard A440-00, Windows.
  - .2 CAN/CSA-G164-M92(R1998), Hot Dip Galvanizing of Irregularly Shaped Articles.
  - .3 CAN/CSA-Z91-M90(R2000), Safety Code for Window Cleaning Operations.

**1.2 SHOP DRAWINGS**

- .1 Submit shop drawings in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Indicate materials and details in full size scale for head, jamb and sill, profiles of components, interior and exterior trim junction between combination units elevations of unit, anchorage details, location of isolation coating, description of related components and exposed finishes fasteners, and caulking. Indicate location of manufacturer's nameplates.
- .3 Provide review and seal by structural engineer registered in the Province of Manitoba for applicable loads acting on the window and AC unit, including approval for fastening methods and suitable fastening substrate / wall preparation.

**1.3 TEST REPORTS**

- .1 Submit test reports from approved independent testing laboratories, certifying compliance with specifications, for:
  - .1 Windows classifications high.
  - .2 Insect screens.
  - .3 Air tightness.
  - .4 Water tightness.
  - .5 Wind load resistance.
  - .6 Condensation resistance.
  - .7 Block operation - sliding windows only.
  - .8 Sash strength and stiffness - Operable Awning.
  - .9 Ease of operation - windows with operable lights.
  - .10 Sash pull-off - vinyl windows.
  - .11 Forced entry resistance.
  - .12 Mullian deflection - combination and composite windows.

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**1.4 CLOSEOUT SUBMITTALS**

- .1 Provide operation and maintenance data for windows for incorporation into manual specified in Section 01 78 00 - Closeout Submittals.

**1.5 WASTE MANAGEMENT AND DISPOSAL**

- .1 Dispose of packaging and waste materials in appropriate on-site bins for recycling and disposal in accordance with Section 01 74 21 - Construction/Demolition Waste Management and Disposal.

**1.6 QUALITY ASSURANCE**

- .1 Qualifications:
  - .1 Manufacturer qualifications: company specializing in manufacturing the products specified in this section with minimum three years documented experience.
  - .2 Installer qualifications: company specializing in performing the Work of this section with minimum 3 years documented experience.
- .2 Pre-Installation Meetings:
  - .1 Conduct pre-installation meeting to verify project requirements, substrate conditions, manufacturer's installation instructions, and manufacturer's warranty requirements.
  - .2 Convene one week before starting Work of this section.

**1.7 DELIVERY, STORAGE, AND HANDLING**

- .1 Deliver, store, handle and protect materials in accordance with Section 01 61 00 - Common Product Requirements.
- .2 Packing, Shipping, Handling, and Unloading: Deliver materials in manufacturer's original, unopened, undamaged containers with identification labels intact.
- .3 Storage and Protection: Store materials protected from exposure to harmful weather conditions. Handle material and components to avoid damage. Protect curtain wall material against damage from elements, construction activities, and other hazards before, during and after installation

**Part 2 Products**

**2.1 PRODUCT**

- .1 All windows by same manufacturer.
- .2 Window stickers are not permitted.
- .3 Triple-pane aluminum windows to CSA-A440/A440.1 complete with 2 coats low-E, argon gas.
- .4 Acceptable Products:
  - .1 Kawneer: 5500 ISOWEB Window by Kawneer, or;
  - .2 Alumicor: RainBlade 1900 Series by Alumicor.

- .5 Performance:
  - .1 Fixed Lite windows as indicated in Window Schedules.
  - .2 In compliance with CAN/CSA-A440.1, CSA-A440.2 and AAMA 101/I.S.2 standards.
  - .3 Fixed window ratings to CSA-A440:
    - .1 Air Tightness: Fixed
    - .2 Water Tightness: B7
    - .3 Wind Load Resistance: C5
- .6 Material:
  - .1 All frame and sash profiles are made from aluminum, having a nominal wall thickness of 2.3 mm (0.090") with minimum glass content of 60%.
  - .2 Non-structural accessory members to be aluminum.
- .7 Construction:
  - .1 Frame and sash corners connected with moulded reinforced polymer components and mechanically secured.
  - .2 Joints factory sealed with silicone and neatly fitted together.
  - .3 The perimeter of open-back frames shall be filled with insulation.
- .8 Finish:
  - .1 Finish shall resist chipping, blistering, chalking, discoloration and aging under normal atmospheric conditions.
  - .2 Finish:
    - .1 Interior: Dark Bronze #40 – low VOC.
    - .2 Exterior: Dark Bronze #40
- .9 Weather-stripping:
  - .1 Q-Lon air-seal gasket on interior with Santoprene bulb-type "rain screen" gasket on the exterior to provide double weather barrier.
- .10 Glass:
  - .1 See Section 08 80 50 – Glazing.
  - .2 Exterior glass to be 12mm tempered glass panel.
  - .3 Interior glass to be 2 - 6mm tempered glass panels.
  - .4 12mm sealed air spaces—super sealer.
  - .5 Glaze in accordance with CSA-A440/A440.1.

## 2.2 FABRICATION

- .1 Fabricate in accordance with CSA-A440/A440.1 supplemented as follows:
- .2 Fabricate units square and true with maximum tolerance of plus or minus 1.5 mm for units with a diagonal measurement of 1800 mm or less and plus or minus 3 mm for units with a diagonal measurement over 1800 mm.
- .3 Face dimensions detailed are maximum permissible sizes.

- .4 Brace frames to maintain squareness and rigidity during shipment and installation.
- .5 Finish steel clips and reinforcement with 380 g/m<sup>2</sup> zinc coating to CAN/CSA-G164.

**Part 3 Execution**

**3.1 WINDOW INSTALLATION**

- .1 Install in accordance with CSA-A440/A440.1/A440.4
- .2 Window shall be plumb and square.
- .3 Window opening to be wrapped with wall air barrier membrane in accordance with Section 07 27 00.01 – Air Barriers.
- .4 Window to be fastened through jamb and, where required, with fastener extensions and in such manner to facilitate future servicing and replacement from the interior of the building.
- .5 Foam insulate full depth of perimeter cavity to achieve full seal all around the window perimeter from the frame to the Air Vapour Barrier.
  - .1 Provide additional anchorage as required to prevent bowing of window frame. See Section 07 21 29.03 – Sprayed Insulation – Polyurethane Foam.
- .6 Sealant in accordance with Section 07 92 00 - Joint Sealing.
  - .1 Neatly caulk all around interior perimeter of openings.
  - .2 Rod and caulk all around exterior perimeter of openings. Location of rod and caulk as indicated in the drawings.
  - .3 **Sealant must verified for compatibility with window, air barrier and spray-foam insulation.**
- .7 Make all necessary final adjustments to ensure normal and smooth operation. Verify that opening windows open no farther than 100mm.

**END OF SECTION**

**Part 1 General**

**1.1 REFERENCES**

- .1 Canadian General Standards Board (CGSB).
  - .1 CAN/CGSB-69.25-M90/ANSI/BHMA A156.9-1982, Cabinet Hardware.
  - .2 CAN/CGSB-69.27-93/ANSI/BHMA A156.11-1991, Cabinet Locks.
  - .3 CAN/CGSB-69.32-M90/ANSI/BHMA A156.16-1981, Auxiliary Hardware.
  - .4 CAN/CGSB-69.34-93/ANSI/BHMA A156.18-1987, Materials and Finishes.
  - .5 CAN/CGSB-69.36-M90/ANSI/BHMA A156.20-1984, Strap and Tee Hinges and Hasps.

**1.2 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 Samples:
  - .1 Submit samples in accordance with Section 01 33 00 - Submittal Procedures.
- .3 Hardware List:
  - .1 Submit contract hardware list in accordance with Section 01 33 00 - Submittal Procedures.
  - .2 Indicate specified hardware, including make, model, material, function, finish and other pertinent information.
- .4 Manufacturer's Instructions:
  - .1 Submit manufacturer's installation instructions.
- .5 Closeout Submittals:
  - .1 Provide maintenance data, parts list, and manufacturer's instructions for incorporation into maintenance manual specified in Section 01 78 00 - Closeout Submittals.

**1.3 QUALITY ASSURANCE**

- .1 Test Reports: certified test reports showing compliance with specified performance characteristics and physical properties.
- .2 Certificates: product certificates signed by manufacturer certifying materials comply with specified performance characteristics and criteria and physical requirements.
- .3 Pre-installation Meetings: conduct pre-installation meeting to verify project requirements, manufacturer's installation instructions and manufacturer's warranty requirements.

**1.4 DELIVERY, STORAGE, AND HANDLING**

- .1 Packing, Shipping, Handling and Unloading:

- .1 Deliver, store, handle and protect materials in accordance with Section 01 61 00 - Common Product Requirements.
- .2 Package items of hardware including fastenings, separately or in like groups of hardware, label each package as to item definition and location.
- .2 Storage and Protection:
  - .1 Store cabinet hardware in locked, clean and dry area.

## **Part 2 Products**

### **2.1 HARDWARE ITEMS**

- .1 Use one manufacturer's product for all similar items.

### **2.2 CABINET HARDWARE**

- .1 Cabinet hardware: to CAN/CGSB-69.25.
  - .1 Hinges: self closing, all metal, screw mount hinge. Hinge type 8, half overlay, 9 mm crank, finish to steel, nickel-plated.
    - .1 Opening Angle: 120 degrees.
    - .2 Acceptable Product: Hafele, Duomatic Hinges, Cat. No. 329.03.512 or approved equivalent in accordance with B7 Substitutes.
  - .2 Pulls: surface mounted pull, type D, finished to chrome plated matte.
    - .1 Size: 135 x 30 mm, with hole spacing of 125 mm.
    - .2 Acceptable Product: Hafele, Modern Brass Wire Handles, Cat. No 116.39.473 or approved equivalent in accordance B7 Substitutes.
  - .3 Shelf brackets and standards: shelf brackets, load capacity of 500 kg per pair, for 380 mm wide shelves, finished to steel, grey primed.
    - .1 Acceptable Product: Hafele, Brackets, Cat. No. 287.45.459 or approved equivalent in accordance with B7 Substitutes.
  - .4 Drawer slides: bottom edge mounted drawer slides, type rollers, self closing with  $\frac{3}{4}$  extension.
    - .1 Dynamic load carrying capacity, minimum 100 lbs per pair.
    - .2 Acceptable Product: Hafele, Drawer Runners,  $\frac{3}{4}$  Extension, Bottom-Mount, Model EC-438FC, Cat. No. 423.37.345 or approved equivalent in accordance with B7 Substitutes.
  - .5 Locks:
    - .1 Cabinet locks: to CAN/CGSB-69.27.
    - .2 Door and drawer locks: half mortised into back of door or drawer, type Cam Lock, with straight, extended lever.
    - .3 Cylinders: key into keying system as directed.
      - .1 Approved Products: Hafele, Cylinder Module System – Cam Locks, Cat. No. 235.08.303 (horizontal installation in drawers) and Cat. No. 235.08.358 (vertical installation in doors) or approved

equivalent in accordance with B7 Substitutes. Finished to zinc die cast, unfinished.

- .2 Approved Products: Hafele, Cylinder Module System – Lock Cores, Cat. No. 210.04.727 – 107 TA or approved equivalent in accordance with B7 Substitutes. Finish to nickel matte.
- .4 Cabinet Keying Schedule as follows:
  - .1 All doors and drawers in room M06 Canteen to be keyed the same.
  - .2 All doors and drawers in room M08 Kitchen west wall to be keyed the same.
  - .3 All doors and drawers in room M08 Kitchen along north wall to be keyed the same.
  - .4 All doors and drawers in room M08 Kitchen along south wall to be keyed the same.
  - .5 All doors and drawers in room M10 Bar to be keyed the same.

### **2.3 MISCELLANEOUS HARDWARE**

- .1 Full-sized change bench mounting brackets:
  - .1 Acceptable Product: Hafele, Hebgo Folding Bench Bracket, heavy-duty model for outdoor use. Cat. No. 287.47.917 or approved equivalent in accordance with B7 Substitutes.
  - .2 Steel Bracket: Speedbrace stainless steel bracket, 381 x 457 mm, heavy duty countertop and shelf brace without kicker, has 50 x 50 notch for wiring, 12 gauge thickness.
    - .1 Location: Computer Room M26 countertop.

### **2.4 FASTENINGS**

- .1 Supply screws, bolts, expansion shields and other fastening devices required for satisfactory installation and operation of hardware.
- .2 Exposed fastening devices to match finish of hardware.
- .3 Use fasteners compatible with material through which they pass.

### **2.5 KEYING**

- .1 Cabinet locks to be keyed alike in groups and master keyed. Submit keying schedule for approval.
- .2 Provide keys in duplicate for every lock in this Contract.
- .3 Provide three masterkeys.
- .4 Stamp keying code numbers on keys and cylinders.

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**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 Install hardware to standard hardware location dimensions in accordance with manufacturer's recommendations and to project design requirements.
- .2 Install key control cabinet and establish key control set-up.

**3.3 ADJUSTING**

- .1 Adjust cabinet hardware for optimum, smooth operating condition.
- .2 Lubricate hardware and other moving parts.
- .3 Adjust cabinet door hardware to provide tight fit at contact points with frames.

**3.4 CLEANING**

- .1 Perform cleaning after installation to remove construction and accumulated environmental dirt.
- .2 Clean hardware with damp rag and approved non-abrasive cleaner, and polish hardware in accordance with manufacture's instructions.
- .3 Remove protective material from hardware items where present.
- .4 Upon completion of installation, remove surplus materials, rubbish, tools and equipment barriers.

**3.5 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 Contract Administrator.
- .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 Demonstrate operation, operating components, adjustment features, and lubrication requirements.

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**Weston Memorial Community Centre**  
Renovation Project  
1625 Logan Ave, Winnipeg, MB.  
Project # 824-2014

**CABINET AND  
MISCELLANEOUS HARDWARE**

**Section 08 70 05**  
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September 2014

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**END OF SECTION**

**Part 1 General**

**1.1 REFERENCES**

- .1 Canadian Steel Door and Frame Manufacturers' Association (CSDFMA).
  - .1 CSDFMA Canadian Metric Guide for Steel Doors and Frames (Modular Construction): standard hardware location dimensions.

**1.2 SUMMARY**

- .1 Section Includes
  - .1 Furnish, Deliver and Install all Finish Hardware as required by this specification section. Include all screws, fasteners and material necessary for the proper installation of the hardware.

**1.3 SUBMITTALS**

- .1 Product Data:
  - .1 Submit manufacturer's printed product literature, specifications and data sheet and catalogue cuts required for any related trades sections in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Schedules
  - .1 Provide Six (6) copies of a detailed hardware schedule in the vertical format.
- .3 Samples:
  - .1 Submit samples in accordance with Section 01 33 00 - Submittal Procedures.
  - .2 Identify each sample by label indicating applicable specification paragraph number, brand name and number, finish and hardware package number.
  - .3 After approval samples will be returned for incorporation in the Work.
- .4 Hardware List:
  - .1 Submit contract hardware list in accordance with Section 01 33 00 - Submittal Procedures.
  - .2 Indicate specified hardware, including make, model, material, function, size, finish and other pertinent information.
- .5 Templates
  - .1 Provide all templates required by related trade sections for the proper preparation of their product.
- .6 Manufacturer's Instructions:
  - .1 Submit manufacturer's installation instructions.
- .7 Keying Schedule
  - .1 Provide a complete keying schedule. Co-ordinate with the Contract Administrator and City of Winnipeg the keying requirements for this project.

- .8 Closeout Submittals
  - .1 Provide operation and maintenance data for door closers, locksets, door holders and fire exit hardware for incorporation into manual specified in Section 01 78 00 - Closeout Submittals.

#### 1.4 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 Test Reports: certified test reports showing compliance with specified performance characteristics and physical properties.
  - .3 Certificates: product certificates signed by manufacturer certifying materials comply with specified performance characteristics and criteria and physical requirements.
  - .4 Pre-installation Meetings: conduct pre-installation meeting to verify project requirements, manufacturer's installation instructions and manufacturer's warranty requirements.
  - .5 Substitutes:
    - .1 The manufacturers products listed in the hardware sets establish a minimum guideline for the standard of quality. Similar items, if listed as an "acceptable substitute" may be supplied provided they are approved by the Contract Administrator, and provided required data and physical samples are submitted in accordance with Division One.

#### 1.5 DELIVERY, STORAGE, AND HANDLING

- .1 Packing, Shipping, Handling and Unloading:
  - .1 Deliver, store, handle and protect materials in accordance with Section 01 61 00 - Common Product Requirements.
  - .2 Package each item of hardware including fastenings, separately or in like groups of hardware, label each package as to item definition and location.
- .2 Delivery
  - .1 Deliver directly to the fabricator any items, which are requested for their use in fabrication.
- .3 Storage and Protection:
  - .1 Store all finish hardware in its original packages in a secure, clean, dry and warm area, equipped with sufficient shelving.

#### 1.6 MAINTENANCE

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

**1.7 Warranty**

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

**Part 2 Products**

**2.1 HARDWARE ITEMS**

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

**2.2 DOOR HARDWARE**

- .1 Screws and fasteners:
  - .1 All hardware is to be installed with the standard fasteners supplied by the manufacturer unless called for otherwise in the hardware sets.
- .2 Hinges:
  - .1 All hinges shall be Ives and of the size, type, and finish as indicated in the hardware sets. Provide non-removable pins on all exterior outswinging doors.
- .3 Flush Bolts:
  - .1 Flush bolts solid brass or bronze. 1" projection and a 5/8" diameter. To be Ives as specified.
- .4 Locks:
  - .1 Locks shall be cylindrical or mortise type as specified in the hardware sets. All locks to ANSI Grade 1 lever trim. Locks to be Schlage only. No substitute.
- .5 Exit Devices:
  - .1 Shall be of the flush bar type. Exit devices on wood doors shall be through bolted. All exit devices to Von Duprin. No substitute.
- .6 Door Closers:
  - .1 All door closers shall be surface mounted with full covers. Manual closers with universal spring size must be adjusted to suit specific opening requirements. Follow manufacturers instructions. Provide LCN Closers as specified. No substitutes.
- .7 Kickplates:
  - .1 To be of brass or bronze construction, .050 thick. Provide Standard Metal series as specified. Screw mounted.
- .8 Pulls:
  - .1 To be of brass or bronze construction. All pulls to be thru bolt mounted. Provide Standard Metal as specified.
- .9 Protective Plates, Push Plates:

- .1 All plates to be of brass or bronze construction. To be .050 thick. Provide Standard Metal as specified. All kickplates on the push side of the door shall be 1 ½" 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.
- .10 Door Stops and Holders:
  - .1 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 Standard Metal stops as specified.
- .11 Thresholds and Weather-strip:
  - .1 All weatherstrip, 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.
- .12 Magnetic Door Holders:
  - .1 Magnetic holders shall be surface mounted. Provide LCN as specified. No substitute.

## 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 All lock cylinders shall be provided Masterkeyed to match the existing system according to the City of Winnipeg requirements. All locks and cylinders will be provided with two keys per lock and three masterkeys. All keys and cylinders shall have a visual key control on the keys and cylinders. Allow for three symbols per key or cylinder. Exterior Keys and cylinders to be Best and supplied keyed from the factory. Hardware supplier to provide temporary cylinders at exterior doors. All interior doors to have Schlage cylinders.
- .2 Prepare detailed keying schedule in conjunction with City of Winnipeg and Community Centre master keying system. Schlage keyway on interior doors. Best cylinders on exterior doors.
  - .1 Masterkeying system must be coordinated with the Contract Administrator.
- .3 Provide keys in duplicate for every lock in this Contract.

- .4 Provide three masterkeys for each MK or GMK group.
- .5 Key groups for Weston Memorial Community Centre are as follows:
  - .1 Group 1 (Grand Master): All doors throughout the project.
  - .2 Group 2 (Master): All doors throughout the project but the following doors:
    - .1 D36.
  - .3 Group 3 (Sub-Master): All doors throughout the project but the following doors:
    - .1 D05, D06, D07, D09, D10, D36.
- .6 Stamp keying code numbers on keys and cylinders.

### 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.
- .2 Furnish metal door and frame manufacturers with complete instructions and templates for preparation of their Work to receive hardware.
- .3 Furnish manufacturers' instructions for proper installation of each hardware component.

#### 3.2 INSTALLATION

- .1 Install hardware to standard hardware location dimensions in accordance with Canadian Metric Guide for Steel Doors and Frames (Modular Construction) prepared by Canadian Steel Door and Frame Manufacturers' Association.
- .2 Examine all doors and frames prior to installation of hardware to determine if the hardware can be installed correctly. Do not proceed with installation until defects are corrected.
- .3 Where door stop contacts door pulls, mount stop to strike bottom of pull.
- .4 Install key control cabinet.
- .5 Use only manufacturer's supplied fasteners. Failure to comply may void manufacturer's warranties and applicable licensed labels. Use of "quick" type fasteners, unless specifically supplied by manufacturer, is unacceptable.
- .6 Remove exterior construction cores when directed by Contract Administrator; install permanent cores and check operation of locks.

#### 3.3 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 provide tight fit at contact points with frames.

### 3.4 CLEANING

- .1 Perform cleaning after installation to remove construction and accumulated environmental dirt.
- .2 Clean hardware with damp rag and approved non-abrasive cleaner, and polish hardware in accordance with manufacture's instructions.
- .3 Remove protective material from hardware items where present.
- .4 Upon completion of installation, remove surplus materials, rubbish, tools and equipment barriers.

### 3.5 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 Contract Administrator.
- .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.

### 3.6 SCHEDULE

- .1 Hardware Components:
  - .1 Hinge - Continuous IVES (IVES)
  - .2 Hinge IVES (IVES)
  - .3 Cylinder – Rim Best Access Systems (BAS)
  - .4 Cylinder Schlage Lock Company (SCH)
  - .5 Lockset Schlage Lock Company (SCH)
  - .6 Mortise Lockset Schlage Lock Company (SCH)
  - .7 Exit Device Von Duprin, Inc. (VDI)
  - .8 Deadlock Schlage Lock Company (SCH)
  - .9 Door Pull Standard Metal Mfg. (SM)
  - .10 Door Closer C.R. Laurence of Canada (CRL)
  - .11 Door Closer LCN Closers (LCN)

.12	Electronic Door Closer	LCN Closers (LCN)
.13	Automatic Operator	LCN Closers (LCN)
.14	Kick Plate	Standard Metal Mfg. (SM)
.15	Wall Bumper	IVES (IVES)
.16	Overhead Holder/Stop	Glynn - Johnson (GJ)
.17	Weatherstripping	K. N. Crowder Mfg., Inc. (KNC)
.18	Smoke Seal	K. N. Crowder Mfg., Inc. (KNC)
.19	Astragal	K. N. Crowder Mfg., Inc. (KNC)
.20	Astragal	Pemko Canada (PEM)
.21	Sweep Strip	K. N. Crowder Mfg., Inc. (KNC)
.22	Door Bottom - Auto	K. N. Crowder Mfg., Inc. (KNC)
.23	Threshold	K. N. Crowder Mfg., Inc. (KNC)
.24	Actuator	Wikk (WIK)

.2 Door List:

	Door#	Hardware Set #
.1	D02	1
.2	D03	2
.3	D04	3
.4	D05	4
.5	D14	5
.6	D19	3
.7	D25	6
.8	D26	7
.9	D27	3
.10	D28	8
.11	D34	9
.12	D35	10
.13	D36	11
.14	D37	9

.3 Hardware Sets:

			Hardware Set #1	
Qty	UOM	Item Type	Pair D02	Finish
2.0	EA	Hinge - Continuous	700	630
2.0	EA	Cylinder	20-021C	626
2.0	EA	Exit Device	9849 NL-OP	626
2.0	EA	Door Pull	3015-2	32D
1.0	EA	Door Closer	4111 EDA	689/Leaf#2

1.0	EA	Automatic Operator	9542	689/Leaf#1
2.0	EA	Kick Plate	K10A 8 X 1 1/2" less dr. width	630
2.0	EA	Overhead Holder/Stop	GJ100S	630
1.0	EA	Weatherstripping	W-20N Top Only	628
2.0	EA	Weatherstripping	W-50N Sides Only	628
1.0	SET	Astragal	W-40P X W-40	628
2.0	EA	Sweep Strip	W-24S	628
1.0	SET	Threshold	CT-65	627
2.0	EA	Actuator	Ingress'r	630

Hardware Set #2

Single D03

Qty	UOM	Item Type	Items Series/Description	Finish
3.0	EA	Hinge	3CB1 4 1/2 X 4	652
1.0	EA	Lockset	ND70PD RHO	626
1.0	EA	Wall Bumper	WS401 CVX	626

Hardware Set #3

Single D04, D19, D27

Qty	UOM	Item Type	Items Series/Description	Finish
3.0	EA	Hinge	3CB1 4 1/2 X 4	652
1.0	EA	Lockset	ND80PD RHO	626
1.0	EA	Door Closer	4010	689
1.0	EA	Kick Plate	K10A 12 X 1 1/2" less dr. width	630
1.0	EA	Wall Bumper	WS401 CVX	626

Hardware Set #4

Single D05

Qty	UOM	Item Type	Items Series/Description	Finish
3.0	EA	Hinge	3CB1 4 1/2 X 4	652
1.0	EA	Lockset	ND70PD RHO	626
1.0	EA	Door Closer	4010	689
1.0	EA	Kick Plate	K10A 12 X 1 1/2" less dr. width	630
1.0	EA	Wall Bumper	WS401 CVX	626

Hardware Set #5

Single D14

Qty	UOM	Item Type	Items Series/Description	Finish
3.0	EA	Hinge	3CB1 4 1/2 X 4	652
1.0	EA	Deadlock	B561 Indicator Deadlock	626
2.0	EA	Door Pull	2312-2	32D
1.0	EA	Automatic Operator	4631	689
1.0	EA	Kick Plate	K10A 12 X 1 1/2" less dr. width	630
1.0	EA	Overhead Holder/Stop	GJ100S	630
2.0	EA	Actuator	Ingress'r	630

Hardware Set #6

Qty	UOM	Item Type	Items Series/Description	Finish
			Pair D25	
2.0	EA	Hinge - Continuous	700	630
2.0	EA	Cylinder	20-021C	626
2.0	EA	Exit Device	9849 L-F	626
2.0	EA	Electronic Door Closer	4040SE	689
2.0	EA	Kick Plate	K10A 8 X 1 1/2" less dr. width	630
2.0	EA	Overhead Holder/Stop	GJ100S	630
1.0	EA	Smoke Seal	W-21	Black
1.0	SET	Astragal	351C X 351CP	628
2.0	EA	Door Bottom - Auto	CT-52	689

Hardware Set #7

Single: D26

Qty	UOM	Item Type	Items Series/Description	Finish
3.0	EA	Hinge	3CB1 4 1/2 X 4	652
1.0	EA	Lockset	ND80PD RHO	626
1.0	EA	Door Closer	1461 RW/PA	689

Hardware Set #8

Single: D28

Qty	UOM	Item Type	Items Series/Description	Finish
3.0	EA	Hinge	3CB1 4 1/2 X 4	652
1.0	EA	Lockset	ND53PD RHO	626
1.0	EA	Wall Bumper	WS401 CVX	626

Hardware Set #9

Single D34, D37

Qty	UOM	Item Type	Items Series/Description	Finish
1.0	EA	Hinge - Continuous	700	630
1.0	EA	Cylinder - Rim	1E74	626
1.0	EA	Exit Device	98NL-OP	626
1.0	EA	Door Pull	3015-2	32D
1.0	EA	Door Closer	4111 EDA	689
1.0	EA	Kick Plate	K10A 12 X 1 1/2" less dr. width	630
1.0	EA	Overhead Holder/Stop	GJ100S	630
1.0	EA	Weatherstripping	W-20N Top Only	628
2.0	EA	Weatherstripping	W-50N Sides Only	628
1.0	EA	Sweep Strip	W-24S	628
1.0	EA	Threshold	CT-65	627

Hardware Set #10

Single D35

Qty	UOM	Item Type	Items Series/Description	Finish
1.0	EA	Hinge - Continuous	700	630
1.0	EA	Lockset	ND80PD RHO	626

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1.0	EA	Door Closer	4010	689
1.0	EA	Kick Plate	K10A 12 X 1 1/2" less dr. width	630
1.0	EA	Wall Bumper	WS401 CVX	626

Hardware Set #11

Single D36

Qty	UOM	Item Type	Items Series/Description	Finish
1.0	EA	Hinge - Continuous	700	630
1.0	EA	Mortise Lockset	L9480 06A	626
1.0	EA	Overhead Holder/Stop	GJ100S	630

**End of Section**

# WESTON COMMUNITY CENTRE RENOVATION - 14-004

Winnipeg, Manitoba

## DOOR AND FRAME SCHEDULE

DOOR NO.	SIZE	TYPE	MATERIAL	FINISH	CORE	RATING	INSUL.	HARD WARE	FRAME TYPE	MATERIAL	FINISH	RATING	REMARKS
D01	EXISTING	-	-	PAINT	-	-	-	EXIST.	EXIST.	-	PAINT	-	
D02	2-914x2134	D	METAL	PAINT				1	1	W.M.F.	PAINT		6mm georgian wire safety glass c/w colour contrasting strip on glass, new upper & lower power door operator, 300mm continuous kick plate
D03	508x2134	A	METAL	PAINT				2	1	W.M.F.	PAINT		
D04	914x2134	A	METAL	PAINT		45 min.		3	2	W.M.F.	PAINT	45 min.	
D05	914x2134	B	METAL	PAINT				4	1	W.M.F.	PAINT		300mm continuous kick plate
D06	EXISTING	-	-	PAINT	-	-	-	EXIST.	EXIST.	-	PAINT	-	
D07	EXISTING	-	-	PAINT	-	-	-	EXIST.	EXIST.	-	PAINT	-	
D08	EXISTING	-	-	PAINT	-	-	-	EXIST.	EXIST.	-	PAINT	-	
D09	EXISTING	-	-	PAINT	-	-	-	EXIST.	EXIST.	-	PAINT	-	
D10	EXISTING	-	-	PAINT	-	-	-	EXIST.	EXIST.	-	PAINT	-	
D11	EXISTING	-	-	PAINT	-	-	-	EXIST.	EXIST.	-	PAINT	-	
D12	EXISTING	-	-	PAINT	-	-	-	EXIST.	EXIST.	-	PAINT	-	
D13	EXISTING	-	-	PAINT	-	-	-	EXIST.	EXIST.	-	PAINT	-	
D14	965x2134	A	METAL	PAINT				5	1	W.M.F.	PAINT		New upper & lower power door operator, 'D' Pull mounted half way for accessible closing, 300mm continuous kick plate
D15	EXISTING	-	-	PAINT	-	-	-	EXIST.	EXIST.	-	PAINT	-	
D16	EXISTING	-	-	PAINT	-	-	-	EXIST.	EXIST.	-	PAINT	-	
D17	EXISTING	-	-	PAINT	-	-	-	EXIST.	EXIST.	-	PAINT	-	
D18	EXISTING	-	-	PAINT	-	-	-	EXIST.	EXIST.	-	PAINT	-	
D19	914x2134	A	METAL	PAINT				3	1	W.M.F.	PAINT		
D20	EXISTING	-	-	PAINT	-	-	-	EXIST.	EXIST.	-	PAINT	-	New upper & lower power door operator.
D21	EXISTING	-	-	PAINT	-	-	-	EXIST.	EXIST.	-	PAINT	-	New upper & lower power door operator.
D22	EXISTING	-	-	PAINT	-	-	-	EXIST.	EXIST.	-	PAINT	-	
D23	EXISTING	-	-	PAINT	-	-	-	EXIST.	EXIST.	-	PAINT	-	
D24	EXISTING	-	-	PAINT	-	-	-		1	W.M.F.	PAINT	-	Flip door swing.

# WESTON COMMUNITY CENTRE RENOVATION - 14-004

Winnipeg, Manitoba

## DOOR AND FRAME SCHEDULE

DOOR NO.	SIZE	TYPE	MATERIAL	FINISH	CORE	RATING	INSUL.	HARD WARE	FRAME TYPE	MATERIAL	FINISH	RATING	REMARKS
D25	2-1016x2134	E	METAL	PAINT				6	1	W.M.F.	PAINT		6mm safety glass sidelights c/w colour contrasting strip on glass, electric hold open device for both.
D26	762x2134	A	METAL	PAINT				3	1	W.M.F.	PAINT		
D27	965x2134	C	METAL	PAINT				8	1	W.M.F.	PAINT		6mm safety glass in door window, 300mm continuous kick plate
D28	965x2134	C	METAL	PAINT	-	-	-	-	1	W.M.F.	PAINT	-	300mm continuous kick plate
D29	EXISTING	-	-	PAINT	-	-	-	EXIST.	EXIST.	-	PAINT	-	
D30	EXISTING	-	-	PAINT	-	-	-	-	EXIST.	-	PAINT	-	Flip door swing.
D31	965x2134	A	METAL	PAINT					1	W.M.F.	PAINT		New upper & lower power door operator, 'D' Pull mounted half way for accessible closing, 300mm continuous kick plate
D32	EXISTING	-	-	PAINT	-	-	-	EXIST.	EXIST.	-	PAINT	-	
D33	EXISTING	-	-	PAINT	-	-	-	EXIST.	EXIST.	-	PAINT	-	
D34	914x2134	A	METAL	PAINT			INSUL.	9	3	W.M.F.	PAINT		300mm continuous kick plate
D35	1067x2134	A	METAL	PAINT				10	1	W.M.F.	PAINT		Enlarged rough opening.
D36	914x2134	A	METAL	PAINT				11	1	W.M.F.	PAINT		Full length hinge and tamper proof, double dead-bolt w/ 1 key. 16 gauge door & 14 gauge frame.
D37	914x2134	A	METAL	PAINT			INSUL.	9	3	W.M.F.	PAINT		300mm continuous kick plate

NOTE: ALL NEW METAL DOORS TO BE PAINTED AS SPECIFIED  
 ALL NEW HARDBOARD DOORS TO BE PAINTED AS SPECIFIED  
 ALL NEW ALUMINUM DOORS AND FRAMES ANODIZED  
 REUSE DOOR, FRAME & HARDWARE FOR EXISTING DOORS

NOTE: DOORS AND FRAMES ON MEZZANINE LEVEL TO REMAIN AS IS.

NOTE: W.M.F - WELDED METAL FRAME  
 ALUM - ALUMINUM  
 HDBD - HARDBOARD  
 S.C.- SOLID CORE  
 G.W.G. - 6MM GEORGIAN WIRE GLASS  
 HOLD OPEN--HARDWARE HOLD OPEN  
 WOOD VENEER -PARTICLE CORE - WOOD GRAIN  
 PREMIUM GRADE - VARNISH

**Part 1 General**

**1.1 REFERENCES**

- .1 American National Standards Institute (ANSI).
  - .1 ANSI/ASTM E330-02, Test Method for Structural Performance of Exterior Windows, Doors, Skylights and Curtain Walls by Uniform Static Air Pressure Difference.
- .2 American Society for Testing and Materials International, (ASTM).
  - .1 ASTM C542-94(1999), Specification for Lock-Strip Gaskets.
  - .2 ASTM D790-02, Test Methods for Flexural Properties of Unreinforced and Reinforced Plastics and Electrical Insulating Materials.
  - .3 ASTM D1003-00, Test Method for Haze and Luminous Transmittance of Plastics.
  - .4 ASTM D1929-96(R2001)e1, Test Method for Determining Ignition Temperature of Plastics.
  - .5 ASTM D2240-02b, Test Method for Rubber Property - Durometer Hardness.
  - .6 ASTM E84-01, Test Method for Surface Burning Characteristics of Building Materials.
  - .7 ASTM F1233-98, Test Method for Security Glazing Materials and Systems.
- .3 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-12.5-M86, Mirrors, Silvered.
  - .6 CAN/CGSB-12.6-M91, Transparent (One-Way) Mirrors.
  - .7 CAN/CGSB-12.8-97, 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.
  - .12 CAN/CGSB-12.13-M91, Patterned Glass.
- .4 Canadian Standards Association (CSA International).
  - .1 CSA A440.2-98, Energy Performance Evaluation of Windows and Sliding Glass Doors.
  - .2 CSA Certification Program for Windows and Doors 2000.
- .5 Environmental Choice Program (ECP).
  - .1 CCD-045-95, Sealants and Caulking.
- .6 Flat Glass Manufacturers Association (FGMA).

- .1 FGMA Glazing Manual - 1997.
- .7 Laminators Safety Glass Association (LSGA).
  - .1 LSGA Laminated Glass Design Guide 2000.

## 1.2 SYSTEM DESCRIPTION

- .1 Performance Requirements:
  - .1 Provide continuity of building enclosure vapour and air barrier using glass and glazing materials as follow:
    - .1 Utilize inner light of multiple light sealed units for continuity of air and vapour seal.
    - .2 Size glass to withstand wind loads, dead loads and positive and negative live loads acting normal to plane of glass to a design pressure of 1 kPa as measured in accordance with ANSI/ASTM E330.
    - .3 Limit glass deflection to 1/200 flexural limit of glass with full recovery of glazing materials.

## 1.3 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 Submit two copies of WHMIS MSDS - Material Safety Data Sheets 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.
- .3 Samples:
  - .1 Submit samples in accordance with Section 01 33 00 - Submittal Procedures.
- .4 Manufacturer's Instructions:
  - .1 Submit manufacturer's installation instructions.
- .5 Closeout Submittals:
  - .1 Provide maintenance data including cleaning instructions for incorporation into manual specified in Section 01 78 00 - Closeout Submittals.

## 1.4 QUALITY ASSURANCE

- .1 Certificates: product certificates signed by manufacturer certifying materials comply with specified performance characteristics and criteria and physical requirements.
- .2 Pre-installation Meetings: conduct pre-installation meeting to verify project requirements, manufacturer's installation instructions and manufacturer's warranty requirements.

## 1.5 SITE CONDITIONS

- .1 Environmental 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: FLAT GLASS

- .1 Flat Glass:
  - .1 Float glass: to CAN/CGSB-12.3
  - .2 Safety glass: to CAN/CGSB-12.1.
    - .1 6mm thick or as indicated.
    - .2 Type 2-tempered.
    - .3 Class B-float.
  - .3 Silvered mirror glass: to CAN/CGSB-12.5, 6 mm thick and as required.
    - .1 Type 1A-Float glass for normal use.
  - .4 Low emissivity (LOW E) glass:
    - .1 Thickness 6mm or as determined by manufacturer for window sizing.
    - .2 Comfort Ti-AC 40 low-e coating or approved equivalent in accordance with B6 Substitutes.
      - .1 Metallic coating: soft, sputtered.
      - .2 Light transmittance: 0.69
      - .3 Shading co-efficient: 0.45
      - .4 U-Value: 0.3 h-ft<sup>2</sup>.°F/Btu
      - .5 Two low E coatings: layers 3 and 5—to be verified.
      - .6 Coatings:
        - .1 North and east to be absorptive.
        - .2 South and west to be reflective.
      - .7 Tempered panes where indicated by window schedule.

### 2.2 MATERIALS: SEALED INSULATING GLASS

- .1 Exterior insulating glass units: to CAN/CGSB-12.8, triple unit, 49.4mm thickness.
  - .1 Glass thickness:
    - .1 Exterior (triple layered glass units):
      - .1 Exterior layer - 12mm tempered glass.
      - .2 Two inner layers – 6mm tempered glass.
    - .2 Interior glazing in the walls as shown:
      - .1 6mm tempered glass
  - .2 Inter-cavity space 12.7mm warm edge, low conductivity spacers.

- .1 Super spacer or approved equivalent in accordance with B7.
- .2 Argon-gas fill.
- .3 Glass coating: single low-e Comfort Ti-AC 40 or approved equivalent in accordance with B7.
  - .1 Locate low-E coating to reduce solar heat gain on South and West windows. (Surface #2 &#5):
    - .1 SN 54 reflective coating.
  - .2 Locate low-E coating to reduce heat loss on North and East windows. (Surface #2 &#5):
    - .1 SN 68 absorptive coating.
- .4 Manufacture glass units with triple seal to CGSB 12.8-90 and certified by the Glass Manufacturer's Association.

## 2.3 MATERIALS

- .1 Sealant: Section – 07 92 00 – Joint Sealing.

## ACCESSORIES

- .2 Setting blocks: by manufacturer, 80-90 Shore A durometer hardness to ASTM D2240, to suit glazing method, glass light weight and area.
- .3 Spacer shims: by manufacturer, 50-60 Shore A durometer hardness to ASTM D2240, 75 mm long x one half height of glazing stop x thickness to suit application. Self adhesive on one face.
- .4 Glazing tape and caulking by manufacturer.
- .5 Glazing splines: by manufacturer, extruded shape to suit glazing channel retaining slot, or as recommended by window manufacturer.
- .6 Glazing clips: manufacturer's standard type.
- .7 Lock-strip gaskets: to ASTM C542.
- .8 Mirror attachment accessories:
  - .1 Concealed stainless steel clip wall attachments.
  - .2 Vandal-resistant mounting.

## 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 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.

### 3.3 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 INSTALLATION: EXTERIOR WET/DRY METHOD (PREFORMED TAPE AND SEALANT)

- .1 Perform Work in accordance with FGMA Glazing Manual, IGMAC and Laminators Safety Glass Association - Standards Manual for glazing installation methods.
- .2 Cut glazing tape to length and set against permanent stops, below sight line. Seal corners by butting tape and dabbing with sealant.
- .3 Apply heel bead of sealant along intersection of permanent stop with frame ensuring full perimeter seal between glass and frame to complete continuity of air and vapour seal.
- .4 Place setting blocks at 1/4 points, with edge block maximum 150 mm from corners.
- .5 Rest glazing on setting blocks and push against tape and heel head of sealant with sufficient pressure to attain full contact at perimeter of light or glass unit.
- .6 Install removable stops with spacer strips inserted between glazing and applied stops 6 mm below sight line. Place glazing tape on glazing light or unit with tape 6 mm below sight line.
- .7 Fill gap between glazing and stop with sealant to depth equal to bite of frame on glazing, maximum 9 mm below sight line.
- .8 Apply cap head of sealant along void between stop and glazing, to uniform line, flush with sight line. Tool or wipe sealant surface smooth.

### 3.5 INSTALLATION: MIRRORS

- .1 Set mirrors with clips. Anchor rigidly to wall construction.
- .2 Place plumb and level.

### 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 and mirrors using approved non-abrasive cleaner in accordance with manufacture'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. Do not mark heat absorbing or reflective glass units.

**3.8 SCHEDULE**

- .1 Mirrors where indicated in Washroom plans and elevations.
- .2 Refer to Drawings, Door schedules and Window schedules for Window and Door glazing.

**END OF SECTION**