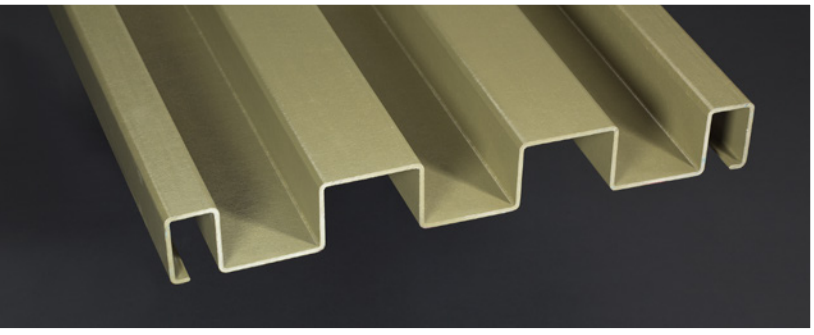
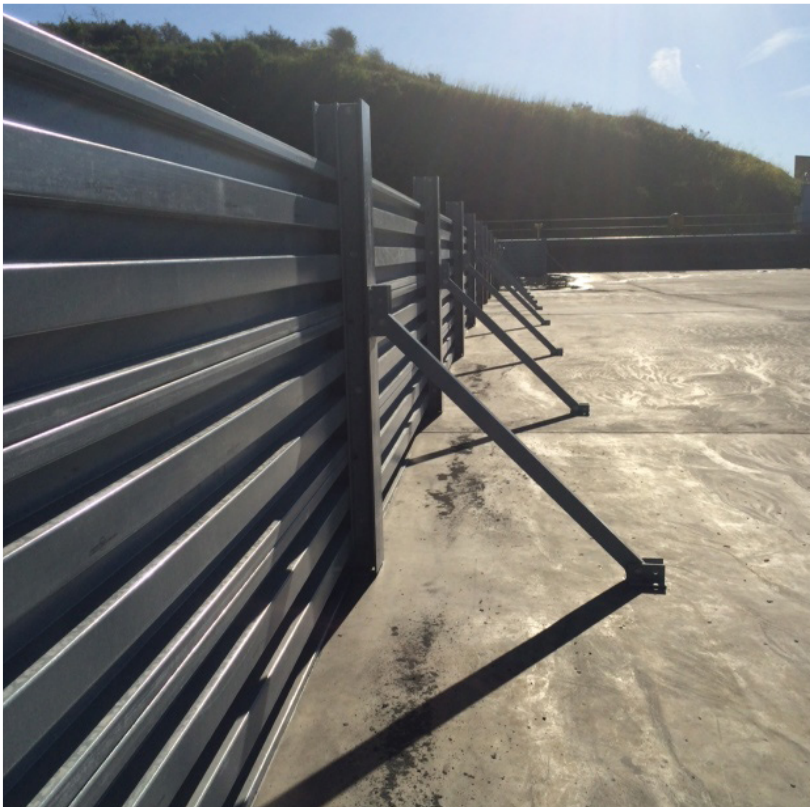
PROTECTOLITE™
COMPOSITES INC.

FIBERGLASS BAFFLE PANELS

- Corrosion Resistant
- High Strength
- Lightweight
- Low Maintenance
- UV Resistant
- Low Conductivity
- Dimensionally Stable





Fiberglass Baffle Panels

lightweight, high strength fiberglass baffle panels are ideal for underwater flow control applications.

Fiberglass baffle panels are cost effective because they have a much longer life cycle than wood, concrete, steel, and other traditional materials that are subject to rot and corrosion. The lightweight panels are easy to install and can be easily removed for cleaning and access.

Baffle panels are available in 12" and 24" nominal widths for easy fabrication and installation of new systems or the rehabilitation of existing systems. Baffles can be mounted to existing columns, attached to H-beams, or attached to concrete walls with clip angles (see details on page 4).

Common Applications:

- Municipal Industrial Water and Wastewater Systems
- Aeration Chambers
- Contact Chambers
- Retention Basins

Materials of Construction

Baffle panels are available in 12" and 24" nominal widths to offer flexibility in design and fabrication. Standard baffle panels are manufactured using a polyester resin. Optional resin systems offered include a fire retardant polyester resin system, a vinyl ester resin system for enhanced corrosion resistance, or a resin system that meets NSF 61 requirements. Panels include a UV inhibitor and a surfacing veil for additional corrosion resistance and UV protection.

HOW TO SPECIFY

FRP baffle panels shall be manufactured using the pultrusion process. Resin shall be (isophthalic polyester) (isophthalic polyester with fire retardant additive) (vinyl ester) (NSF 61 resin certified for potable water applications) with ultraviolet (UV) inhibitor additives. A minimum 7 mil. synthetic surface veil shall be the outermost layer covering the exterior surface.

Panels shall meet the following minimum coupon properties:

Tensile Strength: 52,200 psi (ASTM D638)

Flexural Strength: 63,700 psi (ASTM D790)

Flexural Modulus: 1,910,000 psi (ASTM D790)

Water Absorption: 0.25% (ASTM D570) (typical value)

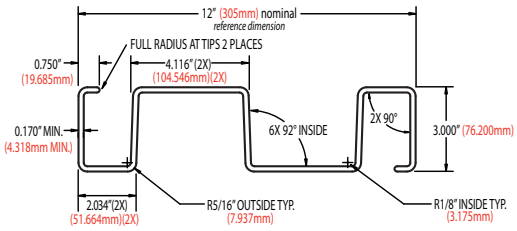
IZOD Impact (Notched): 33.3 ft. lbs./in. (ASTM D256)

Compressive Strength: 52,100 psi (ASTM D695)

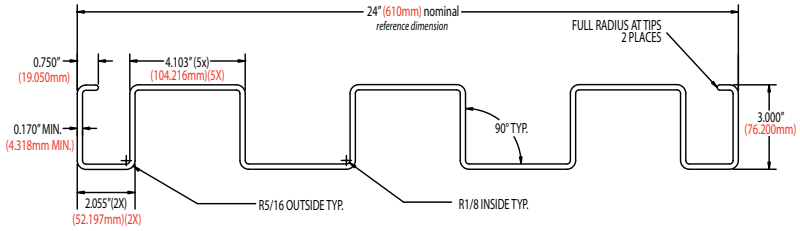
Baffle panels shall be (12" nominal) (24" nominal) x 3" x 0.170", containing a minimum of 55% glass fiber reinforcements (by weight). All fasteners, anchors, and structural hardware shall be 316 stainless steel or FRP, with connections as shown on approved shop drawings.

PROPERTIES

Profiles



12" Baffle Panel
3" x 12" (76mm x 305mm) nominal
3.7 lb/ft (5.5 kg/m)



24" Baffle Panel
3" x 24" (76mm x 610mm) nominal
6.5 lb/ft (9.7 kg/m)

Characteristic Coupon Properties

PROPERTIES	ASTM TEST METHOD	VALUE
Tensile Strength, LW	ASTM D638	52,200 psi (3.60×10^5 kPa)
Flexural Strength, LW	ASTM D790	63,700 psi (4.39×10^5 kPa)
Flexural Modulus, LW	ASTM D790	1.91×10^6 psi (1.32×10^7 kPa)
Water Absorption	ASTM D570	0.25% (typical value)
IZOD Impact (Notched)	ASTM D256	33.3 ft. lbs./in. (1.77 J/mm)
Compressive Strength	ASTM D695	52,100 psi (3.59×10^5 kPa)

Note: Characteristic values are calculated in accordance to ASTM D7290 Standard Practice for Evaluating Material Property Characteristic Values for Polymeric Composites for Civil Engineering Structural Applications

24" Baffle Design Properties

PROPERTIES	VALUE
I_{x-x}	11.388 in^4 (474 cm^4)
Moment Capacity	65,700 in-lb/ft (2,260 N-m/m)
Modulus of Elasticity	2.94×10^6 mpsi (20.2×10^6 kPa)
Stiffness (EI)	33.55×10^6 lb-in^2/ft (29.35×10^9 N-mm^2/m)

Load Span Table

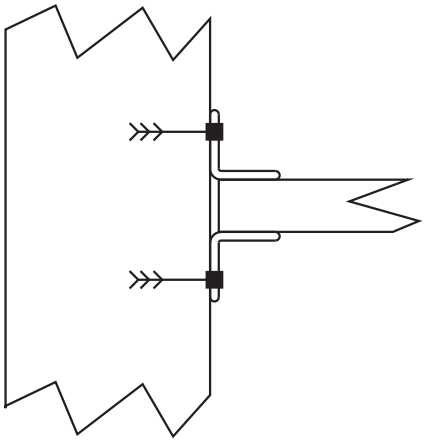
Water Differential	1" (25.4mm)		2" (50.8mm)		3" (76.2mm)		4" (101.6mm)		5" (127.0mm)		6" (152.4mm)		8" (203.2mm)		10" (254mm)		12" (254mm)	
Uniform Load	5.2 psf (25.4 kg/m^2)		10.4 psf (50.8 kg/m^2)		15.6 psf (76.1 kg/m^2)		20.8 psf (101.5 kg/m^2)		26.0 psf (126.9 kg/m^2)		31.2 psf (152.3 kg/m^2)		41.6 psf (203.0 kg/m^2)		52.0 psf (253.8 kg/m^2)		62.4 psf (304.5 kg/m^2)	
SPAN	L/D	FOS	L/D	FOS	L/D	FOS	L/D	FOS	L/D	FOS	L/D	FOS	L/D	FOS	L/D	FOS	L/D	FOS
8' (2.44m)	>360	>6	>360	>6	>360	>6	>360	>6	>360	>6	>360	>6	>360	>6	336	>6	280	5.5
9' (2.74m)	>360	>6	>360	>6	>360	>6	>360	>6	>360	>6	>360	>6	300	>6	240	5.3	200	4.4
10' (3.05m)	>360	>6	>360	>6	>360	>6	>360	>6	355	>6	296	>6	222	5.5	177	4.4	148	3.6
11' (3.35m)	>360	>6	>360	>6	>360	>6	338	>6	270	>6	225	>6	169	4.6	135	3.7	113	3.1
12' (3.66m)	>360	>6	>360	>6	351	>6	263	>6	211	>6	175	5.2	132	3.9	105	3.1		
13' (3.96m)	>360	>6	>360	>6	279	>6	209	>6	167	5.4	139	4.5	105	3.4				
14' (4.27m)	>360	>6	338	>6	225	>6	169	5.9	135	4.8	113	4.0						
15' (4.57m)	>360	>6	277	>6	185	>6	139	5.3	111	4.2	92	3.5						
16' (4.88m)	>360	>6	230	>6	153	>6	115	4.7	92	3.8	77	3.1						
17' (5.18m)	>360	>6	193	>6	129	5.6	96	4.2	77	3.4								
18' (5.49m)	326	>6	163	>6	109	5.1	82	3.8										
19' (5.79m)	279	>6	139	>6	93	4.6												
20' (6.10m)	239	>6	120	>6														
21' (6.40m)	207	>6	104	5.9														

INSTALLATION DETAILS

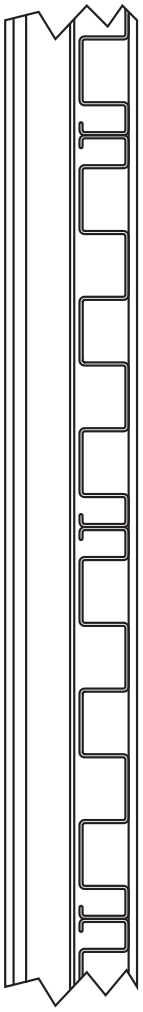
Typical Installation Methods

Baffles can be mounted to existing columns, attached to H-beams, or attached to concrete walls with clip angles .

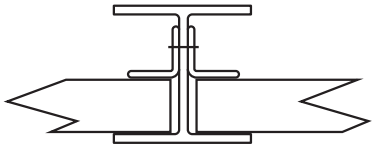
Concrete Connection



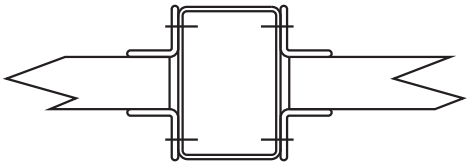
Elevation



Beam Connection



Tube Connection



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