

NEFCO LAUNDER COVER SPECIFICATION

The NEFCO Launder Cover is designed to inhibit the growth of algae on the launder troughs and weirs of the clarifier tank by minimizing incident sunlight on these surfaces. In addition, the Cover is intended to contain odors and keep leaves and other airborne debris from entering the launder.

PART 1 GENERAL

1.1. SUBMITTALS

A. Shop Drawings

- i. Manufacturer's catalog information, descriptive literature, specifications and identification of materials of construction, including resins and glass fiber content and layout for FRP constructions.
- ii. Detailed drawings showing equipment fabrication, dimensions, method of attachment including number, locations and size of fasteners and weights of fabrications.
- iii. Manufacturer's recommended Cover dimensions, mounting configuration and location for each application.

B. Quality Control Submittals

- i. Manufacturer's Certificate of Compliance.
- ii. Special shipping, storage and protection and handling instructions.
- iii. Manufacturer's written/printed installation instructions.
- iv. A list of ten installations of comparable size in operation for at least five years.
- v. Certify that the cover meets local building code specifications for wind load, including uplift and deflection.
- vi. Certified test reports of the physical and mechanical properties of the product. Each panel shall have the following minimum physical properties:

<u>Property</u>	<u>Test</u>	<u>Minimum Value</u>
Tensile Strength	ASTM D-638	10,000 psi
Flexural Strength	ASTM D-790	16,000 psi
Flexural Modulus	ASTM D-790	1.0 x 10 ⁶ psi
Barcol Hardness	ASTM D-2853	40
Notched Izod	ASTM D-256	12 ft-lbs/in
Water Absorption	ASTM D-570	0.2%

1.2. WARRANTY

- A. Manufacturer shall expressly warrant the Launder Cover System to be free of defects in materials and workmanship for a period of one year from the date of installation, exclusive of misuse, negligence or accident on the part of the installation contractors or owner.

1.3. COORDINATION

- A. Manufacturer shall coordinate the Launder Cover design and installation requirements with the clarifier mechanism, scum box and launder effluent channel configurations.

PART 2 PRODUCTS

2.1. MANUFACTURERS

- A. Materials, equipment and components in this section shall be the products of:

NEFCO, Incorporated, 8895 North Military Trail, Bldg C – Ste 100,
Palm Beach Gardens, FL 33410

2.2. DESIGN

- A. The Launder Cover shall consist of a system of molded fiberglass panels that are attached together to form a continuous cover over the launder trough, weir and scum baffle within the treatment tank. The Cover shall be designed and manufactured to inhibit incident sunlight from striking the surfaces of the launder and weir. Each Cover section shall be molded of UV-protected fiberglass and shall be opaque to sunlight. Individual sections shall be a minimum of four feet in length and curved to follow the curvature of the tank. The Cover shall extend over the trough and weir as far as possible and may extend to a point immediately inside the scum baffle so long as the Cover does not interfere with the sweep arm. The Cover shall be designed such that adjacent panels fit together properly and the completed Cover, when installed, forms a rigid structure and has a well-engineered and professional appearance.
- B. The Cover shall be designed to open either away from the operator and toward the center of the tank, or back toward the operator and outer tank wall. Each Cover segment shall consist of a fixed Mounting Section and two hinged Cover Sections, each connected to the Mounting Section by a continuous stainless steel hinge. The Mounting Section shall provide a rigid mount for the Cover Sections and ensure the proper fixed spacing between them.
 - i. If the Cover opens to the center of the tank, the Mounting Section is fastened to the weir wall with FRP and/or stainless steel brackets, and extends inward to a point just inboard the scum baffle. The hinged Cover Sections extend outward toward the tank wall and swing open to allow inspection and maintenance of the launder and weir. The hinge point of the Cover is positioned beyond (inboard) the weir to ensure full visibility of the launder and weir when the Cover is open. In the closed position, the Cover Sections rest on an FRP support flange attached to the inner wall of the tank.
 - ii. If the Cover opens toward the outer tank wall, the Mounting Section is fastened directly to the outer tank wall and extends a minimal distance into the effluent channel. The Cover Sections extend inward toward the center of the tank and swing

open for inspection and maintenance of the launder and weir. In the closed position the Cover Sections rest on stainless steel brackets mounted to the weir wall.

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- C. An optional provision shall be made to lock the Cover in the closed position for safety and security. This shall be accomplished by means of an easily operated, spring-loaded latch mechanism that secures the hinged Cover Sections. Handles or lift rings may also be required for some panels. A means of limiting the travel of the hinged Cover sections, in the form of a restraint cable or tether, may also be provided to protect against damage. Covers with inspection hatches or cleanout doors are unacceptable.
 - D. The hinged Cover sections shall also be designed such that alternating sections have integral tabs at each side which rest on the adjacent section, ensuring that the seams between panels are covered and enabling the alternate panels to open independent of every other panel. Alternatively, if there is a requirement that all panels must be independently operable, the seams between panels shall be exposed, integrally molded 2" downward flanges will be included on both sides of each panel and the space between adjacent panels may be optionally-sealed against light with a suitable gasket.
 - E. Provision shall be made to support the Cover in such a manner that the panels are held securely in place, with the panels hinged to provide access to the launder and weir for inspection and maintenance. Cover supports that cantilever from the outer effluent launder wall without support at the weir wall are unacceptable. Neither the Cover nor the means used to support it shall interfere with effluent flow over the weir or within the trough. Cover supports shall not impede personnel from entering and traversing the launder.
 - F. Where the circumference of the trough is interrupted by a bridge-support or another obstacle, a fixed panel(s) shall be installed over the trough beneath the support such that the surface of the Cover is continuous around the entire tank. Alternatively, vertical panels may be installed on both sides of the bridge supports to block out sunlight.
 - G. The Cover system shall be designed to withstand common wind and snow loads but shall not be intended as a "walk-on" Cover designed to support the weight of plant personnel. Adequate stiffeners shall be integral to each panel, but panels reinforced with balsa or foam cores are not acceptable.

2.3. MATERIALS

- A. Each Cover panel shall be molded of fiberglass, reinforced plastics. The resins and fiberglass reinforcing materials shall be consistent with the environmental conditions and structural requirements of the application.
- B. The resin shall be an industrial quality, isophthalic polyester resin with UV suppression additives, Corezyn COR75-AQ-010, or equivalent. The resin shall be pigmented to ensure that the resulting part is opaque. The glass reinforcement shall be chopped strand roving, 357-211 PLN CTC, or equivalent, with a minimum 1/2-inch strand length. Additional reinforcement in the form of stiffening ribs shall be added when necessary. The glass content of the finished laminate shall be not less than 30% by weight. The nominal thickness of each panel shall be 1/4 inch. The laminate shall consist of a 20 mil

outer layer of marine quality white gelcoat, followed by chopped strand roving. The laminations shall be dense and free of voids, dry spots, cracks or crazes. All factory-trimmed edges shall be sanded and sealed. The finished laminate shall have a smooth, even appearance.

- C. Fasteners, handles, hinge and latches shall be stainless steel. The weir wall mounting brackets shall be stainless steel, FRP or a combination of the two. The latch/handle shall be a spring-loaded mechanism with a positive detent positioned to indicate the closed/locked position of the handle. The latch is activated by pressing down on the spring-loaded handle and turning it.
- D. The tether or restraint cable shall consist of a length of stainless steel cable secured to the tank wall and the hinged Cover Section by means of stainless steel eyebolts. The length of the cable is selected to limit the travel of the Cover.

PART 3 EXECUTION

3.1. INSTALLATION

- A. The Cover sections shall be mounted to the weir wall on stainless steel or FRP brackets. The free end of each Cover panel shall be supported at the outer tank wall by an FRP support flange that attaches to the entire periphery of the tank.
- B. The installation contractor shall install the Cover in accordance with the contract drawings, manufacturing drawings and manufacturer's recommendations. Field cutting of panels shall be allowed to complete the structure and accommodate in-tank obstructions. All cut ends shall be dressed as per the manufacturer's recommendations.
- C. All of the fasteners and brackets required for the installation shall be Stainless Steel and shall be supplied by the Cover manufacturer. The support flange and weir wall brackets are installed using 3/8" x 3-3/4" expansion anchors with flat washers, lock washers and hex nuts.

END OF SECTION