SECTION 09772

FIBERGLASS REINFORCED PLASTIC PANELS

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Fiber glass reinforced composite panels.

B. Trim and installation accessories.

1.2 RELATED SECTIONS

A. Section 04810 - Unit Masonry Assemblies.

1.3 REFERENCES

A. ASTM C 177 - Standard Test Method for Steady-State Heat Flux Measurements and Thermal Transmission Properties by Means of the Guarded-Hot-Plate Apparatus.

B. ASTM D 149 - Standard Test Method for Dielectric Breakdown Voltage and Dielectric Strength of Solid Electrical Insulating Materials at Commercial Power Frequencies.

C. ASTM D 256 - Standard Test Method for Determining the Pendulum Impact Resistance of Notched Specimens of Plastics.

D. ASTM D 543 - Standard Test Method for Resistance of Plastics to Chemical Reagents.

E. ASTM D 570 - Standard Test Method for Water Absorption of Plastics.

F. ASTM D 638 - Standard Test Method for Tensile Properties of Plastics.

G. ASTM D 696 - Standard Test Method for Coefficient of Linear Thermal Expansion of Plastics Between -30 degrees C and 30 degrees C.

H. ASTM D 790 - Standard Test Methods for Flexural Properties of Unreinforced and Reinforced Plastics and Electrical Insulating Materials.

I. ASTM D 792 - Standard Test Methods for Density and Specific Gravity (Relative Density) of Plastics by Displacement.

J. ASTM D 1929 - Standard Test Method for Ignition Properties of Plastics.

K. ASTM D 2583 - Standard Test Method for Indentation Hardness of Rigid Plastics by Means of a Barcol Impressor.

L. ASTM D 5319 - Standard Specification for Glass-Fiber-Reinforced Polyester Wall and Ceiling Panels.

M. ASTM E 84 - Standard Test Method for Surface Burning Characteristics of Building Materials.

1.4 SUBMITTALS

A. Submit under provisions of Section 01300.

B. Product Data: Provide manufacturer's standard details and catalog data demonstrating compliance with referenced standards. Provide installation instructions.

C. Samples:
1. Submit 6 x 6-inch samples of each surface and color required.
2. Submit 6-inch samples of each trim profile and trim color required.

1.5 DELIVERY, STORAGE, AND HANDLING

A. Store products indoors and protect from moisture, construction traffic, and damage.

B. Store panels flat on clean, dry surface. Do not stand on edge or stack on fresh concrete or other surfaces that emit moisture.

C. Store panels at least 24 hours temperature and humidity conditions approximating the average environment of the finish room.

PART 2 PRODUCTS

2.1 MANUFACTURER

A. Provide fiberglass reinforced composite panels fabricated by Sequentia Incorporated; P.O.Box 360530, 15900 Foltz Industrial Parkway, Strongsville OH 44136; ASD. Tel: (800) 321-1935 or (440) 238-2400; Fax: (440) 846-2128.

B. Substitutions: Not permitted.

2.2 PANEL MATERIALS

A. General:
   1. Composite plastic panels of random chopped fiber glass roving, modified polyester copolymer, inorganic fillers, and pigments.
   2. Resistant to rot, corrosion, staining, denting, peeling, and splintering.
   3. USDA accepted.
   4. Comply with ASTM D 5319, various grades and classifications.

B. "STRUCTOGLAS 77136 Wall and Ceiling Panels; #1200FR-19".
   1. Surface burning classification: Class A.
      a. Flame spread (ASTM E 84): 25 or less.
      b. Smoke developed (ASTM E 84): 450 or less.
   2. Flexural strength (ASTM D 790): 9,900 psi.
   3. Flexural modulus (ASTM D 790): 0.35 x 10(6) psi.
   4. Tensile strength (ASTM D 638): 6,200 psi.
   5. Tensile modulus (ASTM D 638): 0.65 x 10(6) psi.
   6. Impact strength, IZOD (ASTM D 256): 5.5 ft.lb./in.
   7. Thermal Conductivity (ASTM C 17): 0.45 BTU/in./hr./sq.ft. deg.F.
   8. Barcol hardness (ASTM D 2583): 25-35.
   9. Water absorption (ASTM D 570): Less than 0.5% in 24 hrs. @ 77 deg.F.
   10. Coefficient of linear thermal expansion (ASTM D 696): 2.25 x 10(-5)in./in./deg.F.
   11. Specific gravity (ASTM D 792): 1.8.
   12. Ignition temperature (ASTM D 1929): Greater than 650 deg.F.

C. "Structoglas Composite Wall and Ceiling Panels; #1200 Standard".

D. "Structoglas Composite Wall and Ceiling Panels; #1000 Standard".

E. "Structoglas Composite Wall and Ceiling Panels; #800 Standard".

F. "Structoglas Composite Wall and Ceiling Panels; #500 Standard".

G. Typical Standard Panel Physical Properties:
1. Surface burning classification: Class C.
a. Flame spread (ASTM E 84): 200 or less.
b. Smoke developed (ASTM E 84): 450 or less.
2. Flexural strength (ASTM D 790): 9,200 psi.
3. Flexural modulus (ASTM D 790): 0.25 x 10(6) psi.
4. Tensile strength (ASTM D 638): 6,400 psi.
5. Tensile modulus (ASTM D 638): 0.45 x 10(6) psi.
6. Impact strength, IZOD (ASTM D 256): 3.0 ft.lb./in.
7. Thermal Conductivity (ASTM C 17): 0.45 BTU/in./hr./sq.ft. deg.F.
8. Barcol hardness (ASTM D 2583): 25-35.
9. Water absorption (ASTM D 570): Less than 0.4 in 24 hrs. @ 77 deg.F.
10. Coefficient of linear thermal expansion (ASTM D 696): 2.25 x 10(-5)in./in./deg.F.
11. Specific gravity (ASTM D 792): 1.7 - 1.8.
12. Dielectric Strength (ASTM D 149): 350 volts/mil.
13. Chemical resistance (ASTM D 543):
(Reagent, Weight increase after immersion (%), Weight increase after reconditioning (%), Appearance change.)

Distilled water	0.59	0.19	No change.
Ethyl alcohol, 95%	0.92	0.18	Some fibers showing.
Sulfuric acid, 3%	0.43	0.08	Some fibers showing.
Sulfuric acid, 30%	0.28	0.13	Some fibers showing.
Sodium hydroxide, 1%	0.63	0.12	Some fibers showing.
Sodium hydroxide, 10%	0.26	0.17	Some fibers exposed, reduction in glass.
Toluene	0.14	0.13	Few fibers showing.
Sodium chloride, 1%	0.43	0.18	No change.
Hydrochloric acid, 10%	0.24	0.01	Few fibers showing.
Chlorine Gas	NC	NC	No change (NC).
Hydrogen sulfide	NC	NC	No change (NC).

No dimensional change under any of the listed reagents.

H. Size:
1. Wall panel width: 48 inches.
2. Wall panel length:
a. 96 inches.
b. 120 inches.
c. 144 inches.
d. As indicated on the drawings.

e. Provide full-length panels unless substrate dimensions exceed available fabricated size.

3. Ceiling panel width: 23-3/4 inches.
4. Ceiling panel length: 47-3/4 inches.

I. Thickness:
1. "#1600 Standard" panels: 0.12 inch.
2. "#1200 Standard" panels: 0.09 inch.
3. "#1200-FR" panels: 0.09 inch.
4. "#1000 Standard" panels: 0.08 inch.
5. "#800 Standard" panels: 0.06 inch.
6. "#500 Standard" panels: 0.04 inch.

J. Dimensional Tolerances:
1. Width and length: +/- 1/8 inch.
2. Thickness: +/- 10%.
3. Squareness: Not more than 1/8 inch out of square.

2.3 FINISHES

A. Exposed Surface: Pebble-like embossed finish.

B. Back Surface: Smooth. Imperfections which do not affect functional properties are not cause for rejection.

C. Color: Uniform throughout.
1. White.
2. Beige.
3. Almond.
4. Silver.
5. Ivory.
6. Gray.
7. Colors as indicated on the Drawings.
8. Selected by the Architect from manufacturer's standard range of white, beige, almond, silver, ivory, and gray.

2.4 TRIM ACCESSORIES

A. Provide panel manufacturer's standard vinyl moldings to meet project conditions.
1. 1/8" Contractor trim: Match panel color.
a. Division bar.
b. Inside corner.
c. Outside corner.
d. End cap.
2. 1/8" Heavy Duty trim: Match panel color.

a. Division bar.
b. Inside corner.
c. Outside corner.
d. End cap.

3. 3/32" Standard trim: White.
    a. Division bar.
    b. Inside corner.
    c. Outside corner.
    d. End cap.
4. 3/8" Contractor trim: White.
    a. Division bar.
    b. Inside corner.
    c. Outside corner.
    d. End cap.
5. Outside angle, white.
6. Inside angle, white.
7. 2-piece division bar, 3/32" Contractor weight, white.

B. Fasteners: Non-staining nylon drive rivets.
    1. Match panel colors.
    2. Length to suit project conditions.

C. Adhesive: Structural construction adhesive as recommended by adhesive manufacturer.

D. Sealant: Clear silicone sealant as recommended by sealant manufacturer.

PART 3 EXECUTION

3.1 EXAMINATION

A. Examine substrates to receive panels to ensure that surfaces are smooth, dry, true, and free of dirt, dust, oil, or grease.

B. Remove high spots. Fill low spots.

C. Apply leveling coat of plaster to concrete block walls, if required to bring surface to a true plane.

D. Verify that substrate construction is completed and approved.

E. Correct deficiencies in substrate before installing panels.

3.2 INSTALLATION

A. Install in accordance with manufacturer's printed installation instructions, using adhesive or adhesive and mechanical fasteners, where warranted.

B. Cutting Panels:
   1. Cut panels with carbide-tipped saw blade or swivel head shear.
   2. Allow 1/2-inch clearance in length per 8-foot panel length.
   3. Allow 1/8-inch clearance at cut-outs for penetrations.

C. Pre-drill fastener holes before applying adhesive. Use carbide-tipped drill.
   1. Drill 3/8-inch holes for 1/4-inch nominal fasteners.
   2. Space at 8 inches maximum on center at perimeter, approximately 1 inch from panel edge.
   3. Space at in field in rows 16 inches on center, with fasteners spaced at 12 inches maximum on center.

D. Apply adhesive between 50 and 90 degrees F, unless otherwise approved.
   1. Spread adhesive in accordance with adhesive manufacturer's directions to achieve 100% coverage.
   2. Do not use beads of adhesive.
   3. Do not use mechanical fasteners or adhesive alone.
   4. Allow open time recommended by adhesive manufacturer before setting panels into position.
   5. Once in position, apply sufficient pressure to make full contact between panel and wall.
   6. Roll panel surface to ensure complete contact.
   7. If necessary, install bracing to maintain intimate contact until adhesive cures in accordance with manufacturer's instructions.

E. Panel Fasteners:
   1. Apply silicone sealant in pre-drilled fastener holes.
   2. Drive fasteners for snug fit. Do not over-tighten.
   3. Fasten leading edge of each panel after installing moldings.

F. Moldings:
   1. Trim division bar to accommodate ceiling and base moldings.

2. Apply bead of silicone sealant to one side of division bar and install on leading edge of first panel.
3. Push molding all the way onto panel and pull back to allow 1/8-inch clearance.
4. Check plumb.
5. Fasten molding with coated lath nails, installed to leading edge of molding, only.
6. Complete fastening of panel, and remove excess sealant.
7. Apply sealant to leading edge of molding to receive next panel. Allow 1/8-inch clearance when installing panel.
8. Remove excess sealant from panels and moldings.

3.3 ADJUST AND CLEAN

A. Remove scraps and debris from the site, and leave in a neat and clean condition.

END OF SECTION