

Part 1 General

1.1 SECTION  
INCLUDES

- .1 Non-rated steel frames and doors.
- .2 Non-rated thermally insulated steel doors.

1.2 RELATED  
SECTIONS

- .1 Section 07 21 00 - Building Insulation: Foam fill at frames.
- .2 Section 07 92 00 - Joint Sealants.
- .3 Section 08 71 00 - Door Hardware.
- .4 Section 09 91 00 - Painting: Field painting of doors and frames.

1.3 REFERENCES

- .1 ASTM A653/A653M-15 - Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process.
- .2 ULC-701 - Standard for Thermal Insulation, Polystyrene, Boards and Pipe Covering (CAN/ULC S701-11).
- .3 CSA G40.20-13/G40.21-13 - General Requirements for Rolled or Welded Structural Quality Steel/Structural Quality Steel.
- .4 CSA O151-09(R2014) - Canadian Softwood Plywood.
- .5 Canadian Steel Door Manufacturers Association (CSDMA), Recommended Dimensional Standards for Commercial Steel Doors and Frames, 2000.
- .6 Canadian Steel Door Manufacturers Association (CSDMA), Selection and Usage Guide for Steel Doors and Frames, 2009.
- .7 NFPA (FIRE)80 - Standard for Fire Doors and Fire Windows

<u>1.4 SUBMITTALS</u>	.1 Submit in accordance with Section 01 33 00.
	.2 Product Data: Indicate door and frame configurations and finishes, location of cut-outs for hardware reinforcement.
	.3 Shop Drawings: .1 Indicate frame elevations, reinforcement, anchor types and spacing, location of cut-outs for hardware, and finish. .2 Indicate door elevations, internal reinforcement, closure method, and cut-outs for glazing, and finishes.
<u>1.5 QUALITY ASSURANCE</u>	.1 Conform to requirements of Canadian Steel Door and Frame Manufacturers Association standards.
<u>1.6 REGULATORY REQUIREMENTS</u>	.1 Fire Rated Door and Frame Construction: Labelled and listed to CAN4-S104M. .2 Installed Door and Frame Assembly: Conform to NFPA 80 for fire rated class as indicated.
<u>1.7 DELIVERY, STORAGE, AND PROTECTION</u>	.1 Remove doors and frames from wrappings or coverings upon receipt on site and inspect for damage. .2 Store in vertical position, spaced with blocking to permit air circulation between components. .3 Store materials on planks or dunnage, out of water and covered to protect from damage. .4 Clean and touch up scratches or disfigurement caused by shipping or handling with zinc-rich primer.
<u>1.8 COORDINATION</u>	.1 Coordinate the work with frame opening construction, door, and hardware installation. .2 Sequence installation to ensure wire connections are achieved in an orderly and expeditious manner.

Part 2 Products

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|--------------------------------|----|---|
| <u>2.1 MATERIALS</u>           | .1 | Sheet Steel: Galvanized steel to ASTM A653/A653M, commercial grade (CS), Type B: <ul style="list-style-type: none"><li>.1 Coating designation Z275 for exterior doors and frames,</li><li>.2 Coating designation ZF001 for interior doors and frames.</li></ul> |
|                                | .2 | Reinforcement Channel: To CSA G40.20/G40.21, Type 44W, coating designation to ASTM A653M, ZF75.   |
|                                | .3 | Plywood: CSA O151 (CSP), CANPLY Grade SHG; unsanded, exterior use, thicknesses as indicated.  |
| <u>2.2 DOOR CORE MATERIALS</u> | .1 | Honeycomb Core: Structural small cell 25.4 mm maximum kraft paper honeycomb, sanded to required thickness.  |
|                                | .2 | Polystyrene Core: Rigid extruded fire retardant, closed cell board, density 16 to 32 kg/m <sup>3</sup> , thermal values RSI 1.0 minimum, Type 1, in accordance with ULC-701.  |
| <u>2.3 ADHESIVES</u>           | .1 | Cores and Steel Components: Manufacturer's standard adhesive.   |
|                                | .2 | Lock Seam: Manufacturer's standard sealant.   |
|                                | .3 | Construction Adhesive: polyurethane construction adhesive, resistant to freezing.   |
| <u>2.4 ACCESSORIES</u>         | .1 | Expanding Foam Sealant: to Section 07 21 00.  |
|                                | .2 | Joint Sealers - Interior: Acrylic latex, to Section 07 92 00.   |
|                                | .3 | Joint Sealers - Exterior: Two component polyurethane, to Section 07 92 00; colour to match adjacent wall finish.  |
|                                | .4 | Door Silencers: Single stud rubber/neoprene.  |
|                                | .5 | Exterior Top Caps: Flush welded steel caps.   |

- .6 Frame Thermal Breaks: Rigid polyvinylchloride extrusion conforming to CGSB 41-GP-19MA.

2.5 FABRICATION  
- DOORS

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- .1 Exterior Doors: Polystyrene insulated and stiffened construction. 1.6 mm minimum face sheet thickness. Stiffeners to be welded to face sheets.
- .2 Longitudinal Edges: Mechanically interlocked, fully welded and sanded smooth.
- .3 Cylindrical, blanked, reinforced, drilled and tapped for templated hardware, in accordance with templates provided by hardware supplier.
- .4 Reinforce for surface mounted hardware, anchor hinges, thrust pivots, pivot reinforced hinges, or non-templated hardware.
- .5 Top and Bottom Channels: Flush, welded steel channels.
- .6 Provide factory-applied touch-up primer at areas where zinc coating has been removed during fabrication.

2.6 FABRICATION  
- FRAMES

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- .1 Exterior Frames: 1.9 mm minimum face sheet thickness, welded type construction.
- .2 Mortised, blanked, reinforced, drilled and tapped for templated hardware, in accordance with templates provided by hardware supplier.
- .3 Reinforce frames wider than 1200 mm with roll formed steel channels fitted tightly into frame head, flush with top.
- .4 Prepare frames for silencers. Provide three single silencers for single doors and mullions of double doors on strike side. Provide two silencers on frame head at double doors without mullions.

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- 2.7 FINISH .1 Finish: Field painted in accordance  
with Section 09 91 00.

Part 3 Execution

- 3.1 EXAMINATION .1 Verify that opening sizes and tolerances are  
acceptable; check floor area within path of  
door swing for flatness.

- .2 Verify doors and frames are correct size,  
swing, rating and opening number.

- .3 Remove temporary shipping spreaders.

- 3.2 INSTALLATION .1 Install doors and frames to CSDMA.
- .2 Coordinate with wall construction for anchor  
placement.
- .3 Coordinate installation of doors and frames  
with installation of hardware specified in  
Section 08 71 00
- .4 Set frames plumb, square, level and at  
correct elevation.
- .5 Secure anchorages and connections to  
adjacent construction.
- .6 Foam fill shim space at perimeter of frame  
and open back sections to maintain  
continuity of thermal envelope.
- .7 Remove wood spreaders after frames have been  
built-in.
- .8 Make allowance for deflection to ensure  
structural loads are not transmitted to frame  
product.
- .9 Install doors, and hardware in accordance  
with hardware templates and manufacturer's  
instructions.
- .10 Adjust operable parts for correct clearances  
and function.
- .11 Install door silencers.

- .12 Finish paint in accordance with Section 09 91 00. Do not paint out weather-stripping.
- .13 Install roll formed steel reinforcement channels between two abutting frames. Anchor to structure and floor.

END OF SECTION

Part 1 General

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|-----|--|----|--|
| 1.1 | RELATED<br><u>SECTIONS</u>                       | .1 | Section 03 30 00 - Cast-in-Place Concrete.   |
|     |  | .2 | Section 09 21 16 - Gypsum Board Assemblies.  |
| 1.2 | REQUIREMENTS<br>OF REGULATORY<br><u>AGENCIES</u> | .1 | Access doors: labelled and listed by an organization accredited by Standards Council of Canada in conformance with CAN4-S104 and CAN4-S105 for ratings specified or indicated. |
| 1.3 | <u>SUBMITTALS</u>                                | .1 | Submit manufacturer's product data sheets and maintenance data in accordance with Section 01 33 00.  |

Part 2 Products

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|-----|----------------------------------|----|---|
| 2.1 | <u>STANDARD<br/>ACCESS DOORS</u> | .1 | Access Doors and Frames: steel with integral flanged frame, weatherstripped, concealed hinge, latch release both sides. Finish: Factory painted; grey enamel. |
|     |                                  | .1 | Provide cylinder locking; two keys per cylinder (keyed into hardware).  |
|     |                                  | .2 | Provide drywall taping flange for installation in gypsum board assembly where applicable. Provide fasteners to suit installation.                             |
|     |                                  | .3 | Size: 600 mm x 600 mm.  |
|     |                                  | .4 | Location: Install to locations as required.   |

Part 3 Execution

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|-----|---------------------|----|--|
| 3.1 | <u>INSTALLATION</u> | .1 | Coordinate installation with applicable sections and in accordance with manufacturer's printed instructions. |
|     |                     | .2 | Coordinate installation of hatches scheduled for installation in concrete slabs with Section 03 30 00.       |
|     |                     | .3 | Adjust door operating components to ensure smooth opening and closing of door.                               |

END OF SECTION

PART 1GENERAL

1.1 RELATED  
SECTIONS

- .1 Section 05 50 00 - Metal Fabrications.
- .2 Section 08 80 50 - Glazing.
- .3 Section 09 91 23 - Interior Painting.

1.2 REFERENCES

- .1 The Aluminum Association Inc. (AA).
  - .1 Aluminum Association Designation System for Aluminum Finishes-DAF 45-03.
- .2 American Society for Testing and Materials International, (ASTM).
  - .1 ASTM A 1008/A1008M-15, Standard Specification for Steel, Sheet, Cold-Rolled, Carbon, Structural, High-Strength Low-Alloy and High-Strength Low-Alloy with Improved Formability.
  - .2 ASTM D 523-14, Test Method for Specular Gloss.
  - .3 ASTM D 822-01/D822M-13, Standard Practice for Filtered Open-Flame Carbon-Arc Exposures of Paint and Related Coatings.
- .3 Canadian General Standards Board (CGSB).
  - .1 CAN/CGSB-1.105-M91, Quick-Drying Primer.
  - .2 CAN/CGSB-1.213-2004, Etch Primer (Pretreatment Coating) for Steel and Aluminum.
  - .3 CGSB 1.181-99, Coating, Zinc-Rich, Organic, Ready Mixed.
- .4 Canadian Standards Association (CSA International).
  - .1 CSA G164-M92 (R2003), Hot Dip Galvanizing of Irregularly Shaped Articles.
- .5 Environmental Choice Program (ECP).
  - .1 CCD-016-97, Thermal Insulation.
  - .2 CCD-047a-98, Paints, Surface Coatings.
  - .3 CCD-048-95, Recycled Water-Borne Surface Coatings



1.3 SYSTEM  
DESCRIPTION

- .1 Design Requirements.
  - .1 Design exterior door assembly to withstand windload of 1.2 kPa with a maximum horizontal deflection of 1/240 of opening width.
  - .2 Design door panel assemblies with thermal insulation factor 2.53 RSI.
  - .3 Design door assembly to withstand minimum 5000 cycles per annum, and 25 years total life cycle.

1.4 SUBMITTALS

- .1 Product Data:
  - .1 Submit manufacturer's printed product literature, specifications and data sheet in accordance with Section 01 00 02 - Standard General Requirements.
  - .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.
  - .2 Indicate sizes, service rating, types, materials, operating mechanisms, glazing locations and details, hardware and accessories, required clearances and electrical connections.
- .3 Manufacturer's Instructions:
  - .1 Submit manufacturer's installation instructions.
- .4 Manufacturers' Field Reports: submit copies of manufacturers field reports.

1.5 CLOSEOUT  
SUBMITTALS

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

1.6 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.

1.7 WASTE  
MANAGEMENT AND  
DISPOSAL

- .1 Separate and recycle waste materials.
- .2 Remove from site and dispose of packaging materials at appropriate recycling facilities.
- .3 Dispose of corrugated cardboard, polystyrene, plastic, packaging material in appropriate on-site bin for recycling in accordance with site waste management program.
- .4 Divert unused metal and wiring materials from landfill to metal recycling facility approved by Architect.
- .5 Divert unused paint material from landfill to official hazardous material collections site approved by Architect.
- .6 Do not dispose of unused paint materials into sewer systems, into lakes, streams, onto ground or in locations where it will pose health or environmental hazard.
- .7 Unused or damaged glazing materials are not recyclable and must not be diverted to municipal recycling programs.

1.8 MAINTENANCE

- .1 Extra Materials.
  - .1 Provide spare parts in accordance with Section 01 33 00 - Submittal Procedures.
  - .2 Provide spare parts for overhead doors as follows:
    - .1 Door panels: 1.
    - .2 Door rollers: 1.
    - .3 Weatherstripping: 2 sets.
  - .3 Store where directed. Identify each part and reference to appropriate door.

PART 2 - PRODUCTS

2.1 MATERIALS

- .1 Galvanized steel sheet: commercial quality Z275 zinc coating.
- .2 Steel sheet: commercial quality to ASTM A 1008/A1008M unexposed (U), exposed (E), with baked enamel finish.
- .3 Aluminum sheet: mill finish embossed pattern utility sheet.
- .4 Anodized aluminum sheet: embossed pattern anodizing quality aluminum sheet.
- .5 Aluminum extrusions: Aluminum Association alloy AA 6063-T5.
- .6 Primer: to CAN/CGSB-1.105 for steel CAN/CGSB-1.213 for aluminum CGSB 1.181, for galvanized steel surfaces.
- .7 Insulation: polyethylene or urethane foam, ozone layer depleting agent free, density 40 kg/m<sup>3</sup>, RSI 1.45/25.4 mm.
- .8 Cable: multi-strand galvanized steel aircraft cable.

## 2.2 DOORS

- .1 Fabricate 44.5 mm thick insulated flush panel doors of steel sections as indicated.
- .2 Fabricate door interior and exterior door skin to the following thickness:
  - .1 Interior skin: 1.09 mm
  - .2 Exterior skin: 1.6 mm
- .3 Fabricate panel frames in a continuous box frame with vertical stiffeners at 600 mm centres.
- .4 Assemble components by means adhesive and self tapping screws to manufacturer's recommendations.
- .5 Acceptable manufacturers: Richard Wilcox, Garaga Isolation Inc., Thermostop Inc, Dorion Doors Inc., or approved equal.

## 2.3 HEAVY DUTY INDUSTRIAL HARDWARE

- .1 Track: high hardware with 75 mm size 2.66 mm core thickness galvanized steel track.
- .2 Track Supports: 2.3 mm core thickness continuous galvanized steel angle track supports.
- .3 Spring counter balance: heavy duty oil tempered torsion spring with manufacturers standard brackets.
  - .1 Drum: 200 mm diameter die cast aluminum.
  - .2 Shaft: 32 mm diameter galvanized steel.
- .4 Top roller carrier: galvanized steel 3.04 mm thick adjustable.
- .5 Rollers: full floating grease packed hardened steel, ball bearing 75 mm diameter solid steel tire.
- .6 Roller brackets: adjustable, minimum 2.5 mm galvanized steel.
- .7 Hinges: heavy duty, 3.04 mm thick galvanized.
- .8 Cable: 6 mm diameter galvanized steel aircraft cable.

#### 2.4 ACCESSORIES

- .1 Overhead horizontal track and operator supports: galvanized steel, type and size to suit installation.
- .2 Track guards: 5 mm thick formed sheet 1500 mm high track guards.
- .3 Pusher springs.
- .4 Handles.
  - .1 Flat bar door latch.
  - .2 Handles: handle operated from inside.
- .5 One horizontal sliding lock bolts on interior.
- .6 Weather stripping.
  - .1 Sills: double contact full width extruded neoprene weatherstrip.
  - .2 Jams and head: extruded aluminum and arctic grade vinyl weatherstrip to manufacturer's standard.
- .7 Finish ferrous hardware items with minimum zinc coating of 300 g/m<sup>2</sup> to CSA G164.

#### 2.5 PREFINISHED STEEL SHEET

- .1 Prefinished steel with factory applied polyvinylidene fluoride.
  - .1 Class F1S.
  - .2 Colour selected by Departmental Representative from manufacturer's standard range.
  - .3 Specular gloss: 30 units +/- in accordance with ASTM D 523.
  - .4 Coating thickness: not less than 22 micrometres.
  - .5 Resistance to accelerated weathering for chalk rating of 8, colour fade 5 units or less and erosion rate less than 20 % to ASTM D 822-96 as follows:
    - .1 Outdoor exposure period 2500 hours.
    - .2 Humidity resistance exposure period 5000 hours.

2.6 OPERATORS

- .1 Equip doors for operation by:
  - .1 Hand, two handles on inside face of door.
  - .2 Chain hoist with galvanized steel chain.
- .2 Cable fail safe device.
  - .1 Able to stop door immediately if cable breaks on door free fall.  
Braking capacity 500 kg.

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 doors and hardware in accordance with manufacturer's instructions.
- .2 Rigidly support rail and operator and secure to supporting structure. Install additional structure as required to accomodate door frame / door and operator.
- .3 Touch-up steel doors with primer where galvanized finish damaged during fabrication.
- .4 Lubricate and adjust door operating components to ensure smooth opening and closing of doors.
- .5 Adjust weatherstripping to form a weather tight seal.
- .6 Adjust doors for smooth operation.

3.3 FIELD QUALITY CONTROL

- .1 Have manufacturer of products supplied under this Section review Work involved in handling, installation/application, protection and cleaning of its products, and submit written reports in acceptable format to verify compliance of Work with Contract.
- .2 Manufacturer's field services: provide manufacturer's field services consisting of product use recommendations and periodic site visits for inspection of product installation in accordance with manufacturer's instructions.
- .3 Schedule site visits to review Work at stages listed:
  - .1 After delivery and storage of products, and when preparatory Work on which Work of this Section depends is complete, but before installation begins.
  - .2 Twice during progress of Work at 50% and 80% complete.
  - .3 Upon completion of Work, after cleaning is carried out.
- .4 Obtain reports within three days of review and submit.

3.4 CLEANING

- .1 Perform cleaning 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 Upon completion of installation, remove surplus materials, rubbish, tools and equipment barriers.

END OF SECTION

Part 1 General

1.1 SECTION INCLUDES .1 Operable windows with insulating glass units.

1.2 RELATED SECTIONS .1 Section 07 92 00 - Joint Sealers.

.2 Section 08 80 00 - Glazing.

1.3 REFERENCES .1 Canadian Standards Association (CSA

.1 CAN/CSA-A440-00, Windows.

.2 Insulating Glass Manufacturers Alliance (IGMA).

.2 IGMAC Certification Program for manufacturers of insulating glass units.

1.4 SUBMITTALS .1 Submit in accordance with Section 01 33 00.

.2 Shop Drawings: Submit shop drawings, indicating dimensions, construction, component connections and locations, anchorage methods and locations, hardware locations, and installation details.

.3 Samples:

.1 Submit one complete full size window sample of each type window.

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

.3 Include 150 mm long samples of head, jamb, sill, to indicate profile.



- .4 .1 Submit test reports from approved independent testing laboratories indicating results from testing in accordance with CSA-A440.
- .5 .1 Provide operation and maintenance data for windows.

1.5 DELIVERY,  
STORAGE AND  
HANDLING

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- .1 Delivery: Deliver materials to site undamaged in manufacturer's or sales branch's original, unopened containers and packaging, with labels clearly identifying manufacturer and product name. Include installation instructions.
- .2 Storage: Store materials off ground, under cover, and protected from weather, direct sunlight, and construction activities.
- .3 Handling: Protect materials and finish during handling and installation to prevent damage.

1.6 WARRANTY

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- .1 Windows shall be warranted to be free from defects in manufacturing, materials and workmanship for a period of ten (10)years from purchase date.

Part 2 Products

2.1 MATERIALS

- .1 Materials: to CSA-A440/A440.1  
Supplemented as follows:
  - .1 All vinyl windows by same manufacturer.
  - .2 Sash: Vinyl.
  - .3 Main frame: vinyl.
- .2 Glazing:
  - .1 As per Section 08 80 00 - Glazing.

2.2 WINDOW TYPE  
AND CLASSIFICATION

- .1 Type: Fixed: with double glazing, insulating glass units.
  - .1 Acceptable material: Elite series as manufactured by Atlantic Windows or Allsco or an acceptable alternate.
  - .2 Colour to be white.
- .2 Classification rating: to CSA-A440/A440.1.
  - .1 Water tightness: B7.
  - .2 Wind load resistance: C4.
  - .3 Condensation resistance: Temperature Index, I 60.
  - .4 Forced Entry: F2.
  - .5 Glazing: G2.

2.3 INSTALLATION  
ACCESSORIES

- .1 Insulating-Foam Sealant: Low-pressure low-expansion, polyurethane foam sealant to Section 07 21 00.
- .2 Installation Brackets: Factory installed anchors for installation in openings, galvanized finish.

- 2.4 FABRICATION .1 Fabricate in accordance with CSA-A440/A440.1 supplemented as follows:
- .1 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.
  - .2 Face dimensions detailed are maximum permissible sizes.
  - .3 Brace frames to maintain squareness and rigidity during shipment and installation.
  - .4 Finish steel clips and reinforcement with shop coat primer to CAN/CGSB-1.40.

Part 3 Execution

- 3.1 EXAMINATION .1 Examine openings to receive windows. Notify Departmental Representative of conditions that would adversely affect installation.
- .2 Do not proceed with installation until unsatisfactory conditions are corrected.

- 3.2 WINDOW INSTALLATION .1 Install in accordance with CAN/CSA-A440.
- .2 Sills:
- .1 Install prefinished metal sills with uniform wash to exterior, level in length, straight in alignment with plumb upstands and faces. Use one piece at each location.
  - .2 Sills to be pre-painted galvanized steel sheet to ASTM A653/A653M, 0.60mm thickness zinc coated, colour to be white.
  - .3 Cut sills to fit window openings.
  - .4 Secure sills in place with anchoring devices located at ends and evenly spaced 600 mm on centre in between.

- .5 Fasten with self-tapping stainless steel screws.
  - .3 Assemble and install window unit according to manufacturer's instructions and reviewed shop drawings.
  - .4 Integrate window installation with air/vapour barrier using transition membrane specified at Section 07 27 00.
  - .5 Seal around window perimeter to maintain continuity of thermal barrier using insulating-foam sealant.
- 3.3 CAULKING
- .1 Seal window to exterior wall cladding with sealant and related backing materials at perimeter of assembly in accordance with Section 07 92 00.
- 3.4 CLEANING
- .1 Clean window frames and glass.
  - .2 Do not use harsh cleaning materials or methods that would damage finish.
  - .3 Remove labels and visible markings.
- 3.5 PROTECTION
- .1 Protect installed windows to be without damage at time of Substantial Completion.

END OF SECTION

PART 1- GENERAL

- 1.1 Related Work .1 Section 08 11 13 - Standard Metal Doors and Frames.
- 1.2 Reference Standards .1 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 Canadian General Standards Board (CGSB):  
.1 CAN/CGSB-69.17-M86/ANSI/BHMA A156.2-03 - Bored and Preassembled Locks and Latches.  
.2 CAN/CGSB-69.18-M90/ANSI/BHMA A156.1-06 - Butts and Hinges.
- 1.3 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.
- 1.4 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, wiring diagram, finish and other pertinent information.
- .3 Provide fully detailed shop drawings showing sizes, templates, reinforcing required, special conditions and all information for templating and installation.

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|----------------------------------|----|---|
| <u>1.5 Maintenance Data</u>      | .1 | Provide operation and maintenance data for door closers, locksets, security locks, door holders and door position indicators for incorporation into manual specified in Section 01 78 00 - Closeout Submittals. |
|                                  | .2 | Brief staff regarding proper care, cleaning, and general maintenance.   |
|                                  |    |   |
| <u>1.6 Delivery and Storage</u>  | .1 | Store finish hardware in locked, clean and dry area.  |
|                                  | .2 | Package each item of hardware including fastenings, separately or in like groups of hardware, label each package as to item definition and location.  |
|                                  |    |   |
| <u>1.7 Alternative Materials</u> | .1 | Acceptable Materials: where materials are specified by trade name refer to the Instructions to Tenderers for procedure to be followed in applying for approval of alternatives.                                 |

## PART 2 - PRODUCTS

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|---------------------------|----|--|
| <u>2.1 Hardware Items</u> | .1 | Use one manufacturer's products only for all similar items.  |
|                           |    |  |
| <u>2.2 Door Hardware</u>  | .1 | Locks and latches:   |
|                           | .1 | Bored locks and latches: to CAN/CGSB-69.17, ANSI A156.2, Series 4,000, Grade 1, designed for function and keyed as stated in this specification. |
|                           | .2 | Lever handles barrier free design.   |
|                           | .3 | Escutcheons: round.  |
|                           | .4 | Strike: ANSI type.   |
|                           | .5 | Finish: to hardware sets.  |
|                           | .6 | Cylinders: key into existing keying system as directed, 7 Pin, removable housing.  |
|                           | .7 | Acceptable materials are: Best 93K Series  |

- .2 Butts and Hinges:
  - .1 To ANSI/BHMA A 156.1, meeting ANSI Standards for performance, numerical identifiers, followed by size, options and finish in listing.
  - .2 Butts are 3 knuckle, plain or with sealed ball bearing, non rising steel pins.
  - .3 Acceptable materials are:

APPROVE	APPROVED	LISTED
Stanley	Hager	McKinney
CB1900	AB700	TA714
- .3 Holders and stops: to CAN/CGSB-69.32, ANSI A156.16, as listed in hardware schedule.
  - .1 Overhead Stops: devices to ANSI/BHMA A156.8, heavy duty, non-friction stop type, concealed and surface mounted, extruded bronze track 21 x 17.5 mm, extruded bronze arm 19 x 4.8 mm, heavy duty tempered steel spring, non-handed, sized for door leaf width indicated, finished to ANSI 626.
    - .1 Acceptable product:

APPROVED	LISTED
Sargent	Glynn-Johnson
690S Series	100S
    - .2 Wall stop to ANSI /BHMA A156.8, Zinc die cast, circular shape, concave rubber insert, concealed mounting, 60 mm diameter x 25mm projection, finished to ANSI 626.
      - .1 Acceptable product:  
Standard Metal Hardware  
Manufacturing S122, DCI 3211, or  
an approved alternate.
- .4 Thresholds: Listed in Hardware Schedule.
  - .1 To ANSI / BHMA A156.21, extruded aluminum threshold, with continuous vinyl barrier, 123mm wide x 23mm high x full width of door opening, thermo break, mill finish.
    - .1 Acceptable product:  
K.N. Crowder CT-48, Zero, Draft  
Seal or approved alternate.

.5 Weatherstrip Set: Listed in Hardware Schedule.

.1 Head and jamb seal:

.1 Extruded aluminum frame 35mm width, sponge neoprene insert, clear anodized finish.

.2 Acceptable product: Draft Seal DS132C, K.N. Crowder W-15, Zero, or approved alternate.

.2 Door bottom seal:

.1 Extruded aluminum frame 35mm width and rubber sweep, clear anodized finish.

.2 Acceptable product: Draft Seal DS138C, K.N. Crowder W13S, Zero, or approved alternate.

2.3 Fastenings

- .1 Supply screws, bolts, expansion shields and other fastening devices required for satisfactory installation and operation of hardware.
- .2 All screw type fasteners for application of hardware items except those to be welded, shall be "Security TORX" type of the size and length as recommended by the manufacturer. Supply 2 - 10 mm drive socket wrenches for each size for maintenance purposes.
- .3 Exposed fastening devices to match finish of hardware.
- .4 Use fasteners compatible with material through which they pass.

2.4 Keying

- .1 Best System:
  - .1 Cores, cylinders and keying: for all commercial and all locking hardware, provide the number of Best Access Systems cores with removable cylinders required by the device specification number. Keyway is "Q" for all Best locks.
  - .2 Provide blank removable cylinders and three (3) key blanks for each lock. Keying is by the Institution.



PART 3 - EXECUTION

3.1 SCHEDULE

- .1 Door D004
  - 1½ pair Hinges;
  - 1 Lockset - Privacy Function;
  - 1 Wall Stop.
  
- .2 Door D005
  - 1½ pair Hinges;
  - 1 Lockset -Exit Function;
  - 1 Weatherstripping;
  - 1 Threshold - 1 Door bottom seal;
  - 1 Overhead Stop.

END OF SECTION

Part 1 General

<u>1.1 SECTION INCLUDES</u>	.1	Glass and glazing for sections referencing this section for Products and installation.
<u>1.2 RELATED SECTIONS</u>	.1	Section 08 50 00 - Windows.
<u>1.3 REFERENCES</u>	.1	IGMAC (Insulated Glass Manufacturers Association of Canada) - Quality Standard Specification.
	.2	GANA - Glazing Manual and Glazing Sealing Systems Manual.
	.3	CAN/CGSB 12.1-M90 - Tempered or Laminated Safety Glass.
	.4	CAN/CGSB 12.8-97 - Insulating Glass Units.
<u>1.4 SYSTEM DESCRIPTION</u>	.1	Glass and glazing materials of this section shall provide continuity of building enclosure air barrier and vapour retarder.
	.2	Size glass to withstand dead loads and positive and negative live loads acting normal to plane of glass.
	.3	Limit glass deflection to flexure limit of glass with full recovery of glazing materials, whichever is less.
<u>1.5 SUBMITTALS</u>	.1	Product Data on Glass Types Specified: Provide structural, physical and environmental characteristics, size limitations, and special handling or installation requirements.
<u>1.6 QUALITY ASSURANCE</u>	.1	Perform Work in accordance with GANA Glazing Manual and IGMAC for glazing installation methods.

- .2 Select glazing compounds and sealants in accordance with glass manufacturer's instructions.

1.7 WARRANTY

- .1 Provide a ten (10) year warranty.
- .2 Warranty: Include coverage for sealed glass units from seal failure, interpane dusting or misting, and replacement of same.

Part 2 Products

2.1 GLASS  
MATERIALS AND  
SCHEDULE

- .1 Tempered Glass: CAN/CGSB 12.1 clear; 5 mm thick unless noted otherwise.
- .2 Insulating Glass Unit - Clear: 25 mm
  - .1 Glazing: Clear tempered glass, 5 mm thick.
  - .2 Interpane Space: 13 mm using warm edge spacer.
  - .3 Gas Fill: Argon.
  - .4 Low E: on 2<sup>nd</sup> surface.
  - .5 Glazing: Clear tempered glass, 5MM.

2.2 GLAZING  
COMPOUNDS

- .1 Sealant: Manufacturer's standard, to attain specified performance criteria.

2.3 GLAZING  
ACCESSORIES

- .1 Setting Blocks: Neoprene, EPDM or Silicone, 80 to 90 Shore A durometer hardness.
- .2 Spacer Shims: Neoprene, Silicone, 50 to 60 - Shore A durometer hardness.
- .3 Glazing Tape: Preformed butyl compound with integral resilient tube spacing device.
- .4 Glazing Splines: Resilient silicone extruded shape.

Part 3 Execution

3.1 EXAMINATION

- .1 Verify that openings for glazing are correctly sized, within tolerance and clean.

3.2 PREPARATION

- .1 Clean contact surfaces with solvent and wipe dry.

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

.3 Prime surfaces scheduled to receive sealant.

3.3 GLAZING  
METHODS

.1 Verify that selected sealants and glazing tapes are compatible.

.2 Perform glazing as required by frame manufacturer to achieve specified performance criteria.

.3 Completed exterior glazed assemblies to provide full perimeter air and vapour seal to the glazed frames and be pressure equalized.

3.4 CLEANING

.1 Remove glazing materials from finish surfaces.

.2 Remove labels after Work is complete.

.3 Clean glass.

END OF SECTION