

1 GENERAL

1.1 RELATED SECTIONS

- .1 Section 01 33 00 - Submittal Procedures.
- .2 Section 01 45 00 – Quality Control
- .3 Section 07 92 00 – Joint Sealants.
- .4 Section 08 44 13 - Glazed Aluminum Curtain Walls

1.2 REFERENCES

- .1 American Society for Testing and Materials International, (ASTM).
 - .1 ASTM C542-09, Specification for Lock-Strip Gaskets.
 - .2 ASTM D2240-05 (2010), Standard Test Method for Rubber Property - Durometer Hardness.
 - .3 ASTM E330-02, Standard Test Method for Structural Performance of Exterior Windows, Doors, Skylights and Curtain Walls by Uniform Static Air Pressure Difference.
 - .4 ASTM C 1036, Standard Specification for Flat Glass.
 - .5 ASTM C 1048, Standard Specification for Heat-Treated Flat Glass-Kind HS, Kind FT Coated and Uncoated Glass.
 - .6 ASTM C 1172, Standard Specification for Architectural Glass.
 - .7 ASTM C 1651, Standard Test Method for Measurement of Roll Wave Optical Distortion in Heat-Treated Flat Glass.
 - .8 ASTM C 1249-6A, Standard Guide for Secondary Seal for Sealed Insulating Glass Units for Structural Sealant Glazing Applications.
- .2 Canadian General Standards Board (CGSB).
 - .1 CAN/CGSB 12.1-M90, Tempered or Laminated Safety Glass.
 - .2 CAN/CGSB 12.3-M91, Flat, Clear Float Glass.
 - .3 CAN/CGSB-12.9-M91 Spandrel Glass
 - .4 CAN/CGSB 1.108, Bituminous Solvent Type Paint.
 - .5 CAN/CGSB-12.1, Tempered or Laminated Safety Glass.
 - .6 CAN/CGSB-12.2, Flat, Clear Sheet Glass.
 - .7 CAN/CGSB-12.3, Flat, Clear Float Glass.
 - .8 CAN/CGSB-12.8, Insulating Glass Units.
 - .9 CAN/CGSB-12.9, Spandrel Glass.
 - .10 CAN/CGSB-12.20, Structural Design of Glass for Building
- .3 Glass Association of North America
 - .1 Glazing Manual 2004 Edition

1.3 SYSTEM DESCRIPTION

- .1 Exterior Performance Requirements:
 - .1 Provide continuity of building vapour and air barriers using glass and glazing materials.
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- .2 Existing sealed glazing units and spandrel glass is to be removed, salvaged, and reinstated. If sealed units or spandrel glazing is damaged during the work of this Contract, size all new glass to withstand wind loads, dead loads and positive and negative live loads as measured in accordance with ASTM E330.
- .3 Limit glass deflection to 1/200 flexural limit of glass with full recovery of glazing materials.

1.4 SUBMITTALS

- .1 Provide submittals in accordance with Section 01 33 00 - Submittal Procedures
- .2 Samples:
 - .1 Submit duplicate 150 x 150 mm size samples of each glazing type if new replacement glass or replacement spandrel glass is required due to damages during the work of this Section.

1.5 DESIGN CRITERIA

- .1 Should replacement glazing be required, maintain the original design features for existing curtain wall and window assemblies, unless specifically instructed otherwise herein.
- .2 Provide for structural silicone sealant manufacturer's requirements in accordance with Section 07 92 00 – Joint Sealants.

1.6 SIZING OF REPLACEMENT GLASS

- .1 Should replacement glass be required, take all field measurements required for proper layout and installation of the work. Examine and confirm out-of-square and out-of-plane tolerances in existing frame components and assemblies.

1.7 SITE CONDITIONS

- .1 Environmental Requirements:
 - .1 Re-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.

1.8 WARRANTY

- .1 Sealed insulated glazing units (should replacement units be required): minimum 2 years against unit failure for all components.

2 PRODUCTS

2.1 PRODUCT COMPATIBILITY

- .1 All products are to be compatible with each other and with all other materials in contact with them

- .2 Materials in contact with silicone sealants are to be compatible with silicone sealants in accordance with Section 07 92 00 – Joint Sealants.

2.2 GLASS

- .1 Existing insulating glass units: approximately 25 mm overall thickness.
 - .1 Glass thickness: 6mm.
 - .2 Inter-cavity space thickness: approximately 12 mm
 - .3 Inert gas cavity fill: argon, minimum 90% fill
 - .4 Spacer: warm edge spacer type
 - .5 Glass types:
 - .1 Clear float glass inner.
 - .2 Tinted tempered glass outer lite
 - .3 Solar S, Low-E film on surface 2

2.3 SPANDREL GLASS

- .1 Existing spandrel glass: 6mm thick, clear tempered complete with standard colour Opaci-Coat coating.

2.4 GLAZING ACCESSORIES

- .1 Existing rubber spacer gaskets for glazing: **salvaged for reinstallation.**
- .2 New, preshimmed glazing tape for use with pressure plate retention of glass: Polyshim II by Tremco, or equivalent
- .3 Cleaning solvent and primer: as recommended by tape manufacturer.
- .4 Lock-strip gaskets: to ASTM C542.

3 EXECUTION

3.1 EXAMINATION

- .1 Prior to removal of any existing glass, examine all conditions, including environmental conditions, likely to affect the timely completion of the work of this section.
- .2 Ensure that all conditions at time of installation, including ambient and surface temperatures, are as recommended by manufacturers of glazing and sealant materials.
- .3 Verify that replacement glass (if required due to damaged caused by work of this Contract) is correctly sized for the intended opening and within acceptable tolerances. Verify that edges of glass are free from nicks and other imperfections conducive to breakage.

- .4 Notify Departmental Representative of conditions which prevent proper installation of work of this section.
- .5 Verify that surfaces of glazing channels or recesses are clean, free of obstructions, and ready to receive glazing.

3.2 GLAZING TECHNIQUES

- .1 As a guide, the following provides information to illustrate the techniques for glazing the edges of the glass to be replaced.
- .2 The information is provided for guidance only and as-built conditions may vary. The contractor should verify the information independently if variations from the anticipated conditions will affect their costs.
- .3 The following describes the glazing techniques:
 - .1 Vertical Edges – A conventional snap cap/pressure plate assembly clamps the glass edge.
 - .2 Horizontal Edges – A conventional snap cap/pressure plate assembly clamps the glass edge.

3.3 REMOVALS

- .1 Existing weather seals and cap beads are to be removed in accordance with Section 07 92 00 – Joint Sealants. Existing caps, pressure plates, exterior gaskets and any related accessories are to be carefully removed and stored for re-installation.
- .2 Assume all edges of units clamped by a pressure plate are sealed to the framing with shimmed glazing tape.
- .3 As required, and carefully so as to salvage all original dry rubber gaskets, cut the seal between the glass and the framing.
- .4 Remove existing glass units and accessories including setting blocks, shims, spacer and glazing tape.
- .5 Existing structural silicone adhesive beads are to be removed in accordance with Section 07 92 00 – Joint Sealants.

3.4 PREPARATION

- .1 Verify that all surfaces to receive glazing, as well as all gasket raceways and glazing cavities in existing framing components, are undamaged, free of obstructions and ready for preparation.
 - .2 Remove all protective coatings. Verify that all surfaces to receive sealant or tape, including glass edges, are prepared in accordance with Section 07 92 00 – Joint Sealants.
 - .3 Protect all cleaned surfaces. Re-clean any contaminated surfaces.
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- .4 Do not clean surfaces that cannot be glazed within two hours.

3.5 INSTALLATION

- .1 Install insulating glass units as specified and in accordance with IGMA manual.
- .2 On edges to be structural silicone glazing, install new foam spacer tape. On all other edges clamped with pressure plate, install new glazing tape. Each length of gasket and tape is to be the full and correct length for its location, with no intermediate butt joints. Ensure tight fits at all corner junctures. If silicone glazing, face clearance need to be 6 mm as per ASTM C1401.
- .3 Where new tapes are installed, proceed as follows:
- .1 Cut tape into strips of proper length.
 - .2 Set strips in straight line, aligned and flush with appropriate edge of opening.
 - .3 Install horizontal strips first, extending 12mm beyond vertical strips.
 - .4 Install vertical strips, butting tightly to horizontal strips.
 - .5 Weld corners by dabbing butt joints with structural silicone sealant.
- .4 Locate and install setting blocks and shims in accordance with instructions of glass manufacturer and as required for proper drainage of water from the bottom of glazing cavities.
- .5 Install glass centred in frame opening and resting on both setting blocks, maintaining minimum edge clearance of 6 mm.
- .6 Ensure full contact to interior perimeter glazing gaskets, foam spacer tape or glazing tape.
- .7 Structural silicone sealant and other sealants are to be installed in accordance with Section 07 92 00 – Joint Sealants.
- .8 After silicone weather seals are completed, pressure plates and caps are to be reinstalled. Cap beads are then to be installed in accordance with Section 07 92 00 – Joint Sealants.

3.6 CLEANING

- .1 Perform cleaning after installation, to remove construction and accumulated environmental dirt.
- .2 Remove excess materials, including sealant and compound droppings, from finished surfaces.
- .3 Remove labels from glass after work is complete and accepted by Departmental Representative.
- .4 Clean all interior and exterior glass to present a clean, dry, grease and oil free surface.
- .5 Clean glass using approved non-abrasive cleaner.

END OF SECTION