

SECTION 08 8000 GLAZING

PART 1 - GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Insulated tempered glass units, low E.
 - 2. Tempered glass units, low E.
- B. Related Documents: The Contract Documents, as defined in Section 01 1000 - Summary of Work, apply to the Work of this Section. Additional requirements and information necessary to complete the Work of this Section may be found in other Documents.
- C. Related Sections:
 - 1. Section 08 1113 – Hollow Metal Doors and Frames.
 - 2. Section 08 4113 – Aluminum Entrances and Storefront.

1.2 REFERENCES

- A. American National Standards Institute (ANSI):
 - 1. ANSI Z97.1 - Safety Performance Specifications and Methods of Test for Safety Glazing Material Used in Buildings.
- B. American Society for Testing and Materials (ASTM):
 - 1. ASTM C920 - Standard Specification for Elastomeric Joint Sealants.
 - 2. ASTM C1036 - Standard Specification for Flat Glass.
 - 3. ASTM C1048 - Standard Specification for Heat-Treated Flat Glass-Kind HS, Kind FT Coated and Uncoated Glass.
 - 4. ASTM D2000 - Standard Classification System for Rubber Products in Automotive Applications.
 - 5. ASTM F1233 - Standard Test Method for Security Glazing Materials and Systems.
- C. Consumer Product Safety Standards for Architectural Glazing. CPSC 16 CFR, Part 1201.
- D. Flat Glass Marketing Association (FGMA):
 - 1. FGMA - Glazing Manual and Glazing Sealing Systems Manual.

1.3 SUBMITTALS

- A. Section 01 3300 – Submittal Procedures: Procedures for submittals.
 - 1. Product Data:

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- a. Glass: Structural, physical, and environmental characteristics, size limitations, special handling, or installation requirements.
 - b. Glazing compound: Provide chemical, functional, and environmental characteristics, limitations, special application requirements.
 - 2. Samples:
 - a. Glazing: Submit one sample 12 x 12 inches (300 x 300 mm) in size of each type of glazing, illustrating tinting, and finish of glazing materials. Label each sample indicating kind, quality, and manufacturer.
 - 3. Assurance/Control Submittals:
 - a. Certificates: Manufacturer's certificate that Products meet or exceed specified requirements.
 - b. Qualification Documentation: Submit documentation of experience indicating compliance with specified qualification requirements.
- B. Section 01 7704 – Closeout Procedures and Training: Procedures for closeout submittals.
- 1. Submit written special warranty with forms completed in Owner name and registered with manufacturer as specified in this section.

1.4 QUALITY ASSURANCE

- A. Identification: Each unit of tempered glass shall be permanently identified by the manufacturer. The identification shall be etched, or ceramic fired on the glass and be visible when the unit is glazed.
- B. Perform Work in accordance with FGMA Glazing Manual.
- C. Installer Qualifications: Company specializing in performing the Work of this Section with minimum 5 years documented experience.

1.5 DELIVERY, STORAGE, AND HANDLING

- A. Section 01 6000 – Product Requirements: Transport, handle, store, and protect Products.

1.6 PROJECT CONDITIONS OR SITE CONDITIONS

- A. Environmental Requirements:
 - 1. Do not install glazing when ambient temperature is less than 40 degrees F.
 - 2. Maintain minimum ambient temperature before, during and 24 hours after installation of glazing compounds.

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1.7 WARRANTY

- A. Section 01 7704 - Closeout Procedures and Training: Procedures for closeout submittals.
- B. Special Warranty:
 - 1. Include coverage for cracking, breakage, and replacement of same.
 - a. Warranty Period: 1 year.
 - 2. Include coverage for sealed glass units from seal failure interpane dusting or misting, and replacement of same.
 - a. Warranty Period: 10 years

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Subject to compliance with project requirements, manufacturers offering Products which may be incorporated in the Work include the following:
 - 1. Pilkington Libbey-Owens-Ford, Toledo, OH (800)221-0444.
 - 2. PPG Industries, Pittsburgh, PA (412) 434-2858 (800) 377-5267.
 - 3. Viracon, Owatonna, MN (800) 533-2080.
 - 4. OR Equal
- B. Section 01 6000 – Product Requirements: Product options and substitutions. Substitutions: Permitted.

2.2 GLASS MATERIALS

- A. Tempered Glass: Condition A (uncoated surfaces), Type II, Class 1, Quality q3 (glazing select), Kind FT (fully tempered glass), match color of clear or tinted glass as applicable; fully thermal tempered, heat strengthening or chemical tempering is not permitted. Perform tempering by horizontal oscillating roller hearth or high speed roller hearth process. Do not permit fabrication processes leaving gripper or tong marks. Handle and size glass according to manufacturer's written instructions.
- B. Low Emissivity Glass (Low E Glass): Provide units with thin metallic high-transmittance coating applied to the number 3 surface of the unit, unless otherwise indicated. The U-value for the IGU shall be no greater than 0.34, unless otherwise indicated.
- C. Insulated Spandrel Glass
 - 1. Product Type: 1" Insulating Glass Unit (IGU) Spandrel.
 - 2. Outboard Lite (Exterior): 1/4" clear or low-iron float glass.
 - a. *Treatment:* Fully Tempered (Kind FT) per ASTM C1048.

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- b. *Surfaces*: Surface #1 (Exterior), Surface #2 (Uncoated).
- 3. *Airspace*: 1/2" width.
 - a. *Gas Fill*: 90% Argon gas filled.
 - b. *Spacer*: Black, warm-edge insulating spacer.
- 4. *Inboard Lite (Interior)*: 1/4" clear float glass.
 - a. *Treatment*: Fully Tempered (Kind FT) per ASTM C1048.
 - b. *Surface #3 (In-cavity)*: Thin metallic high-transmittance Low-E coating (matching vision glass).
 - c. *Surface #4 (Interior)*: Water-borne silicone elastomeric opacifier coating (e.g., OPACI-COAT-300® or approved equal).
- 5. *Performance Criteria*:
 - a. *Center-of-Glass U-Value*: Maximum 0.34 (Winter/Night).
 - b. *Visible Light Transmittance (VLT)*: 0% (Opaque).

2.3 GLASS SETTING MATERIALS

- A. Glazing materials and accessories shall be fully compatible with the materials and finishes with which they are in contact.
- B. *Setting Blocks*: ASTM C864, channel shape; having ¼ inch internal depth, Shore A hardness of 80 to 90 Durometer. Blocks shall be a minimum 2 inch long. Block width shall be approximately 1/16 inch less than the full width of the rabbet. Block thickness shall be at least 3/16 inch, sized for rabbet depth as required.
- C. *Spacers*: ASTM C864, channel shape, with ¼ inch internal depth, 3/32 inch flanges, eb, 1/8 inch thick, one to 3 inches long. Spacers shall provide Shore A hardness of 40 to 50 Durometer.
- D. *Vinyl Glazing Channels*: Profile compatible with framing system and designed to accommodate glass of specified thickness, light gray in color. Provide for dry glazing aluminum frames where indicated or permitted.
- E. *Glazing Tape*: Poly-isobutylene based sealant tape, conforming to AAMA 804.1, with adhesive one side protected by temporary paper cover, Extrusion-Seal manufactured by Pecora Corp., No. 303 by Protective Treatments, Inc., or equal.
- F. *Spring Steel Spacers*: Galvanized steel wire or strip designed to position glazing in channel or rabbet sash with stops.
- G. *Glazing Clips*: Galvanized steel spring wire designed to hold glass in position in rabbet sash without stops.
- H. *Glazing Points (Sprigs)*: Pure zinc stock, thin, flat, triangular, or diamond-shaped pieces, 1/4 inch minimum size.
- I. *Glazing Sealants for Metal Sash*: GE Silicones Silglaze II 2800, GE Silicones Silpruf, GE Silicones 1200 Silicone, and Dow Corning 999A. Polybutylene, oleoresinous, asphalt,

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and oil base sealants are not permitted. Provide sealant of same color as structural silicone sealant unless otherwise required.

- J. Glazing Compound for Wood Sash: Provide acrylic latex glazing compound for bedding and sealing glass in wood frames
- K. Glazing Compounds and Sealants for Thermoplastic: Provide silicone, butyl, or polysulfide glazing compound.
- L. Mirror Setting Materials: Manufactured by Palmer Products Corporation, or equal, for installation of mirrors, and as follows:
 - 1. Mirror backing paint: Mirro-Bac Paint, or equal, formulated to protect mirror silvering.
 - 2. Mirror bond coat: Mirro-Mastic Bond, or equal, formulated to isolate deleterious backing materials from mastic and mirror.
 - 3. Mirror mastic: Palmers Super Set Mirro-Mastic PM290.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Verification of Conditions: Verify that field measurements, surfaces, substrates, and conditions are as required, and ready to receive Work.
 - 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.
- B. Report in writing to Project Manager prevailing conditions that will adversely affect satisfactory execution of the Work of this Section. Do not proceed with Work until unsatisfactory conditions have been corrected.
- C. By beginning Work, Contractor accepts conditions and assumes responsibility for correcting unsuitable conditions encountered at no additional cost to the Owner.

3.2 PREPARATION

- A. Clean contact surfaces with solvent and wipe dry.
- B. Seal porous glazing channels or recesses with substrate compatible primer or sealer.
- C. Prime surfaces scheduled to receive sealant.

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- A. Locate setting blocks at quarter points of sill; set in sealant if heel or toe bead is required.
- B. Install spacers inside and out except where pre-shimmed tape or glazing gaskets are to be used.
- C. Set each piece in a series to other pieces in pattern draw, bow, or other visually perceptible characteristics.
- D. Provide glazing sealants and gaskets as required for glazing application. Coordinate with other Sections for material compatibility.
- E. Gaskets:
 - 1. Provide adequate anchorage, particularly for driven-in wedge gaskets.
 - 2. Miter and weld end of channel gaskets at corners to provide continuous gaskets.
 - 3. Seal face gaskets at corners with sealant to close opening and prevent withdrawal of gaskets from corners.
- F. Do not leave voids in glazing channels except as specifically indicated or recommended by glass manufacturer. Force sealant into channel to eliminate voids. Tool exposed surfaces to slight wash away from joint. Trim and clean promptly.
- G. Do not allow sealant to close weeps of aluminum framing.
- H. Provide filler rod where sealants are used in the following locations:
 - 1. Head and jamb channels.
 - 2. Colored glass over 75 united inches in size.
 - 3. Clear glass over 125 united inches in size.

3.4 CONSTRUCTION

- A. Interface with Other Work: Coordinate glazing with installation of entrances specified in Section 08 11 13 Hollow Metal Doors and Frames and 08 41 13 Aluminum Entrances and Storefronts.

3.5 FIELD QUALITY CONTROL

- A. Section 01 4000 - Quality Requirements: Field testing and inspection.
- B. Inspect preparation and installation of glass.

3.6 CLEANING

- A. Section 01 7300 – Execution: Cleaning.

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- B. Remove glazing materials from finish surfaces.
- C. Remove labels after Work is complete.
- D. Clean glass and adjacent surfaces.

3.7 PROTECTION

- A. Section 01 4000 – Quality Requirements: Completion and Inspection.
- B. After installation, mark pane with an 'X' by using removable plastic tape or paste. Do not mark reflective or Spandrel glass units.

END OF SECTION