



SECTION 08840

MULTIWALL POLYCARBONATE GLAZING SHEETS AND SYSTEMS

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PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Polycarbonate wall panel systems.
- B. Polycarbonate roof panel systems.
- C. Polycarbonate wall panels.
- D. Polycarbonate roof panels.
- E. Polycarbonate glazing sheets.

1.2 RELATED SECTIONS

- A. Section 07920 - Joint Sealants.
- B. Section 08520 - Aluminum Windows.
- C. Section 08800 - Glazing.
- D. Section 08910 - Metal - Framed Curtain Wall.

1.3 REFERENCES

- A. ASTM International (ASTM):
 1. ASTM D 635 - Standard Test Method for Rate of Burning and/or Extent and Time of Burning of Plastics in a Horizontal Position.
 2. ASTM D 1003 - Standard Test Method for Haze and Luminous Transmittance of Transparent Plastics.
 3. ASTM D 1925 - Test Method for Yellowness Index of Plastics.
 4. ASTM D 1929 - Standard Test Method for Determining Ignition Temperature of Plastics.
 5. ASTM D 2244 - Standard Practice for Calculation of Color Tolerances and Color Differences from Instrumentally Measured Color Coordinates.
 6. ASTM D 2843 - Standard Test Method for Density of Smoke from the Burning or Decomposition of Plastics.
 7. ASTM D 4364 - Standard Practice for Performing Outdoor Accelerated Weathering Tests of Plastics Using Concentrated Sunlight.
 8. ASTM E 84 - Standard Test Method for Surface Burning Characteristics of Building Materials.

9. ASTM E 283 - Standard Test Method for Determining the Rate of Air Leakage Through Exterior Windows, Curtain Walls, and Doors Under Specified Pressure Differences Across the Specimen.
10. ASTM E 330 - Standard Test Method for Structural Performance of Exterior Windows, Curtain Walls, and Doors by Uniform Static Air Pressure Difference.
11. ASTM E 331 - Standard Test Method for Water Penetration of Exterior Windows, Skylights, Doors, and Curtain Walls by Uniform Static Air Pressure Difference.

1.4 SUBMITTALS

- A. Submit under provisions of Section 01300.
- B. Product Data: Manufacturer's data sheets on each product to be used, including:
 1. Preparation instructions and recommendations.
 2. Storage and handling requirements and recommendations.
 3. Installation methods.
- C. Shop Drawings:
 1. Provide drawings containing plan, section, elevation and perspective views as necessary to depict proper design, fabrication and installation methods.
 2. Provide joining and flashing details for each condition found on the project.
- D. Selection Samples: For each finish product specified, two complete sets of color chips representing manufacturer's full range of available colors and patterns.
- E. Verification Samples: For each finish product specified, two samples, minimum size 6 inches (150 mm) square representing actual product, color, and patterns.

1.5 DELIVERY, STORAGE, AND HANDLING

- A. All CO-EX panels are supplied with a protective polyethylene film which should not be removed until the panel is fastened.
- B. Crates or sheets should be stored in indoors and not exposed to direct heat or light which could make removal of protective film difficult.

1.6 PROJECT CONDITIONS

- A. Maintain environmental conditions (temperature, humidity, and ventilation) within limits recommended by manufacturer for optimum results. Do not install products under environmental conditions outside manufacturer's absolute limits.

1.7 WARRANTY

- A. Manufacturer's Warranty: 10 years from date of invoice. When CO-EX elects to compensate the user for the sheet which is found to have failed the warranty, the amount to be paid will be calculated on the basis of the purchase price paid by the user: 100 percent of the price for the first 5 years from the invoice date; the amount to be paid will be 100 percent. During the period of 5-10 years from the invoice date, the amount of the invoice price will be reduced by 1/20 for each six month period. After ten years, there will be no further deduction.

PART 2 PRODUCTS

2.1 MANUFACTURERS

- A. Acceptable Manufacturer: CO-EX Corporation, which is located at: 5 Alexander

Dr. ; Wallingford, CT 06492; Toll Free Tel: 800-888-5364; Tel: 203-679-0500; Fax: 203-679-0600; Email: [request info \(sstpierre@co-excorp.com\)](mailto:requestinfo@sstpierre@co-excorp.com); Web: www.co-excorp.com

- B. Substitutions: Not permitted.
- C. Requests for substitutions will be considered in accordance with provisions of Section 01600.

2.2 PERFORMANCE REQUIREMENTS

- A. Panel Flammability:
 - 1. Interior Flame Spread Classification: Less than 450 in accordance with ASTM E 84.
 - 2. Flame Spread: Less than 25 in accordance with ASTM E 84.
 - 3. Smoke Density: Less than 75 in accordance with ASTM D 2843.
 - 4. Self-Ignition Temperature: Less than 1000 degrees F (538 degrees C) in accordance with ASTM D 1929 and self-extinguishing.
- B. Panel Weatherability:
 - 1. Panels must receive less than 5.0 units (Delta-E of ASTM D 2244) after 60 months outdoor weathering in Arizona determined by an average of at least two samples.
 - 2. Color Change: Less than 0.75 - Delta E in accordance with ASTM D 2244.
 - 3. Darkening:
 - a. Delta L: Less than 0.3 units in accordance with ASTM D 2244.
 - b. Delta Y: Less than 0.2 units Delta Y in accordance with ASTM D 1925.
 - c. Cracking / Crazeing: None when exposed to 300 degrees F (149 degrees C) for 25 minutes.
- C. Panel Thermal Performance: U-Factor calculated per European standard.

2.3 FIVE WALL POLYCARBONATE PANELS

- A. 5/8 inch (16 mm) Macrolux Multiwall Panel:
 - 1. Wall Type: 5 Wall.
 - 2. Rib Spacing: 0.787 inch (20 mm).
 - 3. Weight: 0.57 Lbs / sq ft.
 - 4. Light Transmission (ASTM D 1003):
 - a. Clear: 62 percent.
 - 5. U-Factor: 0.34 BTU/ft² h F.
 - 6. R-Value (1/U): 2.98 ft² h F/BTU.
 - 7. K-Factor: 1.9 (W/m²K).

END OF SECTION