

SECTION 08 80 00**GLAZING****PART 1 - GENERAL****1.1 DESCRIPTION**

- A. This section specifies glass, related glazing materials and accessories. Glazing products specified apply to factory or field glazed items.

1.2 RELATED WORK

- A. Factory glazed by manufacturer in following units:
 - 1. Mirrors: Section 10 28 00, TOILET, BATH, AND LAUNDRY ACCESSORIES.
 - 2. Section 08 51 13.11, WOOD WINDOWS.
 - 3. Section 08 51 69.11, ALUMINIUM STORM WINDOWS
- B. Security equipment:
 - 1. Section 28 16 11, INTRUSION DETECTION SYSTEM.

1.3 LABELS

- A. Temporary labels:
 - 1. Provide temporary label on each light of glass identifying manufacturer or brand and glass type, quality and nominal thickness.
 - 2. Label in accordance with NFRC (National Fenestration Rating Council) label requirements.
 - 3. Temporary labels shall remain intact until glass is approved by VA.
- B. Permanent labels:
 - 1. Locate in corner for each pane.
 - 2. Label in accordance with ANSI Z97.1 and SGCC (Safety Glass Certification Council) label requirements.
 - a. Tempered glass.
 - b. Laminated glass or have certificate for panes without permanent label.

1.4 PERFORMANCE REQUIREMENTS

- A. Building Enclosure Vapor Retarder and Air Barrier:
 - 1. Maintain a continuous air barrier and vapor retarder throughout the glazed assembly from glass pane to heel bead of glazing sealant.
- B. Glass Thickness:

1. Select thickness of exterior glass to withstand dead loads and wind loads acting normal to plane of glass at design pressures calculated in accordance with **applicable** code.
2. Limit glass deflection to 1/200 or flexure limit of glass, whichever is less, with full recovery of glazing materials.
3. Test in accordance with ASTM E 330.
4. Thicknesses listed are minimum. Coordinate thicknesses with framing system manufacturers.

1.5 SUBMITTALS

- A. In accordance with Section 01 33 23, SHOP DRAWINGS, PRODUCT DATA, AND SAMPLES.
- B. Manufacturer's Certificates:
 1. Certificate on shading coefficient.
 2. Certificate on "R" value when value is specified.
- C. Warranty:
 1. Submit written guaranty, conforming to General Condition requirements, and to "Warranty of Construction" Article in this Section.
- D. Manufacturer's Literature and Data:
 1. Glass, each kind required.
 2. Insulating glass units.
 3. Putty, for wood sash glazing.
 4. Glazing cushion.
- E. Samples:
 1. Size: 150 mm by 150 mm (6 inches by 6 inches of each product required.

1.6 DELIVERY, STORAGE AND HANDLING

- A. Delivery: Schedule delivery to coincide with glazing schedules so minimum handling of crates is required. Do not open crates except as required for inspection for shipping damage.
- B. Storage: Store cases according to printed instructions on case, in areas least subject to traffic or falling objects. Keep storage area clean and dry.
- C. Handling: Unpack cases following printed instructions on case. Stack individual windows on edge leaned slightly against upright supports with separators between each.

1.7 PROJECT CONDITIONS

- A. Field Measurements: Field measure openings before ordering tempered glass products. Be responsible for proper fit of field measured products.

1.8 WARRANTY

- A. Warranty: Conform to terms of "Warranty of Construction", FAR clause 52.246-21, except extend warranty period for the following:

- 1. Insulating glass units to remain sealed for 10 years.
- 2. Laminated glass units to remain laminated for 5 years.

1.9 APPLICABLE PUBLICATIONS

- A. Publications listed below form a part of this specification to extent referenced. Publications are referenced in text by basic designation only.

- B. American National Standards Institute (ANSI):

- 1. Safety Glazing Material Used in Building - Safety Performance Specifications and Methods of Test.

- C. American Society for Testing and Materials (ASTM):

- 1. C1363-05 Thermal Performance of Building Assemblies, by Means of A Hot Box Apparatus
- 2. C1036-06 Flat Glass.
- 3. C1048-04 Heat-Treated Flat Glass-Kind HS, Kind FT Coated and Uncoated Glass.
- 4. C1172-03 Laminated Architectural Flat Glass.
- 5.
- 6. E84-08 Surface Burning Characteristics of Building Materials.
- 7. E330-02 Structural Performance of Exterior Windows, Curtain Walls, and Doors by Uniform Static Air Pressure Difference.
- 8. E774-97 Sealed Insulating Glass Units

- D. Code of Federal Regulations (CFR):

- 1. 16 CFR 1201 Safety Standard for Architectural Glazing Materials; 1977, with 1984 Revision.
- 2. .

- E. National Fenestration Rating Council (NFRC):

- 1. Certified Products Directory (Latest Edition).

- F. Safety Glazing Certification Council (SGCC):

- 1. Certified Products Directory (Issued Semi-Annually).

G. Unified Facilities Criteria (UFC):

1. 4-010-01-2007 DOD Minimum Antiterrorism Standards for Buildings

PART 2 - PRODUCTS

2.1 GLASS

A. Use thickness stated unless specified otherwise in assemblies.

B. Clear Glass:

1. ASTM C1036, Type I, Class 1, Quality q3.
2. Thickness as indicated.

2.2 HEAT-TREATED GLASS

A. Clear Heat Strengthened Glass:

1. ASTM C1048, Kind HS, Condition A, Type I, Class 1, Quality q3.
2. Thickness, **as indicated**.

2.3 COATED GLASS

A. Low-E Tempered Glass:

1. ASTM C1048, Kind FT, Condition C, Type I, Class 1, Quality q3 with low emissivity pyrolytic coating having an E of 0.15.
2. Apply coating to second surface of insulating glass units.
3. Thickness as indicated.

2.4 LAMINATED GLASS

- A. Interlayer between glass panes: ASTM C 1172. Use heat and light stable polyvinyl butyral plasticized resin sheeting.
- B. Use 0.75 mm (0.030 inch) thick PVB for vertical glazing where 1.5 mm (0.060 inch) PVB is not otherwise indicated or required.
- C. Use a nominal 11.11 mm (0.4375 inch) thick laminated glass at Mental Health and Behavioral Nursing Units.

2.5 LAMINATED GLAZING ASSEMBLIES

A. Clear Glazing:

1. Both panes clear glass ASTM C1036, Type I, Class 1, Quality q3.
2. Thickness: Each pane as indicated.

B. Cleared Tempered Glazing:

1. Both panes ASTM C1048, Kind FT, Condition A, Type I, Class 1, Quality q3.
2. Thickness: Each panel as indicated.

C. Clear Heat Strengthened Glazing:

1. Both panes, ASTM C1048, Kind HS, Condition A, Type I, Class 1, Quality q3.
2. Thickness: Each pane as indicated.
3. Both panes, ASTM C1048, Kind HS, Condition A, Type I, Class 2, Quality q3.

2.6 INSULATING GLASS UNITS

- A. Provide factory fabricated, hermetically sealed glass unit consisting of two panes of glass separated by a dehydrated air space.
- B. Assemble units using glass types specified:
- C. Sealed Edge Units (SEU):
 1. Conform to ASTM E774, Class C performance requirements.
 2. Air Space not less than 13 mm (½ inch) wide.
 3. R value not less than 1.65.

2.7 GLAZING ACCESSORIES

- A. As required to supplement the accessories provided with the items to be glazed and to provide a complete installation. Ferrous metal accessories exposed in the finished work shall have a finish that will not corrode or stain while in service.
- B. Setting Blocks: ASTM C864:
 1. Channel shape; having 6 mm (1/4 inch) internal depth.
 2. Shore a hardness of 80 to 90 Durometer.
 3. Block lengths: 50 mm (2 inches) except 100 to 150 mm (4 to 6 inches) for insulating glass.
 4. Block width: Approximately 1.6 mm (1/16 inch) less than the full width of the rabbet.
 5. Block thickness: Minimum 4.8 mm (3/16 inch). Thickness sized for rabbet depth as required.
- C. Spacers: ASTM C864:
 1. Channel shape having a 6 mm (1/4 inch) internal depth.
 2. Flanges not less 2.4 mm (3/32 inch) thick and web 3 mm (1/8 inch) thick.
 3. Lengths: One to 25 to 76 mm (1 to 3 inches).
- D. Sealing Tapes:

1. Semi-solid polymeric based material exhibiting pressure-sensitive adhesion and withstanding exposure to sunlight, moisture, heat, cold, and aging.
 2. Shape, size and degree of softness and strength suitable for use in glazing application to prevent water infiltration.
- E. Glazing Clips: Galvanized steel spring wire designed to hold glass in position in rabbeted sash without stops.
- F. Glazing Points (Sprigs): Pure zinc stock, thin, flat, and triangular or diamond shaped pieces, 6 mm (1/4 inch) minimum size.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Verification of Conditions:
1. Examine openings for glass and glazing units; determine they are proper size; plumb; square; and level before installation is started.
 2. Verify that glazing openings conform to details, dimensions and tolerances indicated on manufacturer's approved shop drawings.
- B. Advise Contractor of conditions which may adversely affect glass and glazing unit installation, prior to commencement of installation: Do not proceed with installation until unsatisfactory conditions have been corrected.
- C. Verify that wash down of adjacent masonry is completed prior to erection of glass and glazing units to prevent damage to glass and glazing units by cleaning materials.

3.2 PREPARATION

- A. Determine glazing unit size and edge clearances by measuring the actual unit to receive the glazing.
- B. Shop fabricate and cut glass with smooth, straight edges of full size required by openings to provide GANA recommended edge clearances.
- C. Verify that components used are compatible.
- D. Clean and dry glazing surfaces.
- E. Prime surfaces scheduled to receive sealants, as determined by preconstruction sealant- substrate testing.

3.3 INSTALLATION - GENERAL

- A. Set glazing without bending, twisting, or forcing of units.

- B. Do not allow glass to rest on or contact any framing member.
- C. Glaze doors and operable sash, in a securely fixed or closed and locked position, until sealant, glazing compound, or putty has thoroughly set.
- D. Tempered Glass: Install with roller distortions in horizontal position unless otherwise directed.
- E. Laminated Glass:
 - 1. Tape edges to seal interlayer and protect from glazing sealants.
 - 2. Do not use putty or glazing compounds.
- F. Insulating Glass Units:
 - 1. Glaze in compliance with glass manufacturer's written instructions.
 - 2. When glazing gaskets are used, they shall be of sufficient size and depth to cover glass seal or metal channel frame completely.
 - 3. Do not use putty or glazing compounds.
 - 4. Do not grind, nip, cut, or otherwise alter edges and corners of fused glass units after shipping from factory.
 - 5. Install with tape or gunnable sealant in wood sash.
- G. Trim protruding tape edge.

3.4 INSTALLATION - REGLAZING HISTORIC FRAMING

- A. Laminated Glass: Install as specified in doors, observation windows and interior pane of dual glazed windows where indicated.
 - 1. If laminated glass is required for double glazed windows, provide it for interior panes only.

- - - E N D - - -