Part 1 General

1.1 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 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 W59-03 Welded Steel Construction .

.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.

1.2 DESIGN REQUIREMENTS

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

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

1.3 SHOP DRAWINGS

.1 Submit shop drawings in accordance with Section 01330 - 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 reinforcing fire rating finishes.

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

.1 Submit test and contract administrator data, and installation instructions.

1.4 REQUIREMENTS

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

.2 Provide fire labelled frame products for those openings requiring fire protection ratings, as scheduled. Test products in strict conformance with CAN4-S104, ASTM E152 or NFPA 252 and list by nationally recognized agency having factory inspection service and construct as detailed in Follow-Up Service Procedures/Factory Inspection Manuals issued by listing agency to individual manufacturers.

Part 2 Products

1.1 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, ZF001.

1.2 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^3 minimum sanded to required thickness.

.2 Stiffened: face sheets laminated, welded, honeycomb, uninsulated, insulated core.

.1 Expanded polystyrene: CAN/ULC-S701, density 32 kg/m^3.

.2 Polyurethane: to CAN/ULC-S704 rigid, modified poly/isocyanurate, closed cell board. Density 32 kg/m^3.

1.3 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.

1.4 PRIMER

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

1.5 PAINT

.1 Field paint steel doors and frames in accordance with Section 09913 – Painting. Protect weatherstrips from paint. Provide final finish shall be free of scratches or other blemishes.

1.6 ACCESSORIES

.1 Glazing: in accordance with Section 08800.

.2 Make provisions for glazing as indicated and provide necessary glazing stops. Design exterior glazing stops to be tamperproof.

.3 Door silencers: single stud rubber/neoprene type.

.4 Steel top caps to exterior doors. Inverted, recessed, spot welded channels to top and bottom of interior doors.

.5 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.

1.7 FRAMES FABRICATION GENERAL

.1 Fabricate frames in accordance with CSDMA specifications.

.2 Fabricate frames to profiles and maximum face sizes as indicated.

.3 Exterior frames: 1.6 mm welded thermally broken type construction.

.4 Interior frames: 1.6 1.2 mm welded type construction.

.5 Blank, reinforce, drill and tap frames for mortised, templated hardware, and electronic hardware using templates provided by finish hardware supplier. Reinforce frames for surface mounted hardware.

.6 Protect mortised cutouts with steel guard boxes.

Prepare frame for door silencers, 3 for single door, 2 at head for double door.

.8 Manufacturer's nameplates on frames are not permitted.

.9 Conceal fastenings except where exposed fastenings are indicated.

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

.11 Insulate exterior frame components with polyurethane insulation.

1.8 FRAME ANCHORAGE

.1 Provide appropriate anchorage to floor and wall construction.

.2 Locate each wall anchor immediately above or below each hinge reinforecement 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 o.c. maximum.

1.9 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.

1.10 DOOR FABRICATION GENERAL

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

.2 Exterior doors: bonded core construction. Interior doors: honeycomb construction.

.3 Fabricate doors with longitudinal edges welded. Seams: grind welded joints to a flat plane, fill with metallic paste filler and sand to a uniform smooth finish.

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

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

.6 Reinforce doors where required, for surface mounted hardware. Provide flush steel top caps to exterior doors. Provide inverted, recessed, spot welded channels to top and bottom of interior doors.

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

.8 Provide fire labelled doors for those openings requiring fire protection ratings, as scheduled. Test such products in strict conformance with CAN4-S104, ASTM E152 or NFPA 252 and list by nationally recognized agency having factory inspection service and construct as detailed in Follow-Up Service Procedures/Factory Inspection Manuals issued by listing agency to individual manufacturers.

.9 Manufacturer's nameplates on doors are permitted. Location of nameplates to be on hinge side of door concealed from view.

1.11 DOORS: HONEYCOMB/BONDED CORE CONSTRUCTION

.1 Form each face sheet for exterior doors from 1.6 mm sheet steel with polystyrene/ polyurethane core laminated under pressure to face sheets.

.2 Form each face sheet for interior doors from 1.6 mm sheet steel with honeycomb core laminated under pressure to face sheets.

1.12 THERMALLY BROKEN DOORS AND FRAMES

.1 Fabricate thermally broken doors by using insulated core and separating exterior parts from interior parts with continuous interlocking thermal break.

.2 Thermal break: rigid polyvinylchloride extrusion conforming to CGSB 41-GP-19Ma.

.3 Fabricate thermally broken frames separating exterior parts form interior parts with continuous interlocking thermal break.

.4 Apply insulation.

Part 3 Execution

1.1 INSTALLATION GENERAL

.1 Install labelled steel fire rated doors and frames to NFPA 80 except where specified otherwise.

.2 Install doors and frames to CSDMA Installation Guide.

1.2 FRAME INSTALLATION

.1 Set frames plumb, square, level and at correct elevation.

Secure anchorages and connections to adjacent construction.

.3 Brace frames rigidly in position while building-in. Install temporary horizontal wood spreader at third points of door opening to maintain frame width. Provide vertical support at centre of head for openings over 1200 mm wide. Remove temporary spreaders after frames are built-in.

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

.5 Caulk perimeter of frames between frame and adjacent material.

.6 Maintain continuity of air barrier and vapour retarder.

1.3 DOOR INSTALLATION

.1 Install doors and hardware in accordance with hardware templates and manufacturer's instructions and Section 08710 - 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, noncombustible sill and thresholds: 13 mm.

.3 Adjust operable parts for correct function.

1.4 FINISH REPAIRS

.1 Touch up with primer finishes damaged during installation.

.2 Fill exposed frame anchors and surfaces with imperfections with metallic paste filler and sand to a uniform smooth finish.

1.5 GLAZING

.1 Install glazing for doors and frames in accordance with Section 08800 - Glazing.

END OF SECTION

Part 1 General

1.1 SUBMITTALS

.1 Product Data:

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

.2 Shop Drawings:

.1 Submit shop drawings.

.2 Indicate door types and cutouts for lights, sizes, core construction, and cutouts.

1.2 SAMPLES

.1 Submit samples.

.2 Submit one 300 x 300 mm corner sample of each type wood door.

.3 Show door construction, core, detail and faces.

.1 Manufacturer's Instructions: Submit manufacturer's installation instructions.

1.3 QUALITY ASSURANCE

.1 Regulatory Requirements:

.1 Wood fire rated doors: labelled and listed by an 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.

Part 2 Products

2.1 FIRE RATED WOOD DOORS

.1 Wood doors: tested in accordance with CAN4-S104 /NFPA 252 to achieve rating as scheduled.

.1 Face panels:

.1 Hardwood: birch veneer grade custom AWMAC.

.

2.2 WOOD FLUSH DOORS

.1 Solid core: to CAN/CSA-O132.2.1.

.1 Construction:

.1 Solid particleboard core: stile and rail frame bonded to particleboard core with wood lock blocks, 5-ply construction.

.2 45 minute UL label where 45 min rating in door schedule.

.2 Face panels:

.1 Hardwood: birch veneer grade custom AWMAC.

.2 Adhesive: Type 1 (Waterproof)

.2 Flush doors, mineral core: Provide UL label in accordance with fire rating noted in door schedule.

.1 Construction: Core of non-combustible mineral sections adhesives as per UL requirements.

2.3 FABRICATION

.1 Vertical metal edge strips (corner protectors): Refer to Product instructions.

.2 Prepare doors for glazing.

.3 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.

.4 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.

.4 Adjust hardware for correct function.

.5 Install glazing in accordance with Section 08800 – Glazing.

.6 Install sliding track and hardware for sliding door.

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 SUMMARY

A. Section Includes:
Aluminum sectional overhead doors.
Operating hardware, controls, and supports.

1.2 REFERENCES

A. American Architectural Manufacturers Association (AAMA) (www.aamanet.org) 611-98 - Voluntary Specification for Anodized Architectural Aluminum.

B. ASTM International (ASTM)
B209-04 - Standard Specification for Aluminum-Alloy Sheet and Plate.
B221-02 - Standard Specification for Aluminum-Alloy Extruded Bars, Rods, Wires, Shapes and Tubes.

1.3 SYSTEM DESCRIPTION

A. Design doors to withstand:
1. Positive and negative design wind loads
2. Cycle life of 5,000 cycles.

B. Operation: Manual.

C. Track and Operating Hardware: Vertical lift

D. Panels: Stile and rail aluminum with tempered glass infill panels ([2] x 4'H x 10'L).

E. Upward acting sections shall be weight counter balanced so that door will remain balanced at whatever point it is manual set. When operated the lower section shall move simultaneously with the top section but shall move at double the speed so that both sections arrive in the full open position at the same time.

1.4 SUBMITTALS

A. Submittals for Review:

Shop Drawings: Indicate opening dimensions and required tolerances, connection details, anchorage spacing, hardware locations, and installation details.
Product Data: Provide information on component construction, anchorage method, and hardware.

1.5 WARRANTIES

A. Provide manufacturer's one year warranty against defects in materials and workmanship.

Part 2 Products

2.1 MANUFACTURERS

A. Steelcraft Door Products

13504 St Albert Trail Edmonton Alberta T5L 4P4

Design by Allmar International

287 Riverton Ave Winnipeg Mb. R2L ON2 PH 668-3000

Contact Bernie Dueck or Victor Major

B. Contract Documents are based on SA6000 by Steel-Craft

C. To supply and install 10'W x 8'H upward acting, bypassing dual-leaf aluminum doors.

D. Substitutions: Not permitted.

2.2 MATERIALS

A. Sections shall be custom fabricated extruded 6063-T5 aluminum alloy. Clear anodized to AAMA 611, 607, 608 standards. Material thickness of top rail, bottom rail,end stiles 1.8mm (.071"), 3 mm at fastener locations. Top rail height 3 15/16", Bottom rail height 3 15/16". Intermediate stiles 60mm, end stiles 3 15/16".

B. Dual door section glides shall be custom constructed of clear anodized extruded aluminum. Bearing surfaces of guides shall be dual-hardness rigid/flexible PVC material to accomplish both bearing and weather-stripping functions. Top of door and the intermediate joining shall be sealed with brush type of weather-strip.

C. The weight system shall be fabricated of square tubular structural steel and fine balanced with metal punching.

Extrusions: ASTM B221, 6063-T5 or T6 alloy and temper.
Sheet: ASTM B209, alloy and temper best suited to application.

B. Glazing: ¼" dual sealed tempered clear glass.

2.3 COMPONENTS

A. Door Sections:

1. Material: Extruded aluminum, stile and rail.

2. Joints: Tongue-and-groove construction.

3. Thickness: 2 inches.

4. Stiles and rails:
   a. End stiles, bottom rail, and top rail: 4 inch face width.
   b. Center stiles and intermediate rails: 2 inch face width.

5. Vision lites: Full width and height of each door section set with silicone sealant and plastic glazing strips.

6. Glazing shall be set on rubber blocks.

   a. Panel width shall be equal widths as shown on elevation drawing.
   b. Glazing shall be dual sealed tempered clear glass.

B. Tracks:

1. 2 inches wide, roll-formed galvanized steel, 14 gage for doors not exceeding 10 feet high.

2. Lower track sections adjustable for weather tight fit.

3. Horizontal tracks reinforced with minimum 13 gage galvanized steel angle according to door weight and size.

C. Hinge and Roller Assemblies: Heavy duty hinges and adjustable roller holders of galvanized steel, with floating hardened steel bearing rollers, located at top and bottom of each panel, each side.

D. Spring Counterbalance:
Oil tempered torsion springs mounted on cross-header shaft supported by galvanized steel ball bearing end plates and center carrier brackets as required. Counterbalance transferred to doors via aircraft quality braided steel lift cables.

1. The pulleys for the weight system should be 4” diameter and run on sealed precision bearings. Pulleys shall be mounted in two points. Cable shall be 1/8” galvanized 7/19.

E. Bottom Weather stripping: Vinyl weather seal, full width of door.

F. Head and Jamb Weather stripping: Flexible one piece vinyl extrusions.

G. Lock: Outside cylinder type

Part 3 Execution

3.1 INSTALLATION

A. Install door assembly in accordance with manufacturer's instructions.

B. Anchor to adjacent construction without distortion or stress.

C. Securely brace door tracks suspended from structure. Secure tracks to structural members only.

D. Fit and align door assembly including hardware, level and plumb, to provide smooth operation.

E. Position head and jamb weather stripping to contact door sections when closed; secure in position.

3.2 ADJUSTING

A. Adjust to operate smoothly throughout full operating range.

END OF SECTION

Part 1 General

1.1 REFERENCES

.1 Canadian General Standards Board (CGSB)

.1 CAN/CGSB-79.1-M91, Insect Screens.

.2 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-Z91-M90(R2000), Safety Code for Window Cleaning Operations.

1.2 SHOP DRAWINGS

.1 Submit shop drawings in accordance with Section 01330 - 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, description of related components and exposed finishes fasteners, and caulking. Indicate location of manufacturer's nameplates.

1.3 SAMPLES

.1 Submit samples in accordance with Section 01330 - Submittal Procedures.

.2 Submit one representative model of each type window.

.3 Include frame, sash, sill, glazing and weatherproofing method, insect screens, surface finish and hardware. Show location of manufacturer's nameplates.

.4 Include 150 mm long samples of head, jamb, sill, meeting rail, mullions to indicate profile.

1.4 CLOSEOUT SUBMITTALS

.1 Provide operation and maintenance data for windows for incorporation into manual specified in Section 01780 - Closeout Submittals.

1.5 WARRANTY

.1 Provide minimum ten year warranty on labour and materials to replace defective parts of window, insulated glass and hardware.

.2 All warranties to conform to requirements of General Conditions.

Part 2 Products

MATERIALS

.1 Materials: to CSA-A440/A440.1 supplemented as follows:

.2 All windows by same manufacturer.

.3 Main frame: fibreglass.

.4 Glass:

.1 Float glass: to CAN/CGSB-12.3-M91, glazing quality.

.2 Insulating glass units: to CAN/CGSB-12.8-M90, triple unit non-reflecting glass, 42 mm overall thickness, with outer, and inner pane of 6 mm clear float glass, middle pane tempered 6 mm . Low 'E' coating on surface 2 and 5, and 12 mm air spaces with Edgetech Contract administratorural S-Class Super Spacer.

.5 Screens: to CAN/CGSB-79.1.

.1 Insect screening mesh: count 18 x 16.

.2 Fasteners: tamper proof.

.3 Screen frames: colour to match window frames.

.4 Mount screen frames for interior replacement.

.6 Interior, Exterior sills of type and size to suit job conditions; complete with joint covers, jamb drip deflectors, chairs, anchors and anchoring devices.

2.2 WINDOW TYPE AND CLASSIFICATION

.1 Fixed units: medium duty units with minimum classifications of A3 (air infiltration), B7 (water leakage) and C4 (wind load resistance) to A440 Series-00.

.2 Awning units: medium duty units to A440 Series-00 with minimum classification of A3 (air leakage), B7 (water leakage) and C4 (wind load resistance).

.3 Classification rating: CSA PKG A440-00, Energy Rating ER=14.

.4 Screens: on ventilating portion of windows as indicated.

.5 Acceptable Material:

.1 Manufacturer: as indicated in Schedule (Duxton Windows and Doors).

.2 Colour of frame: as indicated in Schedule (silver).

.3 Colour of brick mould: as indicated in Schedule (silver).

2.3 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.

2.4 GLAZING

.1 Glaze windows in accordance with CSA-A440/A440.1.

2.5 HARDWARE

.1 Operators: provide prefinished foldback operator for all awning units. Operators to provide security and permit easy operation of units

2.6 AIR BARRIER AND VAPOUR RETARDER

.1 Equip window frames with factory / site installed air barrier and vapour retarder material for sealing to building air barrier and vapour retarder as follows:

.1 Material: identical to, or compatible with, building air barrier and vapour retarder materials to provide required air tightness and vapour diffusion control throughout exterior envelope assembly.

.2 Material width: adequate to provide required air tightness and vapour diffusion control to building air barrier and vapour retarder from interior.

Part 3 Execution

3.1 WINDOW INSTALLATION

.1 Install in accordance with CSA-A440/A440.1.

3.2 BRICK MOLD INSTALLATION

.1 Install wood brick mold by window manufacturer., level in length, straight in alignment with plumb upstands and faces. Use one piece lengths at each location.

3.3 CAULKING

.1 Seal joints between windows and building with sealant. Apply sealant in accordance with Section 07900 - Joint Sealers. Conceal sealant within window units except where exposed use is permitted by Contract Administrator.

3.4 CLEANING

.1 Leave work area free of all surplus materials, packing, and debris.

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.

.2 Canadian General Standards Board (CGSB).

.1 CAN/CGSB-69.17-M86(R1993), Bored and Preassembled Locks and Latches.

.2 CAN/CGSB-69.18-M90/ANSI/BHMA A156.1-1981, Butts and Hinges.

.3 CAN/CGSB-69.19-93/ANSI/BHMA A156.3-1984, Exit Devices.

.4 CAN/CGSB-69.20-M90/ANSI/BHMA A156.4-1986, Door Controls (Closers).

.5 CAN/CGSB-69.21-M90/ANSI/BHMA A156.5-1984, Auxiliary Locks and Associated Products.

.6 CAN/CGSB-69.22-M90/ANSI/BHMA A156.6-1986, Contract administratorural Door Trim.

.7 CAN/CGSB-69.24-M90/ANSI/BHMA A156.8-1982, Door Controls - Overhead Holders.

.8 CAN/CGSB-69.26-96/ANSI/BHMA A156.10-1991, Power-operated Pedestrian Doors.

.9 CAN/CGSB-69.28-M90/ANSI/BHMA A156.12-1986, Interconnected Locks and Latches.

.10 CAN/CGSB-69.29-93/ANSI/BHMA A156.13-1987, Mortise Locks and Latches.

.11 CAN/CGSB-69.30-93/ANSI/BHMA A156.14-1991, Sliding and Folding Door Hardware.

.12 CAN/CGSB-69.31-M89/ANSI/BHMA A156.15-1981, Closer/Holder Release Device.

.13 CAN/CGSB-69.32-M90/ANSI/BHMA A156.16-1981, Auxiliary Hardware.

.14 CAN/CGSB-69.33-M90/ANSI/BHMA A156.17-1987, Self-closing Hinges and Pivots.

.15 CAN/CGSB-69.34-93/ANSI/BHMA A156.18-1987, Materials and Finishes.CAN/CGSB-69.35-M89/ANSI/BHMA A156.19-1984, Power Assist and Low Energy Power Operated Doors.

.16 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 01330 - Submittal Procedures.

.2 Samples:

.1 Submit samples in accordance with Section 01330 - 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.

.3 Hardware List:

.1 Submit contract hardware list in accordance with Section 01330 - Submittal Procedures.

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

.4 Manufacturer's Instructions:

.1 Submit manufacturer's installation instructions.

.5 Closeout Submittals

.1 Provide operation and maintenance data for door closers, locksets, door holders electrified hardware and fire exit hardware for incorporation into manual specified in Section 01780 - Closeout Submittals.

1.3 QUALITY ASSURANCE

.1 Regulatory Requirements:

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

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

.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 01610 - Basic 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 Storage and Protection:

.1 Store finishing hardware in locked, clean and dry area.

1.5 MAINTENANCE

.1 Extra Materials:

.1 Provide maintenance materials in accordance with Section 01780 - Closeout Submittals.

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

Part 2 Products

HARDWARE ITEMS

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

2.2 DOOR HARDWARE

.1 As indicated in Schedule.

2.3 MISCELLANEOUS HARDWARE

.1 Indexed key control system: to CAN/CGSB-69.21, designated by letter E and numeral identifiers, multiple drawer portable system

2.4 FASTENINGS

.1 Use only fasteners provided by manufacturer. Failure to comply may void warranties and applicable licensed labels.

.2 Supply screws, bolts, expansion shields and other fastening devices required for satisfactory installation and operation of hardware.

.3 Exposed fastening devices to match finish of hardware.

.4 Where pull is scheduled on one side of door and push plate on other side, supply fastening devices, and install so pull can be secured through door from reverse side. Install push plate to cover fasteners.

.5 Use fasteners compatible with material through which they pass.

2.5 KEYING

.1 Doors to be keyed as directed by Contract Administrator. Prepare detailed keying schedule in conjunction with City.

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

.3 Provide three masterkeys for each MK or GMK group.

.4 Stamp keying code numbers on keys and cylinders.

.5 Provide construction cores.

.6 Provide all permanent cores and keys to Contract Administrator.

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

.3 Install key control cabinet.

.4 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.

.5 Remove construction cores, locks 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.

.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 As indicated.

END OF SECTION

Part 1 General

1.1 REFERENCES

.1 Canadian General Standards Board (CGSB).

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

.2 CAN/CGSB-12.3-M91, Flat, Clear Float Glass.

.2 Flat Glass Manufacturers Association (FGMA).

.1 FGMA Glazing Manual - 1997.

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.Size glass to withstand wind loads, dead loads and positive and negative live loads.

.2 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 01330 - Submittal Procedures

.2 Shop Drawings:

.1 Submit shop drawings in accordance with Section 01330 - Submittal Procedures.

.3 Samples:

.1 Submit samples in accordance with Section 01330 - Submittal Procedures.

.4 Manufacturer's Instructions:

.1 Submit manufacturer's installation instructions.

.5 Closeout Submittals: Provide maintenance data including cleaning instructions for incorporation into manual specified in Section 01780 - Closeout Submittals

1.4 QUALITY ASSURANCE

.1 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

MATERIALS: FLAT GLASS

.1 Float glass: to CAN/CGSB-12.3, Glazing quality, 6 mm thick.

.2 Low emissivity (LOW E) glass, 6 mm thick.

.3 Safety glass: to CAN/CGSB-12.1, transparent 6 mm thick.

.1 Type 2-tempered.

.2 Class B-float.

2.2 MATERIALS: SEALED INSULATING GLASS WINDOWS

.1 Insulating glass units: to CAN/CGSB-12.8-M90, triple unit non-reflecting glass, 42 mm overall thickness, with outer, and inner pane of 6 mm clear float glass, middle panel tempered 6 mm. Low 'E' coating titanium sputtered on surface 2 and 5, and 12 mm air spaces with Edgetech Contract Administratorural S-Class Super Spacer.

2.3 MATERIALS SEALED INSULATING GLASS DOORS AND SIDELIGHTS

.1 Insulating glass units: to CAN/CGSB-12.8, double unit, 25 mm overeall thickness with outer and inner pane of 6 mm clear tempered float glass, titanium sputtered Low ‘E’ coating on surface 3 and 13 mm air space, with Edgetech Contract Administratorural S-Class Super Spacer.

2.4 ACCESSORIES

.1 Setting blocks: Neoprene, 80-90 Shore A durometer hardness to ASTM D2240, length of 25 mm for each square meter of glazing to suit glazing method, glass light weight and area.

.2 Spacer shims: Neoprene, 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.

.3 Glazing tape:

.1 Preformed butyl compound, 10-15 Shore A durometer hardness to ASTM D2240; coiled on release paper; size to siut application; black colour.

.2 Closed cell polyvinyl chloride foam, coiled on release paper over adhesive on two sides, maximum water absorption by volume 2%, designed for compression of 25%, to effect an air and vapour seal.

.4 Glazing splines: resilient, extruded shape to suit glazing channel retaining slot, colour as selected by Contract Administrator.

.5 Lock-strip gaskets: to ASTM C542.

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.

.2 Cut glazing tape to length and set against permanent stops, 6 mm 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 1/4points, with edge block maximum 150 mm from corners.

.5 Rest glazing on setting blocks and push against tape 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 flush with 16 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: INTERIOR - DRY METHOD (TAPE AND TAPE)

.1 Perform work in accordance with FGMA Glazing Manual.

.2 Cut glazing tape to length and set against permanent stops, projecting 1.6 mm above sight line.

.3 Place setting blocks at ¼ points, with edge block maximum 150 mm from corners.

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

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

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

.7 Knife trim protruding tape.

3.6 CLEANING

.1 Perform cleaning after installation to remove construction and accumulated environmental dirt. Remove traces of primer, caulking.

.2 Remove glazing materials from finish surfaces.

.3 Remove labels after work is complete.

.4 Clean glass using approved non-abrasive cleaner in accordance with manufacture's instructions.

.5 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.

END OF SECTION