

XL3 Tank Cover System

Corrosion Resistance Superior Strength Long Service Life

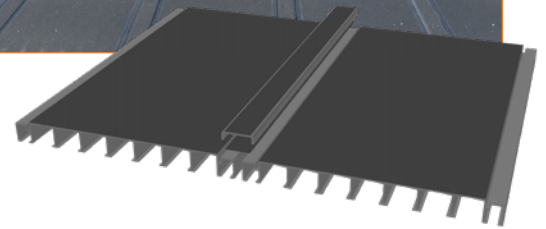
Delivering exceptional benefits and value, the XL3 Tank Cover from Enduro Composites is the most advanced cover system available today. Like its XL6 predecessor, the XL3 fiberglass reinforced plastic (FRP) cover offers appealing qualities for users and operators plus has lighter and easier to remove panels.

- Outstanding strength & corrosion resistance
- Easy access & panel removability
- Odor & vapor control
- Non-skid, structural panels for worker foot traffic
- Easy, low cost installation
- Size versatility

Outstanding Strength & Corrosion Resistance

- Maintenance Free
- Long Service Life

XL3 tank cover components do not corrode in challenging chemical exposures and wet conditions associated with water and wastewater treatment operations. The pultrusion process used for manufacturing produces high content of reinforcing fibers (up to 60% by weight) and strength for long span capability and high load conditions.



Easy Access & Removability

- Removable Panels
- Access Hatches

Weighing 11 lbs per lineal foot, Enduro XL3 panels are lightweight and easy to handle. Removing sections only requires backing out bolts from permanent nutserts. After removing bolts and locking channel, single panels can be removed easily. Access hatches can be sized to fit within individual 30" wide, XL3 panel sections.

Odor & Vapor Control

- Sealed with Gaskets

Sealed with EPDM gaskets at panel joints, end conditions, and at access hatches, the XL3 Cover System effectively contains odors and gases associated with treatment processes. Tested air leakage is .17 CFM/SF at -.20 INWG.

Non-Skid Structural Panels for Worker Foot Traffic

- High Strength Panels
- Gritted Surface

High strength, pultruded panels enable the cover system to be used as a safe, working surface for operators. It's flat, gritted surface protects workers from slipping.

Easy, Low Cost Installation

- Lightweight Sections
- Minimal Fastening & Components

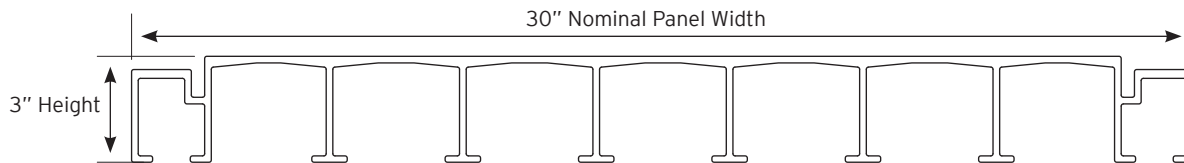
XL3 deck panels and FRP support beams are typically lighter, easier to handle, and field fabricate than alternative materials. Minimal fasteners are required to attach panels and locking channel. Installation of flashings and support beams is similar to installing flashing and roof beams in typical construction.

Size Versatility

- Rectangular Covers
- Round Covers
- Sized for Application

XL3 Tank Covers are custom designed to accommodate most any size tank, either round or rectangular, large or small. Enduro's experienced technical staff can assist design engineers with cost budgets, appropriate material selection, system design, and specifications. For water and wastewater treatment operations, Enduro offers FRP: Tank Covers, Baffle Walls, Weirs and Scum Baffles, Density Current Baffles, Launder Covers, and Building Structures.

XL3 Tank Cover Deck



Maximum Allowable Spans, Lineal Feet

Uniform Positive Load, PSF		20		30		40		50		60	
Span Type		1	2	1	2	1	2	1	2	1	2
L/D	120	14.2	18.9	12.4	15.4	11.3	13.4	10.5	12.0	9.8	10.9
	180	12.4	16.7	10.8	14.5	9.8	13.2	9.1	12.0	8.6	10.9
	240	11.3	15.1	9.8	13.2	8.9	12.0	8.3	11.1	7.8	10.5
Concentrated Load, Lbs		250		300		400		500			
Span Type		1	2	1	2	1	2	1	2		
L/D	180	13.1	14.6	12.3	13.7	11.2	12.5	10.4	11.6		
	240	13.1	14.6	12.2	13.7	10.6	12.5	9.5	11.2		

Allowable spans are the lesser span controlled by: 1) deflection limit, L/D, or 2) Factor of Safety of 2.0 minimum for maximum allowable load. Allowable spans for concentrated loads also consider maximum deflection of 5/8".

IBC 2015, Section 1607 requires minimum concentrated load loading of 250 lbs. distributed over 2.5'x2.5' area to determine spans for "All roof surfaces subject to maintenance workers".

Please contact Enduro Composites for allowable spans for other requirements such as lower maximum deflection or negative loads for high wind conditions.

SPECIFICATIONS: FIBERGLASS REINFORCED PLASTIC TANK COVER

PART 1 - GENERAL

1.01 Description of Work

Scope of this specification shall include materials for fiberglass reinforced plastic (FRP) tank covers, which may include, but not limited to deck panels; structural supports; flashing; fasteners and anchors; gaskets and sealant.

1.02 Design Criteria

A. Design Loads shall comply with local codes with combined loads determined by Allowable Stress Method.

1. Dead + Live or Snow Load: _____ psf
2. Wind Uplift Load: _____ psf
3. Concentrated Load: _____ lbs

B. Design Limits

1. Dead + Live or Snow Load: Deflection Limit=L/180; Factor of Safety=2.0
2. Wind Uplift less Dead Load: Deflection Limit=L/60; Factor of Safety=1.88
3. Concentrated Load: 250 lb. load distributed over 2.5' x 2.5' area at mid-span of cover panel with deflection not to exceed 5/8" or L/180.
4. Each cover panel shall be removable vertically without having to remove adjacent panels or cutting of components.
5. Air leakage rate shall not exceed .17 CFM/SF at negative pressure of 0.2 inches of water column for a 5 minute duration per testing conducted by a certified agency.

PART 2 - PRODUCTS

2.01 Manufacturer(s)

Standard for design and performance shall be XL3 Tank Cover System manufactured by Enduro Composites, 16602 Central Green Blvd., Houston, TX 77032, 713-358-4000.

2.02 Materials

FRP structural components including decking and structural supports shall be manufactured by pultrusion process. Color of components shall be charcoal gray.

A. Glass fiber reinforcements shall be minimum of 50% of the material weight.

B. Materials shall be fire retardant with flame spread rating of 25 or less per ASTM E84 test.

C. Materials shall exhibit these Physical Properties (min):

Tensile Strength (ASTM D638)	30,000 psi
Compressive Strength (ASTM D695)	30,000 psi
Flexural Strength (ASTM D790)	30,000 psi

D. XL3 Tank Cover Deck Panels

1. FRP deck panels shall have minimum thickness of 3/16".
2. Resin type for FRP tank cover decking shall be: _____ Isophthalic Polyester _____ Vinyl Ester.
3. Top of the tank cover decking shall be flat with factory applied, non-skid, UV resistant surface, gray or beige color.

E. FRP Structural Framing (if required)

1. Resin type for FRP beams shall be vinyl ester.
2. Metal angles or plates attached to FRP beams or connections shall be 316SS.

F. Hatches (if required)

1. Access hatches shall be sized as indicated on drawings.
2. Hatches shall have a hold-open device to prevent door from blowing open or closing on itself.
3. Hatch lids shall have plastic or stainless steel lift handles.
4. View port hatches shall be 12 inches square or less.

G. Flashing and Trim shall be FRP or 316SS.

H. Hardware

1. Fasteners, anchors, hinges, and other accessories located on underside of cover shall be 316SS.
2. Perimeter flashing fasteners, concrete anchors, or other hardware not exposed to inside of tank shall be 304SS.
3. Fasteners to attach tank cover decking shall be 316SS and have gasket seal washers.

I. Gaskets and Sealants

1. Gaskets shall be installed at end joints of deck panels and below flashing to seal perimeter and seams.
2. Sealant shall be applied by Contractor at various locations as required.