

SECTION 08842

POLYCARBONATE SHEET GLAZING (XL10)

PART GENERAL

SECTION INCLUDES

Plastic Glazing.

Accessories for installation of plastic glazing.

RELATED SECTIONS

Section 08800 - Glazing.

REFERENCES

16 CFR 1201 - Safety Standard for Architectural Glazing Materials.

ANSI Z97.1 - American National Standard for Glazing Materials Used in Buildings.

ASTM C 1045 - Standard Practice for Calculating Thermal Transmission Properties from Steady-State Heat Flux Measurements.

ASTM D 635 - Standard Test Method for Rate of Burning and/or Extent and Time of Burning of Self-Supporting Plastics in a Horizontal Position.

ASTM D 648 - Standard Test Method for Deflection Temperature of Plastics Under Flexural Load.

ASTM D 696 - Standard Test Method for Coefficient of Linear Thermal Expansion.

ASTM D 790/ASTM D 790M - Standard Test Method for Flexural Properties of Unreinforced and Reinforced Plastics and Electrical Insulating Materials.

ASTM D 1003 - Standard Test Method for Haze and Luminous Transmittance of Transparent Plastics.

ASTM D 1929 - Standard Test Method for Ignition Properties of

Plastics.

ASTM D 2843 - Standard Test Method for Density of Smoke from the Burning and Decomposition of Plastics.

ASTM D 4065 - Standard Practice for Determining and Reporting Dynamic Mechanical Properties of Plastics.

ASTM G 53 - Standard Practice for Operating Light and Exposure Apparatus (Fluorescent UV-Condensation Type) for Exposure of Non-Metallic Materials.

ISO 9002 - Quality System - Model for Quality Assurance in Production, Installation, and Servicing.

SYSTEM DESCRIPTION

Design requirements for installed plastic glazing systems:

Wind Resistance:

Positive pressure: ___ psf (___ kPa).

Negative pressure: ___ psf (___ kPa).

Wind Uplift: ___ psf (___ kPa).

Air infiltration: ___ cubic feet per minute (cu m/hr).

Water infiltration: ___ cubic feet per minute (___ cu m/hr).

Performance Requirements for Polycarbonate Sheet Glazing:

Comply with requirements of 16 CFR 1201 and ANSI Z97.1.

Weather resistance, when tested in accordance with ASTM G 53 for 3500 hours with QUV Weather Tester with 313B lamps:

Light transmission when tested in accordance with ASTM D 1003: Change not to exceed 2 percent.

Yellowness index (0-3500): Change not to exceed 4 percent.

Percent haze when tested in accordance with ASTM D 1003: Change not to exceed 10 percent.

Coating integrity intact after testing period.

Coefficient of expansion, when tested in accordance with ASTM D 696: 0.0000375 per degree F (0.0000675 per degree C).

Modulus of elasticity, when tested in accordance with ASTM D 4065: 340,000 pounds per square inch (2,344 MPa).

Flexural strength, when tested in accordance with ASTM D 790: 13,500 pounds per square inch (93 MPa).

Flammability Class: BOCA Class C1, UBC Class CC1, SBC Class CC1, Dade County Florida approved.

Deflection temperature, when tested in accordance with ASTM

D 648: 270 degrees F (132 degrees C) under 274 pounds per square inch (1.99 MPa) load.
Flammability, when tested in accordance with ASTM D 635:
Extent of burning 1 inch (25 mm) or less.
Ignition temperature, when tested in accordance with ASTM D 1929: 650 degrees F (343 degrees C) or greater.
Smoke density, when tested in accordance with ASTM D 2843:
75, maximum.
Allowable continuous service temperature: 250 degrees F (121 degrees C).

SUBMITTALS

Submit under provisions of Section 01300.

Product Data: Manufacturer's descriptive literature for each glazing type specified, including documentation of code compliance; include descriptive literature for recommended installation accessories.

Selection Samples: Two sets of color chips representing manufacturer's full range of available colors.

Verification Samples: Two samples, minimum size 6 inches square, representing actual color and finish of products to be installed.

Quality Control Submittals:

Design Data: System analysis by manufacturer verifying compliance of plastic glazing assemblies to specified design requirements; include details of glazing edge engagement, and allowance for anticipated thermal movements.

Manufacturer Qualifications: Documentation of specified manufacturer qualifications.

Manufacturer's Instructions: Printed installation instructions for plastic glazing; include recommended glazing techniques and installation accessories.

Operation and maintenance data: Printed instructions on recommended cleaning and maintenance materials and methods.

Warranty documents: Issued and executed by manufacturer.

QUALITY ASSURANCE

Manufacturer Qualifications:

Minimum ten (10) years experience producing plastic glazing

products.

Minimum five (5) completed projects on which manufacturer has supplied plastic glazing, similar in type and scope to this project; each completed project to be minimum five (5) years old.

ISO 9002 registered.

Regulatory Requirements: Glazing materials to comply with the following building code:

BOCA Class C1.

ICBO Class CC1.

SBCCI Class CC1.

Dade County FL.

Mock-Ups: Supply materials for mock-ups required in affected sections.

DELIVERY, STORAGE, AND HANDLING

Do not slide, drag, or drop polycarbonate sheet materials.

Do not store polycarbonate sheet materials in areas subject to direct UV exposure.

Store products of this section with manufacturer's protective film intact.

Maintain storage area in accordance with plastic glazing manufacturer's instructions until installation of products.

WARRANTY

Manufacturer's Warranty: Ten (10) year warranty against defects in materials, including breakage, discoloration, loss of light transmission, and coating delamination.

PART PRODUCTS

MANUFACTURERS

Acceptable Manufacturer: GE Plastics Structured Products; One Plastics Avenue, Pittsfield, MA 01201. ASD. Tel: (800) 752-7674, extension 8234; Fax: (413) 448-5478.

Requests for substitution will be considered in accordance with

provisions of Section 01600.

Substitutions: Not permitted.

MATERIALS

Polycarbonate Sheet Glazing: LEXAN(R) XL10 translucent thermoformable polycarbonate sheet with UV-resistant surface treatment.

Sheet thickness: ___ inch (___ mm) nominal, plus or minus 5 percent.

Color: _____.

Light transmission: ___ percent.

Shading coefficient: _____.

Insulating value (U-value): _____ (___ metric equivalent), as determined by calculations based on test data, in accordance with ASHRAE procedures.

Accessories: Supply joint sealers and installation accessories specified in polycarbonate sheet manufacturer's instructions, or approved by polycarbonate sheet manufacturer, for indicated installation conditions.

PART EXECUTION

EXAMINATION

Verification of Conditions:

Openings are in accordance with approved shop drawings required in Section 08800 and polycarbonate sheet manufacturer's instructions, and are plumb and level to required tolerances.

Glazing channels or recesses are sized for correct glazing edge engagement.

PREPARATION

Clean glazing channels or recesses free of obstructions, soil, debris, and other materials.

Seal porous glazing channels or recesses with primer-sealer compatible with substrate and polycarbonate sheet materials.

Cut polycarbonate sheet materials to exact sizes required, with

clean edges free of notches; clean contact edges with solvent compatible with polycarbonate sheet materials, as specified or approved by polycarbonate sheet manufacturer.

INSTALLATION

Install plastic glazing in accordance with polycarbonate sheet manufacturer's instructions.

Do not use glazing accessories not specified or approved by polycarbonate sheet manufacturer.

CLEANING

Immediately after completing construction activities relating to installation of polycarbonate sheet materials, remove remainder of strippable masking from surfaces of polycarbonate sheet glazing; do not expose masking to sunlight for an extended period of time.

Immediately after removing masking, clean glazing in accordance with polycarbonate sheet manufacturer's instructions:

Rinse surface with lukewarm water.

Wash surface with mild soap and lukewarm water.

Use soft cloth or sponge gently to loosen dirt and grime; scrubbing glazing surfaces, or using squeegee on glazing surfaces, is not permitted.

Repeat rinse as above, then wipe surface dry with soft cloth until surfaces are spotless and dry.

PROTECTION OF INSTALLED PRODUCTS

Immediately after cleaning, cover polycarbonate sheet glazing surfaces with polyethylene sheeting, or other covering material approved by polycarbonate sheet manufacturer; secure covering in place by taping to framing members - do not tape covering to polycarbonate sheet materials.

Protect installed glazing from damage to function or finish by subsequent construction activities.

Repair minor damage to finishes in accordance with polycarbonate sheet manufacturer's recommendations.

Replace glazing having damage to function, and glazing having damage to finishes which cannot be repaired to Architect's acceptance.

END OF SECTION