

SECTION 088400 – TRANSLUCENT RESIN PANEL SYSTEM

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes:
 - 1. Polycarbonate plastic glazing.
 - 2. Enhanced UV-resistant polycarbonate plastic glazing.
 - 3. Laminated polycarbonate plastic glazing.

1.2 REFERENCES

- A. ANSI Z 97.1 - American National Standard for Glazing Materials Used in Buildings -- Safety Performance Specifications and Methods of Test.
- B. ASTM D 256 - Standard Test Method for Determining the Pendulum Impact Resistance of Notched Specimens of Plastics.
- C. ASTM D 638 - Standard Test Method for Tensile Properties of Plastics.
- D. ASTM D 790 - Standard Test Methods for Flexural Properties of Unreinforced and Reinforced Plastics and Electrical Insulating Materials.
- E. ASTM D 1929 - Standard Test Method for Ignition Properties of Plastics.
- F. ASTM D 635 – Standard Test Method for Rate of Building and/or Extent and Time of Burning of Plastics in a Horizontal Position.
- G. ASTM E 84 – Standard Test Method for Surface Burning Characteristics of Building Materials
- H. CAN/ULC 102.2 – Standard Method of Test for Surface Burning Characteristics of Flooring, Floor Coverings, and Miscellaneous Materials and Assemblies.

1.3 SUBMITTALS

- A. General: Submit the following in accordance with conditions of contract and Division 1 specification section 01 33 00 "Submittal Procedures".
- B. Product Data: Submit manufacturer's product data; including product description, fabrication information, and compliance with specified performance requirements.
- C. Submit product test reports from a qualified independent 3rd party testing agency indicating each type and class of panel system complies with the project performance requirements, based on comprehensive testing of current products. Previously completed

test reports will be acceptable if for current manufacturer and indicative of products used on this project.

1. Test reports required are:
 - a. Rate of Burning (ASTM D 635)
 - b. Self-Ignition Temperature (ASTM D 1929)
 - c. Flame Spread and Smoke Developed (ASTM E 84)
 - d. Impact Strength (ASTM D 3763)
 - e. Safety Glazing and Impact Strength (ANSI Z97.1-2004)

D. Samples for Initial Selection:

1. Submit minimum 2-inch by 2-inch samples. Indicate full color.

E. Samples for Verification:

1. Submit minimum 4-inch by 4-inch sample for each type and color of solid plastic fabrication.

F. Mockups:

1. Build mockups to verify selections made under sample Submittals and to demonstrate aesthetic effects.
2. Build mockup of [each type of] Plastic Fabrication.
3. Approved mockups may become part of the completed work if undistributed at time of Substantial Completion.

G. Maintenance Data: Submit manufacturer's care and maintenance data, including care, repair and cleaning instructions. Include in Project closeout documents.

1.4 QUALITY ASSURANCE

A. Manufacturer's Qualifications

1. Materials and systems shall be manufactured by a company continuously and regularly employed in the manufacture of specified materials for a period of at least five (5) consecutive years and which can show evidence of those materials being satisfactory used on at least six (6) projects of similar size, scope and location.
2. Manufacturer must have documented training and qualification program for fabrication and installation of plastic fabrications.

1.5 DELIVERY, STORAGE, AND HANDLING

- A. Deliver Plastic Fabrications, systems and specified items in manufacturer's standard protective masking.
- B. Store materials in a flat orientation in a dry place that is not exposed to exterior elements.
- C. Handle materials to prevent damage to finished surfaces.
- D. Before installing Plastic Fabrications, permit them to reach room temperature.

- E. Do not deliver Plastic Fabrications, systems, components and accessories to Project site until areas are ready for installation.

1.6 WARRANTY

- A. Manufacturer's Special Warranty on Plastic Fabrications: Manufacturer's standard form agreeing to repair or replace units that fail in material or workmanship within the specified warranty period.
- B. Warranty Period: 5 years from ship date.
- C. The warranty shall not deprive the owner of other rights or remedies the Owner may have under provisions of the Contract Documents, and is in addition to and runs concurrent with other warranties made by the Contractor under the requirements of the Contract Documents.

Part 2 – PRODUCTS

2.1 MANUFACTURER

- A. Manufacturer: 3form, Inc., Salt Lake City, Utah, USA / telephone 801-649-2500

2.2 MATERIALS

- A. Koda XT produced from polycarbonate sheet
 - 1. Engineered polycarbonate resin
 - 2. Sheet Size: Maximum 4'x10'
 - 3. Thickness: Minimum ¼"
 - 4. Basis of Design Product: The design of Plastic Fabrications is based on Koda XT as provided by 3form, Inc. Products from other manufacturers must be approved by the Architect and Designer prior to bidding in accordance with the Instructions to Bidders and Section 10 60 00 "Product Requirements".
- B. Sheet Minimum Performance Attributes:
 - Rate of Burning (ASTM D 635). Material must attain CC1 Rating for a nominal thickness of 1.5 mm (0.060 in.) and greater.
 - 1. Self-Ignition Temperature (ASTM D 1929). Material must have a Self-Ignition Temperature greater than 650°F.
 - 2. Flame Spread and Smoke developed testing (ASTM E 84). Material must be able to meet a level of Class B (Flame spread less than 75 and smoke less than 450) at thickness of ½".
 - 3. Impact Strength. Minimum impact strength test as measured by ASTM D 3763 of 20 ft. lbs. (for durability, shipping, installation, and use).
 - 4. Safety Glazing. Material must attain a Class A impact rating in accordance with ANSI Z97.1-2004.

C. Interlayer Materials:

1. C3 Color: Play with 50,000 options in the core color palette. Combine colors up to three layers deep to control the hue, intensity and translucency, creating an exciting range of exact color specifications.
2. HighRes: Translucent high resolution imagery.

2.3 FABRICATION

General: Fabricate Plastic Fabrications to designs, sizes and thicknesses indicated and to comply with indicated standards. Sizes, profiles and other characteristics are indicated on the drawings.

- I. Comply with manufacturer's written recommendations for fabrication.
- J. Machining: Acceptable means of machining are listed below. Ensure that material is not chipped or warped by machining operations.
 1. Sawing: Select equipment and blades suitable for type of cut required.
 2. Drilling: Drills specifically designed for use with plastic products.
 3. Milling: Climb cut where possible.
 4. Routing
 5. Tapping
- K. Forming: Form products to shapes indicated using the appropriate method listed below. Comply with manufacturer's written instructions.
 1. Cold Bending
 2. Hot Bending
- L. Laminating: Laminate to substrates indicated using adhesives and techniques recommended by manufacturer.

2.4 ACCESSORIES

- A. Gaskets shall be as per manufacturer's standards to meet performance criteria.
- B. Fasteners shall be per manufacturer's standards to meet performance requirements.

2.5 MISCELLANEOUS MATERIALS

- A. General: Provide products of material, size, and shape required for application indicated, and with a proven record of compatibility with surfaces contacted in installation.
- B. Cleaner: Type recommended by manufacturer.
- C. Fasteners: Use screws designed specifically for plastics.

PART 3 – EXECUTION

3.1 EXAMINATION

- A. Examine substrates, areas, and conditions where installation of Plastic Fabrications will occur, with Installer present, for compliance with manufacturer's requirements. Verify that substrates and conditions are satisfactory for installation and comply with requirements specified.

3.2 INSTALLATION

- A. General: Comply with manufacturer's written instructions for the installation of Plastic Fabrications.
- B. Manufacturer's shop to fabricate items to the greatest degree possible.
- C. Utilize all fasteners recommended by manufacturer for type of installation indicated. Material that is chipped, warped, hazed or discolored as a result of installation or fabrication methods will be rejected.
- D. Install components plumb, level and rigid, scribed to adjacent finishes, in accordance with approved shop drawings and product data.

We recommend that installation is completed by a 3form Certified Installer. Contact 3form for more information or to get a quote.

3.3 CLEANING AND PROTECTION

- M. Protect surfaces from damage until date of substantial completion. Repair work or replace damaged work, which cannot be repaired to Architect's satisfaction period.

END OF SECTION 088400