

SECTION 08 80 00
TRANSLUCENT RESIN PANEL GLAZING

PART 1 - GENERAL

1.1 DESCRIPTION:

- A. This section specifies the following:
 - 1. Plastic glazing (Translucent Resin Panel).
 - 2. Glazing materials and accessories for both factory and field glazed assemblies.

1.2 RELATED WORK:

- A. Sustainable Design Requirements: Section 01 81 13, SUSTAINABLE CONSTRUCTION REQUIREMENTS.
- B. Countertops: Section 12 36 00

1.3 PERFORMANCE REQUIREMENTS:

- B. Glazing Unit Design: Design translucent resin panel, including engineering analysis meeting requirements of authorities having jurisdiction. Thicknesses listed are minimum. Coordinate thicknesses with framing system manufacturers.

1.4 SUBMITTALS:

- A. In accordance with Section 01 33 23, SHOP DRAWINGS, PRODUCT DATA, AND SAMPLES.
- B. Sustainable Design Submittals, as described below:
 - 1. Volatile organic compounds per volume as specified in
- C. Manufacturer's Certificates:
 - 1. Certificate stating that translucent resin panel units meet code requirements for Class A Finishes
- D. Manufacturer Warranty.
- E. Manufacturer's Literature and Data:
 - 6. Glazing cushion (silicone).
 - 9. Plastic glazing (Translucent Resin Panel) material, each type required.
- F. Samples:
 - 1. Size: 305 mm by 305 mm (12 inches by 12 inches).

1.5 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.
- D. Protect laminated security glazing units against face and edge damage during entire sequence of fabrication, handling, and delivery to installation location. Provide protective covering on exposed faces of glazing plastics, and mark inside as "INTERIOR FACE" or "PROTECTED FACE":
 - 1. Treat security glazing as fragile merchandise, and packaged and shipped in export wood cases with width end in upright position and blocked together in a mass. Storage and handling to comply with manufacturer's directions and as required to prevent edge damage or other damage to glazing resulting from effects of moisture, condensation, temperature changes, direct exposure to sun, other environmental conditions, and contact with chemical solvents.
 - 2. Protect sealed-air-space insulating glazing units from exposure to abnormal pressure changes, as could result from substantial changes in altitude during delivery by air freight. Provide temporary breather tubes which do not nullify applicable warranties on hermetic seals.
 - 3. Temporary protections: The glass front and polycarbonate back of glazing are to be temporarily protected with compatible, peelable, heat-resistant film which will be peeled for inspections and re-applied and finally removed after doors and windows are installed at destination. Since many adhesives will attack polycarbonate, the film used on exposed polycarbonate surfaces is to be approved and applied by manufacturer.
 - 4. Edge protection: To cushion and protect glass clad, and polycarbonate edges from contamination or foreign matter, the four (4) edges are to be sealed the depth of glazing with continuous standard-thickness thermoplastic rubber tape. Alternatively, continuous channel shaped extrusion of thermoplastic rubber are to be used, with flanges extending into face sides of glazing.

5. Protect "Constant Temperature" units including every unit where glass sheet is directly laminated to or directly sealed with metal-tube type spacer bar to polycarbonate sheet, from exposures to ambient temperatures outside the range of 16 to 24 degrees C (60 to 75 degrees F), during the fabricating, handling, shipping, storing, installation, and subsequent protection of glazing.

1.6 PROJECT CONDITIONS:

Field Measurements: Field measure openings before ordering tempered glass products to assure for proper fit of field measured products.

1.7 WARRANTY:

- A. Construction Warranty: Comply with the FAR clause 52.246-21 "Warranty of Construction".
- B. Manufacturer Warranty: Manufacturer shall warranty their glazing from the date of installation and final acceptance by the Government as follows. Submit manufacturer warranty.

1.8 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 Architectural Manufacturers Association (AAMA):
800.....Test Methods for Sealants
810.1-77.....Expanded Cellular Glazing Tape
- C. American National Standards Institute (ANSI):
Z97.1-14.....Safety Glazing Material Used in
Building - Safety Performance Specifications
and Methods of Test
- D. American Society of Civil Engineers (ASCE):
7-10.....Wind Load Provisions
- E. ASTM International (ASTM):
C542-05(R2011).....Lock-Strip Gaskets
C716-06.....Installing Lock-Strip Gaskets and Infill
Glazing Materials
C794-10.....Adhesion-in-Peel of Elastomeric Joint Sealants
C864-05(R2011).....Dense Elastomeric Compression Seal Gaskets,
Setting Blocks, and Spacers
C920-14a.....Elastomeric Joint Sealants
C964-07(R2012).....Standard Guide for Lock-Strip Gasket Glazing

C1036-11(R2012).....Flat Glass

C1048-12.....Heat-Treated Flat Glass-Kind HS, Kind FT Coated
and Uncoated Glass.

C1172-14.....Laminated Architectural Flat Glass

C1349-10.....Standard Specification for Architectural Flat
Glass Clad Polycarbonate

C1376-10.....Pyrolytic and Vacuum Deposition Coatings on
Flat Glass

D635-10.....Rate of Burning and/or Extent and Time of
Burning of Self-Supporting Plastic in a
Horizontal Position

D4802-10.....Poly (Methyl Methacrylate) Acrylic Plastic
Sheet

E84-14.....Surface Burning Characteristics of Building
Materials

E119-14.....Standard Test Methods for Fire Test of Building
Construction and Material

E1300-12a.....Load Resistance of Glass in Buildings

E1886-13a.....Standard Test Method for Performance of
Exterior Windows, Curtain Walls, Doors, and
Impact Protective Systems Impacted by
Missile(s) and Exposed to Cyclic Pressure
Differentials

E1996-14a.....Standard Specification for Performance of
Exterior Windows, Curtain Walls, Doors, and
Impact Protective Systems Impacted by Windborne
Debris in Hurricanes

E2141-12.....Test Methods for Assessing the Durability of
Absorptive Electrochromic Coatings on Sealed
Insulating Glass Units

E2190-10.....Insulating Glass Unit

E2240-06.....Test Method for Assessing the Current-Voltage
Cycling Stability at 90 Degree C (194 Degree F)
of Absorptive Electrochromic Coatings on Sealed
Insulating Glass Units

E2241-06.....Test Method for Assessing the Current-Voltage
Cycling Stability at Room Temperature of

- Absorptive Electrochromic Coatings on Sealed
Insulating Glass Units
- E2354-10.....Assessing the Durability of Absorptive
Electrochromic Coatings within Sealed
Insulating Glass Units
- E2355-10.....Test Method for Measuring the Visible Light
Transmission Uniformity of an Absorptive
Electrochromic Coating on a Glazing Surface
- F1233-08.....Standard Test Method for Security Glazing
Materials and Systems
- F1642-12.....Test Method for Glazing and Glazing Systems
Subject to Airblast Loadings
- E. Code of Federal Regulations (CFR):
- 16 CFR 1201-10.....Safety Standard for Architectural Glazing
Materials
- F. Glass Association of North America (GANA):
- 2010 Edition.....GANA Glazing Manual
- 2008 Edition.....GANA Sealant Manual
- 2009 Edition.....GANA Laminated Glazing Reference Manual
- 2010 Edition.....GANA Protective Glazing Reference Manual
- G. International Code Council (ICC):
- IBC.....International Building Code
- H. Insulating Glass Certification Council (IGCC)
- I. Insulating Glass Manufacturer Alliance (IGMA):
- TB-3001-13.....Guidelines for Sloped Glazing
- TM-3000.....North American Glazing Guidelines for Sealed
Insulating Glass Units for Commercial and
Residential Use
- J. Intertek Testing Services - Warnock Hersey (ITS-WHI)
- K. National Fire Protection Association (NFPA):
- 80-16.....Fire Doors and Windows
- 252-12.....Fire Tests of Door Assemblies
- 257-12.....Standard on Fire Test for Window and Glass
Block Assemblies
- L. National Fenestration Rating Council (NFRC)
- M. Safety Glazing Certification Council (SGCC) 2012:
Certified Products Directory (Issued Semi-Annually).

N. Underwriters Laboratories, Inc. (UL):

- 9-08(R2009).....Fire Tests of Window Assemblies
- 263-14.....Fire Tests of Building Construction and
Materials
- 752-11.....Bullet-Resisting Equipment.

O. Unified Facilities Criteria (UFC):

- 4-010-01-03(R2007).....DOD Minimum Antiterrorism Standards for
Buildings

P. U.S. Veterans Administration:

- Physical Security Design Manual for VA Facilities (VAPSDG); Life Safety
Protected
- Physical Security Design Manual for VA Facilities (VAPSDG); Mission
Critical Facilities
- Architectural Design Manual for VA Facilities (VASDM)

Q. Environmental Protection Agency (EPA):

- 40 CFR 59(2014).....National Volatile Organic Compound Emission
Standards for Consumer and Commercial Products

PART 2 - PRODUCT

2.1 GLASS:

- A. Provide minimum thickness stated and as additionally required to meet
performance requirements.
 - 1. Provide minimum 3/8 thick translucent resin panel units unless
otherwise indicated.
- B. Obtain translucent resin panels from single source from single
manufacturer for each glass type.

2.2 PLASTIC GLAZING (TRANSLUCENT RESIN PANEL):

- A. Translucent Resin Panel:
 - 1. Translucent Resin Panel System: Resin panels of designer selected
color, texture, and finish as indicated on drawings.
 - 2. Gauge: 3/8 inch.
 - 3. Expansion and Contraction Allowance: 1/8 inch on each side.
 - 4. Ultraviolet Light Protection: Not required.
 - 5. Edge Sealing: Required/ Polished.
 - 6. Edge and Corner Style: Eased Edge.
 - 7. Pattern Orientation: As indicated on Drawings.
 - 8. Minimum sheet performance requirements:

- a. Burning Rate: ASTM D 635, CC12 rating for not less than 0.060 inch (1.5 mm) nominal thickness.
- b. Self-Ignition Temperature: ASTM D 1929, not less than 650 deg F (343 deg C).
- c. Smoke Density: ASTM D 2843, not more than 75 percent.
- d. Room Corner Burn Test: NFPA 286, IBC Class A for ¼ inch (6.4 mm) thickness.
- e. Burning Extent: UL94, pass.
- f. Impact Strength: ASTM D 3763, not less than 20 lbf (89 N).
- g. Safety Glazing Impact Resistance: ANSI Z97.1 for 1/8 inch (3.2 mm) thickness.
- h. Combustion Product Toxicity: UPITT Test, rated "not more than wood".
- i. Organic Emissions: ASTM D 5116 and D 6670, no detectable VOC off-gassing.

2.3 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 are to have a finish that will not corrode or stain while in service.
- B. Hardware:
 - 1. Provide hardware and gaskets as recommended by manufacturer's recommendations
 - 2. Glazing Clips
 - a. Smooth Surface Bracket: Model 3-15-1782-K
 - b. Size: 1 inch wide by 1.38" high
 - 3. Gaskets: Silicone to allow for expansion and contraction of Translucent Resin Panel.

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 with details, dimensions and tolerances indicated on manufacturer is approved shop drawings.

- B. Review for 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.

3.2 PREPARATION:

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

3.3 INSTALLATION - GENERAL:

- A. Install in accordance with GANA Glazing Manual, GANA Sealant Manual, IGMA TB-3001, and IGMA TM-3000 unless specified otherwise.
- B. Glaze in accordance with recommendations of glazing and framing manufacturers, and as required to meet the Performance Test Requirements specified in other applicable sections of specifications.
- C. Set glazing without bending, twisting, or forcing of units.
- D. Patterned Translucent Resin Panels:
 - 1. Install units with one patterned surface on exposed side as indicated on Drawings.
 - 2. Install units in interior partitions with pattern in same direction in all openings.

3.4 INSTALLATION - DRY METHOD (TAPE AND GASKET SPLINE GLAZING):

- A. Cut glazing to length; polish exposed edges; install on glazing pane.
- B. Place setting blocks at points with edge block no more than 150 mm (6 inches) from corners.
- C. Rest glazing on specified hardware and secure in place using fasteners.
- D. Do not exceed edge pressures stipulated by glass manufacturers for installing glass lites.

3.5 REPLACEMENT AND CLEANING:

- A. Clean new translucent resin panel surfaces removing temporary labels, paint spots, and defacement after approval by COR.
- B. Replace cracked, broken, and imperfect translucent resin panel, or panel which has been installed improperly.
- C. Leave panels, putty, and other setting material in clean, whole, and acceptable condition.

3.6 PROTECTION:

- A. Protect finished surfaces from damage during erection, and after completion of work. Strippable plastic coatings on colored anodized finish are not acceptable.

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