

**SECTION 06 06 60
TRANSLUCENT RESIN PANEL SYSTEM**

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification sections, apply to this Section

1.2 SUMMARY

- A. This Section includes the Resin Fabrication as shown and specified in the described system(s):
1. Appliqués
 2. Backsplashes
 3. Balustrade Panels
 4. Bar Fronts
 5. Bus Shelters
 6. Cabinet Doors
 7. Ceiling Panels
 8. Closet Doors
 9. Decorative Wall Panels
 10. Door Lights
 11. Doors
 12. Elevator Cabs
 13. Feature Wall
 14. Flooring
 15. Furniture
 16. Lighting
 17. Partitions
 18. Projection Screens
 19. Retail Shelving
 20. Sculpture
 21. Shower Doors and Enclosures
 22. Side Lights
 23. Signage
 24. Tabletops
 25. Transaction Tops
 26. Vanity Tops
 27. Wall Cladding
 - a. Opaque
 - b. Back Lit
 28. Wall Panels
 - a. Opaque
 - b. Back Lit
 29. Wall Sculpture
 30. Whiteboards
 31. Worktops
- B. Related Sections include the following:
1. Section 06 06 20 Schedules for Finish Carpentry
 - Section 06 06 40 Schedules for Architectural Woodwork
 - Section 06 06 50 Schedules for Structural Resins
 - Section 06 06 60 Schedules for Resin Fabrications
 - Section 06 06 70 Schedules for Structural Composites
 - Section 06 06 80 Schedules for Composite Assemblies
 - Section 06 64 00 Plastic Paneling

2. Section 07 42 33 Plastic Wall Panels
3. Section 08 15 00 Plastic Doors
Section 08 84 00 Plastic Glazing
4. Section 09 53 33 Plastic Acoustical Ceiling Suspension Assemblies
5. Section 10 14 00 Signage
Section 10 21 00 Compartments and Cubicles
Section 10 22 00 Partitions
Section 10 26 00 Wall and Door Protection
6. Section 12 36 00 Countertops

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: Indicate product description, fabrication information, and compliance with specified performance requirements.
- C. Submit material test results or certifications indicating each type and class of panel system complies with the project performance requirements
 1. Test results required are:
 - a. Tensile Strength (ASTM D 638)
 - b. Tensile Modulus (ASTM D 638)
 - c. Flexural Strength (ASTM D 790)
 - d. Flexural Modulus (ASTM D 790)
 - e. Rate of Burning (ASTM D 635)
 - f. Density of Smoke (ASTM D 2843)
 - g. Impact Strength (ASTM D 256)
 - h. Abrasion Resistance (ASTM D 1044)
 - i. Max Continuous Service Temperature
 - j. Coefficient of Thermal Expansion (ASTM D 696)
 - k. Thermal Conductivity (ASTM C 177)
 2. Certifications
 - a. Certified Recycled Content
- D. Samples for Initial Selection:
 1. Submit minimum 3.5 inch by 3.5 inch samples.
 2. Indicate full color, texture, and pattern variation.
 3. Approved samples will be retained as standards for work.
- E. Samples for Verification:
 1. Submit minimum 8 inch by 8 inch sample for each type, texture, pattern and color of Resin.
- F. Mockups:
 1. Build mockups to verify selections made under sample submittals and to demonstrate aesthetic effects.
 2. Approved mockups may become part of the completed work if undisturbed 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. Manufacturer must demonstrate leadership in the field of resin encapsulation with patents or similar proof of ownership of intellectual property or expertise.
 2. 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 7 consecutive years.
 3. Manufacturer must offer access to a network of recycling centers nationwide to recycle panels at the end of life with minimal travel distance to reduce

carbon impact. Return process is preceded by the requirements in Section 02 42 00 Removal and Salvage of Construction Materials.

B. Material Properties

1. Minimum light transmission of 92% through clear resin portion of panel.
2. Minimum tensile modulus of 490,000 psi.
3. Resin will not yellow or degrade with exposure to sunlight.

C. Performance Criteria

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| 1. Tensile Strength (ASTM D 638) | Minimum 11,000 psi |
| 2. Tensile Modulus (ASTM D 638) | Minimum 490,000 psi |
| 3. Flexural Strength (ASTM D 790) | Minimum 17,000 psi |
| 4. Flexural Modulus (ASTM D 790) | Minimum 490,000 psi |
| 5. Rate of Burning (ASTM D 635): | CC2 |
| 6. Density of Smoke (ASTM D 2843) | Maximum 5% |
| 7. Impact Strength (ASTM D 256) | Minimum .28 ft-lb/in notch |
| 8. Abrasion Resistance (ASTM D 1044) | Maximum 25% @ 200 cycles |
| 9. Max Continuous Service Temperature | 170°F |
| 10. Coef of Thermal Expansion (ASTM D 696) | Maximum 3.0x10e-5 in/(in-°F) |
| 11. Thermal Conductivity (ASTM C 177) | Maximum 0.90 BTU-in/(hr-ft ² -°F) |

D. Certification Requirements

1. Certified Recycled Content Minimum 50% Post Industrial

E. Manufacturer to have available qualified installers/fabricators upon demand.

F. Allowable Tolerances:

1. Flatness: 1/16" maximum deviation over 12"
2. Thickness: ±10%
3. Height/Width: ±1/2"

1.5 DELIVERY, STORAGE, AND HANDLING

- A. Deliver no components to project site until areas are ready for installation.
- B. Handle materials to prevent damage to finished surfaces and edges.
- C. Keep protective masking in place while fabricating.
- D. Provide protective coverings to prevent damage or staining following installation for duration of project.
- E. Store components on edge, fully supported at 10 off vertical, indoors where atmospheric conditions are controlled to avoid temperature extremes and exposure to ultraviolet light and moisture.
- F. Follow Manufactures recommendations for storage and handling.
- G. Before installing Resin Fabrications, permit them to reach room temperature.

1.6 PROJECT CONDITIONS

- A. Environmental Limitations: Do not install Resin Fabrications until spaces are enclosed and weatherproof, and ambient temperatures and humidity conditions are maintained at the levels indicated for Project when occupied for its intended use.

1.7 WARRANTY

- A. Provide manufacturers 1 year warranty against defects in materials. Warranty shall provide material to repair, or replace, defective materials.
- B. The warranty shall not deprive the owner of other rights or remedies the Owner may have under other 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 MANUFACTURERS

- A. Manufacturer:

1. Lumicor, Inc., Renton, WA, USA / 888-LUMICOR / www.lumicor.com

B. Local Sales Representative contact information:

2.2 MATERIALS

A. Material: Lumiclear™.

1. Acrylic resin with a minimum of 50% post industrial recycled content.
2. Sheet Size: Standard 4' x 8', maximum 4' x 10'.
3. Thickness: Minimum 1/8", maximum 1"
4. Finishes: Gloss, Matte, Sandstone, Adobe, Frost, Satin, Diffusion or Moire
5. Options:
 - a. Illume™ (light diffusing layer)
 - b. Chemshield™ (highly chemical resistant layer)
 - c. UV Block™ (UV protection layer)
 - d. Opaque™ (light blocking layer)
6. Basis of Design Product: The design of Resin Fabrications is based on patented Lumiclear™ panels as provided by Lumicor, Inc. Products from other manufacturers must be approved by the Architect or Designer prior to bidding in accordance with the Instructions to Bidders and Section 10 60 00 "Product Requirements".

B. Description:

Minimum [thickness per Lumicor recommendation] Lumiclear™, _____ color, _____ part number, cut to size, edge sealed per Lumicor Fabrication Guide, and installed per architect's drawings.

C. Interlayer Materials: Compatible with acrylic and bonding process to create a monolithic sheet of material when complete.

2.3 FABRICATION

- A. General: Fabricate Resin Fabrications to designs, sizes and thicknesses indicated and to comply with indicated standards. Sizes, profiles and other characteristics are indicated on the drawings.
- B. Comply with manufacturer's written recommendations for fabrication.
- C. 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 Resin products.
 3. Milling: Climb cut where possible.
 4. Routing
- D. Forming: Form products to shapes indicated using the appropriate method listed below. Comply with manufacturer's written instructions.
 1. Cold Bending
 2. Hot Bending
 3. Thermoforming
 4. Drape Forming
 5. Matched Mold Forming
 6. Mechanical Forming
- E. Laminating: Laminate to substrates indicated using adhesives and techniques recommended by manufacturer.

2.4 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: Mild soap and water or common acrylic cleaners such as Novus or Gel-Gloss.
- C. Fasteners: Use screws designed specifically for Resins. Provide threaded metal or nylon inserts for applications requiring frequent disassembly such as light fixtures.
- D. Bonding Cements: Solvent or adhesives, suitable for use with product and application.
- E. Drilled Panel Wall Anchors: As provided by the manufacturer. Provide extensions to accommodate thicknesses scheduled or illustrated.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine substrates, areas, and conditions where installation of Resin 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 Resin Fabrications. Directions for Lumiclear™ materials can be found at <http://www.lumicor.com/technical-information/>.
- B. Shop fabricates items to the greatest degree possible.
- C. Utilize fasteners, adhesives and bonding agents 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.
- E. Form field joints using manufacturer's recommended procedures. Locate seams in panels so that they are not directly in line with seams in substrates.
- F. Adhere sinks and lavatory bowls to tops using manufacturer's recommended procedures.

3.3 CLEANING AND PROTECTION

- A. Protect surfaces from damage until date of substantial completion. Repair work or replace damaged work, which cannot be repaired to Architect's satisfaction. Refinishing instructions for Lumiclear™ products can be found at <http://www.lumicor.com/technical-information/>.

End of Section 06 06 60

PRODUCT DATA SHEET 1 - Resin Fabrication #1 (SPF-1)

Product: [Replace with Collection and product name]
Color: [Replace with decor name]
Gauge: [1/8"] [3/16"] [1/4"] [3/8"] [1/2"] [3/4"] [1"] [As indicated on drawings] [As required to meet deflection requirements]
Surface Finish: [Matte], [Frost], [Diffusion], [Gloss], [Satin], [Sandstone], [Moire], [Stucco], and [Brushed]
UV Protection: [Required] [Not Required]
Light Diffuser Layer: [Required] [Not Required]
Opaque Backing: [Required] [Not Required]
Edge Seal: [Not Required] [Required]
Orientation: [Horizontal] [Vertical]