

SECTION 08 80 00
GLAZING

PART 1 - GENERAL

1.1 SUMMARY

- A. Section Includes:
1. Glass for aluminum entrances and storefronts.
 2. Glass for aluminum windows.
 3. Associated glazing accessories.

1.2 REFERENCES

- A. Reference Standards: In addition to requirements shown or specified, comply with applicable provisions of following for design, materials, fabrication, and installation of component parts:
1. GANA Glazing Manual and GANA Sealant Manual.

1.3 SYSTEM REQUIREMENTS

- A. Design Requirements: Provide continuity of building enclosure to maintain continuous air and vapor barrier throughout glazed assembly from glass pane to heel bead of sealant.
- B. Glazing Requirements: Comply with CPSC 16 CFR 1201 and ANSI Z97.1 for safety requirements of glazing materials.
1. Glass thickness, where indicated, are minimum requirements and are to be confirmed by glass manufacturer.
 2. Provide glass of thickness and heat treatment (annealed, heat strengthened or fully tempered) as necessary to prevent temperature stress breakage.
 3. Use 2.5 safety factor of glass to statistical probability of failure (8 lites/1000).
 4. Maximum Height to Width Ratio: For glass units not dimensioned, determine minimum acceptable width of glass by using ratio of 6:1, height to width.
 5. Obtain safety glazing products permanently marked with certification label of the Safety Glazing Certification Council or another certification agency acceptable to authorities having jurisdiction.

1.4 SUBMITTALS

- A. Product Data: For each type of glass and glazing material specified, including glazing accessories and glazing sealants.
- B. Shop Drawings: Sections and details of glass and glazing materials installation at framing members including head, mullions, transoms, jambs and sills.
- C. Samples:
1. 12 inches by 12 inches in size illustrating, laminated construction of glass units and structural connection and anchoring of glazing to frame system.
 2. 12 inches long bead of glazing sealant, in full range of manufacturer's standard colors for selection by Architect.
- D. Informational Submittals: Submit following packaged separately from other submittals::
1. Test Reports:
 - a. Glazing sealant indicating substrate adhesion.
 - b. Glazing sealant compatibility.
 - c. Glazing sealant manufacturer's recommendations.
 2. Certifications specified in Quality Assurance article.
 3. Manufacturer's instructions.

- E. Closeout Submittals: Submit specified warranty.

1.5 QUALITY ASSURANCE

- A. Single Source Responsibility: Glass of each type to be produced by same manufacturer.
- B. Installer Qualifications: Acceptable to manufacturer with documented experience on at least five projects of similar nature in past five years.
- C. Regulatory Requirements: Fabricate glass to comply with ASTM C1036, ASTM C1048, and ANSI Z97.1.

1.6 DELIVERY, STORAGE, AND HANDLING

- A. Deliver, store, and handle products in accordance with manufacturer's instructions.
1. Deliver glass units with manufacturer's labels intact on interior side of glass. Ensure labels indicate glass thickness, unit location, glass strength and orientation of units in vertical position.
 2. Protect glass edges and corners against chipping and cracking.

1.7 PROJECT CONDITIONS

- A. Environmental Requirements:
1. Perform glazing when ambient temperature is above 40 degrees F.
 2. Perform glazing on dry surfaces only.

1.8 WARRANTY

- A. Special Warranties: Warrant hermetically sealed insulating glass units to be free from defects in material and workmanship for five years.

PART 2 - PRODUCTS

2.1 GLASS MATERIALS

- A. Clear Insulating Storefront Glass Units: Double glazed, hermetically sealed around perimeter with continuous metal spacer filled with moisture absorbing desiccant, ASTM E774, adhered to glass lights with:
1. Primary Seal: Polyisobutylene.
 2. Secondary Seal: Silicone two-part.
 3. Total Thickness: 1 inch.
 - a. Outer Light: Glazing select, float, ASTM C1036.
 - 1) Type: Annealed, tempered where required by Code.
 - 2) Thickness: 1/4 inch.
 - 3) Color: Clear.
 - 4) Coating: Low E on No. 2 surface.
 - b. Inner Light: Glazing select, float.
 - 1) Type: Annealed, tempered where required by Code.
 - 2) Thickness: 1/4 inch.
 - 3) Color: Clear.
 - c. Air Space: 1/2 inch dehydrated air space.
 4. Provide heat-strengthened glass where required by manufacturer to resist breakage by heat gain.
 5. Acceptable Manufacturers:
 - a. Cardinal IG, Minneapolis, MN.
 - b. Guardian Industries Corp, Corsicana, TX.
 - c. Viracon, Owatonna, MN.
 - d. AFGD, Atlanta GA.

- B. Clear Insulating Aluminum Window Glass Units: Double glazed, hermetically sealed around perimeter with continuous metal spacer filled with moisture absorbing desiccant, ASTM E774, adhered to glass lights with:
1. Primary Seal: Polyisobutylene.
 2. Secondary Seal: Silicone two-part.
 3. Total Thickness: 1 inch.
 - a. Outer Light: Glazing select, float, ASTM C1036.
 - 1) Type: Annealed, tempered where required by Code.
 - 2) Thickness: 1/4 inch.
 - 3) Color: Clear.
 - 4) Coating: Low E on No. 2 surface.
 - b. Inner Light: Glazing select, float.
 - 1) Type: Annealed, tempered where required by Code.
 - 2) Thickness: 1/4 inch.
 - 3) Color: Clear.
 - a) Sandblast on No. 4 surface at toilet room windows.
 - c. Air Space: 1/2 inch dehydrated air space.
 4. Acceptable Manufacturers:
 - a. Cardinal IG, Minneapolis, MN.
 - b. Guardian Industries Corp, Corsicana, TX.
 - c. Viracon, Owatonna, MN.
 - d. AFGD, Atlanta GA.

2.2 GLAZING GASKETS

- A. Dense Compression Gaskets: ASTM C864. Molded or extruded gaskets, silicone compatible EPDM, of profile and hardness required to maintain watertight seal.
- B. Soft Compression Gaskets: ASTM C509 Type II. Extruded or molded, closed-cell, integral-skinned silicone compatible EPDM gaskets; black and of profile and hardness required to maintain watertight seal. Provide with prefabricated, vulcanized corners typically.

2.3 GLAZING ACCESSORIES

- A. Setting Blocks: Preformed silicone compatible EPDM, compatible with sealant.
 1. Hardness: 80-90 Shore A durometer.
 2. Size: 0.10 inch for each square foot of glazing, not less than 4 inch length by width of channel minus 1/16 inch by sufficient height to provide minimum edge clearance.
 3. Location: Sill quarter points, centered minimum 4 inches from each edge.
 4. Requirement: Resistant to sunlight, weathering oxidation and permanent deformation under load.
- B. Spacer Shims: Preformed silicone compatible EPDM, compatible with sealant.
 1. Hardness: 50-60 Shore A durometer.
 2. Size: Minimum 3 inch length by 1/2 height of glazing stop by thickness to suit application.
- C. Edge Blocks: Preformed silicone compatible EPDM, compatible with sealant.
 1. Hardness: 60-70 Shore A durometer.
 2. Size: Minimum 4 inch length by width to support thickness of glass, allow nominal 1/8 inch clearance between edge of glass and edge bumper.
 3. Location: Place in vertical channel.
 4. Requirement: Resistant to sunlight, weathering, oxidation and permanent deformation under load.

D. Glazing Tapes:

1. Interior: Preformed urethane foam, butyl, or closed cell PVC foam with integral spacing device and containing paper release.
2. Size: Continuous corner to corner.
3. Acceptable Products:
 - a. Polyshim II Butyl Tape, Tremco, Cleveland, OH.
 - b. Norseal V-980, Norton, Granville, NY.
 - c. 330 Glazing Tape, PTI, Dayton, OH.

E. Weatherseal Sealant in contact with glass: - Silicone: One-part, primerless, ASTM C920, Type S, Grade NS, Class 25, Use NT, G, A, M, and O.

1. Hardness: Minimum 15-25 Shore A durometer.
2. Non-sagging, non-bleeding, non-staining.
3. Color: Selected by Architect.
4. Acceptable Products:
 - a. 756, DOW Corning Corp., Midland, MI.
 - b. Silpruf NB, General Electric, Waterford, NY.
 - c. Spectrum 2, Tremco, Cleveland, OH.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine conditions and proceed with Work when substrates are acceptable.
1. Verify that openings for glazing are correctly sized and within tolerances.
 2. Verify that glazing channel surfaces are clear, free of burrs, obstructions, irregularities, and glass is free of edge damage or imperfections.

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, if required by sealant manufacturer.

3.3 INSTALLATION

- A. Install glass units in accordance with manufacturer's installation instructions. Ensure weep and drainage holes are not blocked by sealants or setting blocks.
- B. Preformed Glazing Gaskets (Dry Method): Factory cut gasket to proper length.
1. Prefabricate vulcanized joints in shop.
 2. Place setting blocks at quarter points, with edge blocks no more than 6 inches from corner.
 3. Rest glass on setting blocks and push against stop with sufficient pressure to ensure full contact and adhesion at perimeter.
 4. Install removable stops, avoiding displacement of gasket and exert pressure for full continuous contact.
 5. Remove gaskets which twist or which otherwise become torn or damaged and replace with new gasket.
 6. Install fixed aluminum window glass in gaskets as specified in Section 08 51 13.
- C. Tempered Glass: Do not cut, seam, nip or abrade tempered glass.
1. Install in windows and sidelights where required by code.

3.4 PROTECTION AND CLEANING

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- A. Protection: Protect finished Work from damage due to construction.
 - 1. After installation, mark glass pane with **x** by using removable plastic tape or paste.
- B. Cleaning:
 - 1. Remove excess glazing materials from finished surfaces.
 - 2. Remove labels after work is completed.
 - 3. Wash and polish both faces not more than seven days prior to Owner's acceptance of work.
 - 4. Comply with glass manufacturer's recommendations for final cleaning.

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