FIBERGLASS REINFORCED PLASTIC (FRP) LAUNDER COVERS
Revised 7-30-2024

PART 1 GENERAL

1.1. SUMMARY

A. This Section includes fiberglass reinforced plastic (FRP) launder covers for clarifier basins and other applications as shown on the Contract Drawings.

1.2. QUALITY ASSURANCE

A. The material covered by these specifications shall be furnished by a reputable and qualified manufacturer of proven ability that is regularly engaged in the manufacture and installation of FRP products.

B. The fabricator shall be experienced in successfully producing FRP products specified for this project, with sufficient production capacity to produce required units without causing delay in the work.

1.3. SUBMITTALS

A. The following shall be submitted in accordance with the General and Special Provisions.

i. Shop Drawings
   - a Dimensions.
   - b Job specific layout.
   - c Sectional assembly.
   - d Location and identification mark.
   - e Accessories, attachments, transition pieces.
   - f Connection details.

ii. Manufacturer's catalog data showing:
   - a Dimensions, spacing, and construction details.
   - b Materials of construction.
   - c Description.

iii. Certificates
   - a Submit Manufacturer's certification that all materials furnished are following the applicable requirements of this specification.

iv. Manufacturer's Instructions
   - a Submit complete information and instructions relating to the storage, handling, installation, and inspection of all equipment related to this

Section.

1.4. SHIPPING AND STORAGE INSTRUCTIONS

A. All FRP components shall be shop fabricated and assembled into the largest practical size suitable for transporting.

B. The parts and assemblies that are shipped unassembled shall be packaged and tagged in a manner that will protect the equipment from damage and facilitate the final assembly in the field.

C. All FRP materials shall be stored before, during, and after shipment in a manner to prevent cracking, twisting, bending, breaking, chipping or damage of any kind to the materials.

PART 2 PRODUCTS

2.1. MANUFACTURERS

A. The following manufacturer is named to establish a standard of quality necessary for the Project:
National Manufacturing Water Treatment Products 7870 West Ridge Road Fairview, PA 16415 dvorse@nationalcomposites.com

B. The manufacturer of products shall be ISO 9001 certified.
C. All FRP products shall be manufactured entirely in the United States
D. Supplier of FRP material shall be the manufacturer of the FRP material.

2.2 DESIGN CRITERIA

A. Support applied downward vertical or gravity loadings

B. Meet required snow load of 30 psf, wind load of 14 psf

C. Covers supported off the top of the weir wall will not be permitted

2.3 MATERIALS

A. The launder cover laminate shall meet the following minimum physical and mechanical requirements:

Table 1. Laminate Mechanical and Physical Properties Minimum

Property	Test	Minimum Value
Tensile Strength	ASTM D-638	18,500 psi
Flexural Strength	ASTM D-790	27,900 psi
Flexural Modulus	ASTM D-790	1,080,000 psi
Barcol Hardness	ASTM D-2853	40
Notched Izod	ASTM D-256	15.4 ft-lbs/in
Water Absorption	ASTM D-570	0.13%

B. Resin - The resin shall be a commercial grade isophthalic polyester thermosetting resin, which has either been evaluated in a laminate, or which has been determined to be acceptable for use in a wastewater treatment plant environment.

C. Fillers: The resin shall contain no fillers. Thixotropic agents for viscosity control are acceptable. Colorants which have been determined by at least five years previous service to be acceptable for the service condition are acceptable. The standard color for the launder cover shall be marine white or as per customer requirement. Ultraviolet stabilizers are required in all launder cover laminates. Catalysts, accelerators and/or promoters shall be added to provide complete cure of the laminate and must meet the physical properties as indicated in Section 2.3 Table 1.

D. Ultraviolet Resistance - Ultraviolet resistance is required in all laminates exposed to ultraviolet light, whether it be in the form of pigmentation or ultraviolet absorbers.

E. Reinforcement - E glass with silane finish.

F. The content of the finished laminate shall be adequate to produce mechanical and physical properties conforming to Section 2.3, Table 1.

G. Other Reinforcement – Additional reinforcement in the form of foam, balsa sheet or other reinforcement for high stress areas shall be completely encapsulated within the laminate. Care shall be taken to ensure that these areas of the launder cover laminate are not designated as attachment points or drilled for any purpose.

H. Laminate Construction –

1. ‘A’ surface shall be a gelcoat surface.

2. Structural layers shall consist of plies of chopped strand mat with a maximum of 2 ounces per square foot per layer. Adequate contact molding pressure ensures complete resin wet-out of glass fibers.

3. ‘B’ surface shall be a gelcoat surface.

4. Finished launder cover shall be a minimum of 25% fiber reinforced with a minimum thickness of not less than 1/4".

I. Materials used in the manufacture of the FRP launder covers shall be new stock of the best quality and shall be free from all defects and imperfections that might affect the performance of the finished product.
J. Color: Marine White
K. Meet or exceed requirements of ANSI/AWWA F101

EXECUTION

3.1 STORAGE

A. Should it be necessary to store products prior to installation, precautions should be taken to prevent cracking, twisting, warping, distortion, bending, breaking, chipping or damage of any kind to the materials.

3.2 INSTALLATION

A. Install launder covers and supports in accordance with manufacturer's instructions and approved shop drawings.

B. Field cutting of launder covers is allowed if necessary. All field cut edges and field drilled holes shall be sealed per the manufacturer's instructions.

A. Ensure that launder covers and supports are installed plumb and true, free of warp or twist, within the tolerances specified by the manufacturer and as shown on the drawings.

END OF SECTION