

## Technical Information: Specification

### SECTION 07455- Class 1 Fire Rating - Composite Reinforced Fiberglass Panels

#### PART 1 - GENERAL

##### 1.01 RELATED DOCUMENTS

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

##### 1.02 SUMMARY

A. Section Includes: Composite Reinforced Fiberglass Panels and hardware.

##### 1.03 DEFINITION

"Composite Reinforced Fiberglass Panel" means a panel manufactured using glass fibers and polyester resin in a thermoset matrix.

##### 1.04 RELATED SECTIONS

A. Section 05400-Cold Formed Metal Framing

B. Section 07920-Joint Sealants

##### 1.05 REFERENCE STANDARDS

A. ASTM D638: Test Method for Tensile Properties of Plastic.

B. ASTM D695: Test Method for Compressive Strength of Rigid Plastics.

C. ASTM D790: Test Methods for Properties of un-reinforced and Reinforced Plastics and Electrical Insulating Materials.

D. ASTM E84: Test Method for Surface Burning Characteristics of Building Materials.

##### 1.07 DESIGN REQUIREMENTS (If Required)

Structural Requirements: Engineering calculations shall account for the following loads:

1. Dead Loads: Include the weight of the Composite Reinforced Fiberglass Panels and attached items.
2. Live Loads: As required by applicable code,
3. Wind Loads: As required by applicable code. Consider wind loads as an inward pressure and as an outward suction.
4. Snow Loads: As required by applicable codes.
5. Load Combinations: Consider applicable load combinations.

##### B. Provisions for Movement

1. Design and detail anchorage, connections, and joints to allow for dimensional changes of the Composite Reinforced Fiberglass Panels due to thermal and similar effects.
2. Where the piece is restrained, allow for effects of restraint in design.

##### C. Anchorage and Connections

1. Suggested anchorage and connections are shown on the design drawings. Proposed substitutions may be submitted for review. Substitutions shall satisfy the function of the connection as indicated or implied on the drawings and shall not vary to indicated building loading.

2. Anchorage and connection designs shall consider tolerances and eccentricities of load applications. Provide proper edge and end distances for inserts.

### **1.08 SUBMITTALS**

- A.** Product Data: Submit manufacturer's data on the Composite Reinforced Fiberglass Panels.
- B.** Product Samples: Submit minimum of three (3) - 6" x 6" samples in specified color, texture and finish. Architect will select finish, color and texture from manufacturer's offerings.
- C.** Shop Drawings: Submit drawings indicating:
  - 1. Panel shapes and dimensions;
  - 2. Panel surface finish;
  - 3. Part numbers;
  - 4. Jointing and connection details;
  - 5. Adjacent structure details;
  - 6. Hardware location and details; and
  - 7. Lifting and erection details.
- E.** Manufacturers Instructions: Submit manufacturer's instructions and recommendations for:
  - 1. Product delivery, storage and handling.
  - 2. Erection, lifting and connecting of Composite Reinforced Fiberglass Panels.

### **1.09 DELIVERY, STORAGE AND HANDLING**

- A.** Handle, store and transport panels according to manufacturer's recommendations and in a manner that prevents cosmetic and structural damage.
- B.** Verify those areas where panels will be unloaded are clear of obstructions and well drained.
- C.** Do not subject panels to undue stress.
- D.** Brace and stabilize panels to prevent warping.
- E.** Damage Responsibility: Except for damage caused by others, the installer is responsible for chipping, cracking, or other damage to Composite

Reinforced Fiberglass Panels after delivery to the job site and until installation is completed and inspected and found acceptable by the Architect.

### **1.10 QUALITY ASSURANCE**

- A.** Manufacturer: Provide panels manufactured by a firm specializing in the fabrication of reinforced fiberglass panels with a minimum of ten years experience.

### **1.11 PRE-INSTALLATION CONFERENCE**

- A.** Convene a pre-installation conference prior to commencing panel installation.
- B.** Require attendance of parties directly affected by work of this Section.
- C.** Review conditions of installation, installation procedures and coordination required with related work necessary to achieve a satisfactory installation.

### **1.12 WARRANTY**

- A.** Warrant Composite Reinforced Fiberglass Panels to be free from delamination, chalking, cracking, crazing, discoloration, breakage or losing from mountings (other than by malicious cause) for a period of (1) one year from the date of substantial completion.

## PART 2 - PRODUCTS

### 2.01 ACCEPTABLE MANUFACTURERS

A. Provide products as manufactured by Vista F. R.P. Products 1-800-408-9613 or approved equal.

### 2.02 FABRICATED PRODUCTS

A. Fabrications required are shown on the accompanying drawings.

### 2.03 MATERIAL CHARACTERISTICS

A. MOLDED EXTERIOR SURFACE. U-V inhibited, NPG-ISO polyester gel coat, 18 to 22 mils thick.

1. Gel Coat Color: Match sample supplied by Architect.

B. BACK UP LAMINATE:

1. Resin: Fire retardant, isophthalic polyester resin, ASTM E84, Class I (flame spread rating of 25 or less)

2. Fiberglass Reinforcement

a. "E" type fiberglass.

b. Random Chopped glass fibers.

c. Glass content approximately 25% to 30% except, 15% for filled resin systems.

3. Laminate Thickness:

a. Nominal thickness 3/16"

b. Additional thickness and reinforcement, and sandwich structures as indicated and as required for structural integrity.

### 2.04 AVERAGE MECHANICAL PROPERTIES:

Property	Value	Test Method
Tensile Strength	12,000 psi	ASTM D 638
Flexural Strength	20,000 psi	ASTM D 790
Flexural Modulus	0.9 x 10 exp6 psi	ASTM 0790
Compressive Strength	17,000 psi	ASTM D695
Bearing Strength	9,000 psi	
Thermal Expansion	10 x 10 exp-6 (F)	
Specific Gravity	1.5	

### 2.05 FINISH

A. Color and finish shall be as selected by the Architect from the manufacturer's standard finishes.

### 2.06 TOLERANCES

A. Gel Coat Thickness: + or - 2.5 mils.

B. Length: + or - 1/8 inch in 10 feet.

- C. Overall thickness tolerance: +/- 1/16".
- D. Variation from Square: 1/8 inch in 10 feet.

## **2.07 IDENTIFICATION**

- A. Identify each part with a permanent serial number.
- B. Number parts to coordinate with shop drawings.

## **2.08 CURING AND CLEANING**

- A. Cure and clean components prior to shipment and remove material which may be incompatible with adjacent building materials.

## **2.09 HARDWARE**

- A. Metal Anchors and Fasteners: Provide anchors and fasteners as recommended by panel manufacturer and conforming to the following standards of the American Society for Testing and Materials
  1. Stainless steel: ASTM A666, Type 304.
  2. Anchor bolts ASTM A307 or ASTM A525.

## **PART 3 - EXECUTION**

### **3.01 INSTALLERS PRE-INSTALLATION INSPECTION**

- A. Observe field conditions and verify that building lines, centers, and grades will allow proper installation of Composite Reinforced Fiberglass Panels.
- B. Verify that bearing surfaces are true and level.
- C. Verify that support framing has been constructed to allow accurate placement and alignment of anchor bolts, plates, dowels, or other connections on the structure.
- D. Check field dimensions affecting the installation of Composite Reinforced Fiberglass Panels.
- E. Report discrepancies between design dimensions and field dimensions, which could adversely affect installation, to the Architect.
- F. Do not proceed with installation until discrepancies are corrected, or until installation requirements are modified and approved by the Architect

### **3.02 ERECTION**

- A. Install fabrications in accordance with manufacturer's instructions and approved shop drawings.
- B. Unloading: Use equipment that will prevent delays in installation process. Do not block access to panel installation area or other construction areas with equipment and materials.
- C. Lifting and Positioning: Lift Composite Reinforced Fiberglass Panels with suitable lifting devices at points as recommended by the manufacturer.
- D. Set panels level, plumb, square, and true within the allowable tolerances.
- E. Temporarily support and brace panels as required to maintain position, stability and alignment during and until permanent connection.
- F. Fastening: Fasten Composite Reinforced Fiberglass Panels as shown on approved shop drawings.

### **3.03 ALLOWABLE TOLERANCES FOR ERECTED PANELS**

- A. Tolerances for Location of Composite Reinforced Fiberglass Panels: Non-cumulative.
- B. Width of Joint: 1/4" to 3/4" depending upon engineering criteria.
- C. Gap tolerances between joints for panel dimensions of:
  1. <10 ft: +/- 3/16" (5mm)

2. 10 ft. - 20ft: +/- 1/4" (7mm)
3. >20 ft: +/- 5/16" (9mm)

#### **3.04 CLEANING**

- A.** Clean soiled panels using cleaning methods and materials approved by panel manufacturer.

#### **3.05 PROTECTION OF INSTALLED FABRICATIONS**

- A.** Comply with manufacturer's recommendations and instructions for protecting installed fabrications during construction activities.

**END OF SECTION 07455**