Part 1 GENERAL

1.1 SECTION INCLUDES

.1 Aluminum windows.
.2 Glazing.
.3 Operating hardware and insect screens.
.4 Perimeter sealant.

1.2 RELATED SECTIONS

.1 Section 07 92 00 - Joint Sealants: Perimeter sealant and back-up materials.
.2 Section 08 80 50 – Glass and Glazing.

1.3 REFERENCES

.2 AAMA CW-10-04 - Care and Handling of Architectural Aluminum from Shop to Site.
.3 AAMA CW-11-85 - Design Windloads for Buildings and Boundary Layer Wind Tunnel Testing.
.5 AAMA 611-98 - Voluntary Specifications for Anodized Architectural Aluminum.
.7 AAMA 2603-02 - Voluntary Specification, Performance Requirements and Test Procedures for Pigmented Organic Coatings on Aluminum Extrusions and Panels.
1.4 SYSTEM DESCRIPTION

.1 Windows: Tubular aluminum sections, factory fabricated, factory finished, vision glass, related flashings, anchorage and attachment devices.

.2 Configuration: Horizontal sliding, Outward opening top hinged and Fixed non-operable sash.
.3 Glazing:
Exterior, see Section 08 80 00 part 2.2.2.
Interior, see Section 08 80 00 part 2.2.3.

1.5 PERFORMANCE REQUIREMENTS

.1 Conform to AAMA/WDMA/CSA 101/l.S.2/A440 and CSA-A440S1, Product designation Class LC-PG25-HS; and labeled by AAMA, CSA or WDMA.

.2 Forced Entry Resistance: ASTM F588, tested to performance Grade 10.

.2 System Design: Design and size components to withstand dead loads and live loads caused by positive and negative wind loads acting normal to plane of wall [as calculated in accordance with building code, as measured in accordance with ASTM E330.

.3 Deflection: Limit member deflection to 1/175 of the longer dimension with full recovery of glazing materials.

.4 Assembly: To accommodate, without damage to components or deterioration of seals, movement between window and perimeter framing, deflection of lintel.

.5 Thermal Transmittance: U-Value U-0.34, when tested to CAN/CSA-A440.2.

.7 Air Infiltration: Limit air infiltration/exfiltration for operable units to A3 Level, 0.10 cfm/sq ft measured at a reference differential pressure across assembly of 300 Pa as measured to ASTM E283 at a minimum size of 60"x90" (1524x2286).

.8 Vapour Seal: Limit vapour seal with interior atmospheric pressure of 25mm (1 inch) sp, 22 degrees C, 40% RH without seal failure.

.9 Condensation Resistance Factor: Temperature Index (I) of 58 minimum when measured to CAN/CSA-A440.2.

.10 Water Leakage: None, in accordance with AAMA/WDMA/CSA/101/l.S.2/A440, when measured in accordance with ASTM E331.

.11 System Internal Drainage: Drain water entering joints, condensation occurring in glazing channels, or migrating moisture occurring within system, to the exterior by a weep drainage network.

.12 Air and Vapour Seal: Maintain continuous air barrier and vapour retarder throughout assembly, primarily in line with inside pane of glass and heel bead of glazing compound. Position thermal insulation on exterior surface of air barrier and vapour retarder.

1.6 ADMINISTRATIVE REQUIREMENTS
.1 Section 01 31 00: Project management and coordination procedures.

.2 Pre-Installation Meeting: Convene one (1) week before starting work of this section.

1.7 SUBMITTALS FOR REVIEW

.1 Section 01 33 00: Submission procedures.

.2 Product Data: Provide component dimensions, anchorage and fasteners, glass, internal drainage details and finish.

.3 Shop Drawings: Indicate opening dimensions, framed opening tolerances, affected related work; installation requirements; and materials/details in full size scale for head, jamb and sill.

1.8 SUBMITTALS FOR INFORMATION

.1 Section 01 33 00: Submission procedures.

.2 Manufacturer’s Certificate: Certify that Products meet or exceed specified requirements.

1.9 CLOSEOUT SUBMITTALS

.1 Section 01 78 10: Submission procedures.

1.10 QUALITY ASSURANCE

.1 Products of This Section: Manufactured to ISO 9000 certification requirements.


.3 Manufacturer Qualifications: Company specializing in manufacturing the Products specified in this section with minimum three (3) years documented experience.

.4 Installer Qualifications: Company specializing in performing the work of this section with minimum three (3) years documented experience and approved by the manufacturer.

1.11 DELIVERY, STORAGE, AND PROTECTION

.1 Section 01 60 00: Transport, handle, store, and protect products.

.2 Protect factory finished aluminum surfaces with strippable coating. Do not use adhesive papers or sprayed coatings that bond when exposed to sunlight or weather.
1.12 ENVIRONMENTAL REQUIREMENTS

.1 Do not install sealants when ambient temperature is less than 5 degrees C.

.3 Maintain this minimum temperature during and after installation of sealants.

1.13 WARRANTY

.1 Correct defective Work within a five (5) year period after Date of Substantial Completion.

.3 Provide five (5) year manufacturer warranty for insulated glass units from seal failure, interpane dusting or misting, and replacement of same.

.4 Warranty: Include coverage for degradation of colour finish.

Part 2 PRODUCTS

2.1 MANUFACTURERS

.1 Alumicor; Product: ShadowLine 970 Series Fixed Window 5-1/4” (133mm) frame depth with EasySlide 250 Sliding Window and Univent 1350 Outward opening top hinged. All frames are to be thermally broken.

.2 Other acceptable manufacturers offering functionally and aesthetically equivalent products and that can be delivered/installed within the construction timeline.

2.2 MATERIALS

.1 Extruded Aluminum: ASTM B221M; 6063-T5 alloy and temper.

.2 Steel Sections: Profiled to suit mullion sections.

.4 Fasteners: Stainless steel.

.5 Window Perimeter Insulation: CAN/ULC-S705.1, spray-applied rigid cellular polyurethane insulation, Class 1, low expansion. Install as per manufacturer’s written instructions.

.1 Acceptable Materials:
   .1 ZeroDraft Insulating Air Sealant
   .2 Insta-Foam Froth-pak
   .3 Handi Foam by Rivenco Industries Ltd.

.6 Polyethylene Film: to CAN/CGSB-51.34, 0.15mm thick, tape joints with Tuck Tape 60mm
wide and use 6mm (min) leg staples.

.7 Air/Vapour Barrier Membrane: Composite sheets, 1.0mm (40mil) minimum thickness, self-adhering membrane composed of rubberized asphalt integrally bonded to a film of high density cross laminated polyethylene. Primer, sealer, flashing membrane and surface conditioner by same manufacturer:

.1 Low temperature alternates to be used for cold weather application c/w primer as required.
.2 W.R. Grace Perm-A-Barrier System 4000 or Perm-A-Barrier
.3 Tremco ExoAir 110
.4 Soprema Sopraseal Stick 1100
.5 Bakor Blueskin SA
.6 W R Meadows Air-Shield
.7 IKO Aqua-Barrier

2.3 COMPONENTS

.1 Frames: Aluminum, thermally broken, profile size as required; applied glass stops of screw fastened type.

.2 Reinforced Mullion: Extruded aluminum profile, size as required with integral reinforcement of shaped steel structural section.

.3 Insect Screen Frame: Rolled aluminum frame of rectangular sections; nominal size similar to operable glazed unit.

.6 Insect Screens: CAN/CGSB 79.1, steel strands; 14/18 mesh size.

.7 Security Screens: Main Floor windows only. Refer to drawings for locations and quantities.

.8 Operable Sash Weather Stripping: Resilient plastic; permanently resilient, profiled to effect weather seal.

.9 Fasteners: Stainless steel.

2.4 GLASS AND GLAZING MATERIALS

.1 Glass and Glazing Materials: As specified in Section 08 80 50 of Types described below:
.1 Glazing System: Glazing method shall be a wet/dry type in accordance with manufacturer’s standards. Exterior glazing shall be silicone back bedding sealant. Interior glazing shall be snap-in type 0.62” (1.57mm) glazing beads with an interior gasket in accordance with AAMA 702 or ASTM C864.

.2 Insulating Glass Units - Low E: CAN/CGSB-12.8, double pane; coating on #2 surface within unit; interpane space filled with argon gas; with warm edge closed cell polymer foam edge seal; total unit thickness of 25mm.

2.5 SEALANT MATERIALS

.1 Sealant and Backing Materials: As specified in Section 07 92 00 of Types described below.

2.6 HARDWARE

.1 Hardware: Except as noted, comply with the requirements of BHMA A156.18.

.2 Sash lock: Lever handle with cam lock.

2.7 FABRICATION

.1 Fabricate components with minimum clearances and shim spacing around perimeter of assembly, yet enabling installation and dynamic movement of perimeter seal.

.2 Accurately fit and secure joints and corners. Make joints flush, hairline and weatherproof.

.3 Prepare components to receive anchor devices. Fabricate anchors.

.4 Arrange fasteners and attachments to ensure concealment from view.

.5 Prepare components with internal reinforcement for operating hardware.

.6 Provide internal reinforcement in mullions with galvanized steel members to maintain rigidity.

.7 Permit internal drainage weep holes and channels to migrate moisture to exterior. Provide internal drainage of glazing spaces to exterior through weep holes.

.8 Assemble insect screen frame, mitre and reinforced frame corners. Fit mesh taut into frame and secure. Fit frame with four (4), spring loaded steel pin retainers.

.9 Double weatherstrip operable units.

2.8 FINISHES

.1 Clear Anodic Coating: AAMA 611, Class I, AA-M12C22A41.
.1 Location: Interior and exterior exposed aluminum surfaces.

.2 Colour: Clear anodized.

.2 Exposed Hardware: Enameled to colour as selected by Consultant.

.3 Concealed Steel Items: Hot-dip galvanized, minimum coating thickness Grade to ASTM A123/A123M, coating thickness appropriate grade for type and size of steel material indicated.

.4 Concealed Steel Items: Primed with iron oxide paint.

Part 3 EXECUTION

3.1 EXAMINATION

.1 Section 01 70 00: Verify existing conditions before starting work.

.2 Verify wall openings and adjoining air and vapour seal materials are ready to receive work of this Section.

3.2 INSTALLATION

.1 Install glazing, hardware and window frames to manufacturer’s written instructions.

.2 Install window assembly to CSA-A440.4.

.3 Attach window frame and shims to perimeter opening to accommodate construction tolerances and other irregularities.

.4 Align window plumb and level, free of warp or twist. Maintain dimensional tolerances and alignment with adjacent work.

.5 Install sill and sill end angles.

.6 Provide thermal isolation where components penetrate or disrupt building insulation. Install low expansion spray-foam insulation in shim spaces at perimeter of assembly to maintain continuity of thermal barrier.

.7 Coordinate attachment and seal of perimeter air barrier and vapour retarder materials.

.8 Install operating hardware.

.9 Install glass and infill panels as specified in Section 08 80 50, to glazing method required to achieve performance criteria.
.10 Install glass and infill panels as specified in Section 08 80 50, exterior wet/dry method of glazing.

.11 Install perimeter sealant to method required to achieve performance criteria, backing materials, and installation criteria as specified in Section 07 92 00.

3.3 ERECTION TOLERANCES

.1 Section 01 73 00: Tolerances.

.2 Material and Unit Size Tolerances: As specified in AAMA/WDMA/CSA/101/I.S.2/A440.

3.4 ADJUSTING

.1 Adjust hardware for smooth operation and secure weathertight closure.

3.5 CLEANING

.1 Section 01 74 00: Cleaning installed work.

.2 Remove protective material from factory finished aluminum surfaces.

.3 Wash surfaces by method recommended and acceptable to sealant and window manufacturer; rinse and wipe surfaces clean.

.4 Remove excess sealant by moderate use of mineral spirits or other solvent acceptable to sealant and window manufacturer.

END OF SECTION