



VIRTUAL POLYMER
COMPOUNDS, LLC

Specifications “Enduro” Model 400 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 400 Fiberglass Insulated Equipment Enclosure
Project: *(Insert Project Name)*
Manufactured By: Virtual Polymer Compounds, LLC

PRODUCT SPECIFICATION
“ENDURO” MODEL 400 FIBERGLASS INSULATED EQUIPMENT ENCLOSURE

PART ONE: GENERAL INFORMATION

- 1.01 Furnish *(insert number required)* fiberglass composite insulated enclosure that measures 58 inches in length by 46 inches in width and 43 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 Submittals:
A. Comply with General Conditions of the Project Documents
B. Product data to include:
1. Type, Product Name and Resin Manufacturer
2. 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

1.05 Delivery, Off Loading and Storage

- A. Off load structure according to manufacture'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 400 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 1/4 inch thick. It will be a composite of 30% by weight chopped strand glass fiber mat and high grade polyester resin.
(Enclosures can be fabricated from high grade vinyl ester chemical resistant resins selected to meet special industrial application. Typically in this application gel coat is omitted. Contact Manufacturer for more information.)
- 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/AWWA F10	Type II

2.03 Method of Construction: Single piece contact molded fiberglass reinforced plastic with integral 1.9 pound density foam insulation core.

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

2.05 The Enclosure is to include the following standards options:

- A. Provide one screened, fixed louver vent cover over one vent opening at both the right and left side of the unit. The right side vent will be located at the top of the wall (offset from center). The left side vent will be located at the base of the wall (offset from center).

- B. *(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.
- C. 1 inch Polyurethane insulation core (R=7) *(Greater thickness and R Value available as an option)*
- D. Continuous 6 inch wide fiberglass exterior mounting flange with the same finish as the balance of the unit.
- E. *(Optional Feature)* Equipment mounting board to be laminated to the *(specify the location and size)*
- F. *(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)*
- G. *(Optional Feature)* Ventilation Fan (110 Volt, 60 CFM) with remote thermostat.
- H. *(Optional Feature)* Base Board, 110 Volt, 500-Watt electric heater with integral thermostat. *(Other types and sizes available)*
- I. 110 Volt, 20 amp GFI protected Duplex Outlet standard 15 amp duplex
- J. All wire will be run through 1/2 flexible sealed PVC flexible conduit
- K. All wiring will be completed with #12 solid copper
- L. *(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.)*
- M. *(Optional Feature)* Power connection Junction Box.
- N. *(Optional Feature)* 12 in x 12 in window in door.
- O. *(Optional Feature)* Variety of access doors available.

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.

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