SECTION 088400 – PLASTIC GLAZING

Revise this Section by deleting and inserting text to meet Project-specific requirements.

MasterSpec includes provisions for LEED 2009, LEED v4, IgCC, and Green Globes. Sustainable design requirements may be inserted in the Section Text using the hypertext links.

1. GENERAL
   * + 1. SUMMARY
          1. Section Includes:

Monolithic acrylic glazing.

Monolithic polycarbonate glazing.

Retain subparagraph below for multiwalled structured polycarbonate glazing installed in framing. Aluminum-framed assemblies glazed with multiwalled structured polycarbonate panels are specified in Section 084513 "Structured-Polycarbonate-Panel Assemblies" (includes framing and panels).

Multiwalled structured polycarbonate glazing.

* + - * 1. Related Requirements:

Refer to sections listed below for cross-reference requirements Contractor might expect to find in this Section but are specified in other Sections. Sections listed below are for spec editor’s and design team coordination and are to remain as Editor’s Notes. Remove referenced specification sections within the body of the specification if not applicable to the project.

Retain subparagraphs below to cross-reference requirements Contractor might expect to find in this Section but are specified in other Sections.

Section 084513 "Structured-Polycarbonate-Panel Assemblies" for aluminum-framed assemblies glazed with multiwalled structured polycarbonate panels.

Section 088853 "Security Glazing" for [laminated polycarbonate glazing] [and] [monolithic polycarbonate glazing] for security applications.

* + - 1. COORDINATION
         1. Coordinate glazing channel dimensions to provide necessary bite on plastic glazing, minimum edge and face clearances, and adequate sealant thicknesses, with reasonable tolerances.
      2. PREINSTALLATION MEETINGS

Retain "Preinstallation Conference" Paragraphparagraph below if Work of this Section is extensive or complex enough to justify a conference.

* + - * 1. Preinstallation Conference: Conduct conference at [Project site.] <Insert location>.

If retaining subparagraphs below, revise to include Project-specific requirements. Insert additional requirements to suit Project.

Review and finalize construction schedule and verify availability of materials, Installer's personnel, equipment, and facilities needed to make progress and avoid delays.

Review temporary protection requirements for plastic glazing during and after installation.

* + - 1. ACTION SUBMITTALS
         1. Submittals for this section are subject to the re-evaluation fee identified in Article 4 of the General Conditions.
         2. Manufacturer’s installation instructions shall be provided along with product data.
         3. Submittals shall be provided in the order in which they are specified and tabbed (for combined submittals).
         4. Product Data: For each type of product.

Include manufacturer’s installation instructions.

* + - * 1. Sustainable Design Submittals:
        2. Plastic Glazing Samples: For each color and finish of plastic glazing indicated, 12 inches (300 mm) square and of same thickness indicated for final Work.
        3. Glazing Accessory Samples: For [**gaskets**] [**and**] [**sealants**], in 12-inch (300-mm) lengths.[**Install sealant Samples between two strips of material representative in color of the adjoining framing system.**]
        4. Plastic Glazing Schedule: List plastic glazing types and thicknesses for each size opening and location. Use same designations indicated on Drawings. Indicate coordinated dimensions of plastic glazing and construction that receives plastic glazing, including clearances and glazing channel dimensions.
      1. INFORMATIONAL SUBMITTALS
         1. Quality Control Submittals:

Coordinate "Qualification Data" Paragraph below with qualification requirements in Section 014000 "Quality Requirements" and as may be supplemented in "Quality Assurance" Article.

Qualification Data: For testing agency.

Retain "Product Certificates" Paragraphparagraph below to require submittal of product certificates from manufacturers.

Product Certificates: For plastic glazing and glazing products.

Product Test Reports: For [**plastic glazing**] [**glazing sealants**] [**and**] [**glazing gaskets**], for tests performed by a qualified testing agency.

For glazing sealants, provide test reports based on testing current sealant formulations within previous 36-month period.

Delete first paragraph below if no glazing sealants are specified for installing plastic glazing.

Preconstruction adhesion and compatibility test report.

Research/Evaluation Reports: For plastic glazing.

Sample Warranty: For special warranty.

* + - * 1. Contract Closeout Submittals

Maintenance Data: For plastic glazing to include in maintenance manuals.

* + - 1. QUALITY ASSURANCE
         1. Sealant Testing Agency Qualifications: An independent testing agency qualified according to ASTM C1021 to conduct the testing indicated.
         2. Mockup Benchmarks: Build mockup benchmarks to verify selections made under Sample submittals, to demonstrate aesthetic effects, and to set quality standards for materials and execution.

Retain first subparagraph below for large-scale mockupbenchmark. Indicate portion of wall represented by mockupbenchmark on Drawings or draw mockupbenchmark as separate element. Coordinate requirements with those in other Sections specifying systems or products that receive glazing.

Install plastic glazing in mockup benchmarks specified in [**Section 084113 "Aluminum-Framed Entrances and Storefronts"**] [**Section 085113 "Aluminum Windows"**] <**Insert Section number and title**> to match plastic glazing systems required for Project, including glazing methods.

Retain subparagraph below if the intention is to make an exception to the default requirement in Section 014000 "Quality Requirements" for demolishing and removing mockupbenchmarks.

Subject to compliance with requirements, approved mockup benchmarks may become part of the completed Work if undisturbed at time of Substantial Completion.

* + - 1. PRECONSTRUCTION TESTING

Retain this article if plastic glazing is installed with glazing sealants. Adhesion and compatibility testing is essential and usually done by sealant manufacturer. Tests require large number of Samples; some tests require four weeks to complete.

* + - * 1. Preconstruction Adhesion and Compatibility Testing: Test each plastic glazing type, tape sealant, gasket, glazing accessory, and glazing-framing member for adhesion to and compatibility with elastomeric glazing sealants.

Retain first subparagraph below if previous testing is acceptable.

Testing is not required if data are submitted based on previous testing of current sealant products and plastic glazing matching those submitted.

Use ASTM C1087 to determine whether priming and other specific joint-preparation techniques are required to obtain rapid, optimum adhesion of glazing sealants to glazing, tape sealants, gaskets, and glazing channel substrates.

Test no fewer than [**eight**] <**Insert number**> Samples of each type of material, including joint substrates, shims, sealant backings, secondary seals, and miscellaneous materials.

Schedule enough time for testing and analyzing results to prevent delaying the Work.

For materials failing tests, submit sealant manufacturer's written instructions for corrective measures including the use of specially formulated primers.

* + - 1. DELIVERY, STORAGE, AND HANDLING
         1. Protect plastic glazing materials according to manufacturer's written instructions. Prevent damage to plastic glazing and glazing materials from condensation, temperature changes, direct exposure to sun, or other causes.
         2. Maintain protective coverings on plastic glazing to avoid exposures to abrasive substances, excessive heat, and other sources of possible deterioration.
      2. FIELD CONDITIONS
         1. Environmental Limitations: Do not proceed with glazing when ambient and substrate temperature conditions are outside limits permitted by glazing material manufacturers and when glazing channel substrates are wet from rain, frost, condensation, or other causes.

Retain subparagraph below if sealants are required. Revise if another temperature range is required.

Do not install glazing sealants when ambient and substrate temperature conditions are outside limits permitted by sealant manufacturer or below 40 deg F (4.4 deg C).

* + - 1. WARRANTY

When warranties are required, verify with Owner's the Director’s counsel that warranties stated in this article are not less than remedies available to Owner the Facility under prevailing local laws. Paragraphparagraph below is an example only.

* + - * 1. Manufacturer's Special Warranty for Abrasion- and UV-Resistant, [**Monolithic**] [**Multiwalled Structured**] Polycarbonate: Manufacturer agrees to replace polycarbonate products that break or develop defects from normal use that are attributable to manufacturing process and not to practices for maintaining and cleaning plastic glazing contrary to manufacturer's written instructions. Defects include coating delamination, haze, excessive yellowing, and loss of light transmission beyond the limits stated in plastic glazing manufacturer's standard form.

Verify available warranties and warranty periods with manufacturers. Revise "Warranty Period" Subparagraphsubparagraph below if manufacturers insist on warranty beginning on date of sale.

Warranty Period: [**Five**] <**Insert number**> years from date of Substantial Completion.

1. PRODUCTS

Manufacturers and products listed in this Section are neither recommended nor endorsed by the AIA or Deltek. Before selecting manufacturers and products, verify availability, suitability for intended applications, and compliance with minimum performance requirements. For definitions of terms and requirements for Contractor's product selection, see Section 016000 "Product Requirements."

Product options commonly available from manufacturers are included in square brackets throughout the Section Text. Not every manufacturer listed can provide every option offered; verify availability with manufacturers. For definitions of terms and requirements for Contractor's product selection, see Section 016000 "Product Requirements."

* + - 1. MANUFACTURERS
         1. Source Limitations: Obtain plastic glazing from single source from single manufacturer. Obtain [**sealants**] [**and**] [**gaskets**] from single source from single manufacturer for each product and installation method.
      2. PERFORMANCE REQUIREMENTS
         1. Plastic glazing sheets and glazing materials shall withstand normal temperature changes, wind, and impact loads without failure, including loss or breakage of plastic sheets attributable to the following: failure of sealants or gaskets to remain watertight and airtight, deterioration of plastic sheet and glazing materials, or other defects in materials and installation.

Retain "Windborne-Debris Impact Resistance" Paragraphparagraph below to suit Project. The IBC BCNYS establishes criteria for buildings in hurricane-prone locations. In paragraph, "enhanced" option applies to essential facilities and has additional requirements. Verify requirements of authorities having jurisdiction. Verify which manufacturers have tested products and can demonstrate compliance. New York State is Wind Zone 2 .

* + - * 1. Windborne-Debris Impact Resistance: Exterior plastic glazing shall pass ASTM E1886 missile-impact and cyclic-pressure tests in accordance with ASTM E1996 for Wind Zone [**1**] [2] [**3**] [**4**] for [**basic**] [**enhanced**] protection.

Insert increased heights if different from those in "Large-Missile Test" and "Small-Missile Test" subparagraphs below. For enhanced protection, delete "Small-Missile Test" Subparagraphsubparagraph.

Large-Missile Test: For glazing located within [**30 feet (9.1 m)**] <**Insert dimension**> of grade.

Small-Missile Test: For glazing located between 30 feet (9.1 m) and [**60 feet (18.3 m)**] <**Insert dimension**> above grade.

The IBC BCNYS requires plastic glazing used in shower stalls, shower doors, and bathtub enclosures to comply with requirements for safety glazing.

* + - * 1. Safety Glazing: Plastic glazing shall comply with 16 CFR 1201, Category II.

Labeling: Permanently mark plastic glazing with certification label of an agency acceptable to authorities having jurisdiction. Label shall indicate manufacturer's name, type of plastic, thickness, and safety glazing standard with which plastic glazing complies.

* + - * 1. Thermal Movements: Allow for thermal movements from ambient and surface temperature changes acting on plastic glazing and glazing framing members.

Differential values in "Temperature Change" Subparagraph below (for aluminum in particular) are suitable for most of the United States.

Temperature Change: [120 deg F (67 deg C), ambient; 180 deg F (100 deg C), material surfaces] <**Insert temperature change**>.

* + - * 1. Fire-Test-Response Characteristics of Plastic Glazing: As determined by testing plastic glazing by a qualified testing agency acceptable to authorities having jurisdiction.

The IBC BCNYS requires light-transmitting plastics, including plastic glazing, to comply with requirements in first two subparagraphs below.

Self-ignition temperature of 650 deg F (343 deg C) or higher when tested according to ASTM D1929 on plastic sheets in thicknesses indicated for the Work.

Smoke density of 75 or less when tested according to ASTM D2843 on plastic sheets in thicknesses indicated for the Work.

The BCNYSIBC requires Class CC1 for certain glazing in exterior wall panels, roof panels, solar collector covers, and skylights made of light-transmitting plastics.

Burning extent of 1 inch (25 mm) or less when tested according to ASTM D635 at a nominal thickness of 0.060 inch (1.52 mm) or thickness indicated for the Work[**, where Class CC1 is indicated**].

The IBC BCNYS requires Class CC2 for glazing in exterior walls, interior partitions, shower and bathtub enclosures, patio covers, and awnings.

Burning rate of 2.5 in./min. (1.06 mm/s) or less when tested according to ASTM D635 at a nominal thickness of 0.060 inch (1.52 mm) or thickness indicated for the Work[**, where Class CC2 is indicated**].

The IBC BCNYS requires light-transmitting plastics used in or as partitions to comply with flame-spread requirements for wall finishes and requires awnings constructed of light-transmitting plastics to have a flame-spread index of 25 or less.

Flame-spread index of not less than that indicated when tested according to ASTM E84.

* + - 1. PLASTIC GLAZING, GENERAL
         1. Glazing Publication: Comply with published instructions of plastic glazing manufacturers and with GANA's "Glazing Manual" unless more stringent requirements are indicated. See this publication for definitions of glazing terms not otherwise defined in this Section or in other referenced standards.
         2. Plastic Glazing Labeling: Identify plastic sheets with appropriate markings of applicable testing and inspecting agency, indicating compliance with required fire-test-response characteristics.
      2. MONOLITHIC ACRYLIC GLAZING

In this article, insert drawing designation. Use these designations on Drawings to identify each product.

* + - * 1. Plastic Glazing, Transparent Acrylic Sheet[**Type PG-**<**#**>]: ASTM D4802, [**Category A-1 (cell cast)**] [**Category A-2 (continuously cast)**] [**or**] [Category B-1 (continuously manufactured)], Finish 1 (smooth or polished), Type UVF (UV filtering).

[Products:](http://www.specagent.com/Lookup?ulid=9303) Subject to compliance with requirements, provide one of the following:

[Altuglas International, Division of Arkema Inc](http://www.specagent.com/Lookup?uid=123457227549).; Plexiglas MC.

[Plaskolite](http://www.specagent.com/Lookup?uid=123457227552); OPTIX-L.

Or equal.

Retain "Nominal Thickness" Subparagraphsubparagraph below if thickness is not indicated on Drawings.

Nominal Thickness: [**0.093 inch (2.5 mm)**] [**0.118 inch (3 mm)**] [**0.177 inch (4.5 mm)**] [**0.236 inchch (6 mm)**] <Insert dimension>.

Color: [**Colorless**] [**As selected by Architect Director’s Representative from manufacturer's full range**] <**Insert color**>.

Retain "Combustibility Class" Subparagraphsubparagraph below if retaining requirements for both combustibility classes in "Plastic Glazing, General" Article.

Combustibility Class: CC2.

* + - * 1. Plastic Glazing, Coated Transparent Acrylic Sheet[**Type PG-**<**#**>]: ASTM D4802, [**Category A-1 (cell cast)**] [**Category A-2 (continuously cast)**] [**or**] [**Category B-1 (continuously manufactured)**], Finish 3 (abrasion-resistant coating) with coating on [**one side**] [**both sides**], Type UVF (UV filtering).

[Products:](http://www.specagent.com/Lookup?ulid=9304) Subject to compliance with requirements, provide the following:

[Plaskolite](http://www.specagent.com/Lookup?uid=123457227557); <Insert product designation>.

Or equal.

Retain "Nominal Thickness" Subparagraphsubparagraph below if thickness is not indicated on Drawings.

Nominal Thickness: [**0.093 inch (2.5 mm)**] [**0.118 inch (3 mm)**] [**0.177 inch (4.5 mm)**] [**0.236 inchh (6 mm)**] <Insert dimension>.

Color: [**Colorless**] [**As selected by Architect Director’s Representative from manufacturer's full range**] <**Insert color**>.

Retain "Combustibility Class" Subparagraphsubparagraph below if retaining requirements for both combustibility classes in "Plastic Glazing, General" Article.

Combustibility Class: CC2.

* + - * 1. Plastic Glazing, Translucent Acrylic Sheet[**Type PG-**<**#**>]: ASTM D4802, [**Category A-1 (cell cast)**] [**Category A-2 (continuously cast)**] [**or**] [Category B-1 (continuously manufactured)], Finish 1 (smooth or polished), Type UVF (UV filtering).

[Products:](http://www.specagent.com/Lookup?ulid=9305) Subject to compliance with requirements, provide one of the following:

[Altuglas International, Division of Arkema Inc](http://www.specagent.com/Lookup?uid=123457227549).; Plexiglas MC.

[Plaskolite](http://www.specagent.com/Lookup?uid=123457227552); OPTIX-L.

Or equal.

Retain "Nominal Thickness" Subparagraphsubparagraph below if thickness is not indicated on Drawings.

Nominal Thickness: [**0.093 inch (2.5 mm)**] [**0.118 inchh (3 mm)**] [**0.177 inch (4.5 mm)**] [**0.236 inch (6 mm)**] <Insert dimension>.

Color: [**White, with visible light transmittance of not more than 50 percent for 0.117-inch- (2.9-mm-) thick sheet, measured according to ASTM D1003**] [**As selected by Architect Director’s Representative from manufacturer's full range**] <**Insert color**>.

Retain "Combustibility Class" Subparagraphsubparagraph below if retaining requirements for both combustibility classes in "Plastic Glazing, General" Article.

Combustibility Class: CC2.

* + - * 1. Plastic Glazing, Patterned Acrylic Sheet[**Type PG-**<**#**>]: ASTM D4802, Category A-1 (cell cast), Finish 2 (patterned), Type UVF (UV filtering).

[Products:](http://www.specagent.com/Lookup?ulid=9306) Subject to compliance with requirements, provide one of the following:

[Altuglas International, Division of Arkema Inc](http://www.specagent.com/Lookup?uid=123457227565).; <Insert product designation>.

[Plaskolite](http://www.specagent.com/Lookup?uid=123457227566); <Insert product designation>.

Or equal.

Retain "Nominal Thickness" Subparagraphsubparagraph below if thickness is not indicated on Drawings.

Nominal Thickness: [**0.093 inch (2.5 mm)**] [**0.118 inch (3 mm)**] [**0.177 inch (4.5 mm)**] [**0.236 inch (6 mm)**] <Insert dimension>.

Pattern: [**Matte finish**] [**As selected by Architect Director’s Representative from manufacturer's full range**] <**Insert pattern**>.

Color: [**Transparent colorless**] [**Translucent white**] [**As selected by Architect Director’s Representative from manufacturer's full range**] <**Insert color**>.

Retain "Combustibility Class" Subparagraphsubparagraph below if retaining requirements for both combustibility classes in "Plastic Glazing, General" Article.

Combustibility Class: CC2.

* + - 1. MONOLITHIC POLYCARBONATE GLAZING

In this article, insert drawing designation. Use these designations to identify each product.

* + - * 1. Plastic Glazing, Polycarbonate Sheet[**Type PG-**<**#**>]: ASTM C1349, Appendix X1, Type I (standard, UV stabilized), with a polished finish.

[Products:](http://www.specagent.com/Lookup?ulid=9307) Subject to compliance with requirements, provide one of the following:

[Altuglas International, Division of Arkema Inc](http://www.specagent.com/Lookup?uid=123457227569).; <Insert product designation>.

Plaskolite; <insert product designation.>

[SABIC Innovative Plastics IP BV](http://www.specagent.com/Lookup?uid=123457227572); <Insert product designation>.

Or equal.

Retain "Nominal Thickness" Subparagraphsubparagraph below if thickness is not indicated on Drawings.

Nominal Thickness: [**0.093 inch (2.5 mm)**] [**0.118 inch (3 mm)**] [**0.177 inch (4.5 mm)**] [**0.236 inch (6 mm)**] <Insert dimension>.

Color: [**Transparent colorless**] [**As selected by Architect Director’s Representative from manufacturer's full range**] <**Insert color**>.

Retain "Combustibility Class" Subparagraphsubparagraph below if retaining requirements for both combustibility classes in "Plastic Glazing, General" Article.

Combustibility Class: CC1.

Flame-Spread Index: [**25**] [**75**] [**200**] or less.

* + - * 1. Plastic Glazing, Coated Polycarbonate Sheet[**Type PG-**<**#**>]: ASTM C1349, Appendix X1, Type II (coated mar-resistant, UV stabilized), with coating on both sides.

[Products:](http://www.specagent.com/Lookup?ulid=9308) Subject to compliance with requirements, provide one of the following:

[Altuglas International, Division of Arkema Inc](http://www.specagent.com/Lookup?uid=123457227574).; <Insert product designation>.

Plaskolite; <insert product designation>.

[SABIC Innovative Plastics IP BV](http://www.specagent.com/Lookup?uid=123457227575); <Insert product designation>.

Or equal.

Retain "Nominal Thickness" Subparagraphsubparagraph below if thickness is not indicated on Drawings.

Nominal Thickness: [**0.093 inch] (2.5 mm)**] [**0.118 inch (3 mm)**] [**0.177 inch (4.5 mm)**] [**0.236 inchh (6 mm)**] <Insert dimension>.

Color: [**Transparent colorless**] [**As selected by Architect Director’s Representative from manufacturer's full range**] <**Insert color**>.

Retain "Combustibility Class" Subparagraphsubparagraph below if retaining requirements for both combustibility classes in "Plastic Glazing, General" Article.

Combustibility Class: CC1.

Flame-Spread Index: [**25**] [**75**] [**200**] or less.

* + - 1. MULTIWALLED STRUCTURED POLYCARBONATE GLAZING
         1. Multiwalled Structured Polycarbonate Sheet: Manufacturer's standard polycarbonate extruded shape with smooth, flat exterior surfaces and internal ribbing.

Retain "Nominal Thickness" Subparagraphsubparagraph below if thickness is not indicated on Drawings.

Nominal Thickness: [**5/16 inch (8 mm)**] [**3/8 inch (10 mm)**] [**5/8 inch (16 mm)**] [**3/4 inch (20 mm)**] [**1 inch (25 mm)**] <Insert dimension>.

UV Resistance: [**Not required**] [**On outer surface**] [**On both surfaces**].

Color: [**Transparent colorless**] [**As selected by Architect Director’s Representative from manufacturer's full range**] <**Insert color**>.

Retain "Combustibility Class" Subparagraphsubparagraph below if retaining requirements for both combustibility classes in "Plastic Glazing, General" Article.

Combustibility Class: [**CC1**] [**CC2**].

Flame-Spread Index: [**25**] [**75**] [**200**] or less.

* + - 1. GLAZING GASKETS

Gaskets in "Dense Compression Gaskets" Paragraphparagraph below are for drive-in wedges or for use with pressurized stops.

* + - * 1. Dense Compression Gaskets: Molded or extruded gaskets, [**EPDM, ASTM C864**] [**or**] [**silicone, ASTM C1115**]; and of profile and hardness required to maintain watertight seal.

Gaskets in "Soft Compression Gaskets" Paragraphparagraph below are for use between plastic glazing and frame (or fixed stop) where they are compressed by inserting dense compression gaskets.

* + - * 1. Soft Compression Gaskets: Extruded or molded, closed-cell, integral-skinned [**EPDM**] [**or**] [**silicone**] gaskets complying with ASTM C509, Type II, black; and of profile and hardness required to maintain watertight seal.
      1. GLAZING SEALANTS
         1. General:

Compatibility: Provide glazing sealants that are compatible with one another and with other materials they contact, including plastic glazing products and glazing channel substrates, under conditions of service and application, as demonstrated by sealant manufacturer based on testing and field experience.

Suitability: Comply with sealant and glass manufacturers' written instructions for selecting glazing sealants suitable for applications indicated and for conditions existing at time of installation.

Colors of Exposed Glazing Sealants: [**As indicated by manufacturer's designations**] [**Match Architect Director’s Representative's samples**] [**As selected by Architect Director’s Representative from manufacturer's full range**].

Retain one or more of four paragraphs below. If retaining more than one, retain "Applications" subparagraphs.

* + - * 1. Silicone, S, NS, 100/50, NT: Neutral-curing silicone glazing sealant complying with ASTM C920, Type S, Grade NS, Class 100/50, Use NT.

Applications: <Describe types of glazing applications where this sealant is required>.

* + - * 1. Silicone, S, NS, 50, NT: Neutral-curing silicone glazing sealant complying with ASTM C920, Type S, Grade NS, Class 50, Use NT.

Applications: <Describe types of glazing applications where this sealant is required>.

* + - * 1. Silicone, S, NS, 25, NT: Neutral-curing silicone glazing sealant complying with ASTM C920, Type S, Grade NS, Class 25, Use NT.

Applications: <Describe types of glazing applications where this sealant is required>.

* + - * 1. Silicone, Acid Curing, S, NS, 25, NT: Acid-curing silicone glazing sealant complying with ASTM C920, Type S, Grade NS, Class 25, Use NT.

Applications: <Describe types of glazing applications where this sealant is required>.

* + - 1. GLAZING TAPES
         1. Back-Bedding Mastic Glazing Tapes: Preformed, butyl-based, 100 percent solids elastomeric tape; nonstaining and nonmigrating in contact with nonporous surfaces; with or without spacer rod as recommended in writing by tape and glass manufacturers for application indicated; and complying with ASTM C1281 and AAMA 800 for products indicated below:

Retain one or more back-bedding tapes in three subparagraphs below. AAMA 804.3 tape is for less-severe back-bedding and drop-in residential and light-commercial glazing applications. AAMA 806.3 tape is for high-performance commercial glazing applications involving continuous pressure from gaskets or pressure-generating stop designs. AAMA 807.3 tape is for commercial glazing applications not involving continuous pressure from gaskets and stop designs.

AAMA 804.3 tape, where indicated.

AAMA 806.3 tape, for glazing applications in which tape is subject to continuous pressure.

AAMA 807.3 tape, for glazing applications in which tape is not subject to continuous pressure.

* + - * 1. Expanded Cellular Glazing Tapes: Closed-cell, PVC foam tapes; factory coated with adhesive on both surfaces; and complying with AAMA 800 for the following types:

AAMA 810.1, Type 1, for glazing applications in which tape acts as the primary sealant.

AAMA 810.1, Type 2, for glazing applications in which tape is used in combination with a full bead of liquid sealant.

* + - 1. MISCELLANEOUS GLAZING MATERIALS
         1. Compatibility: Provide products of material, size, and shape complying with requirements of manufacturers of plastic glazing and other glazing materials for application indicated, and with a proven record of compatibility with surfaces contacted in installation.
         2. Cleaners, Primers, and Sealers: Types recommended by sealant or gasket manufacturer.

Retain "Setting Blocks" Paragraphparagraph below if needed to prevent blockage of weep holes in sill channel.

* + - * 1. Setting Blocks: EPDM or silicone as required for compatibility with glazing sealant and plastic glazing, and of hardness recommended by plastic glazing manufacturer for application indicated.

Retain "Compressible Filler Rods" Paragraphparagraph below if required in glazing channels.

* + - * 1. Compressible Filler Rods: Closed cell of waterproof-jacketed rod stock of synthetic rubber or plastic foam, flexible and resilient, with 5- to 10-psi (35- to 70-kPa) compression strength for 25 percent deflection.
      1. FABRICATION
         1. Sizes: Fabricate plastic glazing to sizes required for openings indicated. Allow for thermal expansion and contraction of plastic glazing without restraint and without withdrawal of edges from frames, with edge clearances and tolerances complying with plastic glazing manufacturer's written instructions.

1. EXECUTION
   * + 1. EXAMINATION
          1. Examine plastic glazing framing, with glazing Installer present, for compliance with the following:

Manufacturing and installation tolerances, including those for size, squareness, and offsets at corners.

Minimum required face or edge clearances.

Effective sealing between joints of plastic glazing framing members.

* + - * 1. Proceed with glazing only after unsatisfactory conditions have been corrected.
      1. PREPARATION
         1. Clean glazing channels and other framing members immediately before glazing. Remove coatings not firmly bonded to substrates. Remove lacquer from metal surfaces where elastomeric sealants are indicated for use.
      2. GLAZING, GENERAL
         1. Comply with combined written instructions of manufacturers of plastic glazing materials, sealants, gaskets, and other glazing materials unless more stringent requirements are indicated, including those in referenced glazing publication.

Plastic glazing's higher coefficient of expansion and less rigidity than glass require a deeper glazing channel. Verify that glazing channels are dimensioned correctly to accommodate plastic glazing lites.

* + - * 1. Glazing channel dimensions indicated on Drawings are designed to provide the necessary bite on plastic glazing, minimum edge and face clearances, and adequate sealant thicknesses, with reasonable tolerances. Adjust plastic glazing lites during installation to ensure that bite is equal on all sides.
        2. Sand or scrape cut edges of plastic glazing to provide smooth edges, free of chips and hairline cracks.
        3. Remove burrs and other projections from glazing channel surfaces.
        4. Protect plastic glazing surfaces from abrasion and other damage during handling and installation, according to the following requirements:

Retain plastic glazing manufacturer's protective covering or protect by other methods according to plastic glazing manufacturer's written instructions.

Remove covering at border of each piece before glazing; remove remainder of covering immediately after installation where plastic glazing is exposed to sunlight or where other conditions make later removal difficult.

Remove damaged plastic glazing sheets from Project site and legally dispose of off-site. Damaged plastic glazing sheets are those containing imperfections that, when installed, result in weakened glazing and impaired performance and appearance.

* + - * 1. Apply primers to joint surfaces where required for adhesion of sealants, as determined by preconstruction sealant-substrate testing.
        2. Install elastomeric setting blocks in sill channels, sized and located to comply with referenced glazing publication, unless otherwise instructed by plastic glazing manufacturer. Set blocks in thin course of compatible sealant suitable for heel bead.
        3. Provide edge blocking to comply with referenced glazing publication unless otherwise instructed by plastic glazing manufacturer.

Retain both paragraphs below if glazing with wedge-shaped gaskets is required for Project.

* + - * 1. Where wedge-shaped gaskets are driven into one side of channel to pressurize sealant or gasket on opposite side, provide adequate anchorage so gasket cannot walk out when installation is subjected to movement.
        2. Square cut wedge-shaped gaskets at corners and install gaskets as recommended in writing by gasket manufacturer to prevent corners from pulling away; seal corner and butt joints with sealant recommended by gasket manufacturer.
      1. TAPE GLAZING
         1. Install tapes continuously, but not in one continuous length. Do not stretch tapes to make them fit opening.
         2. Cover vertical framing joints by applying tapes to heads and sills first, then to jambs. Cover horizontal framing joints by applying tapes to jambs, then to heads and sills.
         3. Place joints in tapes at corners of opening with adjoining lengths butted together, not lapped. Seal joints in tapes with compatible sealant recommended by tape manufacturer.
         4. Do not remove release paper from tape until immediately before each lite is installed.

Retain first paragraph below if required; if needed, revise by adding the phrase "where indicated" and indicate locations on Drawings or in schedules.

* + - * 1. Apply heel bead of glazing sealant.
        2. Center plastic glazing lites in openings on setting blocks and press firmly against tape by inserting dense compression gaskets formed and installed to lock in place against faces of removable stops. Start gasket applications at corners and work toward centers of openings.

Retain paragraph below if applicable; revise to suit Project. Paragraphparagraph assumes fixed stop is located on exterior.

* + - * 1. Apply cap bead of glazing sealant over exposed edge of tape.
      1. GASKET GLAZING (DRY)
         1. Fabricate compression gaskets in lengths recommended in writing by gasket manufacturer to fit openings exactly, with allowance for stretch during installation.
         2. Insert soft compression gasket between plastic glazing and frame or fixed stop so it is securely in place with joints miter cut and bonded together at corners.
         3. Center plastic glazing lites in openings on setting blocks and press firmly against soft compression gasket by inserting dense compression gaskets formed and installed to lock in place against faces of removable stops. Start gasket applications at corners and work toward centers of openings. Compress gaskets to produce a weathertight seal without developing bending stresses in plastic glazing. Seal gasket joints with sealant recommended by gasket manufacturer.
         4. Install gaskets so they protrude past face of glazing stops.
      2. SEALANT GLAZING (WET)
         1. Install continuous spacers between plastic glazing lites and glazing stops to maintain plastic glazing face clearances and to prevent sealant from extruding into glazing channel weep systems until sealants cure. Secure spacers in place and in position to control depth of installed sealant relative to edge clearance for optimum sealant performance.
         2. Force sealants into glazing channels to eliminate voids and to ensure complete wetting or bond of sealant to plastic glazing and channel surfaces.
         3. Tool exposed surfaces of sealants to provide a substantial wash away from plastic glazing.
      3. CLEANING AND PROTECTION
         1. Protect plastic glazing from contact with contaminating substances from construction operations. If, despite such protection, contaminating substances do come into contact with plastic glazing, remove immediately and wash plastic glazing according to plastic glazing manufacturer's written instructions.
         2. Remove and replace plastic glazing that is broken, chipped, cracked, abraded, or damaged in other ways during construction period, including natural causes, accidents, and vandalism.

Retain paragraph below to suit Project. Delete if covered in Section 017700 "Closeout Procedures."

* + - * 1. Wash plastic glazing on both faces before date scheduled for inspections intended to establish date of Substantial Completion in each area of Project. Wash plastic glazing according to plastic glazing manufacturer's written instructions.

END OF SECTION 088400