

Part 1 General

1.1 SECTION INCLUDES

- .1 Hollow metal steel frames.
- .2 Pressed steel doors.

1.2 RELATED SECTIONS

- .1 Section 07 92 00 – Joint Sealants.
- .2 Section 08 71 00 - Door Hardware - General
- .3 Section 09 91 99 – Painting for Minor Works.

1.3 REFERENCES

- .1 ASTM A653/A653M-09 - Steel Sheet, Zinc-Coated (Galvanized).
- .2 ASTM C553-08 - Mineral Fiber Blanket Thermal Insulation for Commercial and Industrial Applications.
- .3 ASTM C578-09e1 - Rigid, Cellular Polystyrene Thermal Insulation.
- .4 ASTM C591-09 - Unfaced Preformed Rigid Cellular Polyisocyanurate Thermal Insulation.
- .5 ASTM C665-06 - Mineral-Fiber Blanket Thermal Insulation for Light Frame Construction and Manufactured Housing.
- .6 ASTM C1289-08e1 - Faced Rigid Cellular Polyisocyanurate Thermal Insulation Board.
- .7 ASTM E90-09 - Test Method for Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions and Elements.
- .8 ASTM E413-04 - Classification for Rating Sound Insulation
- .9 CAN/ULC S104-10 - Standard Method for Fire Tests of Door Assemblies.
- .10 CAN/ULC S105-09 - Standard Specification for Fire Door Frames Meeting the Performance Required by CAN/ULC-S104.
- .11 CAN/ULC-S704-03 - Thermal Insulation, Polyurethane and Polyisocyanurate Boards, Faced.
- .12 CAN/CSA-G40.20-04/G40.21-04 (R2009) - General Requirements for Rolled or Welded Structural Quality Steel/Structural Quality Steel.
- .13 CSA-W59-03 (R2008) - Welded Steel Construction (Metal Arc Welding).
- .14 CSDMA (Canadian Steel Door Manufacturers Association)
 - .1 Recommended Dimensional Standards for Commercial Steel Doors and Frames, 2000.
 - .2 Selection and Usage Guide for Commercial Steel Doors and Frames, 2009.

- .15 DHI (Door Hardware Institute) - The Installation of Commercial Steel Doors and Steel Frames, Insulated Steel Doors in Wood Frames and Builder's Hardware.
- .16 NFPA 80 - Fire Doors and Fire Windows (2010 Edition).
- .17 NFPA 252-2008 - Methods of Fire Tests of Door Assemblies.

1.4 ADMINISTRATIVE REQUIREMENTS

- .1 Coordination:
 - .1 Coordinate with other work having a direct bearing on work of this section.
 - .2 Coordinate the work with frame opening construction, door, and hardware installation.
- .2 Sequencing: Sequence installation to ensure wire connections are achieved in an orderly and expeditious manner.

1.5 SUBMITTALS FOR REVIEW

- .1 Section 01 33 00: Submittal Procedures.
- .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, finishes, and hardware.

1.6 CLOSEOUT SUBMITTALS

- .1 Section 01 78 00: Closeout Submittals.

1.7 QUALITY ASSURANCE

- .1 Products of This Section: Manufactured to ISO 9000 certification requirements.
- .2 Conform to requirements of CSDMA. Maintain one (1) copy of document on Site.
- .3 Manufacturer Qualifications: Company specializing in manufacturing the Products specified in this section with minimum three (3) years documented experience.

1.8 REGULATORY REQUIREMENTS

- .1 Fire Rated Door and Frame Construction: Labelled and listed to CAN4-S104 and NFPA 252.
- .2 Installed Door and Frame Assembly: Conform to NFPA 80 for fire rated class as scheduled.

1.9 DELIVERY, STORAGE, AND PROTECTION

- .1 Refer to Section 01 61 00.

- .2 Remove doors and frames from wrappings or coverings upon receipt on Site and inspect for damage.
- .3 Store in vertical position, spaced with blocking to permit air circulation between components.
- .4 Store materials on planks or dunnage, out of water and covered to protect from damage.
- .5 Clean and touch up scratches or disfigurement caused by shipping or handling with zinc-rich primer.

Part 2 Products

2.1 MANUFACTURERS

- .1 Allmar.
- .2 Other acceptable manufacturers offering functionally and aesthetically equivalent products.
 - .1 Shanahan's.
- .3 Substitutions: Refer to City of Winnipeg Bid Opportunity

2.2 MATERIALS

- .1 Sheet Steel: Galvanized steel to ASTM A653/A653M, commercial grade (CS), Type B.
 - .1 Interior Doors and Frames: Coating designation ZF120 (A40).
- .2 Reinforcement Channel: To CSA G40.20/G40.21, Type 44W, coating designation to ASTM A653/A653M, coating designation to match door.

2.3 DOOR CORE MATERIALS

- .1 Honeycomb Core: Structural small cell 25.4 mm (1 inch) maximum kraft paper honeycomb; weight 36.3 kg (80 lb) per ream minimum, density 16.5 kg/cu m (1.03 pcf) minimum, sanded to required thickness.
 - .1 Fire Rated Doors: Refer to Drawings and Schedules.

2.4 ADHESIVES

- .1 Cores and Steel Components: Heat resistant, structural reinforced epoxy, resin based adhesive.
- .2 Lock Seam: Reinforced epoxy resin, high viscosity, thicksotropic sealant.

2.5 PRIMERS

- .1 Rust inhibitive touch-up only.

2.6 ACCESSORIES

- .1 Door Silencers: Single stud rubber/neoprene.

2.7 FABRICATION - DOORS

- .1 Interior Doors: Laminated core construction.
- .2 Longitudinal Edges: Tack welded, filled and sanded with no visible edge seams.
- .3 Mortised, 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: Inverted, recessed, welded steel channels.
- .6 Provide factory-applied touch-up primer at areas where zinc coating has been removed during fabrication.
- .7 Sound Rated Door after Fabrication: STC of minimum 48, measured to ASTM E413.

2.8 LAMINATED CORE CONSTRUCTION

- .1 Interior Doors: Both face sheets 1.2 mm (18 gauge) steel with honeycomb core (refer to Schedule), laminated under pressure to face sheets.

2.9 FABRICATION - FRAMES

- .1 Interior Frames: 1.6 mm (14 gauge) thick base metal thickness.
 - .1 Door Frames and Window Assemblies: Welded type construction.
 - .2 Fire rated Frames: Refer to Drawings and Schedules.
- .2 Mortised, blanked, reinforced, drilled and tapped for templated hardware, in accordance with templates provided by hardware supplier.
- .3 Prepare frames for silencers. Provide three (3) single silencers for single doors and mullions of double doors on strike side. Provide two (2) single silencers on frame head at double doors without mullions.
- .4 Attach fire rated label to each fire rated door unit.

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 Install fire-rated doors and frames in accordance with NFPA 80, and local authority having jurisdiction.
- .3 Coordinate with masonry, gypsum board and concrete wall construction for anchor placement and throat depths.
- .4 Coordinate installation of doors and frames with installation of hardware specified in Section 08 71 00.
- .5 Set frames plumb, square, level and at correct elevation.
- .6 Secure anchorages and connections to adjacent construction.
- .7 Brace frames rigidly in position while building-in. Install wood spreaders at third points of frame rebate height to maintain frame width. Provide vertical support at centre of head for openings exceeding 1 200 mm (48 inches) in width.
- .8 Remove wood spreaders after frames have been built-in.
- .9 Make allowance for deflection to ensure structural loads are not transmitted to frame product.
- .10 Install doors, and hardware in accordance with hardware templates and manufacturer's instructions.
- .11 Adjust operable parts for correct clearances and function.
- .12 Install door silencers.
- .13 Finish paint as specified in Section 09 91 99.
- .14 Install roll formed steel reinforcement channels between two abutting frames. Anchor to structure and floor.

3.3 ERECTION TOLERANCES

- .1 Section 01 73 00: Execution Requirements.
- .2 Maximum Diagonal Distortion: 1.5 mm (1/16 inch) measured with straight edges, crossed corner to corner.

3.4 SCHEDULE

- .1 Refer to Door Schedule Section 08 71 00.

END OF SECTION

Part 1 General

1.1 RELATED REQUIREMENTS

- .1 Section 08 80 50 – Glass and Glazing

1.2 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 E330-02, 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.

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 doors and 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 door and frame. Indicate:
 - .1 Interior trim 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 Each type of door system including location.
 - .8 Arrangement of reinforcing for hardware and joints.
 - .9 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 Submit one 300 x 300 mm corner sample of each type door and frame.
 - .4 Submit sample showing glazing detail, reinforcement, finish and location of manufacturer's nameplates.
 - .5 Frame sample to show glazing stop, door stop, jointing detail, finish, and wall trim.

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 cleaning and maintenance of aluminum finishes for incorporation into manual.

1.5 QUALITY ASSURANCE

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

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, 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 and in accordance with manufacturer's recommendations in clean, dry, well-ventilated area.
 - .2 Store and protect aluminum doors and frames from nicks, scratches, and blemishes.
 - .3 Replace defective or damaged materials with new.

Part 2 Products

2.1 MATERIALS

- .1 Aluminum extrusions: to Aluminum Association alloy AA6063-T5 anodizing quality.

- .2 Sheet aluminum: to Aluminum Association alloy AA1100-H14 or AA5005-H32 anodizing quality.
- .3 Steel reinforcement: to CSA G40.20/G40.21, grade 300 W.
- .4 Fasteners: aluminum, finished to match adjacent material.
- .5 Door bumpers: black neoprene.
- .6 Isolation coating: alkali resistant, bituminous paint.
- .7 Glass: tempered glass to CAN/CGSB-12.1. Refer to Section 08 80 50.
- .8 Sealants: colour to match aluminum framing.

2.2 ALUMINUM DOORS

- .1 Construct doors of porthole extrusions with minimum wall thickness of 2.4 mm.
- .2 Aluminum door thickness: 44.5mm (1 3/4").
- .3 Door stiles nominal 89mm (3 1/2") mm wide plus or minus 6 mm.
- .4 Top rail nominal 89mm (3 1/2") wide plus or minus 6 mm.
- .5 Bottom rail nominal 300mm (12") wide plus or minus 6 mm.
- .6 Reinforce mechanically-joined corners of doors to produce sturdy door unit.
- .7 Glazing stops: interlocking snap-in type for dry glazing.
- .8 Hardware: Refer to Section 08 71 00 for door lockset required. See below for balance of hardware required:
 - .1 Push bar: CP-II
 - .2 Pull: C0-9
 - .3 Hinges: single acting ball bearing butts (3 required)
 - .4 Closure: Norton 1601 (adjustable)
- .9 Standard of Acceptance:
 - .1 Kawneer 350 Swing Door, except modified with higher bottom rail as noted above.

2.3 ALUMINUM FRAMES

- .1 Frame members: 44.5mm x 100 mm nominal size.
- .2 Finish to match doors.
 - .1 Standard of Acceptance:
 - .1 Kawneer Trifab 400 or approved equal in accordance with B7.

2.4 ALUMINUM SIDELIGHT PANELS

- .1 Provide 3mm anodized aluminum panels as detailed on drawings. Install internal clip angles to secure panel at each side of frame, and install horizontal aluminum z-bar stiffeners at equal intervals to support aluminum panels. All fasteners to be concealed.

2.5 ALUMINUM FINISHES

- .1 Integral colour anodic finish: Standard #17, Clear Anodic Coating.
- .2 Appearance and properties of anodized finishes designated by Aluminum Association as Architectural Class 1, Architectural Class 2, and Protective and Decorative.

2.6 STEEL FINISHES

- .1 Finish steel clips and reinforcing steel with steel primer to CGSB 1.40, zinc coating to CAN/CSA-G164.
 - .1 Primer VOC limit: to GS-11, 250 g/L maximum.

2.7 FABRICATION

- .1 Doors and framing to be by same manufacturer.
- .2 Fabricate doors and frames to profiles and maximum face sizes as indicated.
- .3 Provide structural steel reinforcement as required.
- .4 Fit joints tightly and secure mechanically.
- .5 Conceal fastenings.
- .6 Mortise, reinforce, drill and tap doors, frames and reinforcements to receive hardware using templates provided under Section 08 71 00 - Door Hardware.
- .7 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.

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 doors and hardware in accordance with hardware templates and manufacturer's instructions.
- .5 Adjust 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 doors and frames in accordance with Section 08 80 50 – Glass & 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 Contract Administrator.

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.
 - .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 Repair damage to adjacent materials caused by aluminum door and frame installation.

END OF SECTION

Part 1 General

1.1 RELATED SECTIONS

- .1 Section 06 10 13 – Wood Blocking and Curbing
- .2 Section 08 11 00 - Metal Doors and Frames.
- .3 Section 08 71 00 - Door Hardware.

1.2 REFERENCES

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

1.3 SUBMITTALS

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

1.4 SAMPLES

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

1.5 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.

1.6 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.

1.7 WASTE MANAGEMENT AND DISPOSAL

- .1 Remove from site and dispose of packaging materials at appropriate recycling facilities.
- .2 Dispose of corrugated cardboard 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 City of Winnipeg.
- .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 WOOD FLUSH DOORS

- .1 Solid core: to CAN/CSA-O132.2.1.
 - .1 Construction:
 - .1 Solid wood core:
 - .1 Glued block core with wood edge band.
 - .2 7-ply construction.
 - .3 Size: 3'-8" x 8'-0" x 1 3/8" for each closet panel (3 required)
 - .2 Face Panels:
 - .1 Hardwood; veneer grades: Grade I Premium, Maple species. Provide samples for approval by Contract Administrator.
 - .3 Adhesive: Type I (waterproof) for interior doors.
 - .4 Standard of Acceptance:
 - .1 Doors – Dormond Industries or approved equal in accordance with B7.

2.2 FABRICATION

- .1 Fabricate non-rated doors in accordance with AWMAC Premium Grade Quality Standards requirements
- .2 Provide lock blocks for hardware reinforcement and ensure that adequate internal framing to suit recessed track for sliding door operation.
- .3 Vertical Exposed Edge of Stiles/Vertical edge strips: Hardwood to match face veneer; transparent finish.
- .4 Fit door edge trim to edge of stiles after applying veneer facing.
- .5 Bond edge banding to cores.
- .6 Factory machine doors for finish hardware in accordance with hardware requirements and dimensions. Do not machine for surface hardware. Provide solid blocking for through bolted hardware.
- .7 Factory fit doors for frame opening dimensions identified on shop drawings.
- .8 Provide edge clearances in accordance with AWMAC Premium Quality Standard.
- .9 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.

2.3 **HARDWARE**

- .1 Provide recessed track hardware for three (3) panel bi-pass closet door operation:
 - .1 Standard of Acceptance:
 - .1 Richelieu, # WEBKIT1006658, sliding door system for wood doors with weight capacity of 220 lbs.
 - .2 Mortise Lock: Richelieu, #89IN20923179, stainless steel finish. Two (2) locks required, one at each end door panel, complete with strike plates.
 - .3 Recessed Door Pulls: Richelieu #89IN16228170, rectangular concealed flush pull handle, stainless steel finish. Three (3) pulls required (1 per door).
 - .4 Recessed Flush Bolt: Richelieu #655NBV, 4" x 3/4" recessed flush bolt mounted to end of middle door panel to allow door to be locked. Brushed nickel finish.
 - .5 Door Mutes: provide 3 mutes per end door panels, mounted on doors that abut wall. Self-adhesive plastic bumpers, 1/2" diameter, by Richelieu.

Part 3 **Execution**

3.1 **MANUFACTURER'S INSTRUCTIONS**

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

3.2 **EXAMINATION**

- .1 Verify that opening sizes and tolerances are acceptable.
- .2 Do not install doors in frame openings that are not plumb or are out-of-tolerance for size or alignment.

3.3 **INSTALLATION**

- .1 Unwrap and protect doors in accordance with CAN/CSA-O132.2 Series, Appendix A.
- .2 Install labelled fire rated doors to NFPA 80.
- .3 Install doors and hardware in accordance with manufacturer's printed instructions and CAN/CSA-O132.2 Series, Appendix A.
- .4 Adjust hardware for correct function.
- .5 Install non-rated doors in accordance with AWMAC Premium Grade Quality Standards requirements.
- .6 Trim non-rated door width by cutting equally on both jamb edges.
- .7 Trim door height by cutting bottom edges to a maximum of 19 mm.

- .8 Machine cut for hardware.

3.4 ADJUSTMENT

- .1 Adjust door for smooth and balanced door movement.
- .2 Adjust closer for full closure.
- .3 Re-adjust doors and hardware just prior to completion of building to function freely and properly.

3.5 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.

3.6 SCHEDULES

- .1 Refer to Section 08 71 00 for Door Schedule.

END OF SECTION

Part 1 General

1.1 RELATED SECTIONS

1. Section 05 50 00 – Metal Fabrications. Door opening jamb and head members.
2. Section 06 10 13 – Wood Blocking and Curbing
3. Section 09 22 16 – Non-Structural Metal Stud Framing

1.2 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 A167-[99(R2009)], Standard Specification for Stainless and Heat-Resisting Chromium-Nickel Steel Plate, Sheet and Strip.
 - .2 ASTM A276-[08a], Standard Specification for Stainless Steel Bars and Shapes.
 - .3 ASTM A480/480M-[09b], 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-1.38-2000, Interior Enamel Undercoat.
 - .2 CAN/CGSB-1.132-M90, Zinc Chromate Primer, Low Moisture Sensitivity.
 - .3 CAN/CGSB-1.213-04, Etch Primer (Pretreatment Coating or Tie Coat) for Steel and Aluminum.
 - .4 CAN/CGSB 1.198-01, Cementitious Primer for Galvanized Surfaces.
 - .5 CAN/CGSB-12.1-M90, Tempered or Laminated Safety Glass.
 - .6 CAN/CGSB-12.12-M90, Plastic Safety Glazing Sheets.
 - .7 CAN/CGSB-85.100-93, Painting.
- .6 CSA International
 - .1 CSA O141-05, Softwood Lumber.
 - .2 CSA Z809-08, Sustainable Forest Management.

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 coiling counter doors and hardware and include product characteristics,

performance criteria, physical size, finish and general construction, component connections and details

- .3 Shop Drawings:
 - .1 Indicate each type of coiling counter door, arrangement of hardware, operating mechanism and required clearances.
 - .2 Clearly indicate description of components: guide rails, panel box housings, operators, hardware and locking method, and finishes. Indicate pertinent dimensioning, anchorage methods, hardware locations, and installation details.
- .4 Samples:
 - .1 Submit for review and acceptance of each unit.

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 coiling counter doors and hardware for incorporation into manual.

1.5 QUALITY ASSURANCE / GUARANTEE

- .1 Certifications: product certificates signed by manufacturer certifying materials comply with specified performance characteristics and criteria and physical requirements.
- .2 Provide a written five (5) year factory guarantee that components will be warranted against defects in material, design and workmanship or they shall be replaced or repaired at no cost to the City. Installer to provide a written guarantee that there will be no labour charge for warranty repairs for one (1) year from the date of installation.

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, labelled with manufacturer's name and address.
- .3 Storage and Handling Requirements:
 - .1 Store materials off ground 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.

Part 2 Products

2.1 MATERIALS

- .1 COILING COUNTER DOORS
 - .1 General

- .1 Vertical lift manual push-up operation with overhead torsion spring counter balance device, requiring 14kg nominal force to operate.
- .2 Standards of Acceptance
 - .1 Aluminum rolling security shutters by Pentagon Rolling Shutters, 5 Granite Ave, Stonewall, Manitoba, R0C 2Z0. Telephone: 1-866-705-4668. Fax: 1-866-705-5668. Email: sales@pentagonshutters.com
 - .2 Curtain – 560 Series
 - .1 Extruded 6063-T5 aluminum alloy solid slat profile, single wall
 - .2 Size: 10'-0"W x 4'-2"H R.O. (Field Verify Dimensions)
 - .3 Height of slat: 56mm
 - .4 Colour –Clear Anodized.
 - .3 Bottom Bar
 - .1 Extruded double walled extruded 6063-T5 alluminum alloy bar with black compressible rubber insert. Colour to match slats.
 - .4 Guide Rails
 - .1 Heavy gauge extruded 6063-T5 aluminum alloy rails with two high grade brush inserts. Colour to match slats
 - .5 Panel Box Housing
 - .1 3005-H27 aluminum alloy box section, detachable for future servicing. Panel box end plates to be made from pressure die-casted high grade aluminum alloy. Panel box housing size to suit rollshutter dimensions as indicated on the drawings. Colour of panel box housing and end plates to match slats.
 - .6 Operation
 - .1 The rollshutters shall be manual push-up operation with overhead torsion spring counter balance device, requiring 14kg nominal force to operate. Roller shaft counterbalance to comprise of steel pipe and torsion spring system, capable of producing torque sufficient to ensure smooth operation of curtain from any position and with adjustable spring tension.
 - .2 Shutter shall be equipped with handles on the bottom bar using either recessed D-pull style handles.
 - .3 Provide removable aluminum pull handle to assist in the closing of the shutter.
 - .7 Locking Devices
 - .1 Locking mechanism to be provided by Sliding Counter Supplier.
 - .2 Bottom bar shall be equipped with lock posts with key cylinders.

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

- .2 Inform Contract Administrator 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 Contract Administrator.

3.2 INSTALLATION

- .1 Install coiling counter door in accordance with manufacturers' printed instructions.
- .2 Use anchorage devices to securely fasten assembly to wall construction and building framing without distortion or stress.
- .3 Install and align assembly including hardware; level, true, square and plumb, free from distortion or defects to provide smooth operation.
- .4 Coordinate installation of backing materials at frame perimeter as specified.
- .5 Install cylinders.
- .6 Adjust operable parts for correct function and smooth operation.

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 aluminum with damp rag and approved non-abrasive cleaner in accordance with manufacturer's instructions.
 - .3 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.

3.4 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 SECTION INCLUDES

- .1 Hardware for hollow metal doors.

1.2 RELATED SECTIONS

- .1 Section 08 11 10 –Metal Doors and Frames.
- .2 Section 08 71 02– Door Hardware - Groups

1.3 REFERENCES

- .1 CAN4-S104-M80 (R1985) - Method for Fire Tests of Door Assemblies.
- .2 CAN/ULC-S132-2007 - Emergency Exit and Emergency Fire Exit Hardware.
- .3 CSDMA (Canadian Steel Door Manufacturers Association).
- .4 DHI (Door and Hardware Institute Canada) - AHC and EHC certification programs.
- .5 DHI (Door Hardware Institute) - A115 series.
- .6 DHI (Door Hardware Institute) - WDHS.3 - Hardware Locations for Wood Flush Doors.
- .7 BHMA (Builders Hardware Manufacturers Association) - A156 series.
- .8 NFPA 80 - Fire Doors, Fire Windows.
- .9 NFPA 252 - Fire Tests of Door Assemblies (2008 Edition).
- .10 UL 10B - Fire Tests of Door Assemblies.
- .11 UL 305 - Panic Hardware.

1.4 ADMINISTRATIVE REQUIREMENTS

- .1 Coordination: Coordinate with other work having a direct bearing on work of this section.
 - .1 Coordinate the work with other directly affected sections involving manufacture or fabrication of internal reinforcement for door hardware and recessed items.
 - .2 Coordinate City of Winnipeg's keying requirements during the course of the Work.
- .2 Sequencing: Sequence installation to ensure utility connections are achieved in an orderly and expeditious manner.

1.5 SUBMITTALS FOR REVIEW

- .1 Section 01 33 00: Submittal Procedures.

- .2 Shop Drawings:
 - .1 Indicate locations and mounting heights of each type of hardware, schedules, catalogue cuts, electrical characteristics and connection requirements, including make, model, material, function, finish, and all other pertinent information for each door or pair of doors. Use standard typed hardware list. "Horizontal" list not permitted.
- .3 Samples:
 - .1 Submit one (1) sample of each type hardware specified, when requested by Contract Administrator illustrating style, colour, and finish.
 - .2 Identify each sample by label indicating applicable specification paragraph number, finish, and hardware package number.

1.6 SUBMITTALS FOR INFORMATION

- .1 Section 01 33 00: Submittal Procedures.
- .2 Installation Data: Manufacturer's special installation requirements.

1.7 CLOSEOUT SUBMITTALS

- .1 Section 01 78 00: Closeout Procedures.
- .2 Operation and Maintenance Data: Include data on operating hardware, lubrication requirements, and inspection procedures related to preventative maintenance.
- .3 Provide maintenance data, parts list, and manufacturer's instructions for each type door closers, locksets, door holders, and panic hardware for incorporation into maintenance manual.
- .4 Brief maintenance staff regarding proper care of hardware such as lubrication of locksets, adjustments of door closers, cleaning, and general maintenance.
- .5 Warranty Documentation: Submit manufacturer warranty and ensure forms have been completed in City of Winnipeg's name and registered with manufacturer.
- .6 Record Documentation:
 - .1 Record actual locations of installed cylinders and their master key code.
 - .2 Keys: Deliver with identifying tags to City of Winnipeg by security shipment direct from hardware supplier.

1.8 MAINTENANCE MATERIAL SUBMITTALS

- .1 Section 01 78 40: Maintenance and extra material requirements.
- .2 Tools:
 - .1 Provide special wrenches and tools applicable to each different or special hardware component.
 - .2 Provide maintenance tools and accessories supplied by hardware component manufacturer.

1.9 QUALITY ASSURANCE

- .1 Products of This Section: Manufactured to ISO 9000 certification requirements.
- .2 Perform Work to the following requirements:
 - .1 BHMA A156 series.
 - .2 DHI - A115 series.
 - .3 DHI - WDHS.3.
 - .4 CSDMA.
 - .5 NFPA 252.
 - .6 UL 10B.
 - .7 UL 305.
 - .8 ULC S132.
 - .9 CAN4-S104.
- .3 Use ULC listed and labelled hardware for doors in fire separations and exit doors.
- .4 Manufacturer Qualifications: Company specializing in manufacturing the Products specified in this section with minimum three (3) years experience.
- .5 Installer Qualifications: Company specializing in performing the work of this section with minimum three (3) years documented experience.

1.10 REGULATORY REQUIREMENTS

- .1 Conform to applicable code for Products requiring electrical connection. Listed and classified by ULC as suitable for the purpose specified and indicated.

1.11 DELIVERY, STORAGE, AND PROTECTION

- .1 Section 01 61 00: Transport, handle, store, and protect products.
- .2 Package hardware items individually; label and identify each package with door opening code to match hardware schedule.

1.12 WARRANTY

- .1 Manufacturer's Warranty:
 - .1 Closers: Ten years
 - .2 Locksets & Cylinders: Three years
 - .3 Hinges: Lifetime
 - .4 All other Hardware: Two years.

Part 2 Products

2.1 SUPPLIERS

- .1 Acceptable Suppliers: As indicated in Hardware Schedule.

2.2 MANUFACTURERS

- .1 Acceptable Manufacturers: As indicated in Hardware Schedule.

2.3 KEYING

- .1 Contractors to supply, install and make use of construction cylinders in all doors. City of Winnipeg will exchange all construction cylinders at building turnover.

2.4 FINISHES

- .1 Finishes: Identified in Schedule at end of section.

Part 3 Execution

3.1 EXAMINATION

- .1 Verify that doors and frames are ready to receive work and dimensions are as indicated on Shop Drawings.
- .2 Verify that electric power is available to power operated devices and is of the correct characteristics.

3.2 INSTALLATION

- .1 Install hardware to manufacturer's written instructions.
- .2 Use templates provided by hardware item manufacturer.
- .3 Mounting heights for hardware from finished floor to centre line of hardware item.

3.3 ADJUSTING

- .1 Adjust hardware for smooth operation.

3.4 PROTECTION OF FINISHED WORK

- .1 Do not permit adjacent work to damage hardware or finish.

3.5 SCHEDULES

- .1 Refer to Door Hardware Schedule.

END OF SECTION

The City of Winnipeg
 Bid Opportunity No. 1034-2015
 Pan Am Pool, Interior Renovations

Section 08 71 01
 DOOR SCHEDULE

NO.	NOM.SIZE	DOOR					FRAME				FIRE RATING	HARD. GROUP	KEYNOTE
		TYPE	MAT.	CORE	FIN.	GLS.	TYPE	MAT.	FIN.	GLS.			
D.105	3'-0" x 7'-0" x 1 3/4"	-	HM	-	PT	-	-	PS	PT	-	-	1	
D.SER1	3'-0" x 7'-0"	-	AL	TG	ANOD	TG	-	AL	ANOD	-	-	2	

LEGEND

- ANOD - Anodized
- AL - Aluminum
- HM - Hollow Metall
- TG - Tempered glass
- PT - Paint
- PS - Pressed Steel (welded) frame

GENERAL NOTES

REFER TO DRAWINGS FOR DOOR AND FRAME TYPES (ELEVATIONS)

Opening List

<u>Opening</u>	<u>Hdw. Set</u>
D-SER-1	01
D105	02

Manufacturer List

<u>Code</u>	<u>Name</u>
CAB	ABH Canada, Division of Dorma
CBE	Best Canada
CKN	K.N. Crowder
CRY	Stanley Security Closers, Canada
CST	Stanley
SH	Stanley Commercial Hardware
TR	Trimco

Option List

<u>Code</u>	<u>Description</u>
S3	ANSI Strike
B4E	BEVELED 4 EDGES - KICK PLATES
DBS	Standard Deadbolt Strike
NRP	NON-REMOVABLE PIN
STK	Standard Strike Package
C-SUNK HOLES	COUNTER SINKING OF KICK PLATES

Finish List

<u>Code</u>	<u>Description</u>
AL	Aluminum
26D	Satin Chrome
32D	Satin Stainless Steel
626	Satin Chromium Plated
628	Satin Aluminum, Clear Anodized
630	Satin Stainless Steel
689	Aluminum Painted
GREY	Grey

Hardware Sets

SET #01 – SER-1 (Aluminum Swing)

Door: D-SER-1:

1	Mortise Cylinder	1E-76 STD	626	CBE
1	Turn Knob Mortice Cylinder	1E-6A4	626	CBE

NOTE: Balance of hardware provided by Aluminum Door Supplier.

SET #02 - Kitchen

Door: D105:

3	Hinges	CB179 4 1/2 x 4	26D	CST
1	Lockset	9K3-7AB15D STD S3	626	CBE
1	Door Closer	CLD-4551 STD W/PA BRKT	689	CRY
1	Kick Plate	KO050 10" X 2" LDW CSK	630	TR
1	Wall Bumper	1270WV	630	TR
1	Threshold	CT-65 36"	AL	CKN
3	Door Silencers	1229A	GREY	TR

Part 1 General

1.1 SECTION INCLUDES

- .1 Glass and glazing for doors indicated on Door Schedule.

1.2 RELATED SECTIONS

- .1 Section 06 20 00 - Finish Carpentry.
- .2 Section 07 92 00 - Joint Sealants: Sealant and back-up material.
- .3 Section 08 11 00 - Metal Doors and Frames.
- .4 Section 08 11 16 – Aluminum Doors and Frames

1.3 REFERENCES

- .1 ANSI Z97.1-04e1 - Safety Glazing Materials Used in Buildings – Safety Performance Specifications and Methods of Test.
- .2 ASTM C542-05 - Specification for Lock-Strip Gaskets.
- .3 ASTM C864-05 - Dense Elastomeric Compression Seal Gaskets, Setting Blocks, and Spacers.
- .4 ASTM C920-08 - Elastomeric Joint Sealants.
- .5 ASTM C1036-06 - Flat Glass.
- .6 ASTM C1048-04 - Heat-Treated Flat Glass - Kind HS, Kind FT Coated and Uncoated Glass.
- .7 ASTM C1193-09 - Use of Joint Sealants.
- .8 ASTM D412-06ae2 -Test Methods for Vulcanized Rubber and Thermoplastic Rubbers and Thermoplastic Elastomers - Tension.
- .9 ASTM D1149-07 - Test Method for Rubber Deterioration - Surface Ozone Cracking in a Chamber.
- .10 ASTM D2240-05 - Test Method for Rubber Property - Durometer Hardness.
- .11 ASTM E84-09c - Test Method for Surface Burning Characteristics of Building Materials.
- .12 ASTM E283-04 - Test Method For Determining Rate of Air Leakage Through Exterior Windows, Curtain Walls and Doors Under Specified Pressure Differences Across the Specimen.
- .13 ASTM E330-02 - Test Method for Structural Performance of Exterior Windows, Curtain Walls, and Doors by Uniform Static Air Pressure Difference.

- .14 CAN/CGSB 12.1-M90 - Tempered or Laminated Safety Glass.
- .15 CAN/CGSB 12.2-M91 - Flat, Clear Sheet Glass.
- .16 CAN/CGSB 12.3-M91 - Flat, Clear Float Glass.
- .17 CAN/CGSB 12.4-M91 - Heat Absorbing Glass.
- .18 CAN/CGSB 12.8-97 - Insulating Glass Units.
- .19 CAN/CGSB 12.13-M91 - Patterned Glass.
- .20 CAN/CGSB 12.20-M89 - Structural Design of Glass for Buildings.
- .21 CGSB 19-GP-5M-1984 - Sealing Compound, One Component, Acrylic Base, Solvent Curing (Incorporating Amendment No. 1)
- .22 GANA (Glass Association of North America)
 - .1 Glazing Manual (2004).
 - .2 FGMA Sealant Manual.
 - .3 Laminated Glazing Reference Manual (2006).
- .23 IGMAC (Insulating Glass Manufacturers Association of Canada) - Sealed Insulating Glass: Certification Program.
- .24 IGMA (Insulating Glass Manufacturers Alliance).

1.4 SUBMITTALS FOR REVIEW

- .1 Section 01 33 00: Submittal Procedures.
- .2 Product Data on Glass Types: Provide structural, physical and environmental characteristics, size limitations, special handling or installation requirements.
- .3 Product Data on Glazing Compounds: Provide chemical, functional, and environmental characteristics, limitations, special application requirements. Identify available colours.

1.5 SUBMITTALS FOR INFORMATION

- .1 Section 01 33 00: Submittal Procedures.
- .2 Certificates: Certify that Products meet or exceed specified requirements.
- .3 Manufacturer's Certificate: Certify that sealed insulated environmental glass, meets or exceeds specified requirements.

1.6 CLOSEOUT SUBMITTALS

- .1 Section 01 78 00: Closeout Submittals.

1.7 MAINTENANCE MATERIAL SUBMITTALS

- .1 Section 01 78 40: Maintenance and extra material requirements.

1.8 QUALITY ASSURANCE

- .1 Perform Work in accordance with GANA Glazing Manual and GANA Sealant Manual GANA Laminated Glazing Reference Manual for glazing installation methods.
- .2 Installer Qualifications: Company specializing in performing the work of this section with minimum three (3) years documented experience.

1.9 ENVIRONMENTAL REQUIREMENTS

- .1 Do not install glazing when ambient temperature is less than 10 degrees C (50 degrees F).
- .2 Maintain minimum ambient temperature before, during and twenty-four (24) hours after installation of glazing compounds.

Part 2 Products

2.1 GLAZING SCHEDULE

- .1 Flat Glass:
 - .1 Tempered Safety Glass: To CAN2-12.1-M90 Type 2, Class B
 - .2 Thickness: 6mm

2.2 GLAZING AND SEALING COMPOUND MATERIALS

- .1 Sealant for heel bead (air seal) or toe bead shall be one part urethane sealant. Colour to be selected by Contract Administrator.
 - .1 **Standard of Acceptance:**
 - .1 Tremco Dymonic.
 - .2 Permapol RC-1.
 - .2 Sealant for cap or needle bead. One part low modulus silicone sealant conforming to NSC/CGSB CAN2-19-13-M82.
 - .1 **Standard of Acceptance:**
 - .1 Tremco Spectrem 2.
 - .2 GE GESIL N2600.
 - .3 Primers, if required, according to sealant manufacturer's recommendations.
 - .4 **Glazing tape:** Lites of glass over 1905 united mm (6'-3"), tape shall be macro polyisobutylene butyl with integral continuous EPDM shim.
 - .1 **Standard of Acceptance:**
 - .1 Tremco Ployshim II Tape.
 - .5 **Setting blocks:** To be neoprene or EPDM with a Shore "A" hardness of 80 plus or minus 5 durometer. Length to be 2.5mm (.1") per 90 sq. mm (1.4 sq.in.) of glass, but not less than 100mm (4"). Width for setting block to be 1.5mm (0.059") more than glass thickness and high enough to provide the bite recommended by glass manufacturer. When thickness offsetting block exceeds 18mm (3/4") thickness, the glass manufacturer must be consulted for size and configuration. In a vented system, setting block shall be designed so as not to restrict the flow of water within the glazing rabbet to the weep holes.
 - .6 **Glazing gaskets:** To be continuous extruded EPDM, designed specifically for use in the window section with a shore "A" hardness balanced to that of shim in the tape.
 - .1 **Standard of Acceptance:**
 - .1 Tremco Plyshim II Glazing Splines.

- .7 Edge blocks shall be of a material and hardness to provide proper edge clearance according to glass manufacturer's recommendations.
- .8 Cleaning material for surfaces to receive glazing of tape or sealants to be xylol, methethylketone, toluol, or as recommended by manufacturer of sealant. The only acceptable cleaner for use with silicone 0 based sealants shall be methylethylketone (MEK).
- .9 Ensure that glazing sealants used are compatible with insulating glass sealant.

2.3 GLAZING ACCESSORIES

- .1 To Industry Standards.

Part 3 Execution

3.1 EXAMINATION

- .1 Verify that openings for glazing are correctly sized and within tolerance.
- .2 Verify that surfaces of glazing channels or recesses are clean, free of obstructions that may impede moisture movement, weeps are clear, and ready to receive glazing.

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.
- .4 Install sealant in accordance with manufacturer's written instructions, ensuring that each material in the glazing system is compatible with the others.
- .5 All surfaces receiving glazing material shall be thoroughly wiped with a clean cloth, dampened with the appropriate cleaner, as approved by the sealant/glazing tape manufacturer. Special precautions must be taken in cold weather to ensure the surfaces are free from frost.
- .6 All framing members of windows shall be checked prior to glazing to make certain that the frame is square, plumb, and secure in order that uniform face and edge clearances are maintained. Inspect all butt and mitre joints. If these joints are open, they shall be sealed with sealant prior to glazing. All ventilators shall be properly adjusted. Maintain 3mm (1/8") minimum face clearance between glass and metal, on both sides, or unless otherwise outlined by the glass manufacturer.

3.3 INSTALLATION - INTERIOR DRY METHOD (TAPE AND TAPE)

- .1 Cut glazing tape to length and set against permanent stops, projecting 1.5 mm (1/16 inch) above sight line.
- .2 Place setting blocks at 1/4 ~~1/3~~ points with edge block no more than 150 mm (6 inches) from corners.

- .3 Rest glazing on setting blocks and push against tape for full contact at perimeter of pane or unit.
- .4 Place glazing tape on free perimeter of glazing in same manner described above.
- .5 Install removable stop without displacement of tape. Exert pressure on tape for full continuous contact.
- .6 Knife trim protruding tape.

3.4 CLEANING

- .1 Section 01 74 11: Cleaning installed work.
- .2 Remove glazing materials from finish surfaces.
- .3 Remove labels after Work is complete.
- .4 Clean glass and adjacent surfaces.
- .5 Clean films to manufactures recommendations.

3.5 PROTECTION OF FINISHED WORK

- .1 Section 01 78 40: Protecting installed work.
- .2 After installation, mark pane with an 'X' by using removable plastic tape or paste. Do not mark heat absorbing or reflective glass units.

END OF SECTION