

1.0 GENERAL

1.1 DESCRIPTION

- .1 Comply with the General Conditions, Supplementary Conditions, the requirements of Division 1, and any supplements and/or addenda.

1.2 RELATED WORK SPECIFIED ELSEWHERE

- .1 Framing and Sheathing Section 06112
- .2 Finishing Hardware Section 08700
- .3 Gypsum Board Section 09250
- .4 Painting Section 09900
- .5 Electrical Division 16

1.3 QUALITY ASSURANCE

- .1 Execute this work by a firm who has adequate plant, equipment and skilled workers to perform work expeditiously and is known to have been responsible for satisfactory installations similar to that specified for the past immediate five (5) years.
- .2 Conform to Canadian Manufacturing Standards for Steel Doors and Frames (CMSSDF), published by the Canadian Steel Door & Frame Manufacturer's Association (CSDFMA), latest edition, except as specified otherwise.
- .3 Manufacturer shall be a member in good standing of CSDFMA.
- .4 Construct steel doors and frames for labelled fire doors, bearing ULC labels. Locate label on the door and frame jamb midway between top hinges.

1.4 SUBMITTAL

- .1 Conform to Section 01330.
- .2 Submit for review shop drawings indicating components, construction (joining, welds, fastening, sleeving) type of metal, gauges, finishes, reinforcement, door swing, location of hardware, anchors and other pertinent data in large scale detail.
- .3 Submit a Door and Frame Schedule. Identify each door and frame with a symbol listed in the schedule and place legibly on the unit at the time of manufacture. Schedule shall refer to architectural drawing symbols and indications.
- .4 Submit certificate attesting to compliance of the specifications, and to substantiate design and construction of fire doors and frames. Indicate fire rated assemblies by fire endurance rating.
- .5 Submit for approval 12" x 12" (300mm x 300mm) sample of frame corner and door corner, showing construction, hinge cut-out, glazing stop.

1.5 DELIVERIES, HANDLING AND STORAGE

- .1 Brace frame units to prevent distortion during shipping and protect finished surfaces, using protective wrappings. Store in accordance with manufacturer's recommendations.
- .2 Repair damage to finishes immediately after it occurs to prevent rusting. Use primer for painted surfaces and zinc-rich primer for galvanized surfaces.

1.6 WARRANTY

- .1 Warrant the glazing of screens in accordance with the General Conditions, but for a period of two (2) years.

2.0 PRODUCTS

2.1 MATERIALS

- .1 Steel Sheet: commercial quality, unpassivated, cold-rolled, stretcher or tension levelled steel sheet to ASTM A525M-86, free from scale, pitting, wave or other defects. Steel for interior doors and frames shall be wipe-coated galvanized ZF075; for exterior doors and frames shall be ZF275.
- .2 Door Core Filler:
- .1 Exterior Doors and Interior Sound Rated Doors: rigid polyurethane.
- .2 Interior Doors (except as above): honeycomb core, 2.5 lbs/cu.-ft. (40 kg/m³), Kraft paper, 3/4" (19mm) cell size.
- .3 Structural Steel Shapes for Support, Reinforcement and Attachment: to ASTM A526M-85, galvanized.
- .4 Astragal: 1/8" (3mm) thick x 2" (50mm) wide minimum by full height of door, steel plate, galvanized.
- .5 Glazing Stops: rolled steel channel shape, mitred corners, prepared for countersunk, tamper proof screws.
- .6 Bituminous Paint: to CGSB 1-GP-108M.
- .7 Primer: to CGSB 1-GP-132M.
- .8 Float Glass: to CAN2-12.3-M76, 1/4" (6mm) thick, clear.
- .9 Wire Glass: To CAN2-12.11-M76 square wired 1/4" (6mm) thick clear, polished.
- .10 Glazing Tape: "Tremtape" with integral spacer by:
- Tremco Ltd., 220 Wickstead Avenue, Toronto, Ontario M4H 1G7
Tel: (416) 421-3300
or approved equal in accordance with B7.

2.2 FABRICATION - GENERAL

- .1 Coordinate with other trades prior to fabrication.
- .2 Assemble units by spot or arc welding to produce a finished unit with no visible seams or joints, square, true and free of distortion. Welding shall be continuous unless specified otherwise.
- .3 Frames: 16 gauge (1.6 mm) thick galvanized sheet steel.
- .4 Door and Panel Facings: 18 gauge (1.2 mm) galvanized sheet steel.
- .5 Door Core Reinforcement:
- .1 Top and Bottom Channel: 18 gauge (1.2 mm) steel sheet.

- .6 Door and Frame Reinforcement: steel sheet of the following thicknesses:
 - .1 Lock and Strike Reinforcement: 10 gauge (3.2 mm) minimum
 - .2 Closer Reinforcement: 13 gauge (2.3mm) minimum
 - .3 Channel Spreaders: 13 gauge (2.3mm) minimum
 - .4 Guard Boxes: 20 gauge (1.0 mm) minimum
 - .5 Hinge Reinforcement: 10 gauge (3.2mm) minimum
 - .6 Glass Stops: 20 gauge (1.0 mm) minimum; snap-in type
 - .7 Jamb Floor Anchors: 10 gauge (3.2mm) minimum
 - .8 T-anchors: 16 gauge (1.6mm) minimum
- .7 Provide cut-outs and conduits and make provision in frame and door as required for electronic security system. Coordinate with Division 16.
- .8 Place removable stops for glazing on inner or room side of doors.

2.3 REINFORCEMENT (FRAMES AND DOORS)

- .1 Construction and reinforcement specified is the minimum acceptable. Provide additional reinforcement where required. Ensure a permanent, rigid, trouble free installation, able to withstand the stresses of heavy commercial usage.
- .2 Weld reinforcement in place at not over 6" (150mm) o.c.
- .3 Provide hardware reinforcement and sinkages for doors and frames in accordance with templates furnished by the hardware supplier.
 - .1 Mortise, reinforce, drill and tap steel doors and frames.
 - .2 Reinforcement for surface applied hardware such as stops, protective plates and similar items shall provide a tapping thickness of not less than 1/8" (3mm).
 - .3 Reinforce frame where bolt attachment is indicated.
- .4 Door Closer Reinforcement
 - .1 Provide closer reinforcement for all doors whether scheduled for closers or not. Closer reinforcement shall be provided on both sides of door for all surface mounted closers.
 - .2 Extend door closer reinforcement for all door frames full width of frame at head.
- .5 Hinge Reinforcement: provide hinge reinforcement for doors and full height hinge reinforcement for frames. Tack-weld securely in place at not over 150mm o.c.
- .6 Double Acting Door Frame Reinforcement: Provide 6 ga. reinforcement in doorframe heads for double acting swing doors.
- .7 Guard Boxes: at hinges and strike, secure guard boxes to frame, except for gypsum board partitions.
- .8 Spreaders: install stiffener plates or two angle spreaders where required to prevent bending of frame. Weld reinforcement in place.
- .9 Weather Cap: provide vinyl weather cap to top of exterior doors.

- .10 Make provisions for glass as indicated and provide removable glazing stops, secured with countersunk oval-head screws.

2.4 FABRICATION - DOOR FRAMES AND SCREENS

- .1 Form frames accurately to profiles indicated. Mitre corners. Construct frames straight and free from twist or warp. Cut frame mitres accurately and weld on inside of frame profile. Fill frame corners, exposed surfaces, depressions and butted joints with filler. Sand to a smooth uniform finish.
- .2 Frames for installation in masonry walls shall be provided with adjustable corrugated jamb anchors of the 'T' strap or wire type. The number of anchors provided on each jamb shall be as follows:
- Frames up to 7'6" (2300mm) height - 3 anchors.
 - Frames 7'6" (2300mm) to 8'2" (2450mm) - 4 anchors.
- .3 Frames for installation in gypsum board partitions shall be provided with steel anchors of suitable design, for installation inside each jamb as follows:
- Frames up to 7'6" (2300mm) height - 4 anchors
 - Frames 7'6" (2300mm) to 8'4" (2540mm) - 5 anchors
- .4 Weld formed floor clip angles of 1/8" (3mm) thick steel to inside of each jamb profile, two holes in each for anchorage to floor. Where required, provide adjustable type floor clip angles.
- .5 Where site welding or splicing is required due to size of the unit, indicate location of the weld on shop drawings.
- .6 Fit frames with channel or angle spreaders, two per frame, to ensure proper frame alignment. Install stiffener plates or spreaders between frame trim where required, to prevent bending of trim and to maintain alignment when setting in place.
- .7 Where frames are to be set in masonry, supply adjustable tee anchors to trade installing frame.

2.5 FABRICATION - STEEL DOORS

- .1 Fabricate steel doors flush face, seamless 1-3/4" (45mm) thick and to conform to details and schedules.
- .1 Fabricate doors to present a continuous face, free from joints, tool markings and abrasions. Assemble by welding.
- .2 Provide both stiles of doors bevelled 1 in 16. Fabricate doors with a clearance of 1/8" (3mm) at head and jamb:
- 1/2" (10mm) above finished floor where no threshold occurs
 - 1/2" (10mm) above concrete slab where resilient flooring is scheduled
 - 3/4" (20mm) above finished floor where threshold occurs
 - 3/4" (20mm) above concrete slab where carpet is scheduled
 - 1/8" (3mm) between meeting edges of door
- .2 For steel doors and panels, spot-weld interior stiffeners when specified at 4" (100mm) o.c. maximum to face sheets laterally. Stiffen steel doors at top and bottom by continuous channels securely welded to both face sheets.
- .3 Heat and pressure-laminate honeycomb core to face sheets using epoxy bond.

- .4 Provide polyurethane cores in exterior and sound-rated doors.

3.0 EXECUTION

3.1 INSPECTION

- .1 Inspect conditions on the Site to verify Work supplied by other trades is satisfactory.
- .2 Report any irregularities to the Contract Administrator in writing.
- .3 Commencement of Work shall imply acceptance of conditions.
- .4 Clean surfaces to be glazed, and prime as recommended by glass manufacturer.
- .5 Protect installed Work in order to maintain all finishes in perfect condition until acceptance by the Contract Administrator. Any damaged or defective Work shall be removed and replaced at no additional cost.
- .6 Finished installation shall be free from defects of materials and workmanship.

3.2 INSTALLATION OF STEEL FRAMES AND DOORS

- .1 Supply steel doors, steel frames and screens to Section 06112. Section 06112 will distribute and set frames for all partitions. Section 09250 will set and build in frames in this Work. Section 06112 will distribute and install all steel doors.
- .2 All exterior door frames shall be insulated with sprayed foam insulation.

3.3 INSTALLATION OF GLASS

- .1 Install glass in doors and screens.
- .2 Remove glazing stops and replace in original locations using original fasteners.
- .3 Set glass properly centred with uniform bite, face and edge clearances, free from distortion.
- .4 Glass shall bear manufacturer's labels indicating quality. Leave labels in place until final cleaning.
- .5 Do not lever or pry glass into place when setting.

3.4 CLEANING

- .1 Remove excess glazing compound from installed glass.
- .2 Wash and polish both faces of glass.
- .3 Remove slight stains or etches using hand polishing with a slurry of cerium oxide of FFFF pumice. Do not use power tools for polishing.

- END OF SECTION -

1.0 GENERAL

1.1 DESCRIPTION

- .1 Comply with the General Conditions, Supplementary Conditions, the requirements of Division 1, and any supplements and/or addenda.

1.2 RELATED WORK

- .1 Framing and Sheathing Section 06112

1.3 SHOP DRAWINGS

- .1 Submit shop drawings in accordance with Section 01330.
- .2 Clearly indicate each type of frame and screen, extrusion profiles, method of assembly, section and hardware reinforcement, locations of exposed fasteners, finishes, etc.

1.4 MAINTENANCE DATA

- .1 Provide maintenance data for cleaning and maintenance of aluminum finishes for incorporation into maintenance manual specified in Section 01700.

1.5 WARRANTY

- .1 Contractors hereby warrants aluminum frames, screens and shop fronts against defects and malfunctions under normal usage in accordance with GC24 but for five (5) years.

1.6 CO-OPERATION

- .1 Co-operate fully with other trades.

2.0 PRODUCTS

2.1 MATERIALS

- .1 Aluminum extrusions: Aluminum Association alloy AA6063-T5.
- .2 Sheet aluminum: Aluminum Association alloy AA1100.
- .3 Steel reinforcement: To CSA G40.21-M1978.
- .4 Steel primer: To CGSB 1-GP-40M.
- .5 Fasteners: Aluminum, cadmium plated steel, or stainless steel, finished to match adjacent material.
- .6 Weatherstrip: Mohair and/or metal backed wool pile.
- .7 Isolation coating: Alkali resistant bituminous paint or epoxy solution.
- .8 Sealants: Tremco "Dymeric" in colour to match aluminum.

2.2 FINISHES

- .1 Aluminum components: Clear Anodized Finish
- .2 Steel clips and reinforcing steel: zinc coating to CSA G164-1965(R1972).

2.3 FABRICATION

- .1 Construct frames and screens to profiles and maximum face sizes as shown.
- .2 Design frames and screens in exterior walls to:

- .1 Accommodate expansion and contraction within service temperature range of -35 deg.C to 75 deg.C.
- .2 Limit deflection to 1/175th of clear span tested to ASTM E330-79 under wind loads for building locality as ascertained by NBC Supplement No. 1 Climatic Information for Building Design in Canada.
- .3 Make allowances for deflection of structure. Ensure that structural loads are not transmitted to aluminum work.
- .4 Provide structural steel reinforcement for strength, stiffness and connections.
- .5 Fit intersecting members to flush hairline weather tight joints and mechanically fasten together, except where indicated otherwise.
- .6 Conceal fastenings from view. Exposed fastenings where indicated.
- .7 Form cut-outs, recesses, mortising or milling for finishing hardware to templates supplied. Reinforce with aluminum or galvanized steel plates.
- .8 Field apply isolation coating to aluminum in contact with dissimilar metals, cementitious materials.
- .9 Place manufacturer's name plates in semi-concealed locations.

2.4 ALUMINUM

- .1 Frame for exterior screen:
 - .1 Aluminum closed extrusion sections 6" deep x 1 3/4" face perimeter frame, 4 1/2" deep x 1 3/4" face intermediate mullion.
 - .2 System generally: Alumicor or equal extrusions in accordance with B7.
- .2 Channel Stops
 - .1 Aluminum channel extrusions top, bottom and sides where abutting Aluminum frames. Size channel stop to be as minimal as possible and still function properly. Glazing to be sized to suit spans indicated. No vertical or horizontal mullions will be tolerated. All vertical joints to be butt glazed with silicone bead connection.
 - .2 Formed Aluminum channel to be clear anodized finish to match typical entry framing.

3.0 EXECUTION

3.1 INSTALLATION

- .1 Install Work plumb, square, level, free from warp, twist and superimposed loads.
- .2 Secure Work in required position. Do not restrict thermal movement.
- .3 Install hardware in accordance with templates.
- .4 Adjust operable parts for correct functions.
- .5 Isolate from cementitious materials.

3.2 CAULKING

- .1 Where required seal between members of Aluminum work.
- .2 Seal between Aluminum components and adjacent building materials.
- .3 Apply sealant in accordance with Section 07900. Conceal sealant within the Aluminum work except where exposed use is permitted by Contract Administrator.

- END OF SECTION -

1.0 GENERAL

1.1 DESCRIPTION

- .1 Comply with the General Instructions, Supplementary Conditions, the requirements of Division 1, and any supplements and/or addenda.

1.2 RELATED WORK SPECIFIED ELSEWHERE

- .1 Steel Doors, Frames & Screens Section 08100
.2 Division 16

1.3 SCOPE OF WORK

- .1 The supply and installation of all door hardware listed elsewhere in this Specification.

1.4 ABBREVIATIONS

Aluminium Mill Finish, Clear Anodized	-	AL
Cadmium Plate	-	C2C
Dull Bronze	-	C10B
Nickel Plated, Dull	-	C15
Chromium Plated, Dull	-	C16D
Dull Stainless Steel	-	C32D
Left Hand	-	LH
Left Hand Reverse	-	LHR
Non-removable Pin	-	NRP
Pressed Steel Frame	-	PSF
Right Hand	-	RH
Right Hand Reverse	-	RHR
Wood Screws	-	WS
Wood Door	-	WD
Wood Frames	-	WF
Self-Tapping Screws	-	STS
Lead Shields	-	LS
Statuary Bronze	-	STAT
Dark Bronze	-	DKB
Fastening Back to Back	-	B/B

2.0 PRODUCTS

2.1 APPROVED MANUFACTURERS

- .1 The hardware listed herein shall be sourced from:
- | | |
|-------------------|--------------------------------|
| Hinges | Stanely, Ives, Hager, McKinney |
| Locksets | Schlage, Sargent |
| Door Push / Pull | Standard Metal, Ives, Pemko |
| Exit Devices | Von Duprin |
| Door Closers | LCN, Sargent |
| Overhead Holder | Glynn-Johnson |
| Door Stops | Standard Metal, Ives, Rockwood |
| Protection Plates | Standard Metal, Ives, Rockwood |
| Threshold | Reese, Pemko |

Miscellaneous
Smoke Seals / Weather strip

Standard Metal, KN Crowder, Glynn-Johnson, Pemko
Reese, KN Crowder, Pemko

2.2 HARDWARE SCHEDULE

- .1 Refer to drawings for hardware schedule.

3.0 EXECUTION

3.1 COOPERATION

- .1 Before installing hardware, check drawings for hardware requirements, verify door swings, check shop drawings, frame and door lists, and advice in writing if revisions are required.
- .2 Supply to metal frame and door manufacturers, complete information and templates required to provide reinforcing for the application of hardware.

3.2 MOUNTING HEIGHTS

- .1 Hardware shall be mounted the following distances from the finished floor measured to the centre of the hardware, unless indicated otherwise:

	<u>Inches</u>	<u>mm</u>
Top Hinge	10"	250 from head of door to top
Bottom Hinge	10"	250 from finish floor to bottom of hinges
Intermediate Hinge		centred between top and bottom hinges
Locksets, Latchsets	40"	1000
Deadlocks	57"	1450
Panic Device Crossbar	40"	1000
Door Pulls	44"	1100

- .2 Contractor to verify existing hinge cut outs where new doors are to be installed in existing frames.

3.3 FIELD QUALITY CONTROL

- .1 Ensure that each shipment box contains all of the hardware listed for the door openings.

3.4 GENERAL NOTES APPLICABLE TO ALL HARDWARE SETS

- .1 Finishing Hardware will be for heavy duty use, of excellent workmanship, with finishes as listed.
- .2 Hardware for fire rated doors shall meet Underwriter's requirements. Submit written certification of conformance to ULC requirements for each type of hardware prior to delivery.
- .3 Each hardware item of the same type shall be of the same design and the product of the same manufacturer.
- .4 Hardware which fails to function satisfactorily will be replaced by proper hardware at the Finishing Hardware Contractor's expense, including all remedial and installation costs.
- .5 Hardware shall be selected and installed in accordance with applicable codes and regulations and to the approval of the local fire marshal.

3.5 KEYING

- .1 All doors keyed differently. Confirm keying requirement with the City.

- .2 Master key will open all locks and as directed by the City
- .3 Grand Master keys will be by the City. Contractor shall key doorway key and area master to the Grand Master.
- .4 Area Master and Individual key shall be supplied by contractor. Provide 4 sets each.

- END OF SECTION -

1.0 GENERAL

1.1 SECTION INCLUDES

- .1 Low-E Glass Block Energy Systems.

1.2 RELATED WORK

- .1 Joint Sealants. Section 07900
- .2 Painting Section 09900

1.3 REFERENCES

- .1 ASTM C1363-05 Standard Test Method for Thermal Performance of Building Materials and Envelope Assemblies
- .2 NFRC 100-2010 Procedure for Determining Fenestration Product U-factors
- .3 NFRC 200-2010 Procedure for Determining Fenestration Product Solar Heat Gain Coefficient and Visible Transmittance at Normal Incidence
- .4 NFRC 500-2010 procedure for Determining Fenestration Product Condensation Resistance Value
- .5 ASTM E2190-08 Standard Specification for Insulating Glass Unit Performance and Evaluation
- .6 ASTM E283-04 Standard Test Method for Determining the Rate of Air Leakage Through Exterior Windows, Curtain Walls, and Doors Under Specified Pressure and Temperature Differences Across the Specimen.
- .7 ASTM E330-02 Standard Test Method for Structural Performance of Exterior Windows, Doors, Skylights and Curtain Walls by Uniform Static Air Pressure Difference.
- .8 ASTM E547-00 Standard Test Method for Water Penetration of Exterior Windows, Skylights, Doors, and Curtain Walls by Cyclic Static Air Pressure Difference.
- .9 ASTM B209M-07 Standard Specification for Aluminum and Aluminum–Alloy Sheet and Plate.
- .10 ASTM C920-08 Standard Specification for Elastomeric Joint Sealants.
- .11 CPSC 16 CFR 1201 – Safety Impact Test.

1.4 QUALITY ASSURANCE

- .1 Manufacturer
 - .1 Minimum of 10 years specialized experience in the manufacture of windows.
- .2 Direct Representation
 - .1 The manufacturer shall have available a direct representative with full knowledge and experience of the product and systems for technical assistance.

1.5 SUBMITTALS

- .1 Submit under provisions of Section 01330

- .2 Product Data: Manufacturer's literature on each product to be used, including:
 - .1 Preparation instructions and recommendations.
 - .2 Storage and handling requirements and recommendations.
 - .3 Written installation instructions.
- .3 Verification Samples:
 - .1 Two glass block units of each type specified, showing size, design, and pattern of faces as required for project.
 - .2 Representative samples of assembly as required for project.
- .4 Test Reports:
 - .1 Submittal of test reports from independent laboratories indicating conformance to regulatory requirements shall be made available if required by Contract Administrator.
- 1.6 DELIVERY, STORAGE, AND HANDLING
 - .1 Handle panels in a manner which will prevent undue stress on component parts, sealants and structural members. Do not rack or torque, or cause load forces in an inappropriate manner
- 1.7 PROJECT CONDITIONS
 - .1 Maintain environmental conditions (temperature, humidity, and ventilation) within limits recommended by manufacturer for optimum results. Do not install products under environmental conditions outside manufacturer's absolute limits.
- 1.8 WARRANTY
 - .1 Provide manufacturers limited 10-year warranty.
- 2.0 PRODUCTS**
- 2.1 MANUFACTURERS
 - .1 Acceptable Manufacturer: Pittsburgh Corning Corporation, which is located at: 800 Presque Isle Drive, Pittsburgh, PA 15239-2724; Toll Free Tel: 800-545-5001; Tel: 724-327-6100; Fax: 724-387-3806; Email: request info; Web: www.pittsburghcorning.com
- 2.2 SYSTEM DESCRIPTION
 - .1 Design Requirements
 - .1 Energy efficient system shall conform to the requirements specified for the particular items and shall be complete assemblies by a single manufacturer.
 - .2 Performance Requirements
 - .1 The system shall meet or exceed heat transfer (U-factor) and solar heat gain (SHGC) performance levels specified.
 - .3 Basis for Design: Pittsburgh Corning LightWise Architectural Energy Efficient Series
 - .1 U-factor of product: Per NFRC 100-2010
 - a) Unframed 0.34

- b) Framed 0.38
- .2 R-value of product:
 - a) Unframed 2.94
 - b) Framed 2.63
- .3 Solar Heat Gain Coefficient (SHGC) of product: Per NFRC 200-2010
 - a) Framed 0.27

2.3 GLASS BLOCK

- .1 Basis for Design: Pittsburgh Corning Energy Efficient Series
 - .1 Patterns
 - a) Energy Efficient IceScapes® Glass Block
 - .2 Physical Properties:
 - a) Nominal Size; Face: 8 inches (203mm) by 8 inches (203mm) by 3.5 inches (89mm) thick
 - b) Installed Weight 15 lb/sq. ft
 - c) Visible Light Transmission: 33%-76% (dependent on pattern)

2.4 ACCESSORIES

- .1 A. Sealant (caulk): Non-staining; waterproof mastic; silicone type meeting the requirements of ASTM C920.
- .2 Aluminum 2-piece Channel System: Anodized or powder coated as required.
- .3 ProVantage 1 Glass Block installation system for perimeter channels system.
- .4 Anchorage: Self-tapping screws and masonry anchors as prescribed per substrate.
- .5 Shims: Plastic type shims as required

3.0 EXECUTION

3.1 EXAMINATION

- .1 Do not begin installation until substrates have been properly prepared.
- .2 Notify Contract Administrator of unsatisfactory preparation before proceeding.
- .3 Verify that channels for support at head, jambs and sills are properly installed.

3.2 PREPARATION

- .1 Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.

3.3 INSTALLATION

- .1 Install Energy Efficient Glass Block System in strict compliance with the manufacturers' specifications, sizing, anchorage charts and installation instructions including all materials, accessories, workmanship and cleaning.

3.4 CLEANING

- .1 Remove excess sealant from glass surfaces immediately following application.

3.5 PROTECTION

- .1 Protect installed products until completion of project.
- .2 Touch-up, repair or replace damaged products before Substantial Completion

- END OF SECTION -