



1873 Williamstown Drive
St. Peters, Missouri 63376
P. 888.736.2726
P. 636.978.7781
Fax. 636.978.7782

www.arcoplast.com

SECTION 06610 (06 83 00)
Product Guide Specification
GLASS-FIBER REINFORCED COMPOSITE PANELS

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Glass-fiber reinforced composite panels for interior walls.
- B. Glass-fiber reinforced composite panels for ceilings.

1.2 RELATED SECTIONS

- A. Section 07920 (07 92 00) - Joint Sealants.
- B. Section 08220 (08 16 13) - Fiberglass Doors.
- C. Section 08560 (08 54 13) - Fiberglass Windows.
- D. Section 09500 (09 50 00) - Ceilings.
- E. Section 10600 (10 22 00) - Partitions.

1.3 REFERENCES

- A. ASTM C 364 - Standard Test Method for Edgewise Compressive Strength of Sandwich Constructions.
- B. ASTM C 393 - Standard Test Method for Flexural Properties of Sandwich Constructions.
- C. ASTM D 523 - Standard Test Method for Specular Gloss.
- D. ASTM D 638 - Standard Test Method for Tensile Properties of Plastics.
- E. ASTM D 695 - Standard Test Method for Compressive Properties of Rigid Plastics.
- F. ASTM D 696 - Standard Test Method for Coefficient of Linear Thermal Expansion of Plastics Between -30°C and 30°C With a Vitreous Silica Dilatometer.
- G. ASTM D 790 - Standard Test Methods for Flexural Properties of Unreinforced and Reinforced Plastics and Electrical Insulating Materials.
- H. ASTM D 1621 - Standard Test Method for Compressive Properties Of Rigid Cellular Plastics.
- I. ASTM D 2583 - Standard Test Method for Indentation Hardness of Rigid Plastics by Means of a Barcol Impressor.
- J. ASTM E 84 - Surface Burning Characteristics of Building Materials.
- K. ASTM E 96 - Standard Test Methods for Water Vapor Transmission of Materials.
- L. Canadian Military Standard (Mils) 1073.2 - Impact Resistance Test.
- M. New York City MEA Approval 414-04-M - University of Pittsburgh Test Protocol for Measurement of Acute Lethality of Thermal Decomposition Products from Specimen.

1.4 SUBMITTALS

- A. Comply with Section 01330 - Submittal Procedures.

- B. Product Data:** Submit manufacturer's product data including installation instructions.
- C. Shop Drawings:** Submit manufacturer's shop drawings, including plans, elevations, sections, and details, indicating composite panels, battens, wall base, joints, radius joint finish at wall-to-wall and wall-to-ceiling junctions, mastic or tape adhesive, and attachment screws.

1. Indicate size and location of wall openings and penetrations.
2. Indicate items to be supported by walls. Include loads.
3. Indicate method of sealing joints, openings, and penetrations.

- D. Samples:** Submit manufacturer's samples.

1. Composite panels.
2. Battens.
3. Wall base.
4. Attachment screws.
5. Finishing compound.

- E. Manufacturer's Certification:** Submit manufacturer's certification that materials comply with specified requirements and are suitable for intended application.

- F. Warranty:** Submit manufacturer's standard warranty.

1.5 DELIVERY, STORAGE, AND HANDLING

- A. Delivery:** Deliver materials to site in manufacturer's original, unopened containers and packaging, with labels clearly identifying product name and manufacturer.

- B. Storage:**

1. Store materials in clean, dry area indoors in accordance with manufacturer's instructions.
2. Composite Panels: Store flat.
3. Finishing Compound: Store for a maximum of 6 months from date of shipment at temperature of 50 degrees F to 80 degrees F (10 degrees C to 27 degrees C).

- C. Handling:** Protect materials and finish from damage during handling and installation in accordance with manufacturer's instructions.

1.6 ENVIRONMENTAL REQUIREMENTS

- A.** Do not install materials until building is enclosed and areas to receive materials are protected from dirt and dust.

- B.** Maintain the following conditions during and after installation in areas to receive materials.

1. Minimum Temperature: 60 degrees F (15 degrees C).
2. Relative Humidity: 20 to 40 percent.

PART 2 PRODUCTS

2.1 MANUFACTURER

- A.** Arcoplast, 1873 Williamstown Drive, St. Peters, Missouri 63376. Toll Free (888) 736-2726. Phone (636) 978-7781. Fax (636) 978-7782. Web Site www.arcoplast.com.

2.2 GLASS-FIBER REINFORCED COMPOSITE PANELS

A. Composite Panels: Arcoplast Glass-Fiber Reinforced Composite Panels.

1. Panels: Polymer-faced cement core.
 - a. Panel Thickness: [1/4 inch (6 mm)] [3/8 inch (9.5 mm)] [1/2 inch (12.5 mm)] [As indicated on the Drawings].
2. Panels: Foam core with polymer-faced cement core.
 - a. Foam Core: Polyisocyanurate closed cell, Class A rigid foam insulation board. Density of 2 pounds per cubic foot.
 - b. Panel Thickness: [2 inches (51 mm)] [3 inches (76 mm)] [4 inches (102 mm)] [As indicated on the Drawings].
3. Facing: Chopped glass-fiber mat, 1.5 ounces per square foot, embedded in permanently durable polymer resin covered by hard, high-gloss, polymer gel-coat finish on exposed side.
4. Color: [White] [_____].

B. Properties of Cement Core Panels: 3/8-inch (9.5-mm) thickness.

1. Tensile Strength, ASTM D 638: 5,732 psi.
2. Tensile Modulus, ASTM D 638: 0.3119 Mpsi.
3. Flexural Strength, ASTM D 790: 11,407 psi.
4. Flexural Modulus, ASTM D 790: 0.8179 Mpsi.
5. Compressive Strength, ASTM D 695: 7,431 psi.
6. Compressive Modulus, ASTM D 695: 1,973 Mpsi.
7. Barcol Hardness, ASTM D 2583: 35.8.
8. Water Vapor Transmission, ASTM E 96: Less than 0.01 perms, 73 degrees F at 50 percent relative humidity.
9. Surface Burning Characteristics, ASTM E 84, Whole Panel, Class A:
 - a. Flame Spread Index: 19.
 - b. Smoke Development: 278.
10. Gloss Property, ASTM D 523: 97.3 reflectance at 85-degree light source.
11. Impact Resistance Test, Mils 1073.2: No damage on impact from 2-pound (1-kg) steel ball dropped 11 feet (3.35 m).
12. Coefficient of Linear Thermal Expansion, ASTM D 696: $31.4 \text{ in/in } ^\circ\text{F} \times 10^\circ - 50^\circ\text{F} - 104^\circ\text{F}$.
13. Approval: New York City MEA Approval 414-04-M.

C. Properties of Polyisocyanurate Core: 3-inch (76-mm) thickness.

1. Core Compression Strength, ASTM D 1621: 25 psi (170 kPa).
2. Sandwich Compression Strength, ASTM C 364: 4,200 psi (16 MPa).
3. Flexural Rigidity, D-Value, ASTM C 393: 4 x 10 pound-force inch.
4. Core Shear Strength: 28 psi (193 kPa).
5. Shear Modulus: 255 psi (1.76 MPa).
6. Barcol Hardness, ASTM D 2583: 35.8.
7. Impact Resistance: No damage on impact from 2-pound (1-kg) steel ball dropped 11'-0" (3.35 m).
8. Gloss Property, ASTM D523: 97.3 reflectance at 85-degree light source.
9. Temperature Range: Minus 22 to 180 degrees F (Minus 30 to 82 degrees C).
10. Water Vapor Transmission, ASTM E 96: Less than 0.01 perms, 73 degrees F at 50 percent relative humidity.
11. Impact Resistance Test, Mils 1073.2: No damage on impact from 2-pound (1-kg) steel ball dropped 11 feet (3.35 m).

2.3 ACCESSORIES

- A. Splines: Aluminum.
- B. Battens: Xenoy engineered resin, same color as composite panels.
- C. Wall Base: Solid resin, same color as composite panels.
- D. Attachment Screws: Coated steel or stainless steel screws. Length and type as determined by manufacturer to support composite panels.
- E. Mastic or Tape Adhesive: As required by manufacturer.
- F. Polyurethane Foam Sealant: As required by manufacturer.
- G. Finishing Compound: Arcoplast Finishing Compound.

1. Description: 2-component, non-sag, non-porous, non-yellowing, high-gloss, odor-free, solvent-free, aliphatic urethane structural adhesive.
2. Solids: 100 percent.
3. Color: Bright white.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Examine areas to receive composite panels. Notify Architect of conditions that would adversely affect installation or subsequent use. Do not proceed with installation until unsatisfactory conditions are corrected.
- B. Ensure other work to be performed behind composite panels is complete before starting installation.

3.2 INSTALLATION

- A. Install composite panels in accordance with manufacturer's instructions.
- B. Lay out panels to minimize joints and to provide balanced borders at room perimeter. Use full and uncut panels where possible.
- C. Field cut panels as necessary in accordance with manufacturer's instructions.
- D. Apply mastic or tape adhesive to furring, steel studs, or existing substrate in accordance with manufacturer's instructions.
- E. Screw panels into galvanized steel studs with attachment screws below floor base line and above ceiling line to hide exposed fasteners.
- F. Install panels plumb, level, square, and in proper alignment.
- G. Cover panel joints with battens or finishing compound for flush joints.
- H. Finishing Compound: Prepare surfaces and apply finishing compound in accordance with manufacturer's instructions.
- I. Finish wall-to-wall and wall-to-ceiling junctions with 1/2-inch radius joints using finishing compound.
- J. Wall Base: Install wall base [before application of floor finish] [over finished floor]. Set in mastic in accordance with mastic manufacturer's instructions.
- K. Seal joints, openings, and penetrations in accordance with manufacturer's instructions.
- L. Sealants: Apply sealants in accordance with sealant manufacturer's instructions.
- M. Apply gel coat putty over exposed fasteners and penetrations in accordance with manufacturer's instructions.
- N. Repair minor damages to composite panel finish in accordance with manufacturer's instructions and as approved by Architect.
- O. Remove and replace damaged components that cannot be successfully repaired as determined by Architect.

3.3 CLEANING

- A. Clean composite panels promptly after installation in accordance with manufacturer's instructions.
- B. Do not use harsh cleaning materials or methods that would damage finish.

3.4 PROTECTION

- A. Protect installed composite panels from damage.

END OF SECTION
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