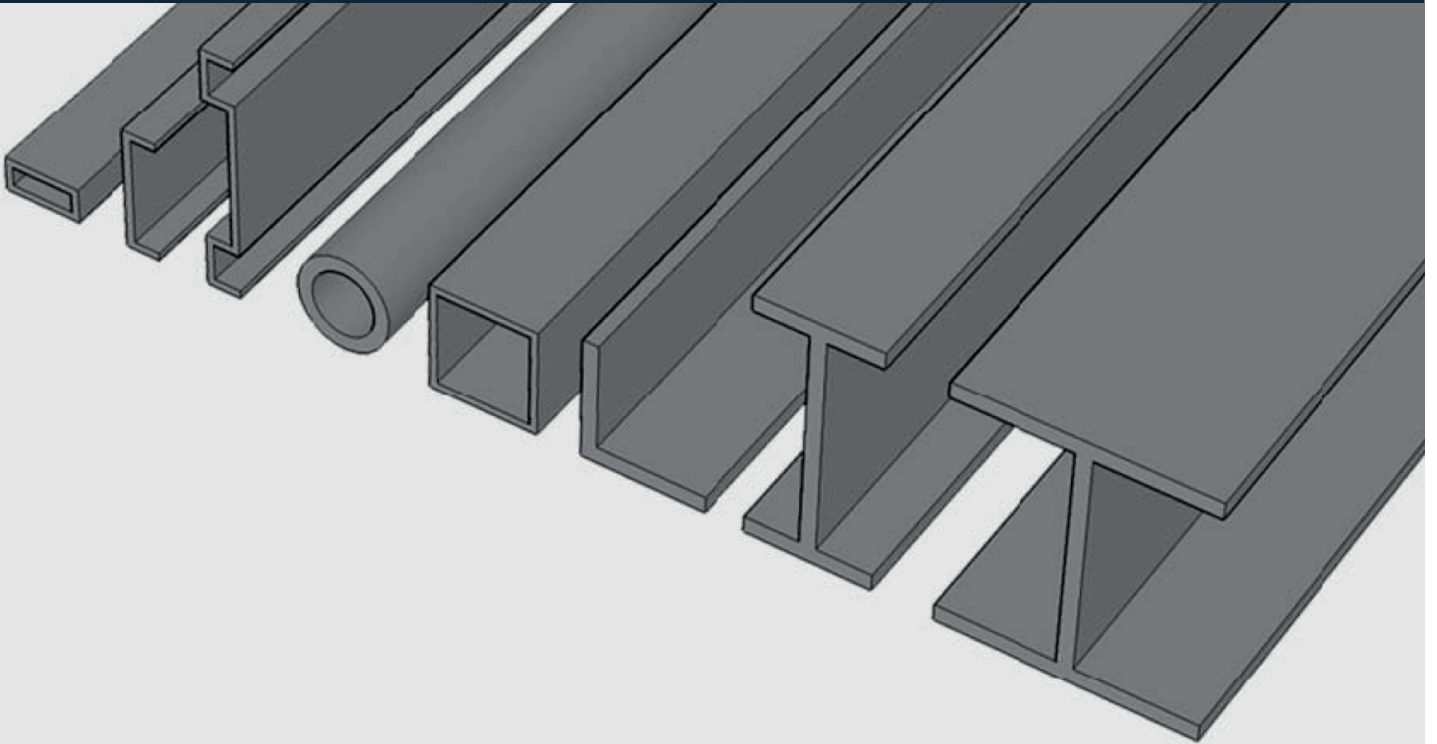




## Pultruded Profiles



### Product Description

Pultrusion is a manufacturing process for producing continuous lengths of GRP structural shapes. Raw materials include a liquid resin mixture (containing resin, fillers and specialized additives) and reinforcing fibres. The process involves pulling these raw materials (rather than pushing as is the case in extrusion) through a heated steel forming die using a continuous pulling device. The reinforcement materials are in continuous forms such as rolls of fibreglass mat or fibreglass roving. As the reinforcements are saturated with the resin mixture ("wet-out") in the resin impregnator and pulled through the die, the gelation (or hardening) of the resin is initiated by the heat from the die and a rigid, cured profile is formed that corresponds to the shape of the die.



### Product Characteristics

- High strength
- Lightweight
- Corrosion resistant
- Dimensional stability
- Non conductive and spark resistant
- Electro-magnetic transparency
- Low temperature capabilities
- Aesthetically pleasing



### Suitable Applications

- |                             |                         |
|-----------------------------|-------------------------|
| Aerospace/Military areas    | Automotive industry     |
| Building/construction areas | Cellular communications |
| Chemical processing plants  | Cooling towers          |
| Electrical areas            | EMI/RFI testing areas   |
| Food processing             | Hotel/Motels            |
| Infrastructure              | Marine                  |
| Mining industry             | Offshore oil            |
| Oil and gas industry        | Petrochemical           |

# Pultruded Profiles



## Technical Data

Description:	Structural fibreglass pultrusion profiles	Tolerances (including cut):	+/- 3-4mm
Stock Colours:	Grey and yellow (stock) any RAL colour subject to minimum quantity ordered and extended lead times.	Service temperatures:	-20 to 80°C
Chemical resistance:	Made from ISO resin as standard. Different chemical resistance available, please call our technical department for advice.	Design life:	20+ years



## Preparation

When installing Pultruded Profiles standard personal protective equipment should be worn as a minimum. These include 3M dust masks (or similar), safety goggles, heavy duty gloves and overalls. Pultruded Profile should be cut in a well ventilated area or close to extraction points. Dust residue can be disposed of using normal waste disposal methods. No special permissions or licences are required at the time of going to print.

Dry fit all Pultruded Profiles to ensure they fit freely and that they sit flat down on the surface. If required, Pultruded Profiles can be trimmed on site to suit, ideally using a skill saw with a 4mm diamond blade or an angle grinder with a 1mm blade.

Please ensure that goggles and gloves are worn at all times when any form of cutting is involved.

Profiles to be fitted in accord with structural design information.



## Cleaning and Maintenance

Whilst Pultruded Profiles are extremely resilient to dirt and contaminants, it can, as with most other things, become dirty.

Dirt and debris can easily be removed using a stiff brush and should be carried out on a regular basis.

If Pultruded Profiles have been subjected to spillages or the dirt has become embedded, detergents such as SlipGrip Degreaser or similar can be used. It is always advisable to test any cleaning product on the profiles before starting the cleaning procedure. This can be done in an inconspicuous area of the installation or, if preferred, a sample can be sent, free of charge for testing purposes.

Using the detergent, warm water and a suitable brush, scrub the areas until clean. The excess water can be removed using a wet/dry vacuum cleaner or suitable absorbable materials.

Where circumstances allow, the profiles can be power washed without causing harm. Care should be taken when the SlipGrip has been stuck down and/or edge sealed as very high-pressure power washing or repeated power washing could cause damage to sealants and adhesives.

### General Routine Maintenance

The security of the fixings/adhesive should be checked on a regular basis. Circumstances will vary, based upon the volume of foot traffic etc, but, as a guide, monthly inspections would be advisable.

# Pultruded Profiles



## Properties

Below are test results for typical properties of FibreGrid Limited structural fibreglass profiles (Standard, Fire Retardant, & Vinylester shapes). Properties are derived per the ASTM test method shown. Synthetic surfacing veil and ultraviolet inhibitors are standard.

Mechanical Properties	ASTM	Units	Value
Tensile Stress, LW	D-638	psi	30,000
Tensile Stress, CW	D-638	psi	7,000
Tensile Modulus, LW	D-638	106 psi	2.5
Tensile Modulus, CW	D-638	106 psi	0.8
Compressive Stress, LW	D-695	psi	30,000
Compressive Stress, CW	D-695	psi	15,000
Compressive Modulus, LW	D-695	106 psi	2.5
Compressive Modulus, CW	D-695	106 psi	1.0
Flexural Stress, LW	D-790	psi	30,000
Flexural Stress, CW	D-790	psi	10,000
Flexural Modulus, LW	D-790	106 psi	1.8
Flexural Modulus, CW	D-790	106 psi	0.8
Modulus of Elasticity, E	Full Section	106 psi	2.8
Shear Modulus	----	106 psi	0.450
Short Beam Shear	D-2344	psi	4,500
Punch Shear	D-732	psi	10,000
Notched Izod Impact, LW	D-256	ft-lbs/in	25
Notched Izod Impact, CW	D-256	ft-lbs/in	4
Physical Properties	ASTM	Units	Value
Barcol Hardness	D-2583	-----	45
24 Hour Water Absorption	D-570	% max	0.45
Density	D-792	Lbs./in.3	.062-.070
Coefficient of Thermal Expansion, LW	D-696	10-6 in/in/°C	8
Electrical Properties	ASTM	Units	Value
Arc Resistance, LW	D-495	seconds	120
Dielectric Strength, LW	D-149	kv./in.	35
Dielectric Strength, PF	D-149	volts/mil.	200
Dielectric Constant, PF	D-150	@60hz	5

### Fire Retardant Polyester and Fire Retardant Vinylester Structural Profiles:

Our standard pultruded profiles have not been fire tested. Our Polyester and Vinylester profiles are fire retardant, results below.

Flammability Properties	ASTM	Units	Value
Tunnel Test	E-84	Flame Spread	25 max.
Flammability	D-635	----	Nonburning

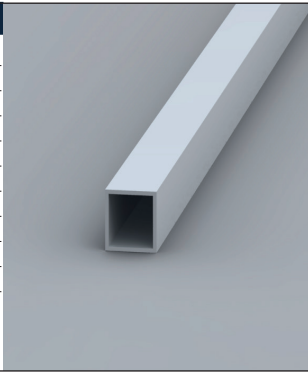
LW = Lengthwise, CW = Crosswise, PF = Perpendicular to Laminate Face

# Pultruded Profiles

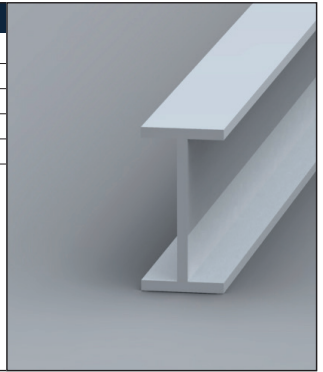
## Standard Profiles

(H=Height, W=Width, T=Thickness ED=Exterior Diameter, ID=Interior Diameter, S=In Stock)

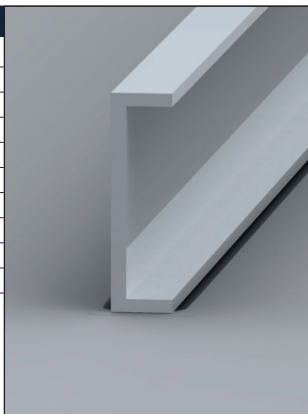
Box Section – Dimensions	
Size (mm) (HxWxT)	Kg's per linear metre
25x25x3 (s)	0.55
38x38x3.2 (s)	0.84
38x38x5 (s)	1.24
44x44x6 (s)	1.70
51x51x3.2 (s)	1.13
51x51x6.35 (s)	2.17
60x60x4.5 (s)	1.85
76x76x6.35 (s)	3.56
101.6x101.6x6.35 (s)	4.60



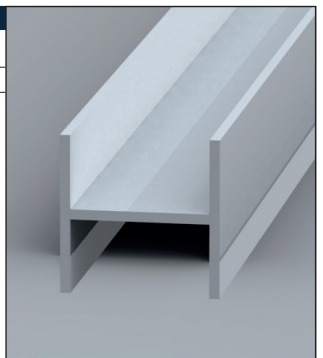
I Beam – Dimensions	
Size (mm) (HxWxT)	Kg's per linear metre
120x70x8 (s)	3.77
150x80x10 (s)	5.71
152x76x6.35 (s)	3.58
200x100x9.5 (s)	7.2



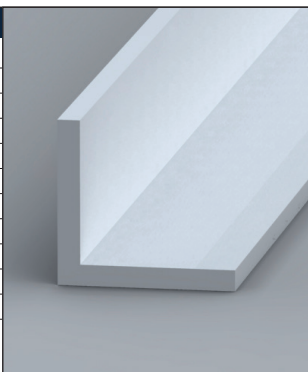
C Channel – Dimensions	
Size (mm) (HxWxT)	Kg's per linear metre
50x30x4 (s)	0.75
76x25.4x6.35 (s)	1.25
76x38x6.35	1.70
100x50x6 (s)	2.18
150x50x6 (s)	2.75
200x60x8 (s)	4.68
200x60x9.5 (s)	5.74
203x55x9.5 (s)	5.30
280x70x12 (s)	9.27



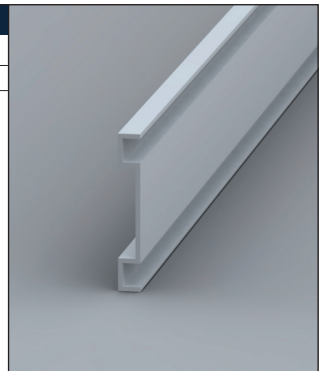
H Beam – Dimensions	
Size (mm) (HxWxT)	Kg's per linear metre
200x200x10 (s)	11.02



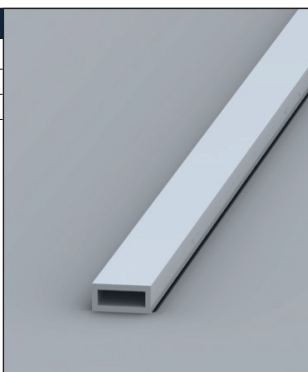
Equal Angle – Dimensions	
Size (mm) (HxWxT)	Kg's per linear metre
25x25x3 (s)	0.27
35x35x5 (s)	0.65
40x40x4 (s)	0.58
50x50x3 (s)	0.55
50x50x5 (s)	0.96
50x50x8 (s)	1.40
51x51x6.35 (s)	1.15
60x60x8 (s)	1.75
75x75x10 (s)	2.70
100x100x8 (s)	2.95



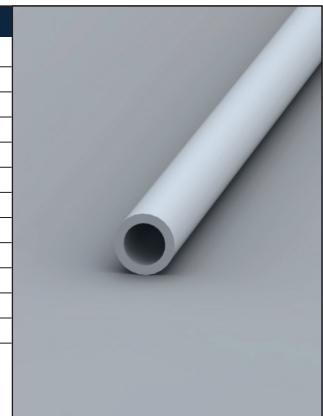
Kick Plate – Dimensions	
Size (mm) (HxWxT)	Kg's per linear metre
150x15x3	1.30



Unequal Angle – Dimensions	
Size (mm) (HxWxT)	Kg's per linear metre
60x40x7 (s)	1.23



Round Tube – Dimensions	
Size (mm) (EDXID)	Kg's per linear metre
9.5x3	0.10
12.5x4	0.21
19x13	0.31
22x17	0.31
25x20	0.33
31x25	0.51
38x32	0.62
38x32	0.62
48.3x35	1.60
50x40	1.31
51.6x46.5	0.76



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