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FRP BUILDING/ENCLOSURE/SHELTER SPECIFICATION MODEL VPC-B4X6  
PRE-ENGINEERED INSULATED FRP BUILDING

**Product: 4 x 6 Fiberglass Building**

**Project:** \_\_\_\_\_ *(Insert Project Name)*

**Manufactured By:** Virtual Polymer Compounds, LLC

**1. PART ONE: GENERAL INFORMATION**

**1.1. SUMMARY**

- A. Furnish \_\_\_\_\_ number of pre-engineered insulated FRP buildings that measure 72 inches in length by 48 inches in width by 90 inches in height designed to withstand 125 mph wind load and 30 PSF snow load. Model VPC-B4X6

**1.2. REFERENCES**

- A. **Referenced Standards:** This section contains references to the following documents. They are part of this section as specified and modified. In case of conflict between the requirements of this section and those of the listed documents, the requirements of this section will prevail. Comply with applicable provisions and recommendations of the following, except where otherwise shown or specified.
- 1) ASTM C 518 - Standard Test Method for Steady-State Heat Flux Measurements and Thermal Transmission Properties by Means of the Heat Flow Meter Apparatus
  - 2) ASTM D 256 - Standard Test Method for Determining the Pendulum Impact Resistance of Notched Specimens of Plastics.
  - 3) ASTM D 638 - Standard Test Methods for Tensile Properties of Plastics.
  - 4) ASTM D 732 - Standard Test Method for Shear Strength of Plastics by Punch Tool
  - 5) ASTM D 790 - Standard Test Methods for Flexural Properties of Unreinforced and Reinforced Plastics and Electrical Insulating Materials.
  - 6) ASTM D 792 - Standard Test Method for Specific Gravity (Relative Density) and Density of Plastics by Displacement.
  - 7) ASTM D 1622 - Standard Test Method for Apparent Density of Rigid Cellular Plastics.
  - 8) ASTM D 2583 - Standard Test Method for Indentation Hardness of Rigid Plastics by means of a Barcol Impressor.

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

### **1.3. SUBMITTALS**

- A. Shop drawings specific to the project and applicable product data will be provided in a single package and submitted as part of the FRP building Manufacturer's submittal. The following information shall be submitted as a minimum:
- 1) Product Data: Provide construction details, data demonstrating compliance with referenced standards, and installation instructions.
  - 2) Shop Drawings:
    - I. Detail equipment assemblies including dimensions, weights, loads, required clearances, and components.
    - II. Specific design parameters for this project as specified herein.
    - III. Wiring Diagrams
    - IV. Equipment weights and lifting points.
    - V. Warranties and service agreements.
  - 3) Provide operation and maintenance manuals as required.
  - 4) Submit for review structural calculations and drawings signed and sealed by a P.E. registered in the local State as required.

### **1.4. QUALITY ASSURANCE**

- A. Qualifications:
- 1) All equipment shall be the product of a single manufacturer having at least ten (10) U.S. installations of the type being proposed, each with a minimum of five (5) years of satisfactory service.
  - 2) A list of similar installations shall be furnished with the shop drawing submittal, including names and telephone numbers of contacts.
- B. Testing and inspection of the factory assembled equipment shall be accomplished by manufacturer prior to shipment. Skid mounted units shall be delivered fully assembled.

### **1.5. DELIVERY, STORAGE, AND HANDLING**

- A. Building shall be fully assembled and mounted on the skid at the factory. Equipment shall be crated and delivered to protect against damage during shipping. Flange faces shall be protected from damage. All openings shall be covered to prevent entrance of dirt, water, and debris.
- B. Properly protect all parts so that no damage or deterioration will occur during a prolonged delay from the time of shipment until installation is completed and until the units and equipment are ready for operation.
- C. Protect all equipment delivered and designated for storage, from the weather (humidity and temperature), dirt and dust, and other contaminants. Store on a flat surface.

## **2. PART TWO: PRODUCT**

### **2.1. ACCEPTABLE MANUFACTURERS**

- A. Virtual Polymer Compounds, 10478 Ridge Road Medina NY 14103, [www.vpcfiberglass.com](http://www.vpcfiberglass.com). Fiberglass Standard Building.

### **2.2. MATERIALS**

- A. Molded composite: Exterior and interior resin-fiberglass laminate with foam core.
- B. Exterior surface: Beige gel coat with low luster finish, smooth and free from fiber pattern, roughness, or other irregularities.
- C. Exterior laminate: 1/8 inch thick, minimum, chemically bonded to gel coat. Interior laminate to be 1/8 inch thick, minimum.
- D. Interior laminate: White color, encapsulate core in place.

- E. Laminate properties:
  - 1) Tensile strength (ASTM D 638): 11,000 PSI
  - 2) Flexural strength (ASTM D 790): 18,000 PSI
  - 3) Shear strength (ASTM D 732): 12,000 PSI
  - 4) Barcol hardness (ASTM D 2583): 40
  - 5) Impact (ASTM D 256): 12 ft lbs/per inch
  - 6) Density/specific gravity (ASTM D 792): 93.6 PCF/1.5.
- F. Rigid closed cell, self-extinguishing, polyisocyanurate foam with a density of 2.0 pounds per cubic foot 3 inch thick with a minimum insulating value of R 24
- G. Core Properties:
  - 1) Thermal conductivity (ASTM C 518): 0.13 BTU Inch/ Hr.SF F.
  - 2) Density/specific gravity (ASTM D 1622): 2.0 PCF

### 2.3. COMPONENTS

- A. **Door:**
  - 1) One-piece, which exhibits a smooth finished, seamless, monolithic, warp-free composite consisting of a gel-coat, fiberglass reinforcement, resin, insulating core, and internal reinforcements.
  - 2) Nominal Size 36" x 80"
  - 3) Mount door with stainless steel hinges
  - 4) Door gasket: Neoprene sponge rubber bulb type gasket with flexible lock to retain permanent grip.
- B. **Latch:**
  - 1) Provide three-point latch with stainless steel padlock hoop, and door stop with chain. OR
  - 2) Provide doors with panic hardware choose one (Aluminum or stainless steel). Accompanied by standard door entry hardware, and door stop with chain.
- C. **Roll-up Door:**
  - 1) Galvanized Steel, Manually Operated Roll-Up Door, Standard Latch Assembly
  - 2) Internal or External Drum with Hood
  - 3) Nominal Opening 120" x 96"
- D. **Base Mounting Flange Gasket**
  - 1) Adhesive-backed, closed cell, Neoprene/EPDM foam gasket.
- E. **Lifting Eye Bolts:**
  - 1) Provide stainless steel eye bolts in roof.
- F. **Hardware**
  - 1) Bolts for attaching fiberglass shelter to base/floor: Stainless steel. 1/2 -inch diameter.
  - 2) Bolts for attaching mating flanges for fiberglass shelter: Stainless steel. 1/2 -inch diameter.

### 2.4. ACCESSORIES

- A. **HVAC**
  - 1) Combination AC/Heating unit
  - 2) 4000W backup heater with thermostat
  - 3) Exhaust fan. Includes gravity damper, rain hood, and bug screen.
  - 4) Intake gravity louver/damper. Includes rain hood and bug screen.
- B. **Lighting**
  - 1) Vapor tight LED fixtures. Qty (4).
  - 2) Exterior LED lights with photocell. Qty (2).
  - 3) Emergency exit light with battery backup.
- C. **Switches**

1) Interior duplex switch for lights and fan.

1) Exterior weatherproof duplex switch for lights and fan.

**D. Duplex outlet**

1) Weatherproof exterior outlets. Qty (2).

2) Interior outlets. Qty (4).

**E. Power Distribution**

1) 120/240V 150A Main breaker, single phase, 30 spaces.

2) Disconnect switch.

3) Power feed junction box.

**F. Provide electrical wiring in flexible, liquid tight PVC conduit for all following connection points:**

1) Combination Air Conditioner/Heater. Thermostatically Controlled.

2) 4000W Heater with Thermostat (Backup).

3) Exhaust Fan. Includes Gravity Shutter, Rain Hood, and Bug Screen.

4) Intake Gravity Louver/Damper: Includes Rain Hood, and Bug Screen.

5) Vapor Tight LED Light Fixtures.

6) Exterior LED lights with Photocell.

7) Emergency exit light with battery backup.

8) Interior duplex switch for fan and light.

9) Exterior weatherproof duplex switch for fan and light.

10) Weatherproof exterior outlets.

11) Interior outlets.

12) 120/240V 150A Main breaker, single phase, 30 spaces.

13) Disconnect switch.

14) Junction boxes.

**G. Accessories for attaching structure to concrete pad:**

1) ½-inch diameter stainless steel expansion anchors.

2) Adhesive-backed, closed cell, neoprene/EPDM foam gasket.

**3. PART THREE: EXECUTION**

**3.1. EXAMINATION**

A. Verify that concrete is level and true to plane and of correct dimensions to receive structure. Do not proceed with installation until unsatisfactory conditions are corrected.

**3.2. INSTALLATION**

A. Lay out anchor bolt pattern according to drawings. Drill holes of depth and diameter required by anchor bolt manufacturer.

B. Install structure in accordance with manufacturer's instructions.

1) Erect structures true to line and plumb, free of twist and warp.

C. Install and test accessories in accordance with manufacturer's instructions.