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## SPECIFICATIONS “ENDURO” MODEL 200 FIBERGLASS ENCLOSURE

**NOTE TO USER:** These specifications are provided to aid the Engineer in the design and complete specification of a Fiberglass Shelter. Proper selection and use of any structure requires the services of a Professional Engineer. These documents are not to be used in lieu of the services of a design professional. The *italicized text* indicates a need to provide information specific to the proposed use. Consult the VPC engineering staff for assistance in special design and/or equipment.

**Product:** Model 200 Fiberglass Insulated Equipment Enclosure

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

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

### PRODUCT SPECIFICATION “ENDURO” MODEL 200 FIBERGLASS INSULATED EQUIPMENT ENCLOSURE

#### **PART ONE: GENERAL INFORMATION**

- 1.01 Furnish (*insert number required*) fiberglass composite insulated enclosure that measures 45 inches in length by 45 inches in width and 74 inches in height.
- 1.02 Specification section that may relate to this work:
  - A. Section 03300 - Cast in Place Concrete
  - B. Section (*insert related specification sections*) - Equipment
- 1.03 References and related standards:
  - A. ANSI/AWWA F101 - Contact molded, Fiberglass-Reinforced Plastic Wash Water Troughs
  - B. ASTM D 256 - Standard Test Method for Determining Pendulum Impact Resistance of Notched Specimens of Plastic
  - C. ASTM D 638 - Standard Test Method for Determining Tensile Properties of Plastic
  - D. ASTM D 790 - Standard Test Method for Determining Flexural Properties of Plastic

- E. ASTM D 2583 - Standard Test Method for Determining the Surface Hardness of Plastic using a Barcol Instrument.
- F. ASTM D 648 - Standard Test Method for Determining the Distortion of Plastic under controlled Exposure to Elevated Temperatures.

1.04 Typical Product Performance Design:

- A. The structure will be designed for 130 mph wind load when correctly installed.
- B. The unit is designed to handle live roof loads of 50 pounds per square foot.

1.05 Submittals:

- A. Comply with general conditions of the project documents.
- B. Product data to include:
  - I. Type, Product Name and Resin Manufacturer
  - II. Test results of fiberglass laminate used
- C. Shop Drawing showing all critical dimensions of Enclosure.
- D. Shop Drawing showing location and plan of all Enclosure options.
- E. Complete off loading, storage, and installation instructions

1.06 Delivery, Off Loading and Storage

- A. Off load structure according to manufacturer's instructions
- B. Inspect structure completely and report any damage during shipping.
- C. Store structure on level, firm ground or platform and protect from construction traffic and damage.

**PART TWO: PRODUCT**

2.01 Products:

- A. Provide ENDURO Model 200 as manufactured by Virtual Polymer Compounds, LLC of 10478 Ridge Road, Medina, NY 14103; Tel. (585)735-9668.
- B. Request for substitution will be considered only if submitted and approved in advance of bid date. Substitution requests must include evidence that the product meets all standards submitted herein, that the manufacturer has ten years of experience fabricating the product, and there is a complete quality assurance program in place, such as ISO 9001.
- C. Substitution not submitted in and approved by bid date will not be considered.

2.02 Material of Construction:

- A. Gel Coat: All exposed surfaces will be smooth with a 20-mil polyester-based gel coat. Color of the gel coat is beige. *(Optional: Other colors available upon request.)*
- B. Structural laminate will be nominal 1 1/2-inch thick. The laminate will include 1/4 inch glass fiber reinforced laminate under 20 mils of gel coat, 1 inch of 1.9 pound density urethane foam insulation and an interior laminate of 1/4 inch glass fiber reinforced laminate.

C. The resin will meet the following standards:

- |                            |                          |
|----------------------------|--------------------------|
| 1. Tensile Strength:       | ASTM D 638 14,000 psi    |
| 2. Flexural Strength:      | ASTM D 790 25,000 psi    |
| 3. Flexural Modulus:       | ASTM D 790 1,000,000 psi |
| 4. Impact, Notched:        | ASTM D 256 10 ft-lbs/1   |
| 5. Barcol Hardness:        | ASTM D 2583 40           |
| 6. High Temperature Limit: | 150°F                    |
| 7. Chemical Resistance     | ANSI/AWWAF10 Type II     |

2.03 Method of Construction: Single piece contact molded fiberglass reinforced plastic.

2.04 Metallic mounting hardware is to be 304 grade stainless steel.

2.05 The Enclosure is to include the following standard options:

- A. Fiberglass insulated, gasketed door with an opening of 38.5 inches wide by 65.5 inches tall.
- B. Door hardware is to include three 3 inch by 3 inch stainless steel hinges and three point latch with keyed lockable handle.
- C. Provide one screened, fixed louver vent cover over three vent openings at both the right and left side of the unit. The vents will be located at the top center of the wall.
- D. *(Optional Feature)* The unit will be fabricated with an integral fiberglass floor that is 3/8 inch thick with slip resistant gray finish. The floor will be integral to the wall sections to provide full spill containment.
- E. 1-inch Polyurethane insulation core (R=7) *(Greater thickness and R Value available as an option)*
- F. Continuous 3-inch-wide fiberglass exterior mounting flange with the same finish as the balance of the unit.
- G. *(Optional Feature)* Equipment mounting board to be laminated to the *(specify the location and size)*
- H. *(Optional Feature)* 110 Volt, 60-Watt incandescent light with switch mounted on the left sidewall near the door handle. *(Optional exterior light switch and/or door activated switch is available)*
- I. *(Optional Feature)* Ventilation Fan (110 Volt, 60 CFM) with remote thermostat.
- J. *(Optional Feature)* Base Board, 110 Volt, 500-Watt electric heater with integral thermostat. *(Other types and sizes available)*
- K. 110 Volt, 20-amp GFI protected Duplex Outlet standard 15 amp duplex
- L. All wire will be run through 1/2 flexible sealed PVC flexible conduit
- M. All wiring will be completed with #12 solid copper
- N. *(Optional Feature)* 110/220 Volt load center with 100 amp main and four (4) 20-amp single breakers. *(Optional NEMA 3 and 4 type center can be provided.) (Optional interior Power connection Junction Box can be provided.)*
- O. *(Optional Feature)* Power connection Junction Box.
- P. *(Optional Feature)* 12 in x 12 in window in door.

### **PART THREE: EXECUTION**

- 3.01 Carefully remove structure from original crating only at the time of installation. Examine the unit completely and report any damage to the unit prior to installation.
- 3.02 Verify that the dimensions of the concrete slab (*foundation*) designated for installation are correct and suitable for installation. Report any anticipated problems at once.
- 3.03 Installation:
  - A. Install according to installation instructions provided by the manufacturer.
  - B. Ensure the structure is set plum, true, and level.
  - C. Fasten to foundation using specified fasteners at specified spacing.
  - D. Connect to power from protected circuit.