Part 1 General

1.1 RELATED SECTIONS

.1 Section 01 33 00 - Submittal Procedures.

.2 Section 01 45 00 - Quality Control.

.3 Section 01 78 00 - Closeout Submittals.

1.2 REFERENCES

.1 American National Standards Institute (ANSI).

.1 ANSI/ASTM E330-[02], Test Method for Structural Performance of Exterior Windows, Doors, Skylights and Curtain Walls by Uniform Static Air Pressure Difference.

.2 American Society for Testing and Materials International, (ASTM).

.1 ASTM C542-[94(1999)], Specification for Lock-Strip Gaskets.

.2 ASTM D790-[02], Test Methods for Flexural Properties of Unreinforced and Reinforced Plastics and Electrical Insulating Materials.

.3 ASTM D1003-[00], Test Method for Haze and Luminous Transmittance of Plastics.

.4 ASTM D1929-[96(R2001)e1], Test Method for Determining Ignition Temperature of Plastics.

.5 ASTM D2240-[02b], Test Method for Rubber Property - Durometer Hardness.

.6 ASTM E84-[01], Test Method for Surface Burning Characteristics of Building Materials.

.7 ASTM F1233-[98], Test Method for Security Glazing Materials and Systems.

.3 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-12.4-[M91], Heat Absorbing Glass.

.5 CAN/CGSB-12.5-[M86], Mirrors, Silvered.

.6 CAN/CGSB-12.6-[M91], Transparent (One-Way) Mirrors.

.7 CAN/CGSB-12.8-[97], Insulating Glass Units.

.8 CAN/CGSB-12.9-[M91], Spandrel Glass.

.9 CAN/CGSB-12.10-[M76], Glass, Light and Heat Reflecting.

.10 CAN/CGSB-12.11-[M90], Wired Safety Glass.

.11 CAN/CGSB-12.12-[M90], Plastic Safety Glazing.

.12 CAN/CGSB-12.13-[M91], Patterned Glass.

.4 Canadian Standards Association (CSA International).

.1 CSA A440.2-[98], Energy Performance Evaluation of Windows and Sliding Glass Doors.

.2 CSA Certification Program for Windows and Doors [2000].

.5 Environmental Choice Program (ECP).

.1 CCD-045-[95], Sealants and Caulking.

.6 Flat Glass Manufacturers Association (FGMA).

.1 FGMA Glazing Manual - [1997].

.7 Laminators Safety Glass Association (LSGA).

.1 LSGA Laminated Glass Design Guide [2000].

1.3 SYSTEM DESCRIPTION

.1 Performance Requirements:

.1 Provide continuity of building enclosure vapour and air barrier using glass and glazing materials as follow:

.1 Utilize inner light of multiple light sealed units for continuity of air and vapour seal.

.2 Size glass to withstand wind loads, dead loads and positive and negative live loads as measured in accordance with ANSI/ASTM E330.

.3 Limit glass deflection to 1/200 flexural limit of glass with full recovery of glazing materials.

1.4 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 glazing materials during application and curing.

.2 Shop Drawings:

.1 Submit shop drawings in accordance with Section 01 33 00 - Submittal Procedures.

.3 Samples:

.1 Submit samples in accordance with Section 01 33 00 - Submittal Procedures.

.2 Submit duplicate 300mm size samples of glazing and sealant material.

.4 Manufacturer's Instructions:

.1 Submit manufacturer's installation instructions.

.5 Closeout Submittals:

.1 Provide maintenance data including cleaning instructions for incorporation into manual specified in Section 01 78 00 - Closeout Submittals.

1.5 QUALITY ASSURANCE

.1 Test Reports: certified test reports showing compliance with specified performance characteristics and physical properties.

.1 Provide testing and analysis of glass under provisions of Section 01 45 00 - Quality Control.

.2 Provide shop inspection and testing for glass.

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

.3 Mock-ups:

.1 Construct mock-ups in accordance with Section 01 45 00 - Quality Control.

.2 Construct mock-up to including glass glazing, and perimeter air barrier and vapour retarder seal.

.3 Mock-up will be used:

.1 To judge workmanship, substrate preparation, operation of equipment and material application.

.4 Locate where indicated.

.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.

.4 Pre-installation Meetings: conduct pre-installation meeting to verify project requirements, manufacturer's installation instructions and manufacturer's warranty requirements. Comply with Section 01 31 19 - Project Meetings.

1.6 SITE CONDITIONS

.1 Environmental Requirements:

.1 Install glazing when ambient temperature is 10 degrees C minimum. Maintain ventilated environment for 24 hours after application.

.2 Maintain minimum ambient temperature before, during and 24 hours after installation of glazing compounds.

1.7 WASTE MANAGEMENT AND DISPOSAL

.1 Separate and recycle waste materials in accordance with requirements of Contract Administrator.

.2 Divert metal cut-offs from landfill by disposal into on-site Metal recycling bin.

.3 Divert uninstalled materials for reuse at nearest used building materials facility or similar type facility.

.4 Divert unused caulking and sealant materials from landfill through disposal at special wastes depot.

.5 Unused or damaged glazing materials are not recyclable and must not be diverted to municipal recycling programs.

.6 Remove form site and dispose of packaging materials at appropriate recycling facilities.

.7 Dispose of corrugated cardboard, polystyrene, plastic packaging material in appropriate on-site bin for recycling in accordance with site waste management program.

Part 2 Products

2.1 MATERIALS: FLAT GLASS

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

.1 Type: tempered.
.2 Class B-float.
.3 Category 1.
.4 Edge treatment: clean cut with ground edges where exposed.

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

.1 Metallic coating: soft, sputtered metallic coating.
.2 Light transmittance: UV 6%, visible 64%, solar 25%.
.3 U-Value: winter .24 maximum, summer .22 maximum.

2.2 MATERIALS: SEALED INSULATING GLASS

.1 Insulating glass units: to CAN/CGSB-12.8, triple unit, overall thickness to fit existing framing.

.1 Glass: to CAN/CGSB-12.3.
.2 Glass thickness: 6 mm each light.
.3 Inter-cavity space thickness: 16mm between inner and middle lights with Edgetech Architectural S class Super Spacers.
.4 Glass coating: surface number 3 and 5, low "E" MSVD clear colour.
.5 Inert gas fill: argon.

2.3 MATERIALS

.1 Sealant: as required by window system: one component compound, to CAN/CGSB-19.13, Class 2-40, neutral cure silicone gun grade, colour to match adjacent surfaces.

2.4 ACCESSORIES

.1 Setting blocks: Neoprene, 80-90 Shore A durometer hardness to ASTM D2240, length of 25 mm for each square meter of glazing, minimum 100 mm x width of glazing rabbet space minus 1.5 mm x height, to suit glazing method, glass light weight and area.

.2 Spacer shims: Neoprene, 50-60 Shore A durometer hardness to ASTM D2240, 75 mm long x one half height of glazing stop x thickness to suit application. Self adhesive on one face.

.3 Glazing tape:

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

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

.4 Glazing clips: manufacturer's standard type.

.5 Lock-strip gaskets: to ASTM C542.

Part 3 Execution

3.1 MANUFACTURER'S INSTRUCTIONS

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

3.2 EXAMINATION

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

.2 Verify that surfaces of glazing channels or recesses are clean, free of obstructions, and ready to receive glazing.

3.3 PREPARATION

.1 Clean contact surfaces with solvent and wipe dry.

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

.3 Prime surfaces scheduled to receive sealant.

3.4 INSTALLATION: EXTERIOR WET/DRY METHOD (PREFORMED TAPE AND SEALANT)

.1 Perform work in accordance with FGMA Glazing Manual IGMAC and Laminators Safety Glass Association - Standards Manual for glazing installation methods.

.2 Cut glazing tape to length and set against permanent stops, 6mm below sight line. Seal corners by butting tape and dabbing with sealant.

.3 Apply heel bead of sealant along intersection of permanent stop with frame ensuring full perimeter seal between glass and frame to complete continuity of air and vapour seal.

.4 Place setting blocks at 1/4 points, with edge block maximum 150mm from corners.

.5 Rest glazing on setting blocks and push against tape and heel head of sealant with sufficient pressure to attain full contact at perimeter of light or glass unit.

.6 Install removable stops with spacer strips inserted between glazing and applied stops 6mm below sight line. Place glazing tape on glazing light or unit with tape flush with 16mm below sight line.

.7 Fill gap between glazing and stop with sealant to depth equal to bite of frame on glazing, maximum 9 mm below sight line.

.8 Apply cap head of sealant along void between stop and glazing, to uniform line, flush with sight line. Tool or wipe sealant surface smooth.

3.5 CLEANING

.1 Perform cleaning after installation to remove construction and accumulated environmental dirt.

.2 Remove traces of primer, caulking.

.3 Remove glazing materials from finish surfaces.

.4 Remove labels after work is complete.

.5 Clean glass using approved non-abrasive cleaner in accordance with manufacturer's instructions.

.6 Upon completion of installation, remove surplus materials, rubbish, tools and equipment barriers.

3.6 PROTECTION OF FINISHED WORK

.1 After installation, mark light with an "X" by using removable plastic tape or paste..

END OF SECTION