

PART 1 - GENERAL

1.1 REFERENCES

- .1 American Architectural Manufacturers Association (AAMA)
 - .1 AAMA 609/610-09, Cleaning and Maintenance Guide for Architecturally Finished Aluminum.
- .2 ASTM International
 - .1 ASTM E 330-02, Standard Test Method for Structural Performance of Exterior Windows, Doors, Skylights and Curtain Walls by Uniform Static Air Pressure Difference.
- .3 Canadian General Standards Board (CGSB)
 - .1 CGSB 1.40-97, Anticorrosive Structural Steel Alkyd Primer.
 - .2 CAN/CGSB-12.1-M90, Tempered or Laminated Safety Glass.
 - .3 CAN/CGSB-12.20-M89, Structural Design of Glass for Buildings.
- .4 CSA International
 - .1 CSA G40.20/G40.21-04 (R2009), General Requirements for Rolled or Welded Structural Quality Steel/Structural Quality Steel.
 - .2 CAN/CSA G164-M92 (R2003), Hot Dip Galvanizing of Irregularly Shaped Articles.
- .5 Environmental Choice Program (ECP)
 - .1 CCD-045-95, Sealants and Caulking Compounds.
- .6 Green Seal Environmental Standards (GS)
 - .1 GS-11-2008, 2nd Edition, Paints and Coatings.
- .7 South Coast Air Quality Management District (SCAQMD), California State, Regulation XI. Source Specific Standards
 - .1 SCAQMD Rule 1168-A2005, Adhesives and Sealants Applications.

1.2 ACTION AND INFORMATIONAL SUBMITTALS

- .1 Submit in accordance with Section 01 33 00 - Submittal Procedures and Section 01 47 15 - Sustainable Requirements: Construction.
- .2 Product Data:
 - .1 Submit manufacturer's instructions, printed product literature and data sheets for doors frames and include product characteristics, performance criteria, physical size, finish and limitations.
- .3 Shop Drawings:
 - .1 Submit drawings stamped and signed by

professional engineer registered or licensed in Province of Manitoba, Canada.

.2 Indicate materials and profiles and provide full-size, scaled details of components for each type of frame. Indicate:

- .1 Interior trim and exterior junctions with adjacent construction.
- .2 Junctions between combination units.
- .3 Elevations of units.
- .4 Core thicknesses of components.
- .5 Type and location of exposed finishes, method of anchorage, number of anchors, supports, reinforcement, and accessories.
- .6 Location of caulking.
- .7 Arrangement of reinforcing for hardware and joints.
- .8 Arrangement of hardware and required clearances.

.4 Samples:

- .1 Submit for review and acceptance of each unit.
- .2 Samples will be returned for inclusion into work.
- .3 Frame sample to show glazing stop, door stop, jointing detail, finish, wall trim.

.5 Manufacturers Reports:

- .1 Manufacturer's Field Reports: submit manufacturer's written reports within 3 days of review, verifying compliance of Work, as described in Part 3 - FIELD QUALITY CONTROL.

1.3 CLOSEOUT SUBMITTALS

- .1 Submit in accordance with Section 01 78 00 - Closeout Submittals.
- .2 Operation and Maintenance Data: submit operation and maintenance data for cleaning and maintenance of aluminum finishes for incorporation into manual.

1.4 QUALITY ASSURANCE

- .1 Certifications: product certificates signed by manufacturer certifying materials comply with specified performance characteristics and criteria and physical requirements.

1.5 DELIVERY, STORAGE AND HANDLING

- .1 Deliver, store and handle materials in accordance with Section 01 61 00 - Common Product Requirements and with manufacturer's written instructions.
- .2 Delivery and Acceptance Requirements: deliver materials to site in original factory packaging, labelled with manufacturer's name and address.

- .1 Apply temporary protective coating to finished surfaces. Remove coating after erection. Use coatings that are easy to remove and residue free.
- .2 Leave protective covering in place until final cleaning of building.
- .3 Storage and Handling Requirements:
 - .1 Store materials off ground in dry location and in accordance with manufacturer's recommendations in clean, dry, well-ventilated area.
 - .2 Store and protect aluminum frames from nicks, scratches, and blemishes.
 - .3 Replace defective or damaged materials with new.
- .4 Develop Waste Reduction Workplan related to Work of this Section and in accordance with Section 01 74 21 - Construction/Demolition Waste Management and Disposal.
- .5 Packaging Waste Management: remove for reuse and return by manufacturer of pallets, crates, padding, and packaging materials as specified in Waste Reduction Workplan in accordance with Section 01 74 21 - Construction/Demolition Waste Management and Disposal.

PART 2 - PRODUCTS

2.1 DESIGN CRITERIA

- .1 Size glass thickness and glass unit dimensions to limits in accordance with CAN/CGSB-12.20.

2.2 MATERIALS

- .1 Aluminum extrusions: to Aluminum Association alloy AA 6063- T6 anodizing quality.
- .2 Sheet aluminum: to Aluminum Association alloy AA 1100 - H14 or AA 5005 - H32 or H34 anodizing quality.
- .3 Steel reinforcement: to CSA G40.20/G40.21, grade 300 W.
- .4 Fasteners: stainless steel, finished to match adjacent material.
- .5 Isolation coating: alkali resistant.
- .6 Glass and glazing materials: in accordance with Section 08 80 50 - Glazing.

- .7 Sealants: colour selected by Departmental Representative in accordance with Section 07 92 00 - Joint Sealants.
 - .1 to CAN/CGSB 19.13-M87 or latest
 - .2 Maximum VOC limit: in accordance with Section 01 47 15 - Sustainable Requirements: Construction.

2.3 ALUMINUM FRAMES

- .1 Frame members for doors 900 mm nominal size, for flush glazing applied stops.
- .2 Frame members for interior windows 2150 x 1100 mm nominal size, for finish glazing.

2.4 ALUMINUM FINISHES

- .1 Clear anodic finish: in accordance with Aluminum Association Designation System for Aluminum Finishes.
- .2 Appearance and properties of anodized finishes designated by Aluminum Association as Architectural Class 1, Architectural Class 2, and Protective and Decorative.

2.5 STEEL FINISHES

- .1 Finish steel clips and reinforcing steel with zinc coating to CAN/CSA-G164.
 - .1 Primer VOC limit: in accordance with Section 01 47 15 - Sustainable Requirements: Construction.

2.6 FABRICATION

- .1 Fabricate frames to profiles and maximum face sizes as indicated, with allowance for glazing.
- .2 Provide structural steel reinforcement as required.
- .3 Fit joints tightly and secure mechanically.
- .4 Conceal fastenings.
- .5 Mortise, reinforce, drill and tap doors, frames and reinforcements to receive hardware using templates provided under Section 08 71 00 - Door Hardware.
- .6 Isolate aluminum from direct contact with dissimilar metals, concrete and masonry.

PART 3 - EXECUTION

3.1 EXAMINATION

- .1 Verification of Conditions: verify conditions of substrates previously installed under other Sections or Contracts are acceptable for aluminum doors and frames installation in accordance with manufacturer's written instructions.

- .1 Visually inspect substrate in presence of Departmental Representative.
- .2 Inform Departmental Representative of unacceptable conditions immediately upon discovery.
- .3 Proceed with installation only after unacceptable conditions have been remedied and after receipt of written approval to proceed from Departmental Representative.

3.2 INSTALLATION

- .1 Manufacturer's Instructions: comply with manufacturer's written recommendations, including product technical bulletins, product catalogue installation instructions, product carton installation instructions, and data sheets.
- .2 Set frames plumb, square, level at correct elevation in alignment with adjacent work.
- .3 Anchor securely.
- .4 Install hardware in accordance with hardware templates and manufacturer's instructions.
- .5 Adjust for door components to ensure smooth operation.
- .6 Make allowances for deflection of structure to ensure that structural loads are not transmitted to frames.
- .7 Glaze aluminum frames in accordance with Section 08 80 50 - Glazing.
- .8 Apply sealant in accordance with Section 07 92 00 - Joint Sealants. Conceal sealant within the aluminum work except where exposed use is permitted by Departmental Representative.

3.3 CLEANING

- .1 Progress Cleaning: clean in accordance with Section 01 74 11 - Cleaning.
 - .1 Leave Work area clean at end of each day.
 - .2 Perform cleaning of aluminum components in accordance with AAMA 609.1 - Voluntary Guide Specification for Cleaning and Maintenance of Architectural Anodized Aluminum.
 - .3 Perform cleaning as soon as possible after installation to remove construction and accumulated environmental dirt.
 - .4 Clean aluminum with damp rag and approved non-abrasive cleaner.
 - .5 Remove traces of primer, caulking, epoxy and filler materials; clean doors and frames.
 - .6 Clean glass and glazing materials with approved non-abrasive cleaner.

- .2 Final Cleaning: upon completion remove surplus materials, rubbish, tools and equipment in accordance with Section 01 74 11 - Cleaning.
- .3 Waste Management: separate waste materials for reuse and recycling in accordance with Section 01 74 21 - Construction/Demolition Waste Management and Disposal.
 - .1 Remove recycling containers and bins from site and dispose of materials at appropriate facility.

3.4 PROTECTION

- .1 Protect installed products and components from damage during construction.
- .2 Apply temporary protective coating to finished surfaces. Do not use coatings that will become hard to remove or leave residue.
- .3 Leave protective covering in place until final cleaning of building.
- .4 Repair damage to adjacent materials caused by aluminum frame installation.

END OF SECTION

PART 1 - GENERAL

1.1 REFERENCES

- .1 Architectural Woodwork Manufacturers Association of Canada (AWMAC).
 - .1 Quality Standards for Architectural Woodwork 1998.
- .2 Canadian General Standards Board (CGSB).
 - .1 CAN/CGSB-71.19-M88, Adhesive, Contact, Sprayable.
 - .2 CAN/CGSB-71.20-M88, Adhesive, Contact, Brushable.
- .3 Canadian Standards Association (CSA International).
 - .1 CSA A440.2-98, Energy Performance of Windows and Other Fenestration Systems.
 - .2 CSA O115-M1982 (R2001), Hardwood and Decorative Plywood.
 - .3 CAN/CSA O132.2 Series-90 (R1998), Wood Flush Doors.
 - .4 CAN/CSA-O132.5-M1992 (R1998), Stile and Rail Wood Doors.
 - .5 CAN/CSA-Z808-96, A Sustainable Forest Management System: Guidance Document.
 - .6 CSA Certification Program for Windows and Doors 00.
- .4 Environmental Choice Program (ECP).
 - .1 CCD-045-92, Sealants and Caulking Compounds.
 - .2 CCD-046-92, Adhesives.
- .5 National Fire Protection Association (NFPA).
 - .1 NFPA 80-1999, Standard for Fire Doors and Fire Windows.
 - .2 NFPA 252-1999, Standard Method of Fire Tests of Door Assemblies.
- .6 Underwriters' Laboratories of Canada (ULC).
 - .1 CAN-4S104M-80 (R1985), Fire Tests of Door Assemblies.
 - .2 CAN4-S105M-85 (R1992), Fire Door Frames Meeting the Performance Required by CAN4-S104.

1.2 ACTION AND
INFORMATIONAL
SUBMITTALS

- .1 Product Data:
 - .1 Submit manufacturer's printed product literature, specifications and data sheet in accordance with Section 01 33 00 - Submittal Procedures.
 - .2 Submit two copies of WHMIS MSDS - Material Safety Data Sheets in accordance with Section 01 33 00 - Submittal Procedures. Indicate VOC's in accordance with Section 01 47 15 - Sustainable

Requirements: Construction:

- .1 For caulking materials during application and curing.
- .2 For door materials and adhesives.

.2 Shop Drawings:

- .1 Submit shop drawings in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Indicate door types and cutouts for lights and louvres, sizes, core construction, transom panel construction and cutouts.

1.3 SAMPLES

- .1 Submit samples in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Submit one 300 x 300 mm corner sample of each type wood door.
- .3 Show door construction, core, glazing detail and faces.
- .4 Manufacturer's Instructions:
 - .1 Submit manufacturer's installation instructions.

1.4 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.
- .4 Pre-installation Meetings: conduct pre-installation meeting to verify project requirements, manufacturer's installation instructions and manufacturer's warranty requirements.

1.5 DELIVERY, STORAGE, AND HANDLING

- .1 Storage and Protection:
 - .1 Protect doors from dampness. Arrange for delivery after work causing abnormal humidity has been completed.
 - .2 Store doors in well ventilated room, off floor, in accordance with manufacturer's recommendations.

- .3 Protect doors from scratches, handling marks and other damage. Wrap doors.
- .4 Store doors away from direct sunlight.

1.6 WASTE
MANAGEMENT AND
DISPOSAL

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

PART 2 - PRODUCTS

2.1 FIRE RATED WOOD
DOORS

- .1 Wood doors: tested in accordance with CAN4-S104 /NFPA 252 to achieve rating as scheduled.
 - .1 Door ratings as scheduled with corresponding ULC label: 45mm thick with homogeneous noncombustible mineral core or agrifibre construction (mineral core for a 90 minute door), institutional grade, with solid hardwood edging to match face veneers at top, bottom, & sides and high-density mineral rails and stiles.
 - .1 Face panels: 3mm hardboard, flat white maple with factory finish as scheduled.
 - .2 Standard of acceptance: Baillargeon Institutional Grade Doors, Jeld-Wen flush rated doors with Environ Biocomposites Manufacturing core, or approved equal.

2.2 WOOD FLUSH
DOORS

- .1 Solid core: to CAN/CSA-O132.2.1.
 - .1 Construction:
 - .1 45 mm with solid core wood product agrifibre construction, institutional grade with hardwood edging to match face veneers at top, bottom, and sides and LVL rails and stiles.
 - .2 Face Panels:

.1 3 mm Hardboard, flat white maple with factory satin finish as scheduled.

.2 Standard of acceptance: Baillargeon Institutional Grade Doors, Jeld-Wen flush rated doors with Environ Biocomposites Manufacturing core, or approved equal.

.3 Adhesive: Type 1 PVA cross-link adhesive or other type with 0% added urea formaldehyde content (NAUF) and in accordance with Section 01 47 15 - Sustainable Requirements: Construction.

2.3 GLAZING

.1 Glass and Accessories: in accordance with Section 08 80 50 - Glazing.

2.4 TRANSOM AND SIDE PANELS

.1 Construction: to match adjacent door.

.2 Meeting edges of doors and transom panels: checked.

.3 Veneer of doors and transom panels: end matched.

2.5 FABRICATION

.1 Fabricate non-rated doors in accordance with AWMAC Quality Standards.

.2 Fabricate fire rated doors in accordance with AWMAC Quality Standards and to ULC requirements. Attach fire rating label to door edge.

.3 Vertical edge strips to match face veneer.

.4 Prepare doors for louvres, glazing and any other openings or hardware as scheduled.

.5 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.

.6 Radius vertical edges of double acting doors to 60 mm radius.

.7 Reinforce all doors with solid blocking for all finish hardware scheduled and premachine.

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-0132.2 Series, Appendix A.
- .2 Install labelled fire rated doors to NFPA 80.
- .3 Install doors and hardware in accordance with manufacturer's printed instructions and CAN/CSA-0132.2 Series, Appendix A.
- .4 Adjust hardware for correct function.
- .5 Install glazing in accordance with Section 08 80 50 - Glazing.
- .6 Install louvres and stops.
- .7 Secure transom and side panels by means of stops concealed fasteners or countersunk screws concealed by means of wood plugs matching panel in grain and colour.

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 REFERENCES

- .1 Aluminum Association (AA)
 - .1 AA DAF 45-03(R2009), Designation System for Aluminum Finishes.
- .2 American Architectural Manufacturers Association (AAMA)
 - .1 AAMA 609/610-09, Cleaning and Maintenance Guide for Architecturally Finished Aluminum.
- .3 ASTM International
 - .1 ASTM A 167-99(R2009), Standard Specification for Stainless and Heat-Resisting Chromium-Nickel Steel Plate, Sheet and Strip.
 - .2 ASTM A 276-10, Standard Specification for Stainless Steel Bars and Shapes.
 - .3 ASTM A 480/4 80M-11, Standard Specification for General Requirements for Flat-Rolled Stainless and Heat-Resisting Steel Plate, Sheet and Strip.
- .4 Architectural Woodwork Manufacturers' Association of Canada (AWMAC)
 - .1 Architectural Woodwork Standards 2009.
- .5 Canadian General Standards Board (CGSB)
 - .1 CAN/CGSB-12.1-M90, Tempered or Laminated Safety Glass.
 - .2 CAN/CGSB-12.12-M90, Plastic Safety Glazing Sheets.
- .6 CSA International
 - .1 CSA O141-05(R2009), Softwood Lumber.
 - .2 CAN/CSA-Z809-08, Sustainable Forest Management.
- .7 Forest Stewardship Council (FSC)
 - .1 FSC-STD-01-001-2004, FSC Principle and Criteria for Forest Stewardship.
- .8 Green Seal Environmental Standards (GS)
 - .1 GS-11-11, Paints and Coatings.
 - .2 GS-36-11, Commercial Adhesives.
- .9 National Fire Prevention Association (NFPA)
 - .1 NFPA 80-2010, Standard for Fire Doors and Other Opening Protectives.
- .10 National Hardwood Lumber Association (NHLA)
 - .1 Rules for the Measurement and Inspection of Hardwood and Cypress 2007.
- .11 National Lumber Grades Authority (NLGA)
 - .1 Standard Grading Rules for Canadian Lumber 2007.

- .12 South Coast Air Quality Management District (SCAQMD), California State, Regulation XI. Source Specific Standards
 - .1 SCAQMD Rule 1113-A2011, Architectural Coatings.
 - .2 SCAQMD Rule 1168-A2005, Adhesives and Sealants Applications.
- .13 Sustainable Forestry Initiative (SFI)
 - .1 SFI-2010-2014 Standard.
- .14 The Master Painters Institute (MPI)
 - .1 Architectural Painting Specification Manual - current edition.
 - .1 MPI #25 Cleaner, Etching, for Galvanized Metal.
 - .2 MPI #26 Primer, Galvanized Metal, Cementitious.
 - .3 MPI #46 Undercoat, Enamel, Interior.
 - .4 MPI #80 Primer Vinyl Wash.
- .15 Underwriters Laboratories of Canada (ULC)
 - .1 CAN/ULC-S104-10, Standard Method for Fire Tests of Door Assemblies.
 - .2 CAN/ULC-S105-09, Standard Specification for Fire Door Frames.

1.2 ACTION AND
INFORMATIONAL
SUBMITTALS

- .1 Submit in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Product Data:
 - .1 Submit manufacturer's instructions, printed product literature and data sheets for coiling counter doors and hardware and include product characteristics, performance criteria, physical size, finish and limitations.
- .3 Shop Drawings:
 - .1 Submit drawings stamped and signed by professional engineer registered or licensed in Province of Manitoba, Canada.
 - .2 Indicate each type of coiling counter door, arrangement of hardware, operating mechanism and required clearances.
- .4 Samples:
 - .1 Submit for review and acceptance of each unit.
 - .2 Submit duplicate 300 mm long pieces of coiling curtain for approval of finish.
- .5 Manufacturers Reports:
 - .1 Manufacturer's Field Reports: submit manufacturer's written reports within 3 days of review, verifying compliance of Work, as described

in Part 3 - FIELD QUALITY CONTROL.

1.3 CLOSEOUT
SUBMITTALS

- .1 Submit in accordance with Section 01 78 00 - Closeout Submittals.
- .2 Operation and Maintenance Data: submit operation and maintenance data for coiling counter doors and hardware for incorporation into manual.

1.4 QUALITY
ASSURANCE

- .1 Regulatory Agency Approvals:
 - .1 Steel fire rated doors and frames: labelled and listed by an organization accredited by Standards Council of Canada to CAN/ULC-S104 and CAN/ULC-S105 for ratings specified or indicated.
 - .2 Fabricate and install fire rated coiling metal counter doors in accordance with NFPA 80 to suit fire protection rating required.
- .2 Certifications: product certificates signed by manufacturer certifying materials comply with specified performance characteristics and criteria and physical requirements.

1.5 DELIVERY,
STORAGE AND
HANDLING

- .1 Deliver, store and handle materials in accordance with Section 01 61 00 - Common Product Requirements and with manufacturer's written instructions.
- .2 Delivery and Acceptance Requirements: deliver materials to site in original factory packaging, labelled with manufacturer's name and address.
- .3 Storage and Handling Requirements:
 - .1 Store materials off ground indoors in dry location and in accordance with manufacturer's recommendations in clean, dry, well-ventilated area.
 - .2 Store and protect coiling counter doors from nicks, scratches, and blemishes.
 - .3 Replace defective or damaged materials with new.
- .4 Develop Waste Reduction Workplan related to Work of this Section and in accordance with Section 01 74 21 - Construction/Demolition Waste Management and Disposal.
- .5 Packaging Waste Management: remove for reuse and return by manufacturer of pallets, crates, padding, and packaging materials as specified in Waste Reduction Workplan in accordance with Section 01 74 21 - Construction/Demolition Waste Management and Disposal.

PART 2 - PRODUCTS

2.1 MATERIALS

- .1 Coiling doors: curtain.
 - .1 Fabricate fire rated rolling metal coiling counter door to NFPA 80 with minimum 45min fire resistant rating.
 - .2 Slats: No. 1 finish, interlocked flat faced slats, 38mm high by 13mm deep, 22 gauge ASTM A653, commercial quality galvanized steel with plain steel bottom bar and vinyl astragal.
 - .3 Fabricate continuous interlocking slat sections with high strength galvanized steel endlocks riveted to slats in accordance to UL requirements.
 - .4 Slat Finish: Powder-coated, as selected by consultant from manufacturer is full range. Minimum 0.065mm cured film thickness, ASTM D-3363 pencil hardness "H" or better.
 - .5 Bottom bar finish: to match that of slat finish.
- .2 Guides:
 - .1 Steel, 12 gauge formed shapes.
 - .2 Finish: to match that of slat and bottom bar finish.
- .3 Counterbalance shaft assembly:
 - .1 Barrel: steel pipe capable of supporting curtain load with maximum deflection of 2.5mm/meter of width.
 - .2 Spring balance: Oil tempered, heat treated helical torsion spring assembly designed for proper balance of door to ensure that max effort to operate will not exceed 25lbs (110N). Provide wheel for applying and adjusting spring torque.
- .4 Brackets:
 - .1 Fabricate from reinforced steel plate with permanently lubricated ball or roller bearings at rotating support points to support counterbalance shaft assembly and form end closures.
 - .2 Finish to match that of slat bottom bar and guide.
- .5 Hood and mechanism covers: 24 gauge galvanized / stainless steel with reinforced top and bottom edges. Provide minimum 635 mm steel intermediate support brackets as required to prevent excessive sag.
 - .1 Finish: to match that of slat and bottom bar finish.
- .6 Smoke Seals:
 - .1 Bottom bar: UL tested, PVC double bulb seal.
 - .2 Guides and head: Replaceable UL listed, nylon pile smoke seals, sealing against fascia side of

curtain.

- .7 Primer: to MPI Painting Specification Manual.
 - .1 For galvanized sheet steel: to MPI #25 or MPI #26.
 - .2 For non-anodized aluminum: MPI #25 or MPI #80.
 - .3 For anodized aluminum: to MPI #46, interior enamel undercoat.
 - .4 VOC limit in accordance with Section 01 47 15 Sustainable Requirements: Construction.
 - .5 VOC limit: in accordance with Section 01 47 15 Sustainable Requirements: Construction.
- .8 Adhesives and Sealants: VOC limit in accordance with Section 01 47 15 Sustainable Requirements: Construction.

2.2 COILING COUNTER DOOR ACCESSORIES

- .1 Locking: Master keyable cylinder operable from both sides of bottom bar, in accordance with Section 08 71 00 - Door Hardware
- .2 Countertop: 1 ½ hour UL Labelled, 41 mm thick plastic laminate covered, size and configuration made for opening size and wall construction. Colour as selected by consultant from standard range of plastic laminates and in accordance with Section 06 40 00 - Architectural Woodwork.

2.3 OPERATION

- .1 Manual M100 Chain hoist:
 - .1 Provide combination chain / controlled closing system operator including endless steel chain, geared reduction units, chain keeper and electric wall mounted close control system.
 - .2 Integral release device for connection to central alarm system and a governor to control automatic closing speed.
 - .3 Automatic closure to be activated by central smoke and fire alarm system.
 - .4 Doors shall maintain an average closing speed of not more than 305 mm per second during automatic closing. Resetting of spring tension or mechanical drop outs is not required.
- .2 Fusible link with Fire Guard AR-D release device Manual push up operation;
 - .1 Activation: Central alarm or power outage in excess of 10 seconds or melting of fusible link.
 - .2 Average closing speed: not less than 152mm or more than 610mm per second.

PART 3 - EXECUTION

3.1 EXAMINATION

- .1 Verification of Conditions: verify conditions of substrates previously installed under other Sections or Contracts are acceptable for coiling counter doors installation in accordance with manufacturer's written instructions.
 - .1 Visually inspect substrate in presence of Departmental Representative.
 - .2 Inform Departmental Representative of unacceptable conditions immediately upon discovery.
 - .3 Proceed with installation only after unacceptable conditions have been remedied and after receipt of written approval to proceed from Departmental Representative.

3.2 INSTALLATION

- .1 Install coiling counter door in accordance with manufacturers' printed instructions.
- .2 Install master keyed cylinders specified in Section 08 71 00 - Door Hardware.
- .3 Adjust operable parts for correct function and smooth operation.
- .4 Test labelled coiling counter doors for proper operation by activating fusible link.
 - .1 Test shutters in presence of Departmental Representative.

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 Following completion of installation including related work by others, lubricate, test and adjust doors for ease of operation, free from warp, twist or distortion.
- .3 Manufacturer's field services:
 - .1 Obtain written report from manufacturer verifying compliance of Work, in handling, installing, applying, protecting and cleaning of its products, and submit written reports in acceptable format to verify compliance of Work with Contract within 3 days of review.
 - .2 Submit 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:

- .1 After delivery and storage of products, and when preparatory Work is complete, but before installation begins.
- .2 Twice during progress of Work at 25% and 60% complete.
- .3 Upon completion of Work, after cleaning is carried out.

.4 Site test: Test doors for normal operation and automatic closing. Coordinate with Authorities Having Jurisdiction and Departmental Representative to witness test and sign drop test form.

3.4 CLEANING

- .1 Progress Cleaning: clean in accordance with Section 01 74 11 - Cleaning.
 - .1 Leave Work area clean at end of each day.
 - .2 Perform cleaning of aluminum components in accordance with: AAMA 609.
 - .3 Clean aluminum with damp rag and approved non-abrasive cleaner in accordance with manufacturer's instructions.
 - .4 Remove traces of primer, caulking; clean doors and frames.
- .2 Final Cleaning: upon completion remove surplus materials, rubbish, tools and equipment in accordance with Section 01 74 11 - Cleaning.
- .3 Waste Management: separate waste materials for reuse and recycling in accordance with Section 01 74 21 - Construction/Demolition Waste Management and Disposal.
 - .1 Remove recycling containers and bins from site and dispose of materials at appropriate facility.

3.5 PROTECTION

- .1 Protect installed products and components from damage during construction.
- .2 Repair damage to adjacent materials caused by coil counter door installation.

END OF SECTION

PART 1 - GENERAL

1.1 REFERENCES

- .1 American National Standards Institute (ANSI) / Builders Hardware Manufacturers Association (BHMA)
 - .1 ANSI/BHMA A156.9-2003, Cabinet Hardware.
 - .2 ANSI/BHMA A156.11-2004, Cabinet Locks.
 - .3 ANSI/BHMA A156.16-2008, Auxiliary Hardware.
 - .4 ANSI/BHMA A156.18-2006, Materials and Finishes.
 - .5 ANSI/BHMA A156.20-2006, Strap and Tee Hinges and Hasps.

1.2 ACTION AND INFORMATIONAL SUBMITTALS

- .1 Submit in accordance with Section 01 33 00 - Submittal Procedures].
- .2 Product Data:
 - .1 Submit manufacturer's instructions, printed product literature and data sheets for cabinet hardware and include product characteristics, performance criteria, physical size, finish and limitations.
- .3 Samples:
 - .1 Upon request from Departmental Representative.
- .4 Hardware List:
 - .1 Submit contract hardware list.
 - .2 Indicate specified hardware, including make, model, material, function, finish and other pertinent information.
- .5 Test Reports: certified test reports showing compliance with specified performance characteristics and physical properties.
- .6 Manufacturer's Instructions: submit manufacturer's installation instructions.

1.3 CLOSEOUT SUBMITTALS

- .1 Submit in accordance with Section 01 78 00 - Closeout Submittals.
- .2 Operation and Maintenance Data: submit operation and maintenance data for cabinet hardware for incorporation into manual.

1.4 QUALITY ASSURANCE

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

1.5 DELIVERY, STORAGE AND HANDLING

- .1 Deliver, store and handle materials in accordance with Section 01 61 00 - Common Product Requirements and with manufacturer's written instructions.
- .2 Delivery and Acceptance Requirements: deliver materials to site in original factory packaging, labelled with manufacturer's name and address.
- .3 Package items of hardware including fastenings, separately or in like groups of hardware, label each package as to item definition and location.
- .4 Storage and Handling Requirements:
 - .1 Store materials off ground indoors in dry location and in accordance with manufacturer's recommendations in clean, dry, well-ventilated area.
 - .2 Store and protect cabinet hardware from nicks, scratches, and blemishes.
 - .3 Protect prefinished surfaces with wrapping strippable coating.
 - .4 Replace defective or damaged materials with new.
- .5 Develop Waste Reduction Workplan related to Work of this Section and in accordance with Section 01 74 21 - Construction/Demolition Waste Management and Disposal.
- .6 Packaging Waste Management: remove for reuse and return by manufacturer of pallets, crates, padding, and packaging materials as specified in Waste Reduction Workplan in accordance with Section 01 74 21 - Construction/Demolition Waste Management and Disposal.

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 ANSI/BHMA A156.9, designated by letter B and numeral identifiers listed below.
 - .1 Hinges: concealed hinge, European #B160213.
 - .2 Pulls: surface mounted, type #B02041, design Contemporary Antibacterial Brass handle pull in 195AB finish, prod. #938196,128.
 - .3 Latches: elbow.
 - .4 Catches: friction.
 - .5 Shelf rests and standards: adjustable shelf standards, type, with open shelf rests.
 - .6 Shelf brackets and standards: type vertical

slotted shelf standard, with shelf brackets.

.7 Drawer slides: side mounted drawer slides.

.2 Cabinet locks: to ANSI/BHMA A156.11, as listed below.

.1 Door or drawer locks: half mortised into back of door or drawer.

.2 Cylinders: key into keying system as directed.

2.3 MISCELLANEOUS HARDWARE

.1 Auxiliary hardware: to ANSI/BHMA A156.16, designated by letter and numeral identifiers as listed below, finished to.

.1 Garment hooks: Contemporary Stainless Steel hooks, #170 finish. Anchor included product #51128170.

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 master keyed as directed. Submit keying schedule for approval.

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

.3 Supply 3 master keys for each master key or grand master key group.

.4 Stamp keying code numbers on keys and cylinders.

.5 Install key cabinet where indicated.

PART 3 - EXECUTION

3.1 INSTALLATION

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

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

3.2 ADJUSTING

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

3.3 CLEANING

- .1 Progress Cleaning: clean in accordance with Section 01 74 11 - Cleaning.
 - .1 Leave Work area clean at end of each day.
 - .2 Clean hardware with damp rag and approved non-abrasive cleaner, and polish hardware in accordance with manufacturer's instructions.
 - .3 Remove protective material from hardware items where present.
 - .4 Final Cleaning: upon completion remove surplus materials, rubbish, tools and equipment in accordance with Section 01 74 11 - Cleaning.
- .2 Waste Management: separate waste materials for reuse and recycling in accordance with Section 01 74 21 - Construction/Demolition Waste Management and Disposal.
 - .1 Remove recycling containers and bins from site and dispose of materials at appropriate facility.

3.4 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 Departmental Representative.
- .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.

3.5 PROTECTION

- .1 Protect installed products and components from damage during construction.
- .2 Repair damage to adjacent materials caused by cabinet and miscellaneous hardware installation.

END OF SECTION

PART 1 - GENERAL

1.1 REFERENCES

- .1 American National Standards Institute (ANSI) / Builders Hardware Manufacturers Association (BHMA)
 - .1 ANSI/BHMA A156.1-2000, American National Standard for Butts and Hinges.
 - .2 ANSI/BHMA A156.2-2003, Bored and Preassembled Locks and Latches.
 - .3 ANSI/BHMA A156.3-2001, Exit Devices.
 - .4 ANSI/BHMA A156.4-2000, Door Controls - Closers.
 - .5 ANSI/BHMA A156.5-2001, Auxiliary Locks and Associated Products.
 - .6 ANSI/BHMA A156.6-2005, Architectural Door Trim.
 - .7 ANSI/BHMA A156.8-2005, Door Controls - Overhead Stops and Holders.
 - .8 ANSI/BHMA A156.10-1999, Power Operated Pedestrian Doors.
 - .9 ANSI/BHMA A156.12-2005, Interconnected Locks and Latches.
 - .10 ANSI/BHMA A156.13-2002, Mortise Locks and Latches Series 1000.
 - .11 ANSI/BHMA A156.14-2002, Sliding and Folding Door Hardware.
 - .12 ANSI/BHMA A156.15-2006, Release Devices - Closer Holder, Electromagnetic and Electromechanical.
 - .13 ANSI/BHMA A156.16-2002, Auxiliary Hardware.
 - .14 ANSI/BHMA A156.17-2004, Self-closing Hinges and Pivots.
 - .15 ANSI/BHMA A156.18-2006, Materials and Finishes.
 - .16 ANSI/BHMA A156.19-2002, Power Assist and Low Energy Power - Operated Doors.
 - .17 ANSI/BHMA A156.20-2006, Strap and Tee Hinges and Hasps.
- .2 Canadian Steel Door and Frame Manufacturers' Association (CSDMA)
 - .1 CSDMA Recommended Dimensional Standards for Commercial Steel Doors and Frames - 2009.

1.2 ACTION AND INFORMATIONAL SUBMITTALS

- .1 Submit in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Product Data:
 - .1 Submit manufacturer's instructions, printed product literature and data sheets for door hardware and include product characteristics, performance criteria, physical size, finish and limitations.

- .3 Samples:
 - .1 Submit for review and acceptance of each unit.
 - .2 Samples will be returned for inclusion into work.
 - .3 Identify each sample by label indicating applicable specification paragraph number, brand name and number, finish and hardware package number.
 - .4 After approval samples will be returned for incorporation in Work.
- .4 Hardware List:
 - .1 Submit contract hardware list.
 - .2 Indicate specified hardware, including make, model, material, function, size, finish and other pertinent information.
- .5 Test Reports: certified test reports showing compliance with specified performance characteristics and physical properties.
- .6 Manufacturer's Instructions: submit manufacturer's installation instructions.

1.3 CLOSEOUT
SUBMITTALS

- .1 Submit in accordance with Section 01 78 00 - Closeout Submittals.
- .2 Operation and Maintenance Data: submit operation and maintenance data for door hardware for incorporation into manual.

1.4 MAINTENANCE
MATERIALS
SUBMITTALS

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

1.5 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.

1.6 DELIVERY,

- .1 Deliver, store and handle materials in accordance

STORAGE AND
HANDLING

with Section 01 61 00 - Common Product Requirements and with manufacturer's written instructions.

- .2 Delivery and Acceptance Requirements: deliver materials to site in original factory packaging, labeled with manufacturer's name and address.
- .3 Package items of hardware including fastenings, separately or in like groups of hardware, label each package as to item definition and location.
- .4 Storage and Handling Requirements:
 - .1 Store materials off ground indoors in dry location and in accordance with manufacturer's recommendations in clean, dry, well-ventilated area.
 - .2 Store and protect door hardware from nicks, scratches, and blemishes.
 - .3 Protect prefinished surfaces with wrapping or strippable coating.
 - .4 Replace defective or damaged materials with new.
- .5 Develop Waste Reduction Workplan related to Work of this Section and in accordance with Section 01 74 21 - Construction/Demolition Waste Management and Disposal.
- .6 Packaging Waste Management: remove for reuse and return by manufacturer of pallets, crates, padding, and packaging materials as specified in Waste Reduction Workplan in accordance with Section 01 74 21 - Construction/Demolition Waste Management and Disposal.

PART 2 - PRODUCTS

2.1 HARDWARE ITEMS

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

2.2 DOOR HARDWARE

- .1 Locks and latches:
 - .1 Mortise locks and latches: to ANSI/BHMA A156.13, series 1000 mortise lock, grade 1, designed for function and keyed as stated in Hardware Schedule.
 - .2 Lever handles: plain. All locksets/latchsets with levers to have 70mm backset typically.
 - .3 Escutcheons: round.
 - .4 Normal strikes: box type, lip projection not beyond jamb.
 - .5 Cylinders: key into keying system as

directed.

.6 Finish as scheduled.

.2 Butts and hinges:

.1 Butts and hinges: to ANSI/BHMA A156.1, designated by letter A and numeral identifiers, followed by size and finish, listed in Hardware Schedule.

.3 Door Closers and Accessories:

.1 Door controls (closers): to ANSI/BHMA A156.4, designated by letter C and numeral identifiers listed in Hardware Schedule, in accordance with ANSI/BHMA A156.4, table A1, finished as scheduled.

.2 Door controls - overhead holders: to ANSI/BHMA A156.8, designated by letter C and numeral identifiers listed in Hardware Schedule, finished as scheduled.

.4 Door Operators:

.1 Power-operated pedestrian doors: to ANSI/BHMA A156.10.

.2 Power assist and low energy power operated doors: to ANSI/BHMA A156.19.

.5 Architectural door trim: to ANSI/BHMA A156.6, designated by letter J and numeral identifiers listed in Hardware Schedule, finished as scheduled.

.1 Door protection plates: kick plate on push side of door unless otherwise noted, 1.27 mm thick stainless steel, with countersunk oval head stainless steel screws. Length to be full width of door less 50mm.

.2 Push plates: type J301, 1.27 mm thick stainless steel.

.3 Push/Pull units: type J405, stainless steel.

.6 Auxiliary hardware: to ANSI/BHMA A156.16, designated by letter L and numeral identifiers listed in Hardware Schedule, finished to 626.

.1 Stop, floor mounted: type L02142, finished to 626.

.7 Acoustic sound seals and door bottom seal: heavy duty, door seal of extruded aluminum frame and closed cell neoprene seal, surface mounted, closed ends, automatic retract mechanism when door is open, clear anodized finish.

.8 Thresholds: width listed in schedule x full width of door opening, extruded aluminum mill finish, serrated surface, with minimal lip to permit barrier free access.

.9 Barrier Free Pneumatic Door Operator to CAN/CGSB-69.26:

- .1 Power assist and low energy power operated doors to CAN/CGSB-69.35: single door operation with actuators, electric strikes, control boxes, and all related hardware. Surface mounted type with ability to adjust operation speed. Acceptable products: LCN 4642, Horton series 4000, Gyro-Tech GT-500, Stanley Magic Swing, Hunter HA-8, or approved equal.
- .2 Self contained control box/compressor combination for independent operation of two door leaves.
- .3 Control boxes: complete with electric strike relay.
- .4 Wall mounted, hard-wired low voltage actuators (with standard recessed electrical boxes): 114mm round stainless steel plate cover with International accessibility symbol engraved in blue. Door operators push bars by Ingress'r by Wikk Industries Mount actuators flush to walls at both the push and pull sides of a door Mount actuators at 900mm above finished floor or grade to the centre. Mount actuators flush to walls at both the push and pull sides of a door. At Vestibules, typically provide 1 exterior and 3 interior actuator locations. Refer to drawings for designated locations and site confirm final on site with Departmental Representative.
- .5 Provide switched line voltage to control box. Locate bypass switch above housing mechanism and wire so switch will also act as an on-off switch for the door operator.
- .6 Supply low voltage wiring to each actuator.

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 Doors, padlocks and cabinet locks to be keyed

differently as directed. Prepare detailed keying schedule in conjunction with Departmental Representative.

- .2 Supply keys in duplicate for every lock in this Contract.
- .3 Supply 3 master keys for each master key or grand master key group.
- .4 Stamp keying code numbers on keys and cylinders.
- .5 Supply construction cores.
- .6 Hand over permanent cores and keys to Departmental Representative.
- .7 Provide a wall mounted, lockable, key cabinet capable of holding the number of keys supplied.
- .8 Hardware for card access controls to be provided in locations as noted. Prepare frames and doors for card access systems including conduit and junction boxes.

PART 3 - EXECUTION

3.1 INSTALLATION

- .1 Manufacturer's Instructions: comply with manufacturer's written recommendations, including product technical bulletins, product catalogue installation instructions, product carton installation instructions, and data sheets.
- .2 Supply metal door and frame manufacturers with complete instructions and templates for preparation of their work to receive hardware.
- .3 Supply manufacturers' instructions for proper installation of each hardware component.
- .4 Install hardware to standard hardware location dimensions in accordance with CSDFMA Canadian Metric Guide for Steel Doors and Frames (Modular Construction).
- .5 Where door stop contacts door pulls, mount stop to strike bottom of pull.
- .6 Install key control cabinet.
- .7 Use only manufacturer's supplied fasteners.
 - .1 Use of "quick" type fasteners, unless specifically supplied by manufacturer, is unacceptable.

3.2 ADJUSTING

- .8 Remove construction cores when directed by Departmental Representative.
 - .1 Install permanent cores and ensure locks operate correctly.
- .1 Adjust door hardware, operators, closures and controls for optimum, smooth operating condition, safety and for weather tight closure.
- .2 Lubricate hardware, operating equipment and other moving parts.
- .3 Adjust door hardware to ensure tight fit at contact points with frames.

3.3 CLEANING

- .1 Progress Cleaning: clean in accordance with Section 01 74 11 - Cleaning.
 - .1 Leave Work area clean at end of each day.
 - .2 Clean hardware with damp rag and approved non-abrasive cleaner, and polish hardware in accordance with manufacturer's instructions.
 - .3 Remove protective material from hardware items where present.
 - .4 Final Cleaning: upon completion remove surplus materials, rubbish, tools and equipment in accordance with Section 01 74 11 - Cleaning.
- .2 Waste Management: separate waste materials for reuse and recycling in accordance with Section 01 74 21 - Construction/Demolition Waste Management and Disposal.
 - .1 Remove recycling containers and bins from site and dispose of materials at appropriate facility.

3.4 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 Departmental Representative.
- .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.

3.5 PROTECTION

- .1 Protect installed products and components from damage during construction.
- .2 Repair damage to adjacent materials caused by door hardware installation.

3.6 SCHEDULE

- .1 HW Set: 01
- | | | | |
|---|--------------------|--------------------------|---------|
| 3 | EA HINGE | TA714 4.5 X 4 NRP | 652 MCK |
| 1 | EA STOREROOM LOCK | CRR 8805 X MEDECO CYL | 626 YAL |
| 1 | EA ELECTRIC STRIKE | EC121 SERIES FS | 630 EFF |
| 1 | EA SURFACE CLOSER | 351-P10 | EN SAR |
| 1 | EA KICKPLATE | K10A 12" X WIDTH TO SUIT | 630 STD |
| 1 | EA FLOOR STOP | S101/S103 | 626 STD |
| | | CARD ACCESS BY OTHERS | |
| | | DOOR CONTACT BY OTHERS | |
- .2 HW Set: 02
- | | | | |
|---|--------------------|--------------------------|---------|
| 3 | EA HINGE | TA714 4.5 X 4 | 652 MCK |
| 1 | EA STOREROOM LOCK | CRR 8805 X MEDECO CYL | 626 YAL |
| 1 | EA ELECTRIC STRIKE | EC121 SERIES FS | 630 EFF |
| 1 | EA SURFACE CLOSER | 351-0 | EN SAR |
| 1 | EA KICKPLATE | K10A 12" X WIDTH TO SUIT | 630 STD |
| 1 | EA FLOOR STOP | S101/S103 | 626 STD |
| | | CARD ACCESS BY OTHERS | |
| | | DOOR CONTACT BY OTHERS | |
- .3 HW Set: 03
- | | | | |
|---|-------------------|--------------------------|---------|
| 3 | EA HINGE | TA714 4.5 X 4 | 652 MCK |
| 1 | EA PULL | 2412-2 | 630 STD |
| 1 | EA PUSH PLATE | K11A - 5 | 630 STD |
| 1 | EA SURFACE CLOSER | 351-0 | EN SAR |
| 1 | EA KICKPLATE | K10A 12" X WIDTH TO SUIT | 630 STD |
| 1 | EA FLOOR STOP | S101/S103 | 626 STD |
- .4 HW Set: 04
- | | | | |
|---|----------------|-----------------------|---------|
| 3 | EA HINGE | TA714 4.5 X 4 | 652 MCK |
| 1 | EA OFFICE LOCK | CRR 8807 X MEDECO CYL | 626 YAL |
| 1 | EA FLOOR STOP | S101/S103 | 626 STD |
- .5 HW Set: 05
- | | | | |
|---|----------------|---------------|---------|
| 3 | EA HINGE | TA714 4.5 X 4 | 652 MCK |
| 1 | EA PRIVACY SET | CRR 8802 | 626 YAL |
| 1 | EA FLOOR STOP | S101/S103 | 626 STD |

1	EA DOOR BOTTOM	CT-52	628 KNC
1	SET WEATHERSTRIP	W-22	BLK KNC
.6 HW Set: 06			
3	EA HINGE	TA714 4.5 X 4	652 MCK
1	EA STOREROOM LOCK	CRR 8805 X MEDECO CYL	626 YAL
1	EA ELECTRIC STRIKE	EC121 SERIES FS	630 EFF
1	EA AUTO OPERATOR	GT 700 C/W 2 ACTUATORS	628 GYR
1	EA KICKPLATE	K10A 12" X WIDTH TO SUIT	630 STD
1	EA FLOOR STOP	S101/S103 CARD ACCESS BY OTHERS DOOR CONTACT BY OTHERS	626 STD
.7 HW Set: 07			
1	EA ELECTRIC HINGE	TA714 4.5 X 4 CC-4	652 MCK
1	EA ELECTRIC STRIKE	EC121 SERIES FS	630 EFF
1	EA STOREROOM LOCK	CRR 8830-2 X 2/MEDECO CYL	626 YAL
EXISTING DEADLOCK TO BE REMOVED BALANCE HARDWARE EXISTING CARD ACCESS BOTH SIDES BY OTHERS			
.8 HW Set: 08			
1	EA ELECTRIC STRIKE	EC121 SERIES FS	630 EFF
BALANCE HARDWARE EXISTING CARD ACCESS BY OTHERS			
.9 HW Set: 09			
3	EA HINGE	TA714 4.5 X 4	652 MCK
1	EA STOREROOM LOCK	CRR 8805 X MEDECO CYL	626 YAL
1	EA ELECTRIC STRIKE	6210 FSE	630 VON
1	EA SURFACE CLOSER	351-0	EN SAR
1	EA KICKPLATE	K10A 12" X WIDTH TO SUIT	630 STD
1	EA FLOOR STOP	S101/S103	626 STD
1	EA DOOR BOTTOM	CT-52	628 KNC
1	SET WEATHERSTRIP	W-22	BLK KNC
CARD ACCESS BY OTHERS DOOR CONTACT BY OTHERS			
.10 HW Set: 10			
3	EA HINGE	TA714 4.5 X 4	652 MCK
1	EA OFFICE LOCK	CRR 8807 X MEDECO CYL	626 YAL
1	EA SURFACE CLOSER	351-0	689 SAR
1	EA KICKPLATE	K10A 12" X WIDTH TO SUIT	630 STD

1	EA FLOOR STOP	S101/S103	626 STD
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END OF SECTION

PART 1 - GENERAL

1.1 REFERENCES

- .1 ASTM International
 - .1 ASTM C 542-05, Standard Specification for Lock-Strip Gaskets.
 - .2 ASTM D 790-07e1, Standard Test Methods for Flexural Properties of Unreinforced and Reinforced Plastics and Electrical Insulating Materials.
 - .3 ASTM D 1003-07e1, Standard Test Method for Haze and Luminous Transmittance of Plastics.
 - .4 ASTM D 1929-96(R2001)e1, Standard Test Method for Determining Ignition Temperature of Plastics.
 - .5 ASTM D 2240-05, Standard Test Method for Rubber Property - Durometer Hardness.
 - .6 ASTM E 84-10, Standard Test Method for Surface Burning Characteristics of Building Materials.
 - .7 ASTM E 330-02, Standard Test Method for Structural Performance of Exterior Windows, Doors, Skylights and Curtain Walls by Uniform Static Air Pressure Difference.
 - .8 ASTM F 1233-08, Standard Test Method for Security Glazing Materials and Systems.
- .2 Canadian General Standards Board (CGSB)
 - .1 CAN/CGSB-12.1-M90, Tempered or Laminated Safety Glass.
 - .2 CAN/CGSB-12.2-M91, Flat, Clear Sheet Glass.
 - .3 CAN/CGSB-12.3-M91, Flat, Clear Float Glass.
 - .4 CAN/CGSB-12.8-97 (Amendment), Insulating Glass Units.
 - .5 CAN/CGSB-12.11-M90, Wired Safety Glass.
- .3 Environmental Choice Program (ECP)
 - .1 CCD-045-95(R2005), Sealants and Caulking Compounds.
- .4 Glass Association of North American (GANA)
 - .1 GANA Glazing Manual - 2008.
 - .2 GANA Laminated Glazing Reference Manual - 2009.
- .5 South Coast Air Quality Management District (SCAQMD), California State, Regulation XI. Source Specific Standards
 - .1 SCAQMD Rule 1168-A2005, Adhesives and Sealants Applications.

1.2 ADMINISTRATIVE
REQUIREMENTS

- .1 Pre-Installation Meetings:
 - .1 Convene pre-installation meeting 1 week prior to beginning work of this Section and on-site installation, with Contractor's Representative and Departmental Representative in accordance with

Section 01 31 19 - Project Meetings to:

- .1 Verify project requirements.
 - .2 Review installation and substrate conditions.
 - .3 Co-ordination with other building subtrades.
 - .4 Review manufacturer's written installation instructions and warranty requirements.
- .2 Arrange for site visit with Departmental Representative prior to start of Work to examine existing site conditions adjacent to demolition Work.
- .3 Ensure key personnel, site supervisor, project manager and subcontractor representatives attend.
- .4 Departmental Representative will submit written notification of change to meeting schedule established upon contract award 24 hours prior to scheduled meeting.

1.3 ACTION AND
INFORMATIONAL
SUBMITTALS

- .1 Submit in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Product Data:
- .1 Submit manufacturer's instructions, printed product literature and data sheets for glass, sealants, and glazing accessories and include product characteristics, performance criteria, physical size, finish and limitations.
- .3 Shop Drawings:
- .1 Submit drawings stamped and signed by professional engineer registered or licensed in Province of Manitoba, Canada.
- .4 Samples:
- .1 Submit for review and acceptance of each unit.
 - .2 Samples will be returned for inclusion into work.
- .5 Certificates: submit product certificates signed by manufacturer certifying materials comply with specified performance characteristics and criteria and physical requirements.
- .6 Test Reports: certified test reports showing compliance with specified performance characteristics and physical properties.
- .1 Submit shop inspection and testing for glass.

1.4 CLOSEOUT
SUBMITTALS

- .1 Submit in accordance with Section 01 78 00 - Closeout Submittals.
- .2 Operation and Maintenance Data: submit operation and maintenance data for glazing for incorporation into manual.

1.5 QUALITY
ASSURANCE

- .1 Certificates: product certificates signed by manufacturer certifying materials comply with specified performance characteristics and criteria and physical requirements.
- .2 Mock-ups:
 - .1 Construct mock-ups in accordance with Section 01 45 00 - Quality Control.
 - .2 Construct mock-up to include glazing.
 - .3 Mock-up will be used:
 - .1 To judge quality of work, substrate preparation, operation of equipment and material application.
 - .4 Locate where directed.
 - .5 Allow 24 hours for inspection of mock-up before proceeding with work.
 - .6 When accepted, mock-up will demonstrate minimum standard of quality required for this work. Approved mock-up may remain as part of finished work.

1.6 DELIVERY,
STORAGE AND
HANDLING

- .1 Deliver, store and handle materials in accordance with Section 01 61 00 - Common Product Requirements and with manufacturer's written instructions.
- .2 Delivery and Acceptance Requirements: deliver materials to site in original factory packaging, labeled with manufacturer's name and address.
- .3 Storage and Handling Requirements:
 - .1 Store materials off ground indoors in dry location and in accordance with manufacturer's recommendations in clean, dry, well-ventilated area.
 - .2 Store and protect glazing and frames from nicks, scratches, and blemishes.
 - .3 Protect prefinished aluminum surfaces with wrapping or strippable coating.
 - .4 Replace defective or damaged materials with new.
- .4 Develop Waste Reduction Workplan related to Work of this Section and in accordance with Section 01 74 21 - Construction/Demolition Waste Management and Disposal.
- .5 Packaging Waste Management: remove for reuse and

return by manufacturer of pallets, crates, padding, and packaging materials as specified in Waste Reduction Workplan in accordance with Section 01 74 21 - Construction/Demolition Waste Management and Disposal.

1.7 AMBIENT CONDITIONS

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

PART 2 - PRODUCTS

2.1 MATERIALS

- .1 Flat Glass:
 - .1 Type A: Float glass: to CAN/CGSB-12.3, glazing quality, thickness to suit opening size thickness and shall be in accordance with applicable Building Code, visible light transmission 88% minimum.
 - .2 Type B: Safety glass: to CAN/CGSB-12.1M, transparent, thickness to suit opening size thickness and shall be in accordance with applicable Building Code.
 - .1 Type 2-tempered.
 - .2 Class B-float.
 - .3 Category 11.
 - .4 Edge treatment.
 - .3 Type C: Wired glass: to CAN/CGSB-12.11, 5 mm thick.
 - .1 Type 1-polished both sides (transparent).
 - .2 Wire mesh style: 3-square grid size in accordance with Building Code.
- .2 Polycarbonate Security Sheet (Type PS-A): ANSI Z97.1, Plastic compound, clear; ultraviolet stabilized; silicone abrasion resistant coating and acrylate non-yellowing coating for scratch resistance, single layer; 2.36 mm thick.
- .3 Plastic Film: Type: Frost film to be 0.05mm thick with 75% visible light transmittance. Allow for 150% coverage on all interior glazing.
- .4 Sealant: in accordance with Section 07 92 00 - Joint Sealants.
 - .1 VOC limit in accordance with Section 01 47 15 - Sustainable Requirements: Construction.

2.2 ACCESSORIES

- .1 Setting blocks: ASTM C864, neoprene, 80-90 Shore A durometer hardness to ASTM D 2240, length of 25 mm for each square meter of glazing to suit glazing method, glass light weight and area.
- .2 Spacer shims: ASTM C864, neoprene, 50-60 Shore A durometer hardness to ASTM D 2240, 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 with integral resilient tube spacing device, 10-15 Shore A durometer hardness to ASTM D 2240; coiled on release paper; 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: ASTM C864, resilient polyvinyl chloride, extruded shape to suit glazing channel retaining slot, colour as selected.
- .5 Glazing clips: manufacturer's standard type.
- .6 Lock-strip gaskets: to ASTM C 542.
- .7 Mirror attachment accessories:
 - .1 Stainless steel clips.
 - .2 Plastic rosettes.
 - .3 Mirror adhesive, chemically compatible with mirror coating and wall substrate.
 - .4 Mirror frames: stainless steel.

PART 3 - EXECUTION

3.1 EXAMINATION

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

after receipt of written approval to proceed from Departmental Representative.

3.2 PREPARATION

- .2 Clean contact surfaces with solvent and wipe dry.
- .3 Seal porous glazing channels or recesses with substrate compatible primer or sealer.
- .3 Prime surfaces scheduled to receive sealant.

3.2 INSTALLATION: INTERIOR GLAZING

- .1 Perform work in accordance with GANA Glazing Manual and GANA Laminated Glazing Reference Manual for glazing installation methods.
- .2 Cut glazing tape to length and set against permanent stops, projecting 1.6 mm above sight line.
- .3 Place setting blocks at 1/4 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.

3.3 INSTALLATION: PLASTIC FILM

- .1 Install plastic film with adhesive, applied in accordance with film manufacturer's written instructions.
- .2 Place without air bubbles, creases or visible distortion.
- .3 Fit tight to glass perimeter with razor cut edge.

3.4 INSTALLATION: MIRRORS

- .1 Set mirrors with adhesive, applied in accordance with adhesive manufacturer's instructions.
- .2 Set mirrors with clips. Anchor rigidly to wall construction.

- .3 Set in frame.
- .4 Place plumb and level.

3.5 CLEANING

- .1 Progress Cleaning: clean in accordance with Section 01 74 11 - Cleaning.
 - .1 Leave Work area clean at end of each day.
 - .1 Remove traces of primer, caulking.
 - .2 Remove glazing materials from finish surfaces.
 - .3 Remove labels.
 - .4 Clean glass and mirrors using approved non-abrasive cleaner in accordance with manufacturer's instructions.
 - .2 Final Cleaning: upon completion remove surplus materials, rubbish, tools and equipment in accordance with Section 01 74 11 - Cleaning.
- .2 Waste Management: separate waste materials for reuse and recycling in accordance with Section 01 74 21 - Construction/Demolition Waste Management and Disposal.
 - .1 Remove recycling containers and bins from site and dispose of materials at appropriate facility.

3.6 PROTECTION

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

3.7 SCHEDULE TYPES

- .1 Safety glass at all interior windows, interior doors, sidelights (unless otherwise noted): single pane, clear tempered glass.
- .2 Wired glass at all interior doors and windows in a fire-rated assembly: clear, wired glass.
- .3 Polycarbonate Security Sheet for interior window in Room 221 as shown on drawings.
- .4 Mirrors - size as per interior elevation drawings and details, with finished edges.

END OF SECTION