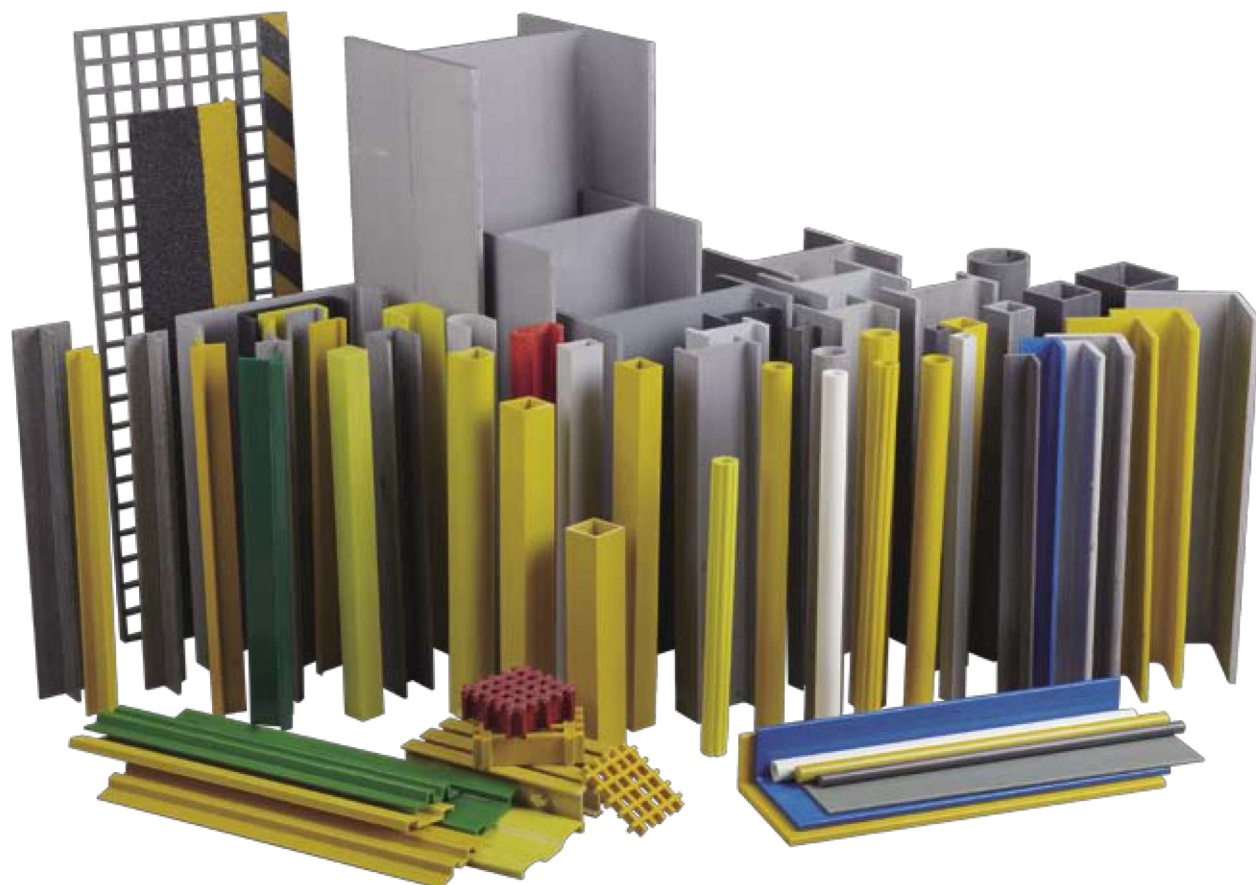


## Pultruded profiles

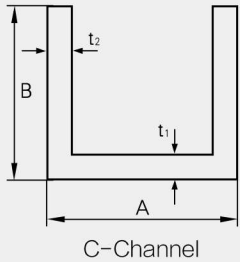


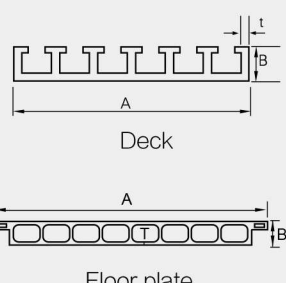
Chemical resistance chart of Pultruded profiles

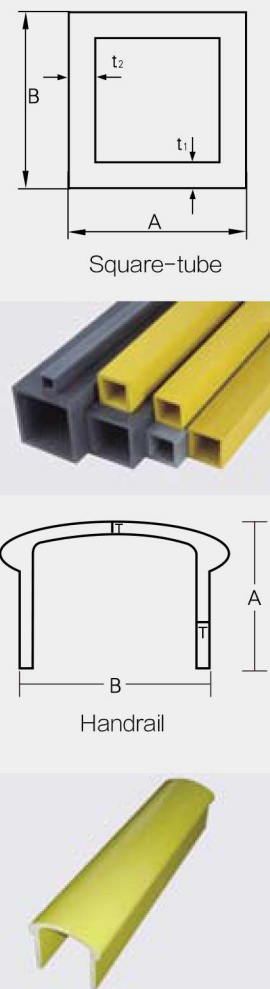
Chemical	Type 'vinyl'		Type 'Iso'	
	%Conc.	Max. Oper. Temp	%Conc.	Max. Oper. Temp
Acetic acid	50	180/82	50	125/52
Benzonic acid	SAT	200/93	SAT	150/66
Chromate	10	120/49	5	70/21
Citric acid	ALL	200/93	ALL	170/77
Hydrobromic acid	50	120/49	50	120/49
Hydrochloric acid	37	100/38	37	75/24
Lactic acid	ALL	200/93	SAT	170/77
Nirate	20	100/38	20	70/21
Oxalic acid	ALL	120/96	ALL	75/24
Perchloric acid	30	80/27	N/R	N/R
Phosphate	100	200/93	100	120/49
Sulfuric acid	75	100/38	25	75/24
Tartaric acid	ALL	200/93	ALL	170/77
Vineger	100	200/93	100	170/77
Ammonium hydroxide	28	100/38	28	N/R
OH	100	170/77	100	160/71

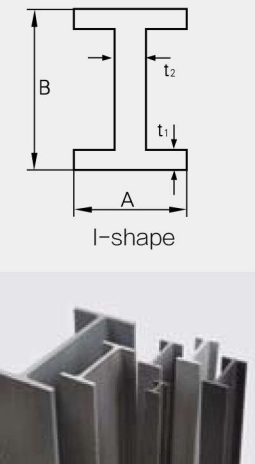
borax	SAT	200/93	SAT	170/77
Ammonium oxidation	ALL	190/88	ALL	170/77
Ammonium bicarbonate	50	150/65	15	125/52
Ammonium sulfate	ALL	200/93	ALL	170/77
Calcium carbonate	ALL	180/82	SAT	170/77
Calcium nitrate	ALL	200/93	ALL	180/82
Copper chloride	ALL	200/93	ALL	170/77
Copper cyanide	ALL	200/93	ALL	170/77
Copper nitrate	ALL	200/93	ALL	170/77
Ferric chloride	ALL	200/93	ALL	170/77
Ferrous chloride	ALL	200/93	ALL	170/77
Lithium chloride	SAT	200/93	SAT	150/66
Magnesium chloride	ALL	200/93	ALL	170/77
Magnesium nitrate	ALL	180/82	ALL	150/66
Magnesium sulfate	ALL	190/88	ALL	170/77
Mercuric chloride	100	190/88	100	150/66
Calomel	ALL	180/82	ALL	140/60
Nickel chloride	ALL	200/93	ALL	170/77
Nickel sulfate	ALL	200/93	ALL	170/77
Potassium chloride	ALL	200/93	ALL	170/77
Potassium dichromate	ALL	200/93	ALL	170/77
Potassium nitrate	ALL	200/93	ALL	170/77
Potassium sulfate	ALL	200/93	ALL	170/77
Sodium acetate	ALL	200/93	ALL	160/71
Sodium bisulfate	ALL	200/93	ALL	170/77
Sodium bromide	ALL	200/93	ALL	170/77
Sodium chlorine	ALL	200/93	ALL	170/77
Sodium cyanide	25	150/66	N/R	N/R
Sodium nitrate	ALL	200/93	ALL	170/77
Sodium sulfate	ALL	200/93	ALL	170/77
Stannic chloride	ALL	200/93	ALL	170/77
Zinc nitrate	ALL	190/88	ALL	160/71
Phenoxin	100	200/93	N/R	170/77
Chlorine	...	75/24	...	N/R
Chlorine water	SAT	170/77	SAT	140/60
Ethanol	50	180/82	50	80/27
Diethylene glycol	100	90/32	100	75/24
formaldehyde	ALL	200/93	50	90/32
gasoline	100	100/38	100	75/24
glucose	100	150/65	100	80/27
Glycerol	100	200/93	100	170/77
Peroxide	30	200/93	5	150/66
Diethylpropanediol	ALL	100/38	ALL	100/38
Distilled water	100	200/93	100	170/77
Benzene	N/R	180/82	N/R	170/77

ALL-concentrations; SAT-saturated solution; N/R- not recommended; ...-no information available

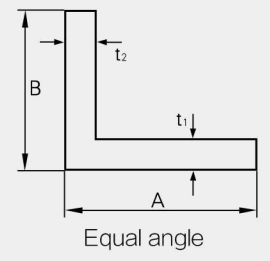
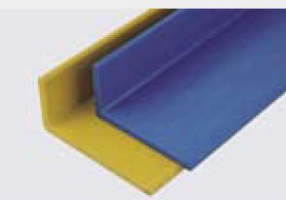

View/instance	Type	Dimension ( mm )	Weight ( kg/m )
 <p>C-Channel</p>	C-Channel	$A \times B \times T_1 \times T_2$	
	C26	26 × 17 × 3.2 × 3.2	0.30
	C32	32 × 13 × 3 × 3	0.25
	C40	40 × 24 × 3.2 × 3.2	0.50
	C45	45 × 28 × 6.4 × 6.4	0.91
	C50	50 × 14 × 3.2 × 3.2	0.44
	C52	52 × 50 × 6 × 6	1.63
	C70	70 × 30 × 4.5 × 4.5	0.95
	C75	75 × 35 × 5 × 5	1.30
	C76A	76 × 22 × 6.4 × 6.4	1.31
	C76B	76 × 25 × 4.8 × 4.8	1.06
	C76C	76 × 38 × 6.4 × 6.4	1.70
	C90A	90 × 35 × 8.0 × 8.0	2.10
	C102A	102 × 27 × 3.2 × 3.2	0.91
	C102B	102 × 29 × 4.8 × 4.8	1.37
	C102C	102 × 29 × 6.4 × 6.4	1.78
	C102D	102 × 35 × 4.8 × 4.8	1.48
	C102E	102 × 44 × 4.8 × 4.8	1.65
	C102F	102 × 44 × 6.4 × 6.4	2.10
	C120	120 × 50 × 5.0 × 5.0	2.00
	C150	150 × 41 × 8.0 × 8.0	3.28
	C152A	152 × 42 × 4.8 × 4.8	2.03
	C152B	152 × 42 × 6.4 × 6.4	2.72
	C152C	152 × 42 × 8.8 × 8.0	3.35
	C152D	152 × 42 × 9.5 × 9.5	3.95
	C152E	152 × 50 × 8.0 × 8.0	3.59
	C203A	203 × 56 × 6.4 × 6.4	3.68
	C203B	203 × 56 × 9.5 × 9.5	5.34
	C254	254 × 70 × 12.7 × 12.7	8.90
	C210A	210 × 55 × 5.0 × 5.0	2.95
	C210B	210 × 80 × 5.0 × 5.0	3.42
	C210C	210 × 85 × 5.0 × 5.0	3.52
C292	292 × 70 × 12.7 × 12.7	9.60	
C120A	120 × 25 × 5.0 × 5.0	1.52	
C120B	120 × 30 × 5.0 × 5.0	1.62	
C120C	120 × 40 × 5.0 × 5.0	1.81	

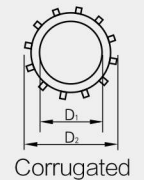

View/instance	Type	Dimension ( mm )	Weight ( kg/m )
 <p>Deck</p> <p>Floor plate</p>	Deck	$A \times B \times T$	
		305 × 47.5 × 6.4	8.5
		500 × 48.5 × 6.0	16.4
		500 × 40 × 5.0	10.5
	Floor plate	$A \times B \times T$	
		500 × 48.5 × 6.0	16.4
	650 × 98.5 × 13	55.3	
	725 × 45 × 4.5	17.5	

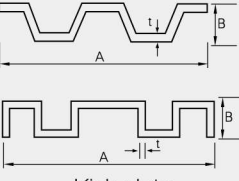
View/instance	Type	Dimension ( mm )	Weight ( kg/m )
 <p>Square-tube</p> <p>Handrail</p>	Square-tube	$A \times B \times T \times 1T2$	
	ST25A	25 × 25 × 2.8 × 2.8	0.50
	ST25B	25 × 25 × 3.2 × 3.2	0.53
	ST25C	25 × 25 × 6.4 × 6.4	0.90
	ST32	32 × 32 × 6.4 × 6.4	1.24
	ST38A	38 × 38 × 3.2 × 3.2	0.85
	ST38B	38 × 38 × 5.0 × 5.0	1.25
	ST38C	38 × 38 × 6.4 × 6.4	1.54
	ST44A	44 × 44 × 3.2 × 3.2	1.01
	ST44B	44 × 44 × 6.4 × 6.4	1.83
	ST50A	50 × 50 × 3.2 × 3.2	1.14
	ST50B	50 × 50 × 3.5 × 3.5	1.24
	ST50C	50 × 50 × 4.0 × 4.0	1.42
	ST50D	50 × 50 × 5.0 × 5.0	1.74
	ST50E	50 × 50 × 6.4 × 6.4	2.12
	ST54A	54 × 54 × 3.2 × 3.2	1.24
	ST54B	54 × 54 × 4.8 × 4.8	1.78
	ST64A	64 × 64 × 3.2 × 3.2	1.48
	ST64B	64 × 64 × 4.4 × 4.4	1.97
	ST64C	64 × 64 × 6.4 × 6.4	2.80
	ST76A	76 × 76 × 3.2 × 3.2	1.77
	ST76B	76 × 76 × 5.0 × 5.0	2.70
	ST76C	76 × 76 × 6.4 × 6.4	3.39
	ST101A	101 × 101 × 3.2 × 3.2	2.38
ST101B	101 × 101 × 5.0 × 5.0	3.61	
ST101C	101 × 101 × 6.4 × 6.4	4.61	
ST152A	152 × 152 × 6.4 × 6.4	7.10	
ST152B	152 × 152 × 9.5 × 9.5	10.4	
ST152C	152 × 152 × 12.7 × 12.7	13.5	
Handrail	$A \times B \times T$		
	62 × 60 × 5.0	1.70	

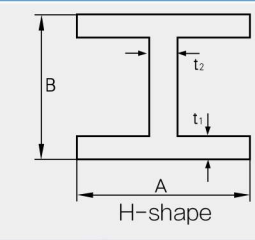

View/instance	Type	Dimension ( mm )	Weight ( kg/m )
 <p>I-shape</p>	I-shape	$A \times B \times T1 \times T2$	
	IB25	15 × 25 × 4.0 × 6.4	0.40
	IB32	15 × 32 × 4.0 × 6.4	0.44
	IB38A	15 × 38 × 4.0 × 6.4	0.51
	IB38B	38 × 76 × 6.4 × 6.4	1.69
	IB50A	50 × 102 × 6.4 × 6.4	2.40
	IB50B	50 × 102 × 8.0 × 8.0	3.00
	IB76A	76 × 152 × 6.4 × 6.4	3.59
	IB76B	76 × 152 × 9.5 × 9.5	5.32
	IB102A	102 × 203 × 9.5 × 9.5	7.20
	IB102B	102 × 203 × 12.7 × 12.7	9.50
	IB127A	127 × 254 × 9.5 × 9.5	9.00
	IB127B	127 × 254 × 12.7 × 12.7	11.90
	IB152A	152 × 305 × 9.5 × 9.5	10.74
IB152B	152 × 305 × 12.7 × 12.7	14.30	

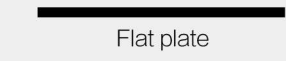





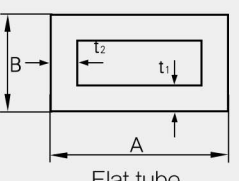

View/instance	Type	Dimension ( mm )	Weight ( kg/m )
 Equal angle  	Equal angle	$A \times B \times T_1 \times T_2$	
	EL32	32 × 32 × 4.0 × 4.0	0.42
	EL38A	38 × 38 × 4.8 × 4.8	0.65
	EL38B	38 × 38 × 6.4 × 6.4	0.85
	EL38C	38 × 38 × 5.0 × 5.0	0.65
	EL45	45 × 45 × 4.8 × 4.8	0.75
	EL50A	50 × 50 × 3.2 × 3.2	0.59
	EL50B	50 × 50 × 6.4 × 6.4	1.14
	EL70A	70 × 70 × 24 × 6.0	3.75
	EL76A	76 × 76 × 3.2 × 3.2	0.91
	EL76B	76 × 76 × 4.8 × 4.8	1.34
	EL76C	76 × 76 × 6.4 × 6.4	1.77
	EL76D	76 × 76 × 9.5 × 9.5	2.57
	EL76E	76 × 76 × 12.7 × 12.7	3.40
	EL101A	101 × 101 × 6.4 × 6.4	2.50
	EL101B	101 × 101 × 8 × 8	2.95
	EL101C	101 × 101 × 9.5 × 9.5	3.48
	EL101D	101 × 101 × 12.7 × 12.7	4.57
	EL152A	152 × 152 × 6.4 × 6.4	3.62
	EL152B	152 × 152 × 9.5 × 9.5	5.42
EL152C	152 × 152 × 12.7 × 12.7	7.01	
L40	40 × 22 × 4.0 × 4.0	0.44	
L100	100 × 50 × 6.0 × 6.0	1.65	
L145	145 × 76 × 10 × 10	3.85	
L170	170 × 76 × 9.5 × 9.5	4.40	
L180	180 × 80 × 8.0 × 8.0	3.89	

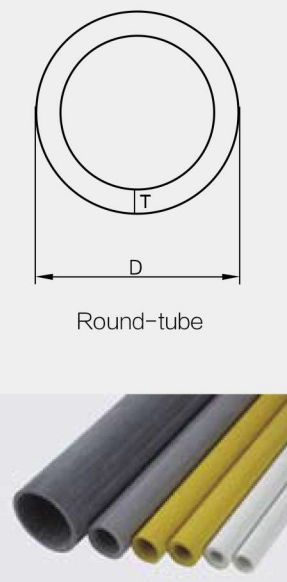
View/instance	Type	Dimension ( mm )	Weight ( kg/m )
 Corrugated 	Corrugated Round Tube	$D_1 \times D_2 \times T$	
	CT32A	19 × 32 × 6.4	1.11
	CT32B	25 × 32 × 3.5	0.66
	CT45A	28 × 45 × 8.5	1.86
	CT45B	32 × 45 × 6.4	1.10
	CT50	50 × 36 × 7.0	1.75
	CT90A	78 × 90 × 6	3.60
	CT90B	71 × 90 × 9.5	5.70

View/instance	Type	Dimension ( mm )	Weight ( kg/m )
 Kick plate 	Kick plate	$A \times B \times T$	
	M1	100 × 13 × 3.2 M-shape	0.77
	M2	100 × 14 × 3.2 M-shape	1.10
	M3	100 × 16 × 5.0 M-shape	1.30
	M4	148 × 12 × 3 M-shape	1.27
	W1	100 × 19 × 5.0 W-shape	1.36
	W2	100 × 14 × 3.2 W-shape	1.10

View/instance	Type	Dimension ( mm )	Weight ( kg/m )
 H-shape 	H-shape	$A \times B \times T_1 \times T_2$	
	HB76	76 × 76 × 6.4 × 6.4	2.67
	HB102A	102 × 102 × 6.4 × 6.4	3.59
	HB102B	102 × 102 × 8.0 × 8.0	4.50
	HB152A	152 × 152 × 6.4 × 6.4	5.43
	HB152B	152 × 152 × 9.5 × 9.5	8.10
	HB203A	203 × 203 × 9.5 × 9.5	10.80
	HB203B	203 × 203 × 12.7 × 12.7	14.36
	HB203C	203 × 203 × 6.4 × 6.4	7.50
	HB254A	254 × 254 × 9.5 × 9.5	13.60
	HB254B	254 × 254 × 12.7 × 12.7	18.04
	HB305	305 × 305 × 12.7 × 12.7	21.50

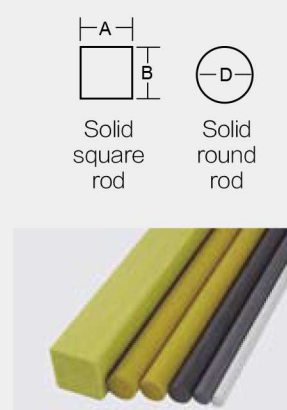
View/instance	Type	Dimension ( mm )	Weight ( kg/m )
 Flat plate  Flat strip  	Flat plate	Thickness × width × length	
	FP32	3.2 × 1220 × 3660	6.08
	FP64	6.4 × 1220 × 3660	12.16
	FP95	9.5 × 1220 × 3660	18.05
	FP127	12.7 × 1220 × 2440	24.13
	Flat strip	Width × thickness	
	FS20	20 × 6.4	0.25
	FS30A	30 × 3.0	0.70
	FS30B	30 × 6.4	0.36
	FS38	38 × 5.0	0.36
	FS50A	50 × 3.0	0.26
	FS50B	50 × 4.0	0.38
	FS50C	50 × 8.0	0.76
	FS50D	50 × 15	1.43
	FS60	60 × 4.0	0.46
	FS70	70 × 4.0	0.53
	FS90	90 × 15	2.57
	FS120	120 × 3.0	0.69
FS190	190 × 15	5.42	
FS280	280 × 10	5.32	

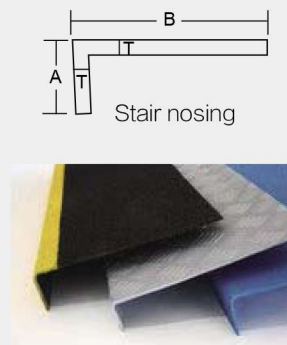
View/instance	Type	Dimension ( mm )	Weight ( kg/m )
 Flat tube 	Flat tube	$A \times B \times T_1 \times T_2$	
	FT50A	50 × 25 × 3 × 3	0.79
	FT50B	50 × 25 × 6.4 × 6.4	1.54
	FT51A	51 × 25 × 4 × 4	1.01
	FT51B	51 × 38 × 4 × 4	1.22
	FT52	52 × 32 × 5 × 5	1.41
	FT91A	91 × 38 × 4 × 4	1.78
	FT91B	91 × 112 × 6.4 × 6.4	4.46

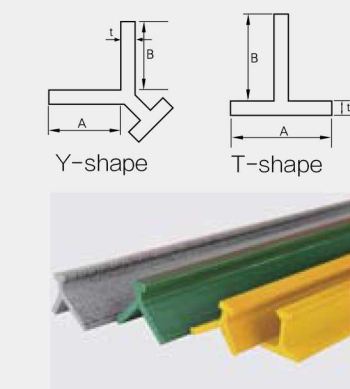
View/instance	Type	Dimension ( mm )	Weight ( kg/m )
 <p>Round-tube</p>	Round-tube	D × T	
	RT25	25 × 3.2	0.44
	RT26A	26 × 3.0	0.42
	RT26B	26 × 4.8	0.63
	RT32A	32 × 3.2	0.55
	RT32B	32 × 5	0.81
	RT32C	32 × 6	0.96
	RT35A	35 × 2.5	0.49
	RT38A	38 × 3.2	0.65
	RT38B	38 × 4.0	0.81
	RT38C	38 × 5.0	1.00
	RT38D	38 × 6.4	1.18
	RT42A	42 × 3.2	0.70
	RT42B	42 × 5.0	1.11
	RT48	48 × 6.4	1.58
	RT50A	50 × 3.2	0.84
	RT50B	50 × 4.0	1.10
	RT50C	50 × 5.0	1.34
	RT50D	50 × 6.4	1.67
	RT50E	50 × 3.5	0.96
	RT50.8A	50.8 × 6.4	1.70
	RT50.8B	50.8 × 3.2	0.86
	RT64A	64 × 3.5	1.26
	RT64B	64 × 7.0	2.38
	RT76	76 × 6.4	2.64
	RT89A	89 × 3.2	1.54
	RT89B	89 × 5.0	2.51
	RT89C	89 × 6.4	3.13
	RT99	99 × 5.0	2.81
	RT101	101 × 6.4	3.62
	RT114A	114 × 3.2	2.12
	RT114B	114 × 5.0	3.25
RT114C	114 × 6.4	4.11	
RT114D	114 × 9.5	5.93	
RT150A	150 × 3.2	2.81	
RT150B	150 × 5.0	4.35	
RT150C	150 × 6.4	5.50	
RT150D	150 × 9.5	8.00	

Fiberglass reinforced plastic ( FRP ) Pultrusion structure physical characteristics:

Property	Value	Units
Tensile Strength	30,000 (206)	psi (MPa)
Tensile Modulus	2.5 x 10 <sup>6</sup> (17.2)	psi (GPa)
Flexural Strength	30,000 (206)	psi (MPa)
Flexural Modulus	1.8 x 10 <sup>6</sup> (12.4)	psi (GPa)
Flexural Modulus (Full Section)	2.8 x 10 <sup>6</sup> (19.3)	psi (GPa)
Short Beam Shear (Transverse)	4,500 (31)	psi (MPa)
Shear Modulus (Transverse)	4.5 x 10 <sup>5</sup> (3.1)	psi (GPa)
Coefficient of Thermal Expansion	4.4 x 10 <sup>-6</sup> (8.0 x 10 <sup>-6</sup> )	in/in/°F (cm/cm/°C)
Flame Spread	<25	N/A

View/instance	Type	Dimension ( mm )	Weight ( kg/m )
 <p>Solid square rod      Solid round rod</p>	Solid square rod	A × B	
	SSR25	25 × 25	1.23
	SSR32	32 × 32	2.00
	SSR38	38 × 38	2.80
	Solid round rod	diameter	
	SRR95	9.5	0.14
	SRR127	12.7	0.26
	SRR254	25.4	1.00
	SRR328	31.8	1.51
	SRR380	38.0	2.15
	SPR42	4.2	0.03
	SPR80	8.0	0.10
	SPR16	16	0.41
	SPR19	19	0.55
	SPR20	20	0.62
	SPR22	22	0.72
	FS120	120 × 3.0	0.69
	FS190	190 × 15	5.42
	FS280	280 × 10	5.32

View/instance	Type	Dimension ( mm )	Weight ( kg/m )
 <p>Stair nosing</p>	Stair nosing	A × B × T	
		25 × 60 × 3	0.50
		25 × 50 × 3	0.45
		30 × 70 × 4	0.75
		30 × 70 × 3.2	0.70
		55 × 55 × 3.2	0.70
		55 × 55 × 4	0.74
		55 × 70 × 3.2	0.80
		76 × 30 × 3	0.60
		90 × 50 × 3.2	0.85
	Round angle	30 × 100 × 3.2	0.78
	Square angle	30 × 100 × 3.2	0.80
		30 × 155 × 3.2	1.20
	Square angle	30 × 230 × 3.2	1.70
	Round angle	30 × 230 × 3.2	1.60
		30 × 260 × 3.2	1.80
		40 × 254 × 6.4	3.60
		345 × 55 × 4	3.85
		30 × 380 × 3.2	2.70
		55 × 400 × 3.2	2.80

View/instance	Type	Dimension ( mm )	Weight ( kg/m )
 <p>Y-shape      T-shape</p>	Y-shape	A × B × T	
		25 × 38 × 6.4	1.40
		38 × 38 × 6.4	1.60
		50 × 38 × 6.4	1.70
	T-shape	A B C	
		54 × 25 × 5.0	0.81
		54 × 25 × 6.0	0.89
		54 × 45 × 6.0	1.1
		54 × 54 × 5.0	1.03
		60 × 40 × 5.0	1.20
		60 × 40 × 6.0	1.30
		76 × 38 × 6.4	1.38