

FRP Structural Shapes and Plates

EXTREN® Structural Shapes and Plates

EXTREN® is a proprietary combination of fiberglass reinforcements and thermoset polyester or vinyl ester resin systems. It is produced in more than 100 standard shapes. All EXTREN® shapes have a surface veil to protect against glass fibers penetrating the resin surface in service and to increase corrosion and UV resistance.

EXTREN® is offered in three series designed for different environments and applications:

EXTREN® 500: An all-purpose series utilizing a premium polyester resin system with a UV inhibitor.

Color: olive green

EXTREN® 525: An all-purpose series utilizing a fire retardant premium polyester resin system with a UV inhibitor.

Color: slate gray (plus certain handrail and fixed-ladder components in yellow)

EXTREN® 625: A premium series — both fire retardant and highly corrosion resistant — utilizing a vinyl ester resin system with a UV inhibitor.

Color: beige



All structural shapes are available in a polyester resin (Strongwell PE) and vinyl ester resin (Strongwell VE) which are certified to NSF-61. Any Series 500, 525 and 625 EXTREN® product can be manufactured upon request to meet the mechanical and physical properties of BS EN 13706 (E23) European standards.

FABRICATING WITH EXTREN®

JOINING - EXTREN® can be fastened mechanically with screws, bolts or rivets. FIBREBOLT® fiberglass studs and hex nuts (available from FABCO) can also be used with EXTREN®. EXTREN® can be joined by adhesives. The strongest connections can be made by using a combination of mechanical fasteners with adhesives. Suggested fabrication techniques for EXTREN® are covered in MFG's EXTREN® Fabrication and Repair Manual.

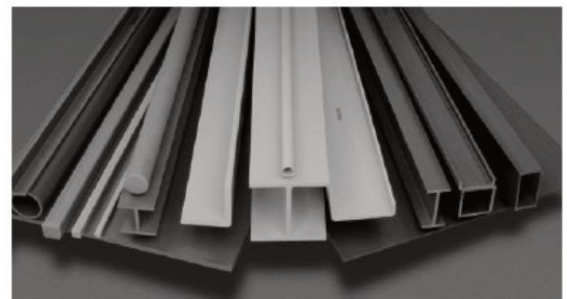
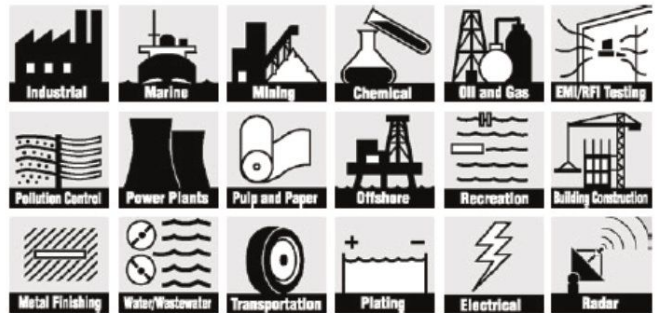
Features

- Corrosion Resistant
- Low Conductivity - Thermally and Electrically
- Non-Magnetic - Electromagnetic
- Lightweight
- High Strength
- Dimensional Stability
- Low Maintenance



Strongwell's pultruded fiberglass structural materials - including structural shapes, grating, stair treads, decking, handrail, ladders and more - are ideal for use in extreme environments like waterparks and pools.

EXTREN® FIBERGLASS STRUCTURAL SHAPES & PLATE



The three EXTREN® series: (left to right) 500, 625 and 525.



EXTREN® structural shapes were used in a SXEW copper refinery because of the highly corrosive environment.



A 63' (19.2m) high freestanding fiberglass stair tower at Ft. Story Army Base, Virginia Beach, Virginia.

EXTREN® FIBERGLASS STRUCTURAL SHAPES & PLATE

EQUAL LEG ANGLES



Sizes in Inches	Series 500	Series 525	Series 625	Lbs. Per Lin. Ft.
1 x 1/8	STOCKED	STOCKED	STOCKED	0.18
1-1/4 x 1/8	NS	NS	NS	0.22
1-1/4 x 3/16	STOCKED	STOCKED	NS	0.35
1-1/2 x 1/8	NS	STOCKED	NS	0.28
1-1/2 x 3/16	NS	NS	NS	0.41
1-1/2 x 1/4	STOCKED	STOCKED	STOCKED	0.50
2 x 1/8	NS	NS	NS	0.37
2 x 3/16	STOCKED	STOCKED	NS	0.56
2 x 1/4	STOCKED	STOCKED	STOCKED	0.73
3 x 1/4	STOCKED	STOCKED	STOCKED	1.08
3 x 3/8	STOCKED	STOCKED	STOCKED	1.66
4 x 1/4	STOCKED	STOCKED	STOCKED	1.50
4 x 3/8	STOCKED	STOCKED	STOCKED	2.08
4 x 1/2	NS	STOCKED	STOCKED	2.86
5 x 1/2	NS	NS	NS	3.80
6 x 1/4	NS	STOCKED	NS	2.29
6 x 3/8	NS	NS	NS	3.56
6 x 1/2	STOCKED	STOCKED	STOCKED	4.41

CHANNELS



Sizes in Inches	Series 500	Series 525	Series 625	Lbs. Per Lin. Ft.
1-1/2 x 1 x 3/16	NS	NS	NS	0.46
1-1/2 x 1-1/2 x 1/4	NS	STOCKED	NS	0.74
2 x 9/16 x 1/8	STOCKED	STOCKED	NS	0.28
2 x 7/8 x 1/4	NS	NS	NS	0.76
2-5/8 x 1/8 x 1-1/4 x 3/16	NS	NS	NS	0.59
3 x 1 x 3/16	NS	NS	NS	0.68
3 x 7/8 x 1/4	STOCKED	STOCKED	STOCKED	0.77
3 x 1-1/2 x 1/4	NS	NS	NS	1.06
3-1/2 x 1-1/2 x 3/16	NS	STOCKED	NS	0.90
4 x 1-1/16 x 1/8	NS	NS	NS	0.53
4 x 1-3/8 x 3/16	STOCKED	STOCKED	NS	0.87
4 x 1-1/8 x 1/4	STOCKED	STOCKED	NS	1.07
5 x 1-3/8 x 1/4	NS	NS	NS	1.35
5-1/2 x 1-1/2 x 3/16	NS	NS	NS	1.19
5-1/2 x 1-1/2 x 1/4	NS	STOCKED	NS	1.55
6 x 1-5/8 x 1/4	STOCKED	STOCKED	STOCKED	1.68
6 x 1-11/16 x 3/8	NS	STOCKED	NS	2.38
8 x 2-3/16 x 1/4	NS	STOCKED	NS	2.24
8 x 2-3/16 x 3/8	STOCKED	STOCKED	STOCKED	3.41
10 x 2-3/4 x 1/2	NS	STOCKED	STOCKED	5.50
12 x 3 x 1/2	NS	NS	NS	6.50
14 x 3-1/2 x 3/4	NS	NS	NS	10.73
18 x 2-3/16 x 3/16	NS	NS	NS	3.88
24 x 3 x .260	NS	NS	NS	6.16

I-BEAMS



Sizes in Inches	Series 500	Series 525	Series 625	Lbs. Per Lin. Ft.
2 x 1 x 1/8	NS	NS	NS	0.37
3 x 1-1/2 x 1/4	NS	NS	NS	1.11
4 x 2 x 1/4	STOCKED	STOCKED	STOCKED	1.48
5-1/2 x 2-1/2 x 1/4	NS	STOCKED	NS	2.00
6 x 3 x 1/4	NS	STOCKED	NS	2.31
6 x 3 x 3/8	NS	NS	NS	3.39
6 x 4 x 1/4	NS	NS	NS	3.20
8 x 4 x 3/8	STOCKED	STOCKED	NS	4.40
8 x 4 x 1/2	NS	NS	NS	5.96
10 x 5 x 3/8	NS	NS	NS	5.55
10 x 5 x 1/2	NS	NS	NS	7.81
12 x 6 x 1/2	NS	NS	NS	9.07
18 x 3/8 x 4-1/2 x 1/2	NS	NS	NS	8.52
24 x 3/8 x 7-1/2 x 3/4	NS	NS	NS	15.77

WIDE FLANGE BEAMS



Sizes in Inches	Series 500	Series 525	Series 625	Lbs. Per Lin. Ft.
2 x 1/8	NS	NS	NS	0.58
3 x 1/4	STOCKED	STOCKED	NS	1.69
4 x 1/4	STOCKED	STOCKED	STOCKED	2.35
6 x 1/4	STOCKED	STOCKED	STOCKED	3.39
6 x 3/8	STOCKED	STOCKED	STOCKED	5.19
8 x 3/8	NS	STOCKED	STOCKED	6.97
8 x 1/2	NS	NS	NS	9.37
10 x 1/2	NS	NS	NS	8.78
10 x 3/8	NS	NS	NS	12.06
12 x 1/2	NS	NS	NS	13.98

All items are stocked in 20 foot lengths unless otherwise noted
 ■ Items are non-stocked items

Series 500 - Polyester resin, olive green
 Series 525 - Polyester resin, flame retardant, slate gray
 Series 625 - Vinyl Ester resin, flame retardant, beige

FRP Structural Shapes and Plates

SQUARE TUBE



Sizes in Inches	Series 500	Series 525	Series 625	Lbs. Per Lin. Ft.
1 x 1/8	STOCKED	STOCKED	NS	0.35
1-1/4 x 1/8	NS	NS	NS	0.41
1-1/2 x 1/8	STOCKED	STOCKED	NS	0.56
1-1/2 x 1/4	NS	NS	NS	0.98
1-3/4 x 1/8	NS	NS	NS	0.64
1-3/4 x 1/4	NS	NS	NS	1.19
2 x 1/8	NS	STOCKED	NS	0.72
2 x 1/4*	STOCKED	STOCKED	STOCKED	1.37
2-1/2 x 1/4	NS	NS	NS	1.73
3 x 1/8	NS	NS	NS	1.16
3 x 1/4	STOCKED	STOCKED	STOCKED	2.26
3 x 3/8	NS	NS	NS	3.20
3-1/2 x 1/4	NS	STOCKED	NS	2.81
4 x 1/4	STOCKED	STOCKED	STOCKED	2.99
4 x 3/8	NS	NS	NS	4.24
6 x 3/8	NS	STOCKED	NS	6.62

ROUND TUBE



Sizes in Inches	Series 500	Series 525	Series 625	Lbs. Per Lin. Ft.
1 x 1/8	NS	NS	NS	0.25
1-1/4 x 1/8	NS	NS	NS	0.32
1-1/2 x 1/8	NS	NS	NS	0.45
1-1/2 x 1/4	NS	NS	NS	0.79
1-3/4 x 1/8	NS	NS	NS	0.52
1-3/4 x 1/4	NS	NS	NS	0.94
2 x 1/8	NS	NS	NS	0.60
2 x 1/4	STOCKED	STOCKED	NS	1.12
2-1/2 x 1/4	STOCKED	STOCKED	NS	1.43
3 x 1/4	NS	NS	NS	1.70
3-1/2 x 1/4	NS	NS	NS	1.21
4 x 1/4	NS	NS	NS	2.36
5 x 1/4	NS	NS	NS	3.08
6 x 1/8	NS	NS	NS	1.92
6 x 1/4	NS	NS	NS	3.76

RECTANGULAR TUBE



Sizes in Inches	Series 500	Series 525	Series 625	Lbs. Per Lin. Ft.
2-1/2 x 1-5/8 x 1/8	NS	NS	NS	0.75
4 x 1/8 x 2 x 1/4	STOCKED	STOCKED	NS	1.52
3-1/2 x 5-1/2 x 1/4	NS	STOCKED	NS	3.42
6-1/2 x 1/4 x 2 x 1/2	NS	NS	NS	3.86
7 x 4 x 1/4	NS	NS	NS	4.09
9 x 6 x 5/16	NS	NS	NS	6.80
9 x 6 x 7/16	NS	NS	NS	9.72

PLATE

EXTREN® pultruded plate is stocked in six thicknesses - see below. EXTREN® plate is a stocked item and is usually available on short notice. Stock size is 48" x 96".
60" wide plate is also available, non-stocked. Other sizes are available and will be quoted upon request.



Thickness in Inches	Series 500	Series 525	Series 625	Weight Lbs. Per Sq. Foot
1/8	STOCKED	STOCKED	STOCKED	1.20
3/16	STOCKED	NS	NS	1.71
1/4	STOCKED	STOCKED	STOCKED	2.34
3/8	STOCKED	STOCKED	NS	3.54
1/2	STOCKED	STOCKED	STOCKED	4.82
5/8	NS	NS	NS	5.79
3/4	STOCKED	STOCKED	STOCKED	7.24
1	NS	STOCKED	NS	8.50

All items are stocked in 20 foot lengths unless otherwise noted

* Also stocked in Series 525 yellow

■ Items are non-stocked items

Series 500 - Polyester resin, olive green

Series 525 - Polyester resin, flame retardant, slate gray

Series 625 - Vinyl Ester resin, flame retardant, beige

ROD AND BAR

THERMAL CURE ROD AND BAR is produced using all longitudinal reinforcements with low speed and high temperature, which provides a rich surface appearance. It has no surfacing veil, no pigment and is not fire retardant. On request, Strongwell can quote special formulations including resin type, fire retardant properties, etc. Because it maintains high electrical standards, thermal cure rod is most commonly specified for electrical applications. Normally stocked for prompt delivery. *Thermal cure rod and bar was not designed to be machined.*

ROUND ROD*



Sizes in Inches	Thermal Cure	Lbs. Per Lin. Ft.
1/4	STOCKED	0.04
5/16	STOCKED	0.07
3/8	STOCKED	0.10
1/2	STOCKED	0.17
5/8	STOCKED	0.27
3/4	STOCKED	0.39
13/16	NS	0.45
7/8	NS	0.53
1	STOCKED	0.69
1-1/8	NS	0.87
1-1/4	NS	1.03
1-1/2	NS	1.52
2	NS	2.78

SQUARE BAR*



Sizes in Inches	Thermal Cure	Lbs. Per Lin. Ft.
1/2	STOCKED	0.22
5/8	STOCKED	0.34
3/4	NS	0.49
1	STOCKED	0.87
1-1/4	NS	1.35
1-1/2	STOCKED	1.83

Sizes 3/4" diameter and smaller will be stocked in Chatfield, MN

SPECIAL COMPOSITE SHAPES

(Special Composite Design — Not EXTREN® Composite)

All Special Composite Shapes are Nonstocked items unless otherwise noted.

Tooling is available for the following special nonstocked items

	PE	PE/FR	VE/FR	Lbs. Per Lin. Foot
TOP RAIL				
2 x 1/4 Modified Rd Tube	NS	NS	NS	1.29
FLIGHT CHANNEL				
5-1/4 x 1/8 x 2-1/2 x 3/16	NS			1.33
7-1/8 x 1/8 x 2-1/2 x 3/16	NS			1.60
CHANNEL				
3-1/2 x 2 x 7/32	NS	NS	NS	1.20
1.875 x .125 x 1.125 x .188**	NS			0.48
3.290 x .128 x 1.180 x .190**	NS			0.65
3.310 x .135 x 1.187 x .210**	NS			0.69
4.000 x .125 x 1.750 x .187**	NS			0.94
STRUT				
1-5/8 x 1-5/8 x 5/32	NS	NS	NS	0.65
SQUARE TUBE/ROUND HOLE				
1" Sq. with 3/4" Rd. Hole	NS	NS	NS	0.49

All items are stocked in 20 foot lengths unless otherwise noted
 NS Items are non-stocked items

* Special Composite Design - Not EXTREN® Composite
 ** Nonstocked item; standard color - orange