

Atkore[™]
Unistrut[®]

**Atkore Unistrut
Catalogue**

Electrical & Mechanical Support Systems

**Metal
Framing**



ATKORE UNISTRUT

The Original Metal Framing System

Unistrut is the original metal framing system, featuring a unique weldless connection. The Unistrut system eliminates welding and drilling, and is easily adjustable and reusable for infinite configurations. Since 1924, our brand has evolved from a simple connection concept to a comprehensive engineered building and support system featuring a robust line of channels, fittings, fasteners, hangers, pipe clamps cable trays and cable ladders. Backed by our worldwide network of engineering and distribution centres, we provide customers with total-resource capability, making Unistrut the brand everyone asks for by name.



Allied Tube & Conduit ▲ AFC Cable Systems ▲ Heritage Plastics ▲ Unistrut
Unistrut Construction ▲ United Poly Systems ▲ Calbrite ▲ Calbond ▲ Cii ▲ US Tray
Power-Strut ▲ Calconduit ▲ Razor Ribbon ▲ Calpipe Security ▲ Vergokan ▲ Marco
Columbia-MBF ▲ Eastern Wire + Conduit ▲ ACS/Uni-Fab ▲ Sasco Strut ▲ Kaf-Tech
Cope ▲ FRE Composites ▲ Queen City Plastics ▲ Four Star Industries ▲ Flexicon



Introduction



The Atkore Unistrut World of Support starts with our network of Unistrut Service Centers across the nation.

Atkore Unistrut World of Support starts with our network of Unistrut Service Centres throughout New Zealand. They go far beyond providing local product inventories, by offering complete application solutions, based on experience gained from thousands of projects worldwide. It's the kind of knowledgeable assistance that can help save time and cost now, and simplify change in the future.

Technical help? No one knows the engineering side of Unistrut support systems like your local Atkore Unistrut team. If it's special fabrication, cutting or custom finishing you want, the pros at your local Unistrut Service Centre will make it happen - quickly, efficiently, economically. So when it's help you need, call your Unistrut Service Centre –the quickest way to unlock Atkore Unistrut's World of Support.





Atkore Unistrut New Zealand

Atkore Unistrut has been the leading supplier of metal framing systems for over 45 years.

We specialise in Metal Framing, Cable Management and our products and services are synonymous with engineering excellence and reliability worldwide.

Over Ninety Years Of Innovation

Unistrut began developing and manufacturing products during the 1920s, producing the original Unistrut® Metal Framing System. Our extensive product portfolio now includes a variety of cable management solutions and advanced metal framing systems.

Sharing our Experience, Knowledge and Expertise

We continue to make investments in our people, products and services. Our ability to share our experience and knowledge with our customers is the key to our success in a wide range of industry sectors.

Proven Delivery Processes

Atkore Unistrut has proven procedures that guarantee the delivery of orders.

Part of the Atkore® Family

Atkore is a major manufacturer and innovator with a unique focus on steel frame, pipe and electrical products. As part of the Atkore family, we can draw on a variety of technologies, products and experience from Atkore companies throughout the world.



Introduction

Wide Range of Applications for Construction and Industry

Atkore Unistrut can supply a wide variety of standard structural fittings in zinc plated heavy duty galvanised, aluminium and 316 stainless steel. Atkore Unistrut engineers can also design specialised fittings for individual project needs.

With resources across the Asia Pacific region, including manufacturing sites in New Zealand and Asia totaling over 400,000m² in floor space accredited to ISO9001.

Atkore Unistrut facilities have automated welding, over 30 metal pressing machines, from 16 to over 300 tonnes, and roll forming machinery. Services from both our Atkore Unistrut fully owned operations and our JV partner facilities can fully label, pack and ship to your individual specifications. Marshalling and packaging is done in-house and from our manufacturing facility fully undercover.

Projects in the Region Successfully Supplied Include

- Waterview Tunnel Project
- M2pp Bridge Services
- Mount Victoria Tunnel Services (Fire And Seismically Rated)
- Christchurch Hospital
- Kaimai Rail Tunnel Service Supports
- Pacific Island Standby Power Systems
- Darfield Dryers Service Support Systems
- City rail link
- Auckland Library Granite Cladding Support System

Atkore Overview

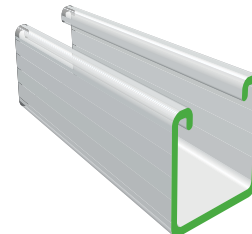
- Revenue of \$1.8B
- 3,100+ employees
- 27 manufacturing and service locations in New Zealand, Asia Pacific, EMEA and North America
- Strong brands that are well known by customers and respected in the industry
- Purchase & process close to one million tonne of steel per year – approximately 50,000 truckloads
- Produce enough electrical cable each year to circle the earth 7 times
- Electrical Raceway and Mechanical Products solutions



Metal Framing System

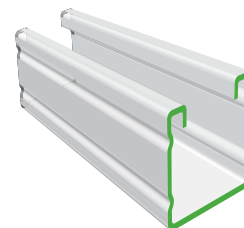
P1000[®]

Strut SIZE: 41mm x 41mm
MATERIAL THICKNESS: 2.5mm



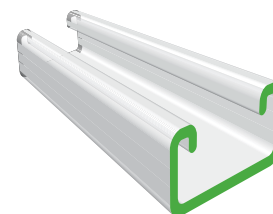
P2000

Strut SIZE: 41mm x 41mm
MATERIAL THICKNESS: 1.6mm



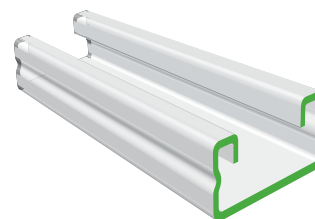
P3300

Strut SIZE: 41mm x 22mm
MATERIAL THICKNESS: 2.5mm



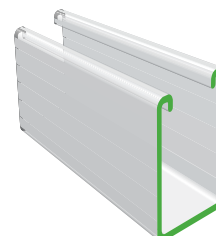
P4000

Strut SIZE: 41mm x 22mm
MATERIAL THICKNESS: 1.6mm



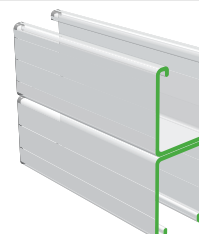
P5500

Strut SIZE: 41mm x 62mm
MATERIAL THICKNESS: 2.5mm



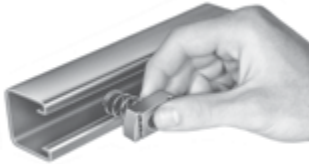
Combinations

Strut SIZE: VARIES
MATERIAL THICKNESS: 2.5 / 1.6mm

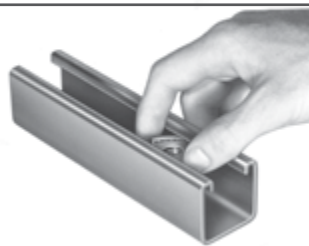


The Original Strut System

Adjustable, Demountable, Reusable



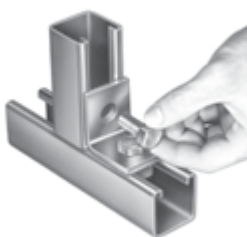
Spring nut is inserted anywhere along continuous slot. Rounded nut ends permit easy insertion.



A 90° turn positions the serrated grooves in the nut with the inturned edges of the Strut.



Fittings may be placed anywhere along Strut slot permitting complete freedom of adjustment. The need for drilling holes is eliminated.



The fitting makes the connection between any framing Strut or as means for other attachments.



A turn of a spanner locks the serrated teeth of the nut into the inturned edges of the Strut to make the strong, vice-like connection.

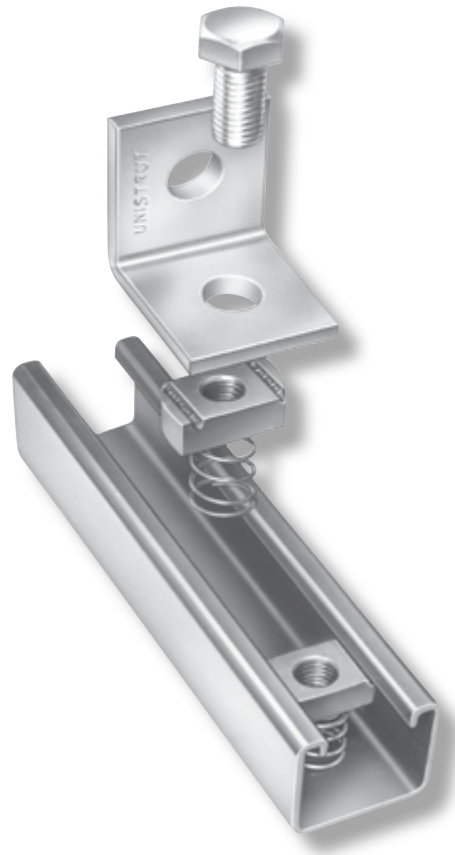
Look for These Features:

Large chamfer in the nut eases starting of bolt.

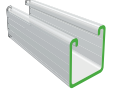
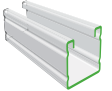
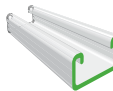
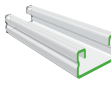
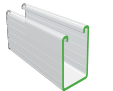
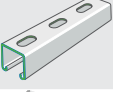
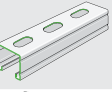
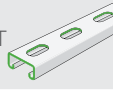
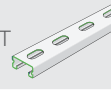
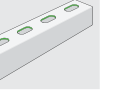



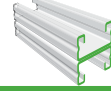





















































Special shaped inturned edges and tapered, serrated grooves produce strong vice-like grip between channel and nut.

Strut edges and nut's tapered grooves act as guides to provide positive alignment of connection.

- Nut teeth grip the Strut's inturned edges, tying the channel sides together in a "box" configuration for added strength.
- Longitudinal movement of nut is resisted as hardened teeth bite into the inturned edges.
- Spring allows precision placement anywhere along Strut length, then holds nut in position while connection is completed - the installer's "third hand".



Strut Selection Chart

STRUT SIZE	41 X 41	41 X 41	41 X 22	41 X 21	41 X 62
MATERIAL THICKNESS	2.5mm	1.6mm	2.5mm	1.6mm	2.5mm
Strut	P1000® 	P2000 	P3300 	P4000 	P5500 
Strut - SLOTTED	P1000T 	P2000T 	P3300T 	P4000T 	P5500T 
Strut - BACK TO BACK	P1001 	P2001 	P3301 	P4001 	P5501 
STRUT NUTS - WITH SPRING	P1000®	P2000	P3300	P4000	P5500
6mm	P1006 	P1006 	P4006 	P4006 	
8mm	P1007 	P1007 	P4007 	P4007 	P5508 
10mm	P1008 	P1008 	P4008 	P4008 	P5510 
12mm	P1010 	P1010 	P4010 	P4010 	
16mm	P1012S 	P1012S 	P4012S 	P4012S 	
STRUT NUTS - WITHOUT SPRING	P1000®	P2000	P3300	P4000	P5500
6mm	P3016 	P3016 	P3016 	P3016 	P3016 
6mm	P3006 	P3006 	P3006 	P3006 	P3006 
8mm	P3007 	P3007 	P3007 	P3007 	P3007 
10mm	P3008 	P3008 	P3008 	P3008 	P3008 
12mm	P3010 	P3010 	P3010 	P3010 	P3010 
16mm	P4012 	P4012 	P4012 	P4012 	P4012 

Standard Strut Length: 6 metres Material Finishes: Strut: Plain, Heavy Duty Galvanised, Stainless Steel. Strut Nuts: Zinc Plated, Heavy Duty Galvanised, Stainless Steel



Strut General Specifications

Framing Members

Strut and continuous inserts are accurately and carefully cold formed to size from low carbon strip steel. The Strut has a continuous slot with inturned edges. Secure attachments may be made to the framing member with the use of hardened, toothed, grooved nuts which engage the inturned edges.

Fittings

The fittings, unless noted otherwise, are punch press formed from low carbon steel plates or strip.

Strut Nuts

The Unistrut® nuts are produced from steel bars and after all manufacturing operations are completed, zinc plated nuts are case hardened. They are rectangular with the ends so shaped as to permit a quarter turn crosswise in the framing member after inserting through the slotted opening in the Strut and to prevent any further turning of the nut. Two serrated grooves in the top of the nut engage the inturned edges of the Strut and after bolting operations are completed, will prevent any longitudinal movement of the bolt and nut within the framing member. All bolts and nuts have ISO metric coarse screw threads.

Masses and Dimensions

Masses given for all material are approximate shipping weights. All dimensions subject to commercial tolerance variations.

Material

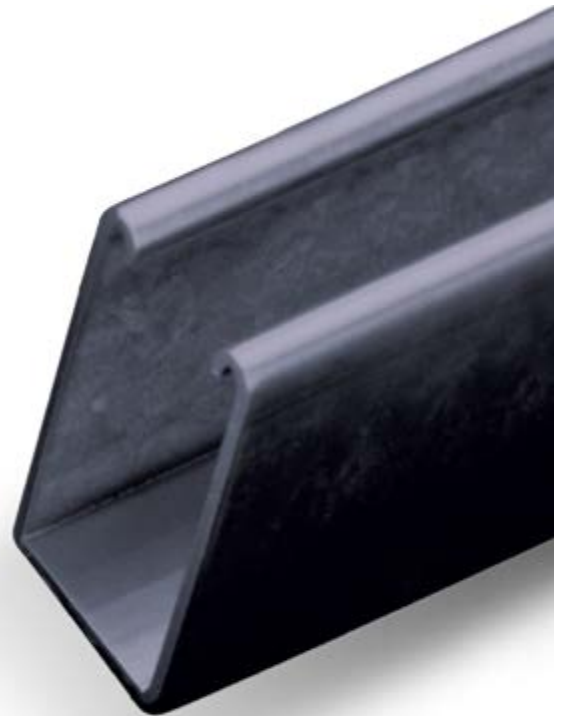
All single Unistrut® Strut members are accurately and carefully rolled from strip steel to AS/NZS1594 and AS/NZS1365. Spot-welded combination members are welded 100mm (maximum) on centre. Some members may require fillet welding.

Standard Lengths

Standard lengths of the above Strut are 6m. Facilities are available to cut standard lengths into any special lengths for a small cutting charge. Custom lengths and custom products are non-returnable and non-refundable.

Section Shape

The roll forming process used by Unistrut® produces a consistent Strut within the manufacturing tolerance allowed. The process includes stresses within the section itself which are released when the Strut is cut. This creates a common condition known as "Bellmouth" where the section deforms slightly for a small distance in from the end.



Strut General Specifications

Finishes

All Strut is available in Plain, Heavy Duty Galvanised, Galvabond and Polyester finishes.

Plain - Plain finish on Unistrut[®] Strut is an oiled finish that is applied to the raw material by the steel mill. The cold rolling process used to form Unistrut[®] Strut removes the excess of this oil and the residue provides a modicum of protection for the channel in storage. The plain finish on Unistrut[®] fittings is that of the commercial bar stock input material. No surface treatment is applied to plain finish fittings.

Galvabond Strut - Input material is supplied by the steel mill generally in accordance with AS/NZS1397 having a coating class of Z275. The material is slit to width and roll formed to shape.

Powder Coated - Strut and parts are carefully cleaned and phosphated. Immediately after phosphating, a uniform coat of thermosetting polyester powder is electrostatically applied then baked. Minimum coating thickness to exterior surfaces is 50 microns. The polyester coating is ultra-violet stabilised.

Heavy Duty Galvanised - Coatings are applied generally in accordance with AS/NZS4680. The thickness of the coating is dependent on the material thickness of the component being galvanised. It should be noted that due to the galvanising process, the thickness of the coating will vary over the surface and should be taken into account during component assembly. It may be necessary to remove excess build-up prior to use.

Zinc Plated - Fittings and components are electroplated generally in accordance with AS/NZS1789. Fasteners are electroplated generally in accordance with AS/NZS1897 Service Condition 1.

Stainless Steel - Unistrut[®] stainless steel Strut is manufactured from Grade 316 stainless steel. The material is slit to width and roll formed to shape. Grade 316 stainless steel has excellent corrosion resistance and has advantages over grade 304 stainless steel, such as:

- Resistance to pitting and crevice corrosion in chloride environments.
- Superior resistance to ordinary rusting in most applications.
- Regularly used in aggressive coastal and marine environments.
- Highly recommended for food processing environments where it can be easily cleaned and has a greater resistance to organic and inorganic chemical substances.

Aluminium - Unistrut[®] aluminium Struts are manufactured from high strength alloy 6106-T6 for all extruded components and 5005 for sheet or plate components. These alloys are suitable for marine applications and offer excellent all round corrosion resistance.

Specific Coating - When specific applications require other commercially available finishes, they can be supplied according to specification. Custom products are non-returnable and non-refundable.

Strut - General Engineering Data



Beams & Columns Loads

Notes to Table

Note 1: Loads are governed by shear or web crippling.
Note 2: For uniform beam working loads asymmetric sections are required to be adequately braced to prevent rotation and twist.

Beam Loads

The loads and deflections shown are based on simply supported beams uniformly loaded.

Notes on Derivation of Structural Data

1. Section Properties

Section properties have been derived from 'as formed' shapes and are based on nominal dimensions and nominal base steel thickness. Nominal masses are calculated from the tabulated areas based on a steel density of 7850 kg per cu.m. For dead load calculations the tabulated masses should be increased by 10% to allow for rolling tolerances, and the result multiplied by 0.0098 to give corresponding dead load (self weight) in kN per m. run of section. Also note the beam and column loads do not make allowance for self weight of the section. When designing a structure in which the section forms an integral part, the self weight should be determined using the method described above and subtracted from the tabulated load.

2. Beam and Column Load Tables

Ultimate load values have been calculated from the section properties as permitted by AS/NZS 4600 Cold Formed Steel Structures code. The guaranteed minimum yield stress F_y has been taken as 264 MPa for plain Struts, and the increase allowed resulting from cold forming has been determined in accordance with the code. The listed working loads have been derived from the ultimate load divided by 1.5.

2.1 Span or Column Length

Listed value is to be taken as the distance between centres of supports.

2.2 Beam Load at Maximum

Permissible Stresses

In order to establish the table of working loads that can be carried by the corresponding section, the ultimate limit state loads that could be permitted by the code were first determined. These were divided by 1.5 to provide 'conservative' working loads. The load is considered to be uniformly distributed along the span and orientated with respect to the section, as defined by the diagrams to cause bending about X-X axis only. The webs of the beams are assumed to be unstiffened and have been checked for end bearing in accordance with clause 3.3.6 of AS/NZS4600:2005. Where this is critical the working loads have been appropriately reduced. This assessment has been based on a rigid support with the beam bearing on each support for a length equal to at least the straight length of web-depth of the basic section.

ABBREVIATIONS

A = Area of Section
I = Moment of Inertia
z = Section of Modulus
r = Radius of Gyration

MEASUREMENTS

m Metre
mm Millimetre
kg Kilogram

FINISHES

AL Aluminium
GB Galvabond
HG Heavy Duty Galvanised
MG Mechanically Galvanised
PL Plain
PVC Plastic
SS Stainless Steel
ZP Zinc Plated
ZA Zinc Plated - Yellow Iridescence

2.3 Deflection

Deflections are calculated for the corresponding beam working load, using standard formulae. Deflections or uniformly distributed loads for conditions other than those tabulated may be calculated from the following:

- $\delta_2 = (W2 / W1) \times (L2 / L1)^3 \times \delta_1$
- W1 = tabulated load in kN
- δ_1 = corresponding tabulated deflection in mm
- L1 = corresponding tabulated length in mm
- W2 = new load in kN
- L2 = new length in mm
- δ_2 = deflection corresponding to new length and new load

It is recommended that beam deflections generally be limited to the smaller of span/180 or 10mm and loads restricted accordingly. These limitations are based on 'visual straightness' with the latter value subject to variation to suit particular visual or other physical requirements.



2.4 Maximum Column Load

Listed values of column load capacity are derived on the basis of a concentric axial load applied to the section, acting as a column with an effective length corresponding to the listed value, i.e. translational and torsional restraint available at the centres of supports.

For other conditions of loading and/or restraint, reference should be made to the appropriate sections of AS/NZS 4600 Cold Formed Steel Structures.

3. Recommended Bearing & Connection Loads

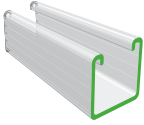
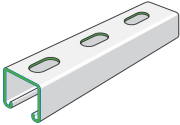
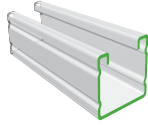
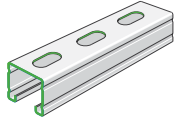
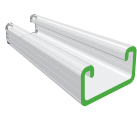
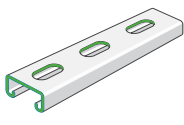
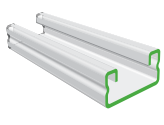
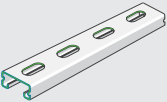
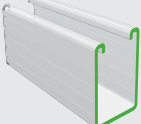
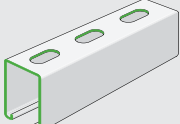
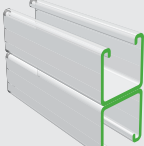
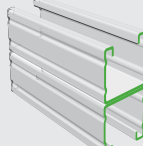
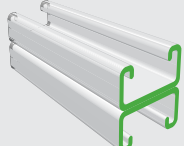
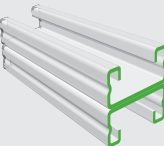
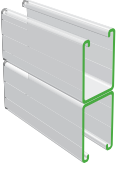

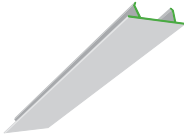
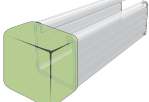
Listed values are based on extensive testing of components by Unistrut® using a factor of safety of 2.5 against failure of the connection.

4. Point Loads

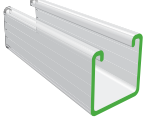

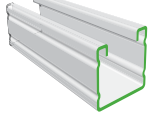
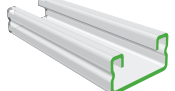
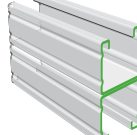
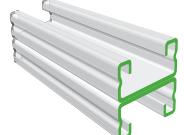
For point loads at midspan, the allowable loads are half the values shown in the tables. The deflection for the point load is obtained from: $\delta_2 = 0.80 \delta_1$ where δ_1 is the deflection for a uniform load which is double the value of the point load.

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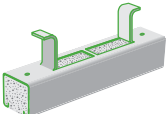
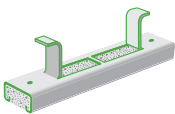
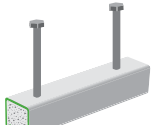
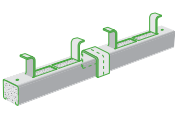
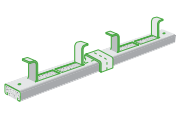
Strut Systems - Strut

						
P1000® [PL/GB/HG] PG. 19	P1000T [PL/GB/HG] PG. 19	P2000 [PL/GB/HG] PG. 20	P2000T [PL/GB/HG] PG. 20	P3300 [PL/GB/HG] PG. 21	P3300T [PL/GB/HG] PG. 21	P4000 [PL/GB/HG] PG. 22
						
P4000T [PL/GB/HG] PG. 22	P5500 [PL/GB/HG] PG. 23	P5500T [PL/GB/HG] PG. 23	P1001 [PL/GB/HG] PG. 24	P2001 [PL/GB/HG] PG. 24	P3301 [PL/GB/HG] PG. 25	P4001 [PL/GB/HG] PG. 25
						
P5501 [PL/GB/HG] PG. 26	MP3.41.41 P1000-T3 PG. 123	P1184 PG. 26	P2860-10 - P2240, P4240, P5580 STRUT END CAPS - PLASTIC PG. 27			

Strut Special Metals

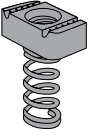





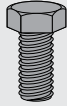
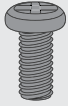
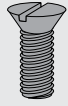
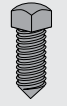
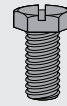





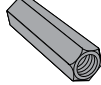

					
P1000-SS STAINLESS STEEL PG. 28	P3300-SS STAINLESS STEEL PG. 28	P2000-AL ALUMINUM PG. 28	P4000-AL ALUMINUM PG. 28	P2001-AL ALUMINUM PG. 28	P4001-AL ALUMINUM PG. 28

Strut Concrete insert

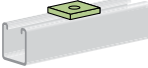
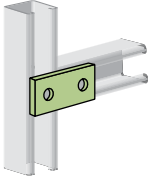
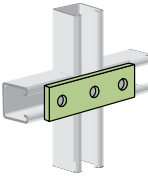
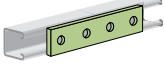
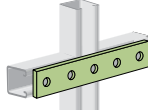

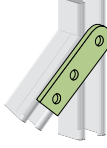
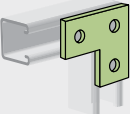
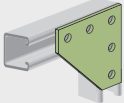
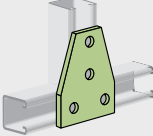
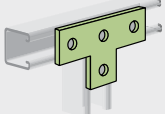
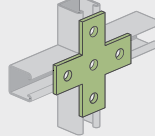
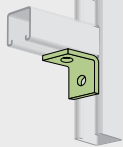
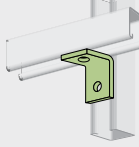
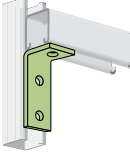
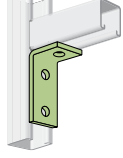
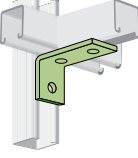
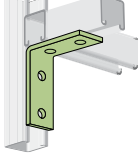
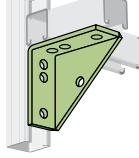
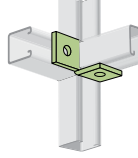
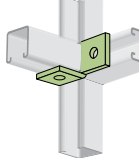
				
P1000CI PG. 35	P3300CI PG. 35	P3753 HEAVY DUTY INSERT PG. 35	P1663 CI JOINT COVER PG. 36	P4663 CI JOINT COVER PG. 36

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Strut Nuts and Hardware

						
FOR P1000 [®] & P2000 STRUT NUTS, W/ SPRINGS PG. 37	FOR P3300 & P4000 STRUT NUTS, WITH SPRINGS PG. 37	FOR P5500 STRUT NUTS, WITH SPRINGS PG. 37		FOR P1000 [®] & P2000 STRUT NUTS, NO SPRINGS PG. 38	FOR P3300 & P4000 STRUT NUTS, NO SPRINGS PG. 38	FOR P5500 STRUT NUTS, NO SPRINGS PG. 38
						
		HEX HEAD SET SCREWS PG. 35	PAN HEAD SCREWS PG. 39	COUNTERSUNK HEAD SCREW PG. 39	CONE POINT SET SCREW PG. 39	SLOTTED HEX HEAD SET SCREWS PG. 39
						
HEXAGON NUTS PG. 39	FLAT WASHERS PG. 39	SPRING WASHERS PG. 39	SHAKEPROOF LOCK WASHER PG. 39	UNIROD STEEL THREADED ROD PG. 39	ROD COUPLERS PG. 39	SWIVEL NUT PG. 39

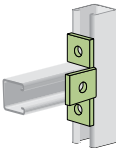
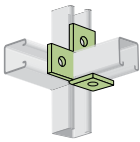
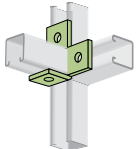

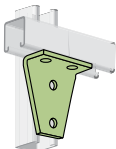
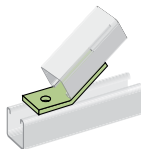
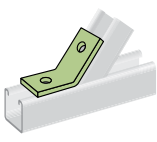
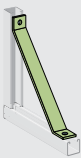
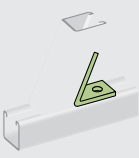
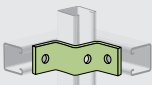
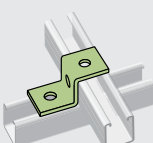
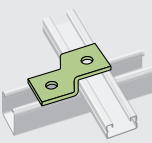
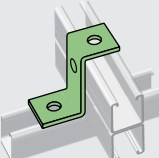
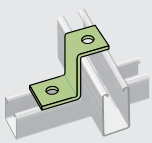
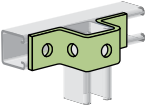
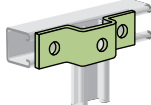
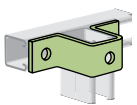
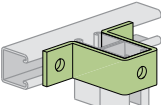
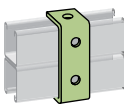
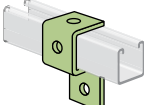
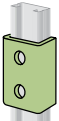
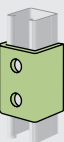
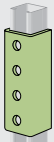
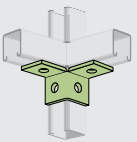
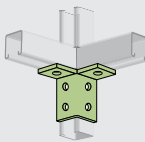
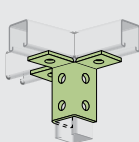
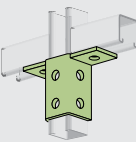
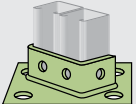
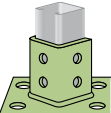
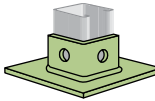
Strut Fittings

						
P1062 - P1964 PG. 40	P1065 PG. 40	P1066 PG. 40	P1067 PG. 40	P1941 PG. 40	P2325 PG. 40	P2324 PG. 40
						
P1036 PG. 40	P1873 PG. 40	P1358 PG. 41	P1031 PG. 41	P1028 PG. 41	P1026 PG. 41	P1068 PG. 41
						
P1326 PG. 41	P1346 PG. 41	P1458 PG. 41	P1325 PG. 41	P2484 PG. 41	P1037 PG. 41	P1038 PG. 41

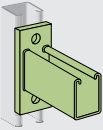
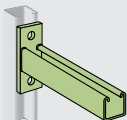
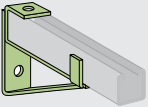
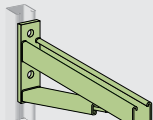
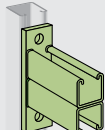
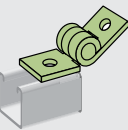
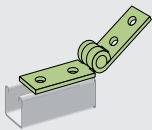



Unistrut Pictorial Index

Strut Fittings (Cont.)

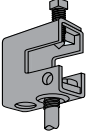

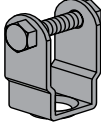
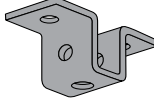
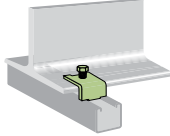
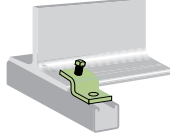
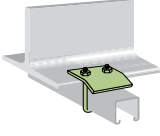
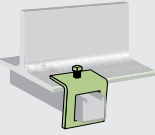
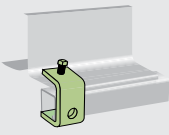
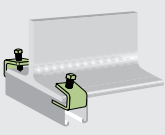
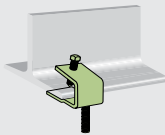
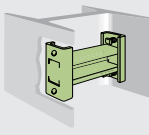
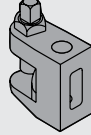
						
P1033 PG. 42	P1034 PG. 42	P1035 PG. 42	P1357 PG. 42	P1359 PG. 42	P2101 & P2103 PG. 42	P1546, P2095, P2097 PG. 42
						
P2452 PG. 42	P1186, P2106, P2108 PG. 42	P1736 PG. 42	P1045 PG. 42	P4045 PG. 42	P1453 PG. 43	P5545 PG. 43
						
P1047 PG. 43	P4047 PG. 43	P5547 PG. 43	P1737 PG. 43	P1044 PG. 43	P1046 PG. 43	P4376 PG. 43
						
P1376 PG. 43	P1377 PG. 43	P2223 PG. 43	P2224 PG. 44	P2228 PG. 44	P2346 PG. 44	P2073 PG. 44
						
P2072A PG. 44	P2072S1 PG. 44					

Cantilever Brackets and Adjustable Braces


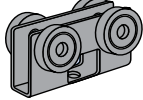
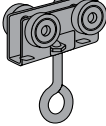
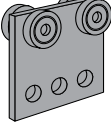
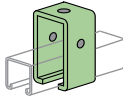
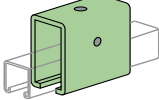
						
P5663-300 TO P5663-750 PG. 46	P2663-250 TO P2663-700 PG. 45	P1075-8 PG. 45	PCL150 TO PCL900 PG. 45	P2542 TO P2546 PG. 46	P1843W PG. 47	P1354W PG. 47
						
2266993 - UH10Z PG.47	LS 503 (ZP & HG) PG.47	LS 504 (ZP & HG) PG.47				

Unistrut Pictorial Index

Beam Clamps

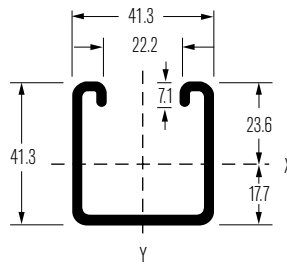
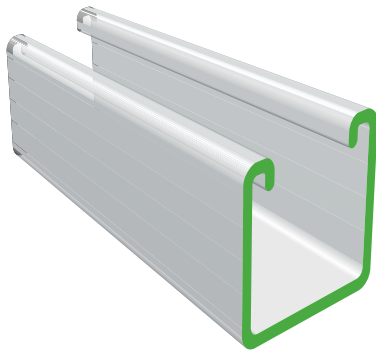
						
P2676 PG. 48	P2676 - SWIVEL NUT PG. 49	P2677 PG. 48	P2682 PG. 49	P1386 PG. 48	P1379 PG. 49	P2785 & P2786 PG. 49
						
P1796 PG. 50	P1271 PG. 50	P1272 PG. 50	P1270 PG. 50	P3087 PG.50	EF1600 Flange Clamp Pg 49	

Trolley Assemblies

					
P2749 & P2749N PG. 51	P2750 / P2750N PG. 51	P2751 / P2751N PG. 51	P2950 PG. 51	P1834 - TROLLEY SUPPORT PG. 51	P1834A - TROLLEY SUPPORT PG. 51



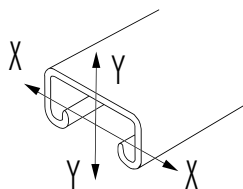
P1000®



P1000 - PL/GB/HG

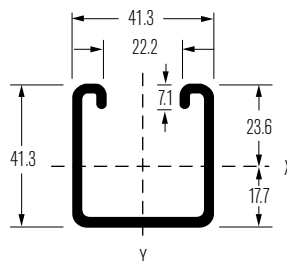
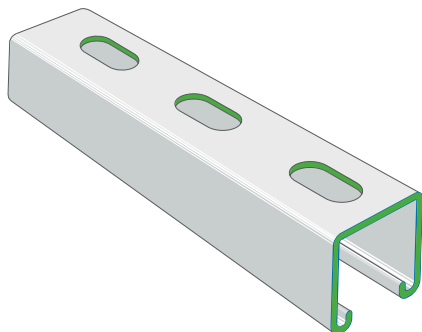
- Mass: 2.59kg/m
- See Note 2 Page 13

Part No.	Material Thickness	Length
P1000-PL	2.5mm	6m
P1000-GB	2.5mm	6m
P1000-HG	2.5mm	6m



A - 330mm²
 kg/m - 2.59kg/m
 I_{x-x} = 0.069 10⁶mm⁴
 Z_{x-x} = 2.920 10³mm³
 r_{x-x} = 14.5mm
 I_{y-y} = 0.092 10⁶mm⁴
 Z_{y-y} = 4.451 10³mm³
 r_{y-y} = 16.7mm

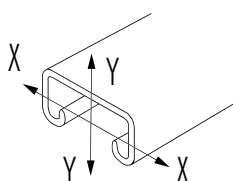
L (mm)	Fmax(kN)	fmax(mm)	F(kN)
250	14.83	0.22	45.51
500	7.42	0.87	36.84
750	4.94	1.97	28.22
1000	3.71	3.50	21.44
1250	2.97	5.46	16.42
1500	2.47	7.87	13.20
1750	2.12 (2)	10.71	11.00
2000	1.85 (2)	13.99	9.35
2250	1.65 (2)	17.70	8.05
2500	1.48 (2)	21.85	7.01
2750	1.35 (2)	26.44	6.14
3000	1.24 (2)	31.47	-



P1000T - PL/GB/HG

- Slots: 14 wide x 28 long at 50 cm (approx.)
- Mass: 2.32kg/m
- See Note 2 Page 13

Part No.	Material Thickness	Length
P1000-PL	2.5mm	6m
P1000-GB	2.5mm	6m
P1000-HG	2.5mm	6m



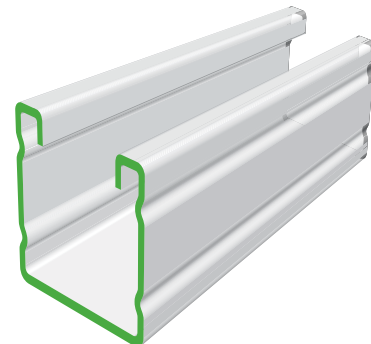
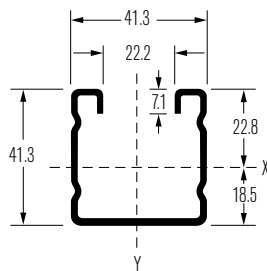
A - 295mm²
 kg/m - 2.32kg/m
 I_{x-x} = 0.059 10⁶mm⁴
 Z_{x-x} = 2.698 10³mm³
 r_{x-x} = 14.1mm
 I_{y-y} = 0.091 10⁶mm⁴
 Z_{y-y} = 4.423 10³mm³
 r_{y-y} = 17.6mm

L (mm)	Fmax(kN)	fmax(mm)	F(kN)
250	13.35	0.20	40.96
500	6.68	0.78	33.16
750	4.49	1.77	25.40
1000	3.34	3.15	19.30
1250	2.67	4.91	14.78
1500	2.22	7.08	11.88
1750	1.91 (2)	9.64	9.90
2000	1.66 (2)	12.59	8.41
2250	1.48 (2)	15.93	7.24
2500	1.33 (2)	19.66	6.31
2750	1.21 (2)	23.80	5.53
3000	1.12 (2)	28.32	-

P2000

P2000 - PL/GB/HG

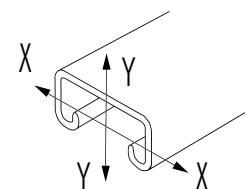
- Mass: 1.79kg/m
- (2) See Note 2 Page 13



L(mm)	Fmax(kN)	f	fmax(mm)	F(kN)
250	10.30		0.20	32.92
500	6.06		0.94	26.55
750	4.04		2.12	19.21
1000	3.03		3.77	12.91
1250	2.42		5.89	9.03
1500	2.02		8.48	6.89
1750	1.73 (2)		11.54	5.56
2000	1.27 (2)		8.41	5.46
2250	1.35 (2)		19.07	4.02
2500	1.21 (2)		23.55	3.53
2750	1.10 (2)		28.49	3.14
3000	1.01 (2)		33.91	2.82

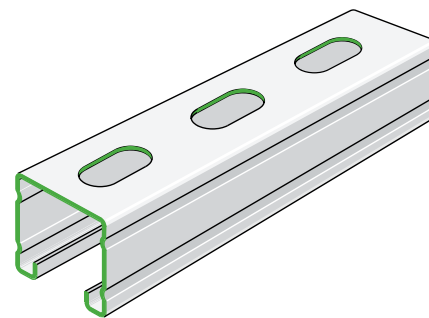
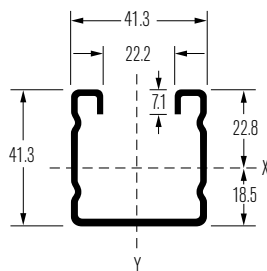
Part No.	Material Thickness	Length
P2000-PL	1.6mm	6m
P2000-GB	1.6mm	6m
P2000-HG	1.6mm	6m

A - 228mm²
 kg/m - 1.79kg/m
 I x-x = 0.052 10⁶mm⁴
 Z x-x = 2.297 10³mm³
 r x-x = 15.2mm
 I y-y = 0.065 10⁶mm⁴
 Z y-y = 3.143 10³mm³
 r y-y = 16.9mm



P2000T - PL/GB/HG

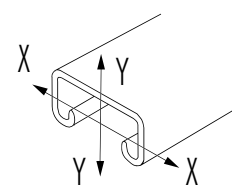
- Slots: 11 wide x 28 long at 50 cm (approx.)
- Mass: 1.62kg/m
- (2) See Note 2 Page 13



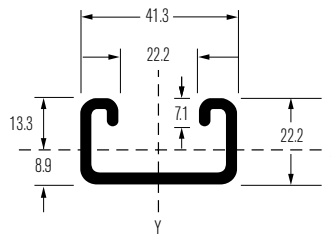
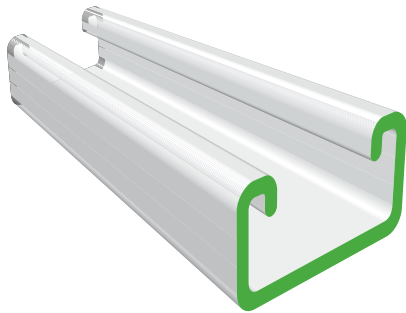
L(mm)	Fmax(kN)	f	fmax(mm)	F(kN)
250	9.27		0.18	29.63
500	5.45		0.85	23.90
750	3.64		1.91	17.29
1000	2.73		3.39	11.62
1250	2.18		5.30	8.13
1500	1.82		7.63	6.20
1750	1.56 (2)		10.39	5.00
2000	1.14 (2)		7.57	4.91
2250	1.22 (2)		17.16	3.62
2500	1.09 (2)		21.20	3.18
2750	0.99 (2)		25.64	2.83
3000	0.91 (2)		30.52	2.83

Part No.	Material Thickness	Length
P2000T-PL	1.6mm	6m
P2000T-GB	1.6mm	6m
P2000T-HG	1.6mm	6m

A - 206mm²
 kg/m - 1.62kg/m
 I x-x = 0.045 10⁶mm⁴
 Z x-x = 2.036 10³mm³
 r x-x = 14.7mm
 I y-y = 0.065 10⁶mm⁴
 Z y-y = 3.125 10³mm³
 r y-y = 17.7mm



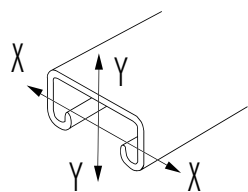
P3300



P3300 - PL/GB/HG

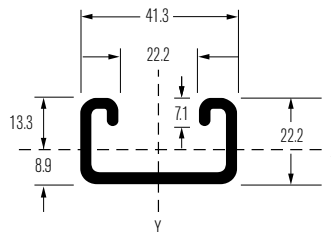
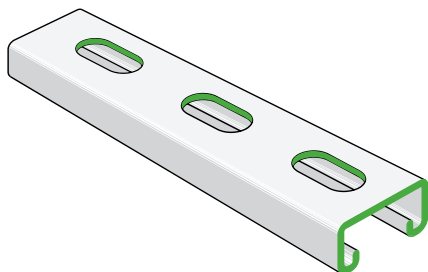
- Mass: 1.82kg/m
- (2) See Note 2 Page 13

Part No.	Material Thickness	Length
P3300-PL	2.5mm	6m
P3300-GB	2.5mm	6m
P3300-HG	2.5mm	6m



A - 232mm²
 kg/m - 1.82kg/m
 I x-x = 0.013 10⁶mm⁴
 Z x-x = 0.999 10³mm³
 r x-x = 7.6mm
 I y-y = 0.055 10⁶mm⁴
 Z y-y = 2.661 10³mm³
 r y-y = 15.4mm

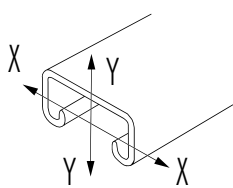
L(mm)	Fmax(kN)	f	fmax(mm)	F(kN)
250	5.52		0.42	34.88
500	2.76		1.68	27.76
750	1.84		3.79	19.42
1000	1.38		6.74	12.08
1250	1.10		10.53	7.90
1500	0.92		15.16	5.56
1750	0.79 (2)		20.63	
2000	0.69 (2)		26.95	
2250	0.61 (2)		34.11	
2500	0.55 (2)		42.11	
2750	0.50 (2)		50.95	
3000	0.46 (2)		60.63	



P3300T - PL/GB/HG

- Slots: 14 wide x 28 long at 50 cm (approx.)
- Mass: 1.55kg/m
- (2) See Note 2 Page 13

Part No.	Material Thickness	Length
P3300T-PL	2.5mm	6m
P3300T-GB	2.5mm	6m
P3300T-HG	2.5mm	6m



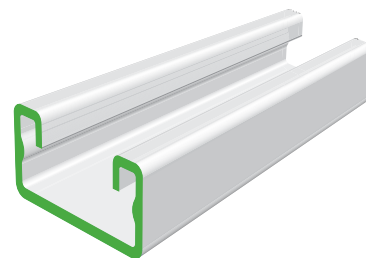
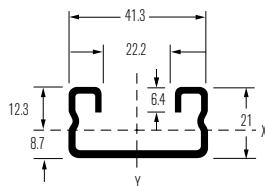
A - 197mm²
 kg/m - 1.55kg/m
 I x-x = 0.011 10⁶mm⁴
 Z x-x = 0.912 10³mm³
 r x-x = 7.5mm
 I y-y = 0.054 10⁶mm⁴
 Z y-y = 2.634 10³mm³
 r y-y = 16.6mm

L(mm)	Fmax(kN)	f	fmax(mm)	F(kN)
250	4.97		0.38	31.39
500	2.48		1.51	24.98
750	1.66		3.41	17.48
1000	1.24		6.07	10.87
1250	0.99		9.48	7.11
1500	0.83		13.64	5.00
1750	0.71 (2)		18.57	
2000	0.62 (2)		24.26	
2250	0.55 (2)		30.70	
2500	0.50 (2)		37.90	
2750	0.45 (2)		45.86	
3000	0.41 (2)		54.57	-

P4000

P4000 - PL/GB/HG

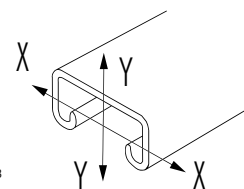
- Mass: 1.26kg/m
- (2) See Note 2 Page 13



L(mm)	Fmax(kN)	f	fmax(mm)	F(kN)
250	4.20		0.44	22.36
500	2.10		1.77	16.30
750	1.40		3.98	10.46
1000	1.05		7.08	6.54
1250	0.84		11.07	4.54
1500	0.70 (2)		15.94	3.35
1750	0.60 (2)		21.69	
2000	0.52 (2)		28.33	
2250	0.47 (2)		35.86	
2500	0.42 (2)		44.27	
2750	0.38 (2)		53.57	
3000	0.35 (2)		63.57	

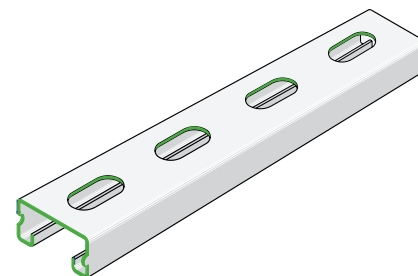
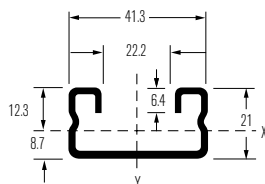
Part No.	Material Thickness	Length
P4000-PL	1.6mm	6m
P4000-GB	1.6mm	6m
P4000-HG	1.6mm	6m

A - 160mm²
 kg/m - 1.26kg/m
 I x-x = 0.010 10⁶mm⁴
 Z x-x = 0.786
 10³mm³
 r x-x = 7.8mm
 I y-y = 0.039 10⁶mm⁴
 Z y-y = 1.880 10³mm³
 r y-y = 15.6mm



P4000T - PL/GB/HG

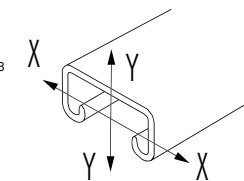
- Slots: 11 wide x 28 long at 50 cm (approx.)
- Mass: 1.08kg/m
- (2) See Note 2 Page 13



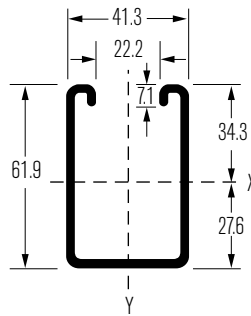
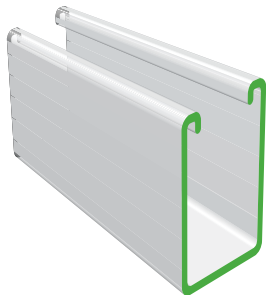
L(mm)	Fmax(kN)	f	fmax(mm)	F(kN)
250	3.78		0.40	20.12
500	1.89		1.59	14.67
750	1.26		3.58	9.41
1000	0.95		6.37	5.89
1250	0.76		9.96	4.09
1500	0.63 (2)		14.35	3.02
1750	0.54 (2)		19.52	
2000	0.47 (2)		25.50	
2250	0.42 (2)		32.27	
2500	0.38 (2)		39.84	
2750	0.34 (2)		48.21	
3000	0.32 (2)		57.21	

Part No.	Material Thickness	Length
P4000T-PL	1.6mm	6m
P4000T-GB	1.6mm	6m
P4000T-HG	1.6mm	6m

A - 138mm²
 kg/m - 1.08kg/m
 I x-x = 0.008 10⁶mm⁴
 Z x-x = 0.729 10³mm³
 r x-x = 7.6mm
 I y-y = 0.038 10⁶mm⁴
 Z y-y = 1.862 10³mm³
 r y-y = 16.7mm



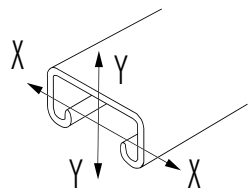
P5500



P5500 - PL/GB/HG

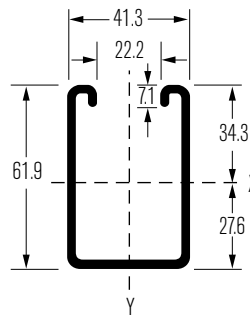
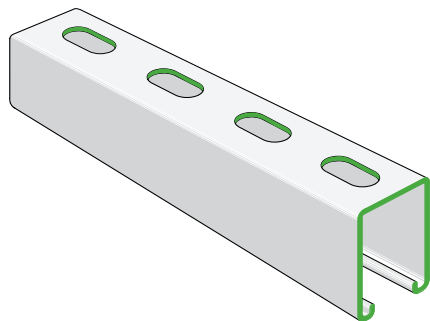
- Mass: 3.40kg/m
- (2) See Note 2 Page 13

Part No.	Material Thickness	Length
P5500-PL	2.5mm	6m
P5500-GB	2.5mm	6m
P5500-HG	2.5mm	6m



A - 433mm²
 kg/m - 3.40kg/m
 I_{x-x} = 0.197 10⁶mm⁴
 Z_{x-x} = 5.730 10³mm³
 r_{x-x} = 21.3mm
 I_{y-y} = 0.131 10⁶mm⁴
 Z_{y-y} = 6.328 10³mm³
 r_{y-y} = 17.4mm

L(mm)	Fmax(kN)	f	fmax(mm)	F(kN)
250	27.04		0.14	57.03
500	13.84		0.57	45.91
750	9.23		1.29	33.78
1000	6.92		2.29	23.85
1250	5.54		3.58	17.38
1500	4.61		5.15	13.76
1750	3.95 (2)		7.01	11.48
2000	3.46 (2)		9.16	9.98
2250	3.08 (2)		11.59	8.72
2500	2.77 (2)		14.31	7.81
2750	2.52 (2)		17.31	7.06
3000	2.31 (2)		20.61	6.43



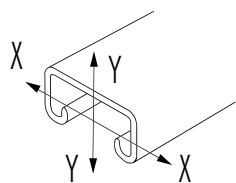
P5500T - PL/GB/HG

- Slots: 14 wide x 28 long at 50 cm (approx.)
- Mass: 3.12kg/m
- (2) See Note 2 Page 13

*Non Standard Stock.

Available to order on request

Part No.	Material Thickness	Length
P5500T-PL	2.5mm	6m
P5500T-GB	2.5mm	6m
P5500T-HG	2.5mm	6m



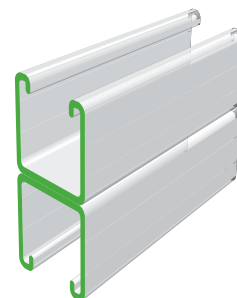
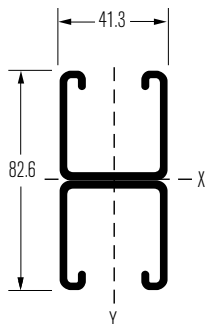
A - 398mm²
 kg/m - 3.12kg/m
 I_{x-x} = 0.170 10⁶mm⁴
 Z_{x-x} = 5.322 10³mm³
 r_{x-x} = 20.7mm
 I_{y-y} = 0.130 10⁶mm⁴
 Z_{y-y} = 6.300 10³mm³
 r_{y-y} = 18.1mm

L(mm)	Fmax(kN)	f	fmax(mm)	F(kN)
250	24.34		0.13	51.33
500	12.46		0.51	41.32
750	8.31		1.16	30.40
1000	6.23		2.06	21.47
1250	4.99		3.22	15.64
1500	4.15		4.64	12.38
1750	3.56 (2)		6.31	10.33
2000	3.11 (2)		8.24	8.90
2250	2.77 (2)		10.43	7.85
2500	2.49 (2)		12.88	7.03
2750	2.27 (2)		15.58	6.35
3000	2.08 (2)		18.55	5.79

Combination Struts

P1001 - PL/GB/HG

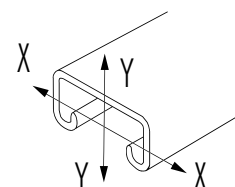
- Mass: 5.18kg/m
- * Limited by weldshear
- (1) See Note 1 Page 13
- (2) See Note 2 Page 13



L(mm)	Fmax(kN)	f	fmax(mm)	F(kN)
250	25.64 (1)		0.08	97.71
500	19.58		0.50	94.09
750	13.06*		1.13	88.35
1000	9.79		2.00	80.90
1250	7.83		3.13	72.23
1500	6.53		4.50	62.89
1750	5.60 (2)		6.13	53.40
2000	4.90 (2)		8.01	44.21
2250	4.35 (2)		10.13	35.62
2500	3.92 (2)		12.51	28.85
2750	3.56 (2)		15.14	23.85
3000	3.26 (2)		18.02	20.04

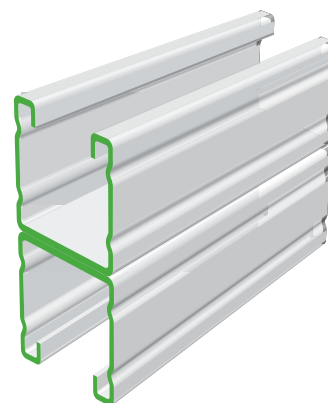
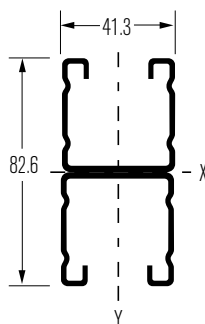
Part No.	Material Thickness	Length
P1001-PL	2.5mm	6m
P1001-GB	2.5mm	6m
P1001-HG	2.5mm	6m

A - 660mm²
 kg/m - 5.18kg/m
 I x-x = 0.318 10⁶mm⁴
 Z x-x = 7.711 10³mm³
 r x-x = 22.0mm
 I y-y = 0.184 10⁶mm⁴
 Z y-y = 8.902 10³mm³
 r y-y = 16.7mm



P2001 - PL/GB/HG

- Mass: 3.58kg/m
- (1) See Note 1 Page 13
- (2) See Note 2 Page 13



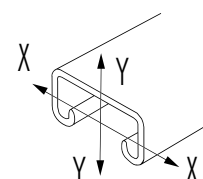
*Non Standard Stock.

Available to order on request

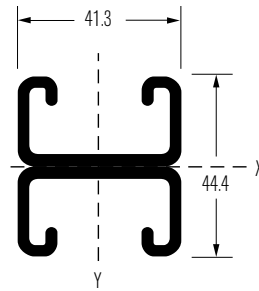
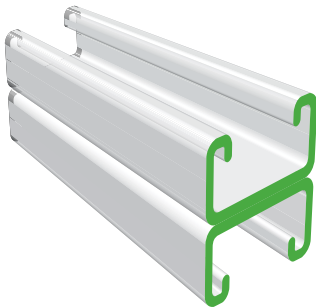
L(mm)	Fmax(kN)	f	fmax(mm)	F(kN)
250	11.78 (1)		0.05	70.84
500	11.78		0.37	68.18
750	11.09		1.17	63.96
1000	8.32		2.07	58.50
1250	6.65		3.24	52.15
1500	5.54		4.67	45.32
1750	4.75 (2)		6.35	38.39
2000	3.48 (2)		4.63	31.77
2250	3.70 (2)		10.50	25.48
2500	3.33 (2)		12.96	20.64
2750	3.02 (2)		15.68	17.06
3000	2.77 (2)		18.66	14.33

Part No.	Material Thickness	Length
P2001-PL	1.6mm	6m
P2001-GB	1.6mm	6m
P2001-HG	1.6mm	6m

A - 138mm²
 kg/m - 3.58kg/m
 I x-x = 0.008 10⁶mm⁴
 Z x-x = 0.729 10³mm³
 r x-x = 7.6mm
 I y-y = 0.038 10⁶mm⁴
 Z y-y = 1.862 10³mm³
 r y-y = 16.7mm



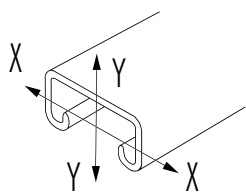
Combination Struts



P3301 - PL/GB/HG

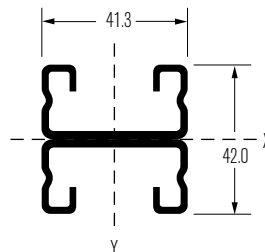
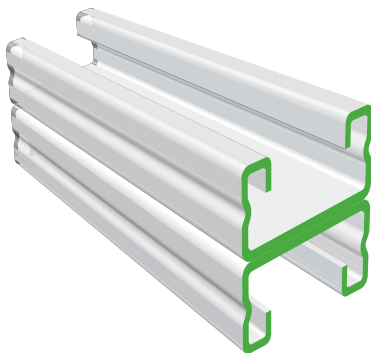
- Mass: 3.64kg/m
- (2) See Note 2 Page 13

Part No.	Material Thickness	Length
P3301-PL	2.5mm	6m
P3301-GB	2.5mm	6m
P3301-HG	2.5mm	6m



A - 465mm²
 kg/m - 3.64kg/m
 I_{x-x} = 0.063 10⁶mm⁴
 Z_{x-x} = 2.841 10³mm³
 r_{x-x} = 11.6mm
 I_{y-y} = 0.110 10⁶mm⁴
 Z_{y-y} = 5.329 10³mm³
 r_{y-y} = 15.4mm

L(mm)	F _{max} (kN)	f	f _{max} (mm)	F(kN)
250	15.58		0.25	73.20
500	7.79		1.01	67.32
750	5.19		2.26	58.55
1000	3.90		4.02	48.16
1250	3.12		6.28	37.47
1500	2.60		9.05	27.50
1750	2.23 (2)		12.32	20.21
2000	1.95 (2)		16.09	15.47
2250	1.73 (2)		20.36	12.22
2500	1.56 (2)		25.13	
2750	1.42 (2)		30.41	
3000	1.30 (2)		36.19	



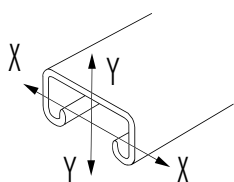
P4001 - PL/GB/HG

- Mass: 2.52kg/m
- (2) See Note 2 Page 13

*Non Standard Stock.

Available to order on request

Part No.	Material Thickness	Length
P4001-PL	1.6mm	6m
P4001-GB	1.6mm	6m
P4001-HG	1.6mm	6m



A - 320mm²
 kg/m - 2.52kg/m
 I_{x-x} = 0.044 10⁶mm⁴
 Z_{x-x} = 2.082 10³mm³
 r_{x-x} = 11.7mm
 I_{y-y} = 0.078 10⁶mm⁴
 Z_{y-y} = 3.764 10³mm³
 r_{y-y} = 15.6mm

L(mm)	F _{max} (kN)	f	f _{max} (mm)	F(kN)
250	10.39		0.24	49.05
500	5.55		1.03	45.24
750	3.70		2.33	39.54
1000	2.78		4.14	32.74
1250	2.22		6.46	25.69
1500	1.85 (2)		9.31	19.06
1750	1.59 (2)		12.67	14.00
2000	1.39 (2)		16.54	10.72
2250	1.23 (2)		20.94	8.47
2500	1.11 (2)		25.85	
2750	1.01 (2)		31.28	
3000	0.93 (2)		37.22	

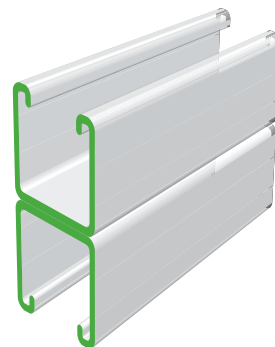
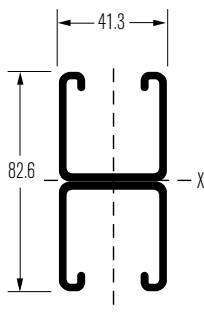
Combination Struts

P5501 - PL/GB/HG

- Mass: 6.80kg/m
- (1) See Note 1 Page 13
- (2) See Note 2 Page 13

*Non Standard Stock.

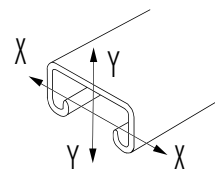
Available to order on request



L(mm)	Fmax(kN)	f	fmax(mm)	F(kN)
250	27.04 (1)		0.03	122.16
500	27.04 (1)		0.21	118.17
750	27.04		0.71	111.82
1000	20.50		1.27	103.50
1250	16.40		1.98	93.71
1500	13.67		2.86	82.98
1750	11.72		3.89	71.88
2000	10.25		5.08	60.91
2250	9.11 (2)		6.43	50.48
2500	8.20 (2)		7.93	41.04
2750	7.46 (2)		9.60	33.92
3000	6.83 (2)		11.42	28.50

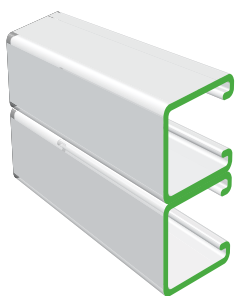
Part No.	Material Thickness	Length
P5501-PL	2.5mm	6m
P5501-GB	2.5mm	6m
P5501-HG	2.5mm	6m

$A = 867\text{mm}^2$
 $\text{kg/m} = 6.80\text{kg/m}$
 $I_{x-x} = 1.052 \cdot 10^6\text{mm}^4$
 $Z_{x-x} = 16.990 \cdot 10^3\text{mm}^3$
 $r_{x-x} = 34.8\text{mm}$
 $I_{y-y} = 0.261 \cdot 10^6\text{mm}^4$
 $Z_{y-y} = 12.662 \cdot 10^3\text{mm}^3$
 $r_{y-y} = 17.4\text{mm}$

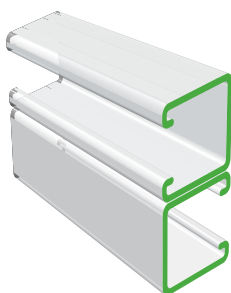


Optional Combinations - Non Standard Stock. Available to order.

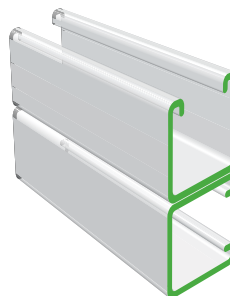
P1001A



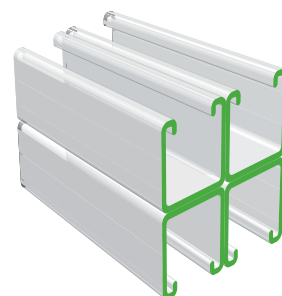
P1001B



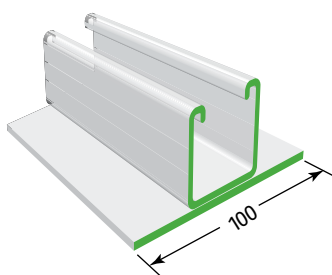
P1001C



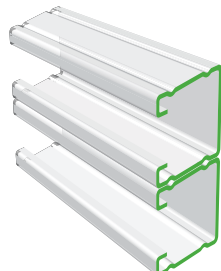
P1001C 41



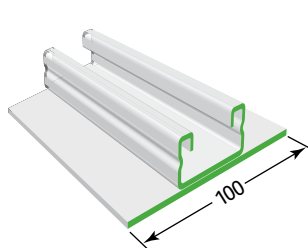
P1003



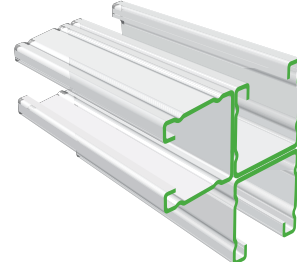
P2001A



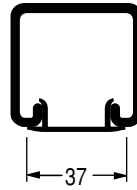
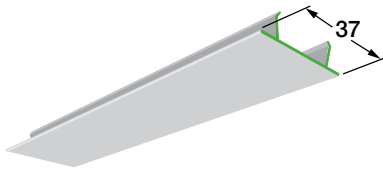
P4002-1



P2001C3

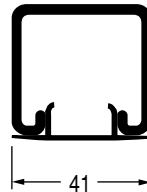
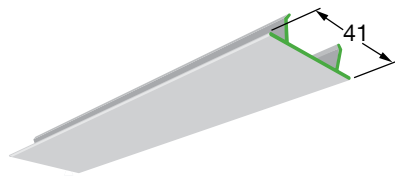


Strut Accessories



P1184 - PLASTIC CLOSURE STRIP (UV STABILISED)

- Standard Length 3m
- Mass: 0.11 kg/m



P1184A - ALUMINIUM CLOSURE STRIP

- Standard Length 3m
- Mass: 0.18 kg/m

Strut End Caps - Plastic, Uv Stabilised



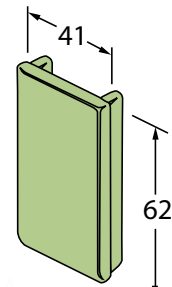
P2240

- For P1000® & P2000 Strut
- Mass: 0.70 kg/100



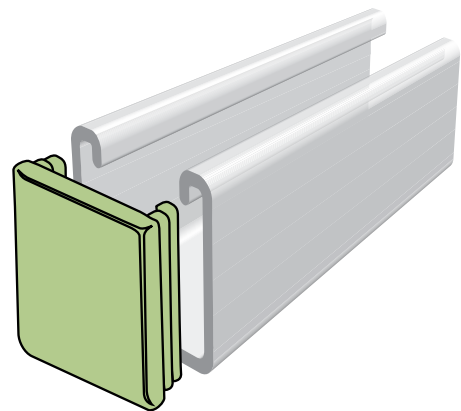
P4240

- For P3300 & P4000 Strut
- Mass: 0.40 kg/100

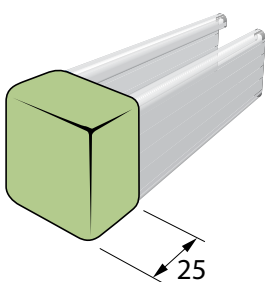


P5580

- For P5500 Strut
- Mass: 1.2 kg/100



Typical Installation



P2860-10 - STRUT END CAPS - PLASTIC

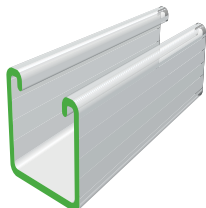
- Fits P1000@ & P2000 Strut
- Mass: 1.54kg/100
- Note: Caps struts provide a protective covering on protruding Struts to guard against personal injury or damage to clothing. They slip easily over the ends of strut.
- Available: White or black only.

Struts - Special Metals

Stainless 316 Strut

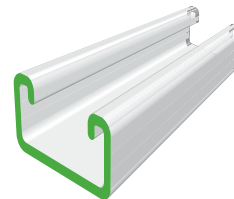
P1000-SS

- Mass: 2.76kg/m
- Material Length 6m
- Material Thickness 2.5mm
- 41.3 x 41.3



P3300-SS

- Mass: 1.96kg/m
- Material Length 6m
- Material Thickness 2.5mm
- 41.3 x 22.2

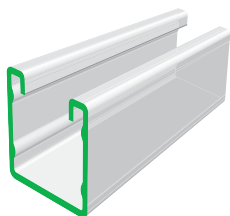


Note: P2000 and P4000 profiles available in stainless steel, made to order.

Aluminum Strut

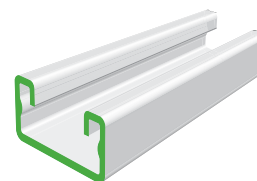
P2000-AL

- Mass: 0.77kg/m
- Material Length 6m
- 41.3 x 41.3



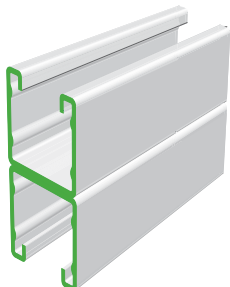
P4000-AL

- Mass: 0.58kg/m
- Material Length 6m
- 41.3 x 20.6



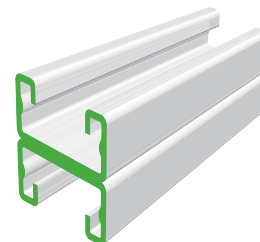
P2001-AL

- Material Length 6m
- 41.3 x 82.6



P4001-AL

- Material Length 6m
- 41.3 x 41.3



*Non Standard Stock.
Available to order on request

*Non Standard Stock.
Available to order on request

Loading Data

Approximate beam load capacities for Strut sections may be obtained from the engineering data sections in this catalogue. Multiply data by the following percentages:

Material	Load Factor
Extruded Aluminum	33%

Nut pullout strength and resistance to slip for sections may be obtained from the engineering data sections in this catalogue. Multiply data by the following percentages:

Material	Slip Percentage Factor	Pullout Percentage Factor
Extruded Aluminum	75%	50%

UNISTRUT® FITTINGS: Some fittings, as shown in this catalogue can be supplied in aluminium on special order.

Beam and Column Loads

Notes to Table

Note 1: Loads are governed by shear or web crippling.

Note 2: For uniform beam working loads asymmetric sections are required to be adequately braced to prevent rotation and twist. The table should be read in conjunction with 'Notes on derivation of Structural Data' page 13, and 'How to use Load Tables' (pages 56-57).

Beams & Columns - P1000® Strut & Combination

Beam Span or Column Unsupported Height mm	Section Number	Uniform Beam Working Load kN	Deflection at Uniform Working Load mm	Max. Loading of Column kN
250	P1000	14.83	0.22	45.51
	P1001	25.64 (1)	0.08	97.71
	P1001C41	25.64 (1)	0.04	195.70
	P1003	17.46	0.15	78.01
500	P1000	7.42	0.87	36.84
	P1001	19.58	0.50	94.09
	P1001C41	25.64	0.30	188.76
	P1003	8.73	0.59	74.48
750	P1000	4.94	1.97	28.22
	P1001	13.06	1.13	88.35
	P1001C41	25.64	1.02	178.34
	P1003	5.82	1.33	68.94
1000	P1000	3.71	3.50	21.44
	P1001	9.79	2.00	80.90
	P1001C41	21.16	2.00	165.65
	P1003	4.36	2.37	61.87
1250	P1000	2.97	5.46	16.42
	P1001	7.83	3.13	72.23
	P1001C41	16.93	3.13	151.78
	P1003	3.49	3.70	53.84
1500	P1000	2.47	7.87	13.20
	P1001	6.53	4.50	62.89
	P1001C41	14.11	4.50	137.52
	P1003	2.91	5.33	45.43

Beam Span or Column Height mm	Section Number	Uniform Beam Working Load kN	Deflection at Uniform Working Load mm	Max. Loading of Column kN
1750	P1000	2.12 (2)	10.71	11.00
	P1001	5.60 (2)	6.13	53.40
	P1001C41	12.09	6.13	123.36
	P1003	2.49	7.25	37.16
2000	P1000	1.85 (2)	13.99	9.35
	P1001	4.90 (2)	8.01	44.21
	P1001C41	10.58	8.01	109.59
	P1003	2.18	9.48	29.41
2250	P1000	1.65 (2)	17.70	8.05
	P1001	4.35 (2)	10.13	35.62
	P1001C41	9.41	10.13	96.41
	P1003	1.94	11.99	23.24
2500	P1000	1.48 (2)	21.85	7.01
	P1001	3.92 (2)	12.51	28.85
	P1001C41	8.47 (2)	12.51	83.93
	P1003	1.75	14.81	18.82
2750	P1000	1.35 (2)	26.44	6.14
	P1001	3.56 (2)	15.14	23.85
	P1001C41	7.70 (2)	15.13	72.11
	P1003	3.56	15.14	23.85
3000	P1000	1.24 (2)	31.47	0.00
	P1001	3.26 (2)	18.02	20.04
	P1001C41	7.05 (2)	18.01	62.18
	P1003	1.45 (2)	21.32	0.00

Elements of Section - P1000® Strut & Combination

Part No.	Mass kg/m	Area of Section mm ²	I 10 ⁶ mm ⁴	Axis XX Z 10 ³ mm ³	r mm	I 106mm ⁴	Axis XX Z 10 ³ mm ³	r mm
P1000	2.59	330	0.069	2.920	14.5	0.092	4.451	16.7
P1001	5.18	660	0.318	7.711	22.0	0.184	8.902	16.7
P1001C41	10.36	1322	0.688	16.670	22.8	0.931	22.546	26.5
P1003	4.50	580	0.120	3.771	14.4	0.300	6.007	22.8

Note:

I - Moment of Inertia

Z - Section Modulus

r - Radius of Gyration

For Slip and Pullout Performance details refer to this Tab Section (page 52)

Beam and Column Loads

Beams & Columns - P2000 Strut & Combination

Beam Span or Column Unsupported Height mm	Section Number	Uniform Beam Working Load kN	Deflection at Uniform Working Load mm	Max. Loading of Column kN	Beam Span or Column Unsupported Height mm	Section Number	Uniform Beam Working Load kN	Deflection at Uniform Working Load mm	Max. Loading of Column kN
250	P2000	10.30	0.20	32.92	1750	P2000	1.73 (2)	11.54	5.56
	P2001	11.78 (1)	0.05	70.84		P2001	4.75 (2)	6.35	38.39
	P2001C3	11.77 (1)	0.03	106.31		P2001C3	6.24 (2)	5.53	59.16
500	P2000	6.06	0.94	26.55	2000	P2000	1.27 (2)	8.41	4.66
	P2001	11.78	0.37	68.18		P2001	3.48 (2)	4.63	31.77
	P2001C3	11.77 (1)	0.24	101.69		P2001C3	4.01 (2)	3.97	58.18
750	P2000	4.04	2.12	19.21	2250	P2000	1.35 (2)	19.07	4.02
	P2001	11.09	1.17	63.96		P2001	3.70 (2)	10.50	25.48
	P2001C3	11.77 (2)	0.24	94.74		P2001C3	4.85 (2)	9.13	43.10
1000	P2000	3.03	3.77	12.91	2500	P2000	1.21 (2)	23.55	3.53
	P2001	8.32	2.07	58.50		P2001	3.33 (2)	12.96	20.64
	P2001C3	10.91	1.80	86.31		P2001C3	4.37 (2)	11.28	36.13
1250	P2000	2.42	5.89	9.03	2750	P2000	1.10 (2)	28.49	3.14
	P2001	6.65	3.24	52.15		P2001	3.02 (2)	15.68	17.06
	P2001C3	8.73 (2)	2.82	77.21		P2001C3	3.97 (2)	13.64	30.72
1500	P2000	2.02	8.48	6.89	3000	P2000	1.01 (2)	33.91	2.82
	P2001	5.54	4.67	45.32		P2001	2.77 (2)	18.66	14.33
	P2001C3	7.28 (2)	4.06	68.03		P2001C3	3.64 (2)	16.24	26.44

Note:

The table should be read in conjunction with 'Notes on Derivation of Structural Data' (page 13) and 'How to use Load Tables' (pages 56-57) in this Tab Section

Elements of Section - P2000 Strut & Combination

Part No.	Mass kg/m	Area of Section mm ²	I 10 ⁶ mm ⁴	Axis XX Z 10 ³ mm ³	r mm	I 10 ⁶ mm ⁴	Axis XX Z 10 ³ mm ³	r mm
P2000	1.79	228	0.052	2.297	15.2	0.065	3.143	16.9
P2001	3.58	462	0.261	6.321	23.8	0.131	6.367	16.9
P2001C3	5.37	695	0.394	8.302	23.8	0.418	8.410	24.5

Note:

I - Moment of Inertia
Z - Section Modulus
r - Radius of Gyration

For Slip and Pullout Performance details refer to this Tab Section (page 52)



Beam and Column Loads

Beams & Columns - P3300 Strut & Combination

Beam Span or Column Unsupported Height mm	Section Number	Uniform Beam Working Load kN	Deflection at Uniform Working Load mm	Max. Loading of Column kN	Beam Span or Column Unsupported Height mm	Section Number	Uniform Beam Working Load kN	Deflection at Uniform Working Load mm	Max. Loading of Column kN
250	P3300	5.52	0.42	34.88	1750	P3300	0.79 (2)	20.63	0.00
	P3301	15.58	0.25	73.20		P3301	2.23 (2)	12.32	20.21
500	P3300	2.76	1.68	27.76	2000	P3300	0.69 (2)	26.95	0.00
	P3301	7.79	1.01	67.32		P3301	1.95 (2)	16.09	15.47
750	P3300	1.84	3.79	19.42	2250	P3300	0.61 (2)	34.11	0.00
	P3301	5.19	2.26	58.55		P3301	1.73 (2)	20.36	12.22
1000	P3300	1.38	6.74	12.08	2500	P3300	0.55 (2)	42.11	0.00
	P3301	3.90	4.02	48.16		P3301	1.56 (2)	25.13	0.00
1250	P3300	1.10	10.53	7.90	2750	P3300	0.50 (2)	50.95	0.00
	P3301	3.12	6.28	37.47		P3301	1.42 (2)	30.41	0.00
1500	P3300	0.92	15.16	5.56	3000	P3300	0.46 (2)	60.63	0.00
	P3301	2.60	9.05	27.50		P3301	1.30 (2)	36.19	0.00

Note:

The table should be read in conjunction with 'Notes on Derivation of Structural Data' (page 13) and 'How to use Load Tables' (pages 56-57) in this Tab Section

Elements of Section - P3300 Strut & Combination

Part No.	Mass kg/m	Area of Section mm ²	I 10 ⁶ mm ⁴	Axis XX Z 10 ³ mm ³	r mm	I 10 ⁶ mm ⁴	Axis XX Z 10 ³ mm ³	r mm
P3300	1.82	232	0.013	0.999	7.6	0.055	2.661	15.4
P3301	3.64	465	0.063	2.841	11.6	0.110	5.329	15.4

Note:

I - Moment of Inertia
Z - Section Modulus
r - Radius of Gyration
For Slip and Pullout Performance details refer to this Tab Section (page 52)

Beam and Column Loads

Beams & Columns - P4000 Strut & Combination

Beam Span or Column Unsupported Height mm	Section Number	Uniform Beam Working Load kN	Deflection at Uniform Working Load mm	Max. Loading of Column kN	Beam Span or Column Height mm	Section Number	Uniform Beam Working Load kN	Deflection at Uniform Working Load mm	Max. Loading of Column kN
250	P4000	4.20	0.44	22.36	1750	P4000	0.60 (2)	21.69	0.00
	P4001	10.39	0.24	49.05		P4001	1.59 (2)	12.67	14.00
	P4003	11.16 (1)	0.06	73.53		P4003	4.30 (2)	8.35	26.45
	P4002-1	4.71	0.25	51.41		P4002-1	0.67	12.10	0.00
500	P4000	2.10	1.77	16.30	2000	P4000	0.52 (2)	28.33	0.00
	P4001	5.55	1.03	45.24		P4001	1.39 (2)	16.54	10.72
	P4003	11.16	0.51	68.80		P4003	3.76 (2)	10.90	20.25
	P4002-1	2.35	0.99	42.12		P4002-1	0.59	15.81	0.00
750	P4000	1.40	3.98	10.46	2250	P4000	0.47 (2)	35.86	0.00
	P4001	3.70	2.33	39.54		P4001	1.23 (2)	20.94	8.47
	P4003	10.02	1.53	62.23		P4003	3.34 (2)	13.80	16.01
	P4002-1	2.35	0.99	42.12		P4002-1	0.52	20.01	0.00
1000	P4000	1.05	7.08	6.54	2500	P4000	0.42 (2)	44.27	0.00
	P4001	2.78	4.14	32.74		P4001	1.11 (2)	25.85	0.00
	P4003	7.52	2.73	53.62		P4003	3.01 (2)	17.04	12.97
	P4002-1	1.18	3.95	18.99		P4002-1	0.47	24.70	0.00
1250	P4000	0.84	11.07	4.54	2750	P4000	0.38 (2)	53.57	0.00
	P4001	2.22	6.46	25.69		P4001	1.01 (2)	31.28	0.00
	P4003	6.01	4.26	44.23		P4003	2.73 (2)	20.61	0.00
	P4002-1	0.94	6.18	12.16		P4002-1	0.43	29.89	0.00
1500	P4000	0.70 (2)	15.94	3.35	3000	P4000	0.35 (2)	63.57	0.00
	P4001	1.85 (2)	9.31	19.06		P4001	0.93 (2)	37.22	0.00
	P4003	5.01	6.13	34.96		P4003	2.51 (2)	24.53	0.00
	P4002-1	0.78	8.89	0.00		P4002-1	0.39	35.57	0.00

Note:

The table should be read in conjunction with 'Notes on Derivation of Structural Data' (page 13) and 'How to use Load Tables' (pages 56-57) in this Tab Section

Elements of Section - P4000 Strut & Combination

Part No.	Mass kg/m	Area of Section mm ²	I 10 ⁶ mm ⁴	Axis XX Z 10 ³ mm ³	r mm	I 10 ⁶ mm ⁴	Axis XX Z 10 ³ mm ³	r mm
P4000	1.26	160	0.010	0.786	7.8	0.039	1.880	15.6
P4001	2.52	320	0.044	2.082	11.7	0.078	3.764	15.6
P4002-1	3.22	410	0.019	1.036	6.9	0.247	4.946	24.6
P4003	3.78	480	0.180	5.636	19.3	0.083	4.002	13.1

Note:

I - Moment of Inertia
Z - Section Modulus
r - Radius of Gyration
For Slip and Pullout Performance details refer to this Tab Section (page 52)



Beam and Column Loads

Beams & Columns - P5500 Strut & Combination

Beam Span or Column Unsupported Height mm	Section Number	Uniform Beam Working Load kN	Deflection at Uniform Working Load mm	Max. Loading of Column kN	Beam Span or Column Unsupported Height mm	Section Number	Uniform Beam Working Load kN	Deflection at Uniform Working Load mm	Max. Loading of Column kN
250	P5500	27.04	0.14	57.03	2250	P5500	3.08 (2)	11.59	8.72
	P5501	27.04 (1)	0.03	122.16		P5501	9.11 (2)	6.43	50.48
500	P5500	13.84	0.57	45.91	2500	P5500	2.77 (2)	14.31	7.81
	P5501	27.04 (1)	0.21	118.17		P5501	8.20 (2)	7.93	41.04
750	P5500	9.23	1.29	33.78	2750	P5500	2.52 (2)	17.31	7.06
	P5501	27.04	0.71	111.82		P5501	7.46 (2)	9.60	33.92
1000	P5500	6.92	2.29	23.85	3000	P5500	2.31 (2)	20.61	6.43
	P5501	20.50	1.27	103.50		P5501	6.83 (2)	11.42	28.50
1250	P5500	5.54	3.58	17.38	3250	P5500	2.13 (2)	24.18	5.89
	P5501	16.40	1.98	93.71		P5501	6.31 (2)	13.41	24.28
1500	P5500	4.61	5.15	13.76	3500	P5500	1.98 (2)	28.05	0.00
	P5501	13.67	2.86	82.98		P5501	5.86 (2)	15.55	0.00
1750	P5500	3.95 (2)	7.01	11.48	3750	P5500	1.85 (2)	32.20	0.00
	P5501	11.72	3.89	71.88		P5501	5.47 (2)	17.85	0.00
2000	P5500	3.46 (2)	9.16	9.89	4000	P5500	1.73 (2)	36.63	0.00
	P5501	10.25	5.08	60.91		P5501	5.13 (2)	20.31	0.00

Elements of Section - P5500 Strut & Combination

Part No.	Mass kg/m	Area of Section mm ²	I 10 ⁶ mm ⁴	Axis XX Z 10 ³ mm ³	r mm	I 10 ⁶ mm ⁴	Axis XX Z 10 ³ mm ³	r mm
P5500	3.43	232	0.197	5.730	21.3	0.131	2.661	17.4
P5501	6.86	465	1.052	16.990	34.8	0.261	5.329	17.4

Note:

I - Moment of Inertia
Z - Section Modulus

r - Radius of Gyration

For Slip and Pullout Performance details refer to this Tab Section. (page 52)

Concrete Inserts

Concrete Inserts are manufactured from standard Unistrut Strut sections. They may be installed in floors, walls or concealed for the support of all kinds of piping, conduit, cable and other industrial equipment. Unistrut nuts can be inserted anywhere along the insert providing a means of attaching fittings or hanger rods.

Fixing Methods

Note: The lug protruding from the back of the insert are designed to provide positive anchorage in the concrete. Distortion of the lugs is not recommended as it will severely reduce the performance of the insert.

Form Ply: Unistrut P1000CI Concrete Inserts are placed face down on the form at the required location and fixed up using 2.8mm x 75mm long flat head nails through holes provided.

The point of the nail should be bent over to prevent lifting should the vibrator make contact.

Note: For P3300CI Concrete Insert, a 50mm long nail is recommended.

Steel Forms: Concrete Inserts are either tack welded or wired to reinforcement.

Filler Methods

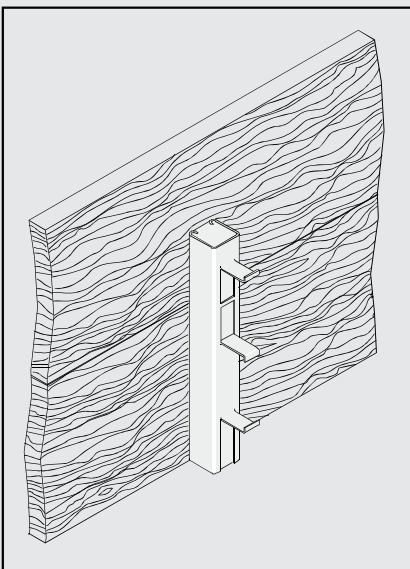
Unistrut Concrete Inserts are supplied foam filled to prevent the ingress of grout and cement.

Finishes

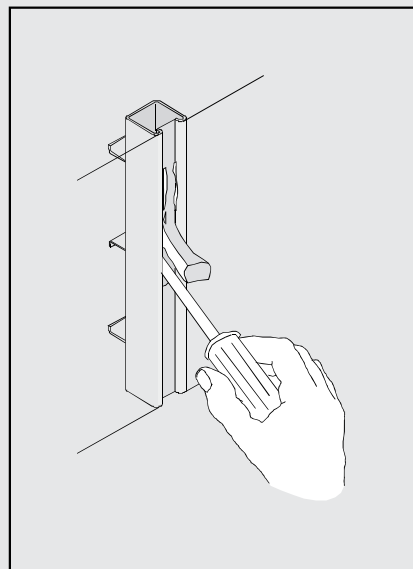
Unistrut Concrete Inserts are available in the following styles and finishes - P1000® & P3300 in Hot Dipped Galvanised.

Note: Test results are available on request

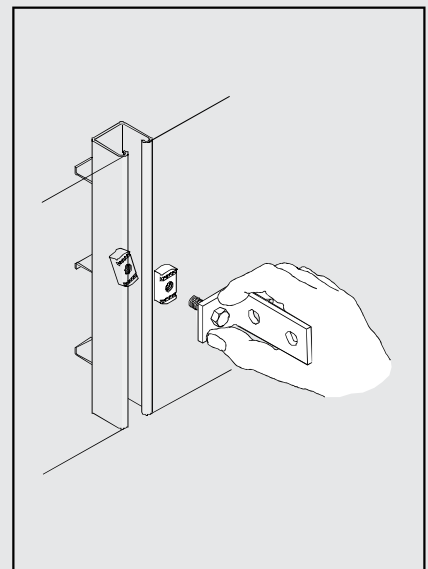
Installing



1. Install concrete insert.



2. Scrape out filler

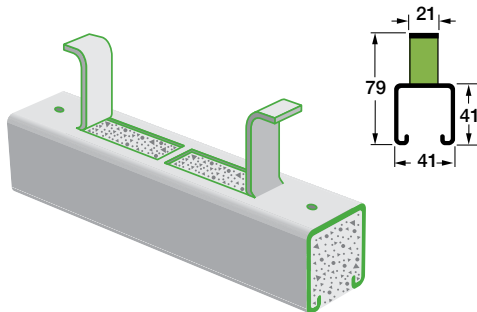


3. Insert strut nut & attach fitting

Note:

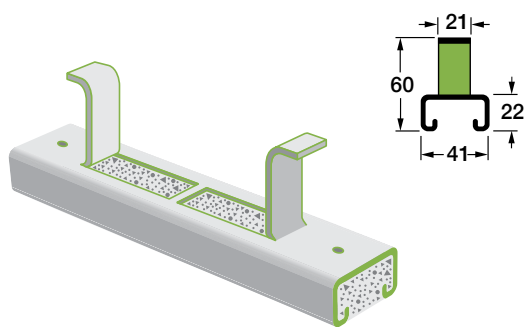
The Unistrut® concrete insert is firmly fixed to the concrete side of the form before pouring. When the forms are removed, the insert is ready for use. Brackets and other components can be attached at any point of the continuous entry Strut.

Concrete Inserts



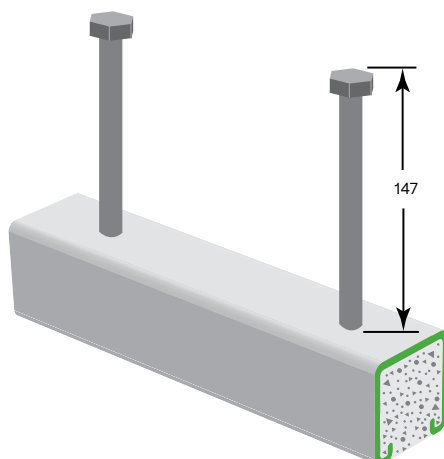
P1000CI

- Standard Length: 3m or 6m
- Mass: 2.80kg/m
- Finish: Hot Dipped Galvanised.
- Loading Data: The support capacity of any concrete insert depends largely on the strength of the concrete used. Therefore, Atkore and Unistrut can not guarantee any particular load.
- Recommended Pullout Loading*: Inserts 300mm and over 8.83kN per 300mm.
- Factor of Safety; Approximately 3 Design load based on 34mpa concrete
- **NOTE: Exercise care during installation - Do not bend lugs. Lugs at 100mm centres**



P3300CI

- Standard Length: 3m or 6m
- Mass: 1.94kg/m
- Finish: Hot Dipped Galvanised.
- Loading Data: The support capacity of any concrete insert depends largely on the strength of the concrete used. Therefore, Atkore and Unistrut can not guarantee any particular load.
- Recommended Pullout Loading*: Inserts 300mm and over 6.37kN per 300mm.
- Factor of Safety: Approximately 3 Design load based on 34mpa concrete
- **NOTE: Exercise care during installation - Do not bend lugs. Lugs at 100mm centres**



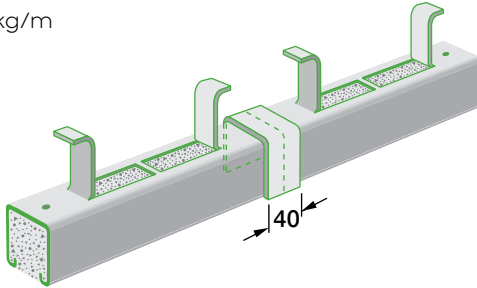
P3753 Heavy Duty Insert

- Standard Length: 300mm
- Finish: Hot Dipped Galvanised.
- Loading Data: Because the support capacity of any Concrete Insert depends largely on the strength of the concrete used, Atkore and Unistrut® can not guarantee any particular load.
- Recommended Pullout Loading*: 22kN per 300mm.
Recommended Loading*: The recommended design load is based on using two P1010 nuts at no less than 75mm C.C. and no closer than 50mm to either end of the insert. The distance between the insert centerline and the concrete edge must be a minimum of 75mm.

Concrete Inserts

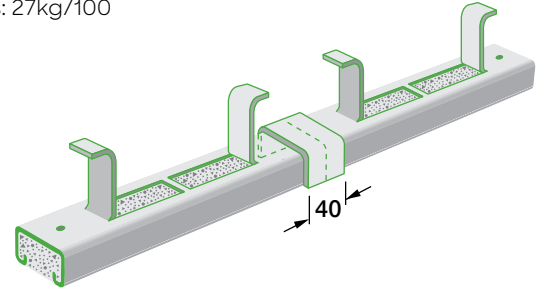
P1663 CI Joint Cover

- Mass: 4.5kg/m



P4663 CI Joint Cover

- Mass: 27kg/100

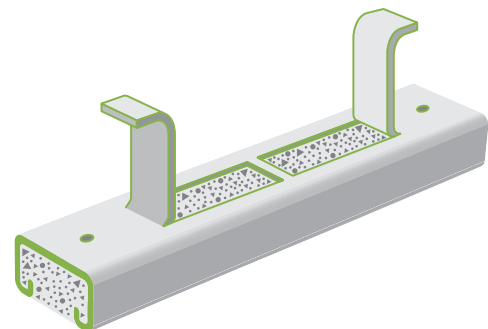
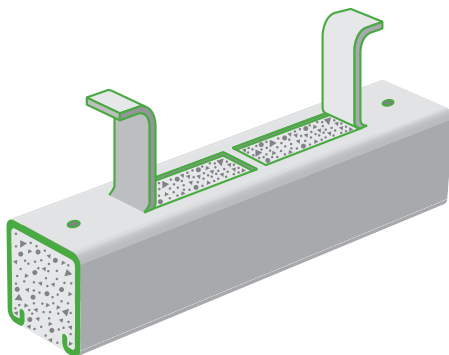


P1000[®] Inserts 41mm x 41mm

Insert Length mm	Maximum Allowable Point Load kN	Minimum Spacing of Point Loads mm	Maximum Allowable Uniform Load kN
200	5.34	-	5.34
300	8.83	-	8.83
400	8.83	300	1766
500	8.83	300	1766
600	8.83	300	1766
800	8.83	300	1766
1000	8.83	300	3000kg/m
1100	8.83	300	3000kg/m
1200	8.83	300	3000kg/m
1300	8.83	300	3000kg/m
1400	8.83	300	3000kg/m
1500	8.83	300	3000kg/m
1600	8.83	300	3000kg/m
1700	8.83	300	3000kg/m
1800	8.83	300	3000kg/m
1900	8.83	300	3000kg/m
2000	8.83	300	3000kg/m
2400	8.83	300	3000kg/m
3000	8.83	300	3000kg/m
6000	8.83	300	3000kg/m

P3300[®] Inserts 41mm x 22mm

Insert Length mm	Maximum Allowable Point Load kN	Minimum Spacing of Point Loads mm	Maximum Allowable Uniform Load kN
200	4.25	-	4.25
300	6.37	300-	6.37
400	6.37	300	12.74
500	6.37	300	12.74
600	6.37	300	12.74
700	6.37	300	12.74
800	6.37	300	2164.50kg/m
900	6.37	300	2164.50kg/m
1000	6.37	300	2164.50kg/m
1100	6.37	300	2164.50kg/m
1200	6.37	300	2164.50kg/m
1400	6.37	300	2164.50kg/m
1500	6.37	300	2164.50kg/m
1600	6.37	300	2164.50kg/m
2000	6.37	300	2164.50kg/m
2100	6.37	300	2164.50kg/m
2200	6.37	300	2164.50kg/m
3000	6.37	300	2164.50kg/m
6000	6.37	300	2164.50kg/m



Strut Nuts

MATERIAL

Unistrut spring nuts are manufactured from steel bars, and after machining operations are completed, zinc plated nuts are case hardened. Hardening assures positive biting action into the inturred edge of the Unistrut Strut.

Similar nuts without springs are also available. Strut nuts are manufactured

by welding studs to UNISTRUT nuts except for USB series which are drop forged. Nuts and bolts are manufactured to AS/NZS1111 & AS/NZS1112.

Threads: All threads on the nuts and bolts are metric coarse.

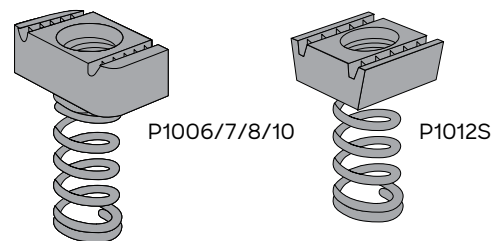
Design Bolt Torque: Refer to Engineering Data Page 52

Finishes: Nuts and bolts are zinc plated to Australian Standards AS/NZS1897, selected sizes also available in hot dipped galvanised to AS/NZS1214.

Stainless Steel: Grade 316 class 70

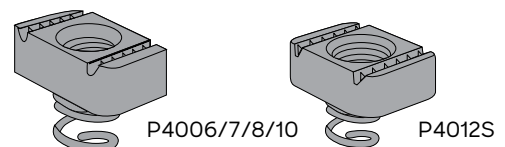
P1000® & P2000 Strut Nuts, with Springs

Size	Part No. ZP	Part No. HG	Part No. SS	Mass Kg/100
M6	P1006	P1006H	P1006SS	3.2
M8	P1007	P1007H	P1007SS	3.2
M10	P1008	P1008H	P1008SS	4.5
M12	P1010	P1010H	P1013SS	5.4
M16	P1012S	P1012SH	P1012SS	9.5



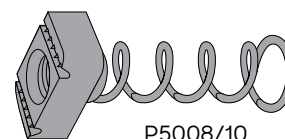
P3300 & P4000 Strut Nuts, with Springs

Size	Part No. ZP	Part No. HG	Part No. SS	Mass Kg/100
M6	P4006	P4006H	P4006SS	3.2
M8	P4007	P4007H	P4007SS	2.7
M10	P4008	P4008H	P4008SS	4.1
M12	P4010	P4010H	P4013SS	3.6
M16	P4012S	P4012SH	P4012SS	5.1



P5500 Strut Nuts, with Springs

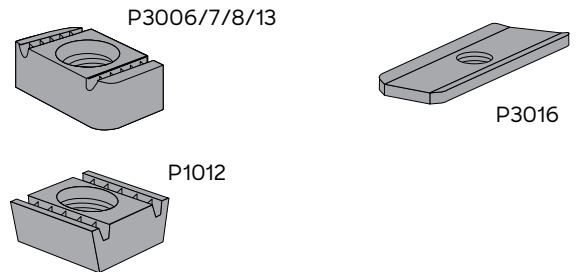
Size	Part No. ZP	Part No. HG	Part No. SS	Mass Kg/100
M10	P5508	-	-	4.5
M12	P5510	-	-	5.4



Strut Nuts No Springs

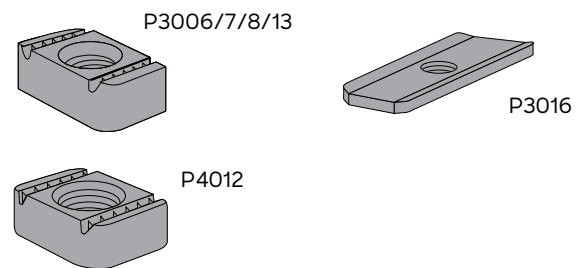
P1000® & P2000 Strut Nuts, No Springs

Size	Part No. ZP	Part No. HG	Part No. SS	Mass Kg/100
M6	P3016	P3016MG	P3016SS	1
M6	P3006	P3006H	P3006SS	2.7
M8	P3007	P3007H	P3007SS	2.7
M10	P3008	P3008H	P3008SS	4.1
M12	P3010	P3010MG	P3013SS	5
M16	P1012	P1012H	-	9.1



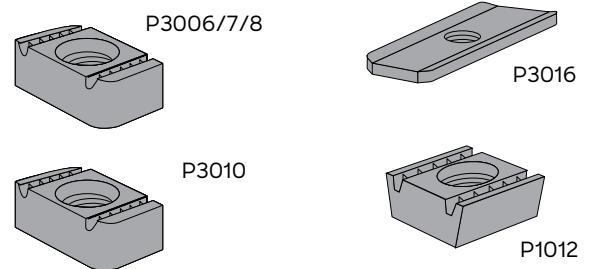
P3300 & P4000 Strut Nuts, No Springs

Size	Part No. ZP	Part No. HG	Part No. SS	Mass Kg/100
M6	P3016	P3016MG	P3016SS	1
M6	P3006	P3006H	P3006SS	2.7
M8	P3007	P3007H	P3007SS	2.7
M10	P3008	P3008H	P3008SS	4.1
M12	P3013	P3013MG	P3013SS	3.6
M16	P4012	P4012H	P4012SS	5



P5500 Strut Nuts, No Springs

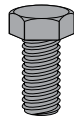
Size	Part No. ZP	Part No. HG	Part No. SS	Mass Kg/100
M6	P3016	P3016MG	P3016SS	1
M6	P3006	P3006H	P3006SS	2.7
M8	P3007	P3007H	P3007SS	2.7
M10	P3008	P3008H	P3008SS	4.1
M12	P3010	P3010MG	P3013SS	3.6
M16	P1012	P1012H	-	9.1



Hardware

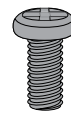
Hex Head Set Screws

Part No.	Size	Mass kg/100
HHS0620	M6 x 20	0.6
HHS0625	M6 x 25	0.7
HHS0630	M6 x 30	0.8
HHS0820	M8 x 20	1.2
HHS0825	M8 x 25	1.4
HHS0830	M8 x 30	1.5
HHS0840	M8 x 40	1.8
HHS1020	M10 x 20	1.9
HHS1025	M10 x 25	2.1
HHS1030	M10 x 30	2.5
HHS1040	M10 x 40	3.0
HHS1225	M12 x 25	4.2
HHS1230	M12 x 30	4.5
HHS1240	M12 x 40	5.1
HHS1260	M12 x 60	7.5
HHS1640	M16 x 40	9.5



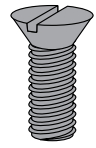
Pan Head Screws

Part No.	Size	Mass kg/100
PHS0620	M6 x 20	0.6
PHS0625	M6 x 25	0.7
PHS0630	M6 x 30	0.8
PHS0825	M8 x 25	1.3



Countersunk Head Screw

Part No.	Size	Mass kg/100
CKS0615	M6 x 15	0.3
CKS0620	M6 x 20	0.4
CKS0820	M8 x 20	0.8
CKS1020	M10 x 20	1.3



Cone Point Set Screw

Part No.	Size	Mass kg/100
CPS1040	M10 x 40	2.3
CPS1240	M12 x 40	3.8
CPS1250	M12 x 50	4.4



Hexagon Nuts

Part No.	Size	Mass kg/100
HN06	M6	0.2
HN08	M8	0.5
HN10	M10	0.8
HN12	M12	1.8
HN16	M16	3.3
HN20	M20	5.6



Flat Washers

Part No.	Size	Mass kg/100
FW06	M6	0.1
FW08	M8	0.1
FW10	M10	0.3
FW12	M12	0.4
FW16	M16	0.8
FW20	M20	0.9



Spring Washers

Part No.	Size	Mass kg/100
SW06	M6	0.1
SW08	M8	0.2
SW10	M10	0.3
SW12	M12	0.4
SW16	M16	0.6
SW20	M20	1.0



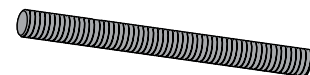
Shakeproof Lock Washers

Part No.	Size	Mass kg/100
LW06	M6	0.05
LW08	M8	0.06
LW10	M10	0.08
LW12	M12	0.10
LW16	M16	0.13
LW20	M20	1.20



Unirod Steel Threaded Rod

Part No.	Size	Max. Recommended Tensile Load (kN)	Mass kg/100
UR06	M6	3.22	0.06
UR08	M8	5.84	1.1
UR10*	M10	9.28	1.5
UR12*	M12	13.48	2.4
UR16*	M16	25.12	3.9
UR20*	M20	39.20	6.3



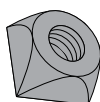
Standard Finish: Zinc Plated.
*Also available in Heavy Duty Galvanised.

Standard Length: 3m

Unirod Load Data: Maximum recommended tensile load is based on a safety factor of 2.5 using the appropriate stress area of thread and ultimate tensile strength of 430 MPa.

P2676 - Swivel Nut

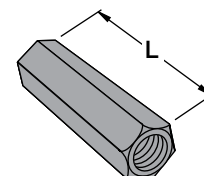
Part No.	Size	Mass kg/100
P267910	M10	1.7
P267912	M12	1.5



Note: Swivel nuts are used with P2676 and P2677. Order size as required.

Rod Couplers

Part No.	Size	A Length	Mass kg/100
RC06	M6	20	1.2
RC08	M8	20	2.3
RC10*	M10	30	4.0
RC12*	M12	40	7.8
RC16*	M16	50	12.2
RC20*	M20	50	19.0



Standard Finish: Zinc Plated.
*Also available in Heavy Duty Galvanised.

Fittings - Flat Plate

MATERIAL

Unless otherwise noted, all fittings are punch press formed from plate or strip steel.

FITTING APPLICATION

All product drawings illustrate only one application of each fitting. In most cases many other applications are possible.

The members shown in the illustrations are P1000®, 41mm square. Nuts and bolts are not included with the fitting and must be ordered separately.

DESIGN LOAD DATA

Design load data, where shown, is based on the ultimate strength of the connection with a safety factor of 2.5.

DESIGN BOLT TORQUE

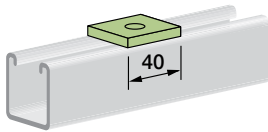
Refer to Engineering Data page 52.

FINISHES

All fittings in this section are available in zinc plated finish to New Zealand's Standard AS/NZ1789 and Hot Dipped Galvanised to AS/NS4680.

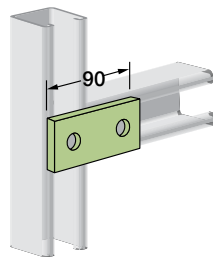
P1062 - P1964

Part No.	Bolt Size	Hole Size	Mass kg/100
P1062	8	9	5.9
P1063	10	12	5.7
P1064	12	14	5.5
P1964	16	18	5.4



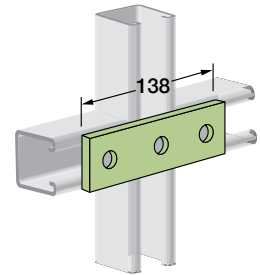
P1065

- Mass: 13.4kg/100



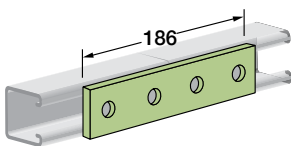
P1066

- Mass: 20kg/100



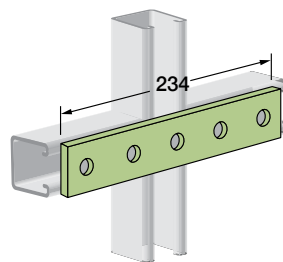
P1067

- Mass: 26.7kg/100



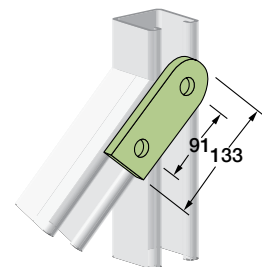
P1941

- Mass: 34.2kg/100



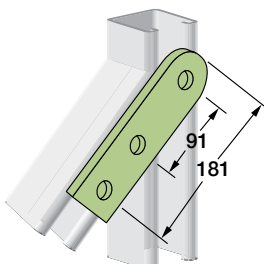
P2325

- Mass: 19.2kg/100



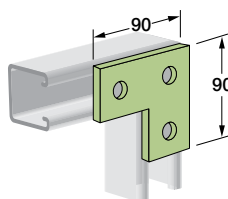
P2324

- Mass: 25.9kg/100



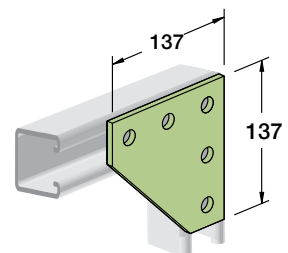
P1036

- Mass: 20.9kg/100



P1873

- Mass: 56.7kg/100

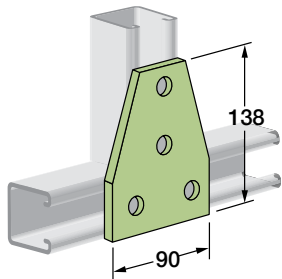


Standard Dimensions for 41mm width series Strut fittings (Unless Otherwise Shown on Drawing)
Hole Diameter: 14mm; Hole Spacing - From End: 21mm; Hole Spacing - On Centre: 48mm; Width: 40mm

Fittings - 90°, Angle

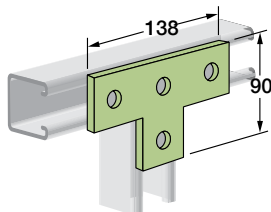
P1358

- Mass: 40kg/100



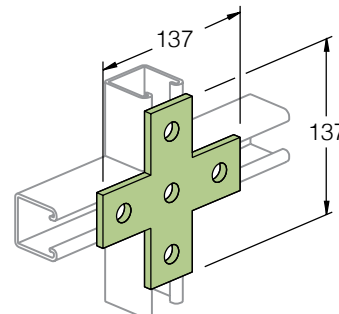
P1031

- Mass: 29.2 kg/100



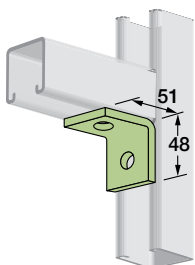
P1028

- Mass: 39.7kg/100



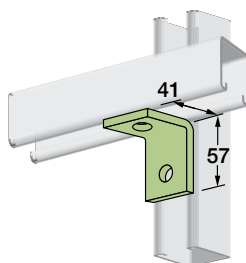
P1026

- Mass: 14.2kg/100



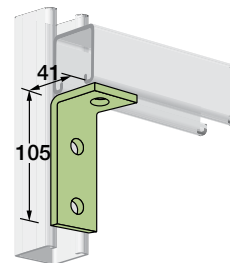
P1068

- Mass: 14.2kg/100



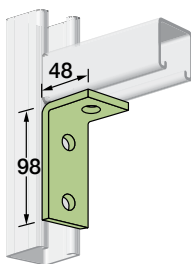
P1326

- Mass: 20kg/100



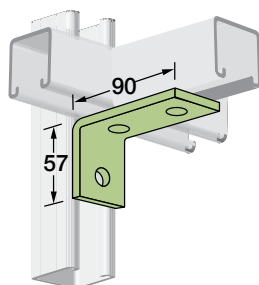
P1346

- Mass: 20kg/100



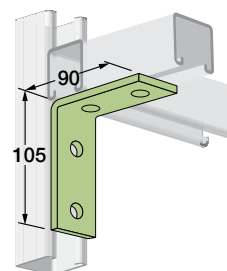
P1458

- Mass: 20kg/100



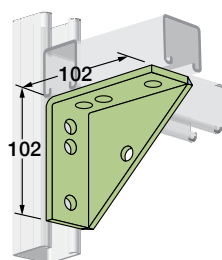
P1325

- Mass: 27.5kg/100



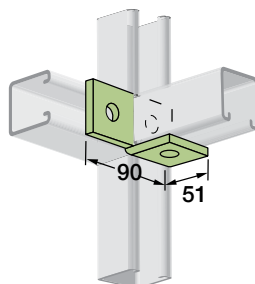
P2484

- Mass: 50.9kg/100



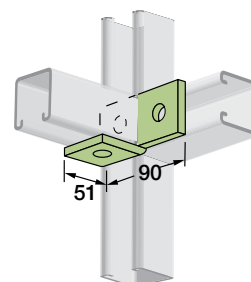
P1037

- Mass: 20.9kg/100



P1038

- Mass: 20.9kg/100

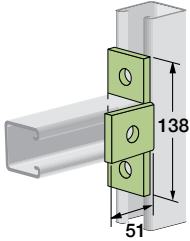


Standard Dimensions for 41mm width series Strut fittings (Unless Otherwise Shown on Drawing)
Hole Diameter: 14mm; Hole Spacing - From End: 21mm; Hole Spacing - On Centre: 48mm; Width: 40mm

Fittings - 90°, Angular & "Z" Shape

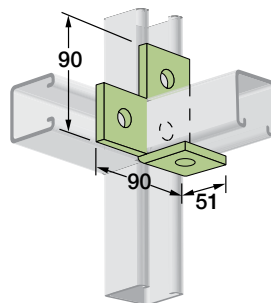
P1033

- Mass: 29.2kg/100



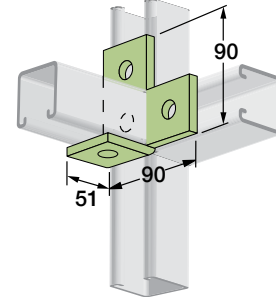
P1034

- Mass: 29.2kg/100



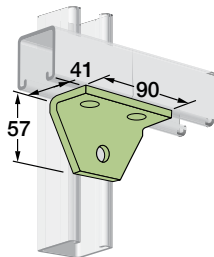
P1035

- Mass: 29.2kg/100



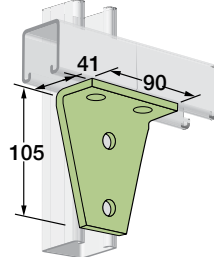
P1357

- Mass: 26.7kg/100



P1359

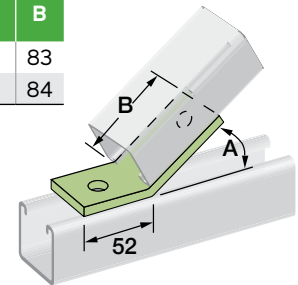
- Mass: 40kg/100



P2101 & P2103

- Mass: 21.7kg/100

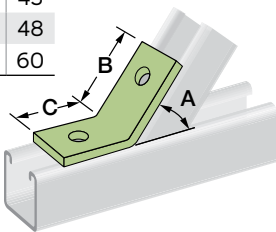
Part No.	A	B
P2101	30	83
P2103	15	84



P1546, P2095, P2097

- Mass: 21.7kg/100

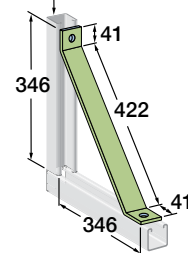
Part No.	A	B	C
P2095	75	91	43
P2097	60	86	48
P1546	45	76	60



P2452

- Mass: 85.9kg/100

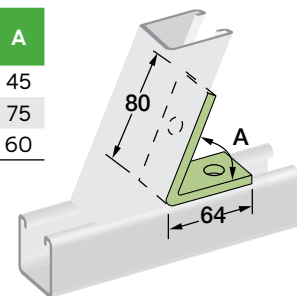
Design Axial Load - 5.36kN



P1186, P2106, P2108

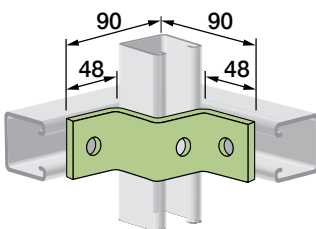
- Mass: 21.7kg/100

Part No.	A
P1186	45
P2106	75
P2108	60



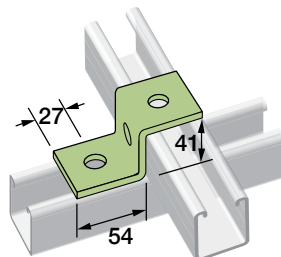
P1736

- Mass: 22.5kg/100



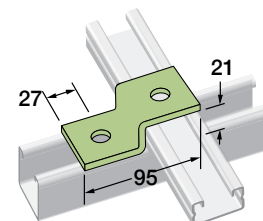
P1045

- Mass: 20kg/100



P4045

- Mass: 16.7kg/100



P4000 Shown

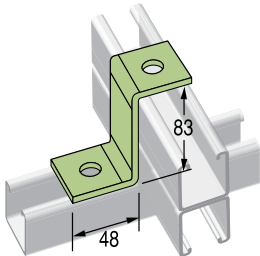
Standard Dimensions for 41mm width series Strut fittings (Unless Otherwise Shown on Drawing)
Hole Diameter: 14mm; Hole Spacing - From End: 21mm; Hole Spacing - On Centre: 48mm; Width: 40mm



Fittings - "Z", "U" and Wing Shape

P1453

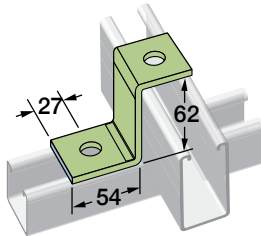
- Mass: 25kg/100



P1001 Shown

P5545

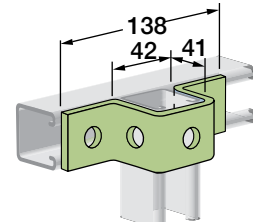
- Mass: 24.2kg/100



P1000® and P5500 Shown

P1047

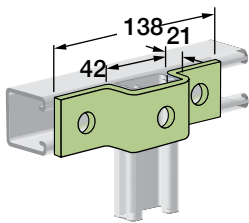
- Mass: 30.9kg/100



P1000® Shown

P4047

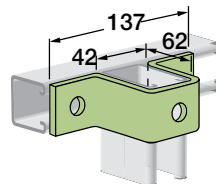
- Mass: 25kg/100



P1000® and P4000 Shown

P5547

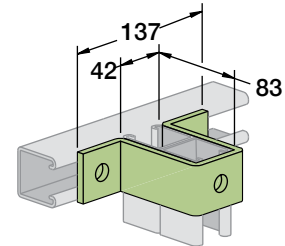
- Mass: 39.2kg/100



P1000® and P5500 Shown

P1737

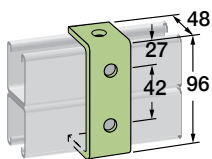
- Mass: 48.4kg/100



P1000® (shown), and P2001

P1044

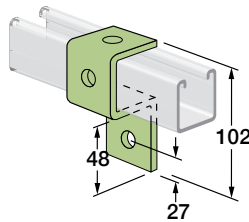
- Mass: 25kg/100



P1001 Shown

P1046

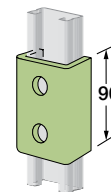
- Mass: 29.2kg/100



P1000® Shown

P4376

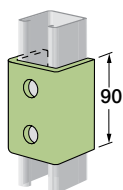
- Mass: 31.7kg/100



P4000 Shown

P1376

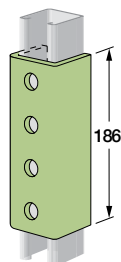
- Mass: 46.7kg/100



P1000® Shown

P1377

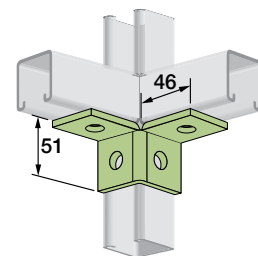
- Mass: 95.9kg/100



P1000® Shown

P2223

- Mass: 28.4kg/100



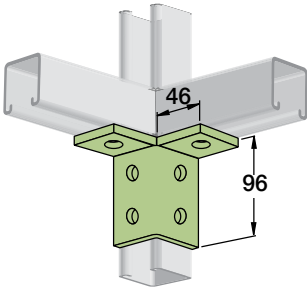
P1000® Shown

Standard Dimensions for 41mm width series Strut fittings (Unless Otherwise Shown on Drawing)
Hole Diameter: 14mm; Hole Spacing - From End: 21mm; Hole Spacing - On Centre: 48mm; Width: 40mm

Fittings Wing Shape & Post Bases

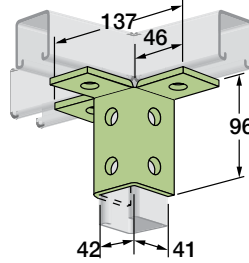
P2224

- Mass: 41.7kg/100



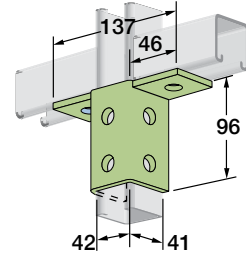
P2228

- Mass: 65kg/100



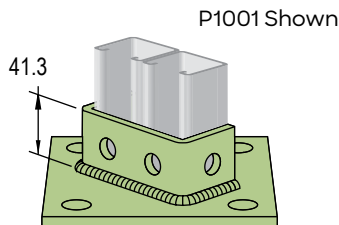
P2346

- Mass: 55kg/100

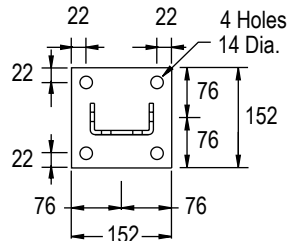


P2073

- Mass: 116.7kg/100



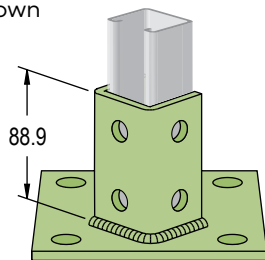
P2073SQ



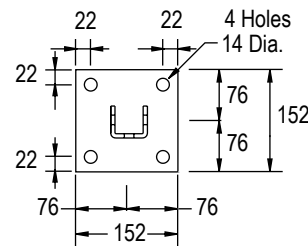
P2072A

- Mass: 136.7kg/100

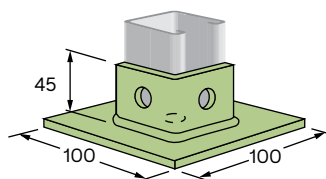
P1000® Shown



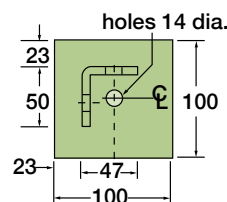
P2072ASQ



P2072S1



P1000® Shown



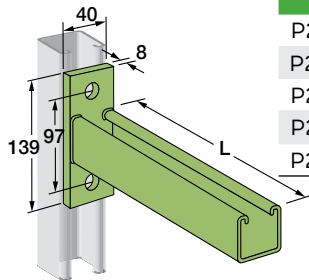
Standard Dimensions for 41mm width series Strut fittings (Unless Otherwise Shown on Drawing)
Hole Diameter: 14mm; Hole Spacing - From End: 21mm; Hole Spacing - On Centre: 48mm; Width: 40mm



Cantilever Brackets General Information

P2663 - 250 to P2663 - 700

Brackets can be used inverted



Part No.	L	Design Uniform Load - kN	Mass kg/100
P2663-250	250	3.01	102
P2663-400	400	1.88	143
P2663-450	450	1.51	153
P2663-550	550	1.36	186
P2663-700	700	1.06	229

Material

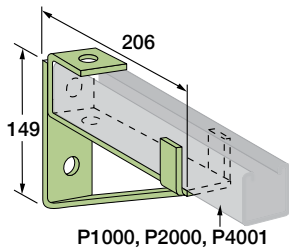
Unless otherwise noted, all fittings are punch press formed from plate or strip steel.

Fitting Application

All product drawings illustrate only one application of each fitting. In most cases many other applications are possible.

The members shown in the illustrations are P1000®, 41mm square, except where noted otherwise. All 14mm diameter holes use M12 x 24 hex head set screws and M12 nuts - P1010, P4010 or P5510 - depending on the channel used. Nuts and bolts are not included with the fitting and must be ordered separately.

P1075-4 to P1075-8



Part No.	Design Moment kN*	Mass kg/100
P1075-8	0.58	130

Design Load Data

Loadings are as shown based on calculations in accordance with AS/NZS 4600 and AS 4100.

Design Bolt Torque

Refer to Engineering Data (See Page 52).

Finishes

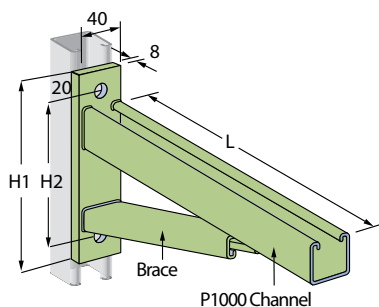
All fittings in this section are Heavy Duty Galvanised to AS/NZS4680 unless otherwise shown.

Standard Dimensions

The following dimensions apply to all fittings except as noted on the individual part drawings:

- Hole Size - 14mm diameter
- Hole Spacing - 21mm from end
- Hole Spacing - 48mm on centre
- Width - 40mm

PCL150 to PCL900

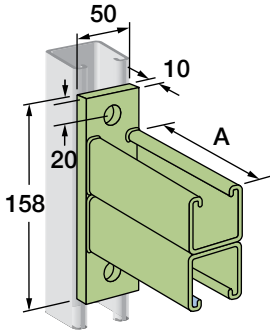


Part No.	L	H1	H2	Design Uniform Load kN	Mass kg/100
PCL150	320	200	160	3.98	170
PCL300	470	200	160	2.82	230
PCL450	635	235	195	2.75	340
PCL600	780	235	195	2.26	380
PCL750	930	300	260	3.83	550
PCL900	1080	300	260	3.58	510

* Applies only to fittings and not to strength of Unistrut® arm. Designed for use with "Unistrut®" nuts, do not use through bolts.

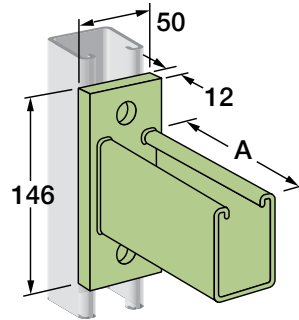
Cantilever Brackets

***P2542 to P2546**



*Non stock item.
Made to order.

***P5663 - 300 to P5663 - 750**



*Non stock item.
Made to order.

Part No.	A	Design Uniform - Load kN	Mass kg/100
P2542	305	7.57	228
P2543	460	5.22	314
P2544	610	3.98	400
P2545	760	3.21	487
P2546	915	2.67	574

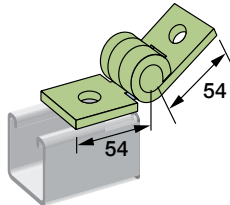
Part No.	A	Design Uniform - Load kN	Mass kg/100
P5663-300	300	6.93	173
P5663-450	450	4.78	224
P5663-600	600	3.62	276
P5663-750	750	2.91	327



Adjustable Brace Fittings & Beam Clamps

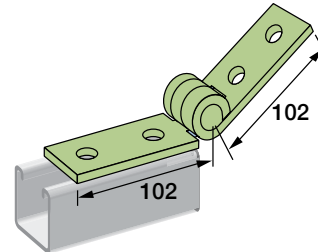
P1843W

- Mass: 31kg/100



P1354W

- Mass: 49kg/100



Universal Hinge (UH10Z)

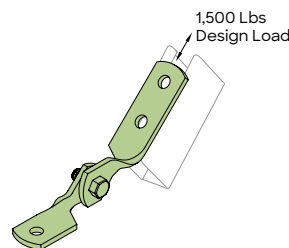
- Mass: 10.8kgs/100
- The ideal solution for suspending threaded rod vertically from an angled roof or ceiling
- Working load with a safety factor of 2 is 8.13kN or 828kg



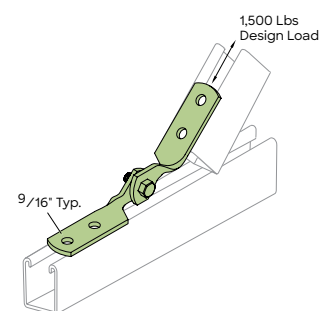
SPF/LS Hinge

- Design loading of 6.67kN(1500lbs)
- LS503-for Rod Sizes 10mm,12mm.
- LS504 -All hole sizes 15mm

LS 503



LS 504



Notes:

LS 503 - For rod sizes 3/8", 1/2", 5/8" & 3/4"

LS504 - All hole sizes 9/16"

SRC10

- Seismic Retrofit Bracket



Application

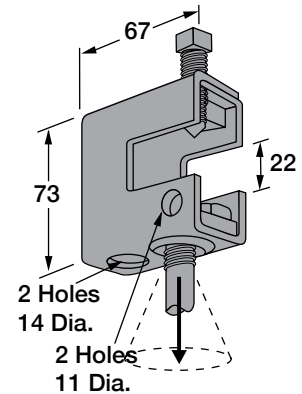
Beam Clamps are designed to provide a fast easy attachment to overhead structures. They alleviate the need for drilling and welding as well as being completely adjustable.

Finishes – Standard finishes as shown.

Design Bolt Torque – Refer to Engineering Data (page 52)

P2676

- Mass: 31kg/100
- Beam Attachment Applications: Clamp P2676 provides a means of rod suspension, either fixed, or where a free swing of up to 15 degrees is required. Swivel nuts to be ordered separately.
- Clamp may also be used with P2677 as illustrated in application drawings.
- Available Finishes: Z.P, H.D.G. & S.S.
- M12 x 50 cone-pointed screw & nut included
- Clamp material 3mm thick
- Swivel nut and Lock nut not included
- Rod size up to M12
- Rod swivel 15° all directions



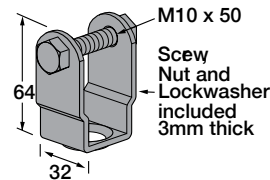
2.23 kN Load

P2677/P2683

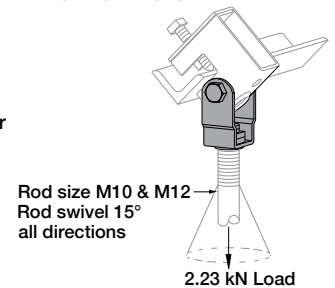
- Mass: 13.6kg/100
- P2677/P2683 clevis hanger to be used with P2677/P2683 to provide angle adjustment and 15 degree free swing for up to M12 rod suspension. Order P2679 series swivel nuts required.
- Standard Finishes: Z.P

*P2677 Non Standard Stock. Made to order.

P2677/P2683



P2677 & P2679

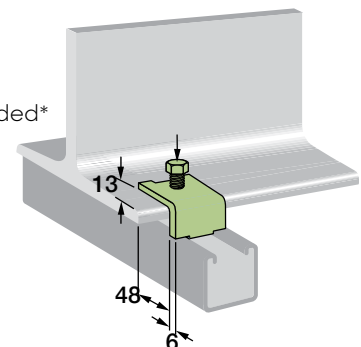


P1386

- Mass: 12kg/100
- Design Load each: P1000® - 2.67kN P2000 - 2.00kN
- Standard Finishes: H.G

**Use in pairs only

M12 x 40mm hexagon head screw and Unistrut M12 channel nut not included*

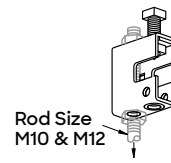
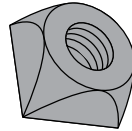


Beam Clamps

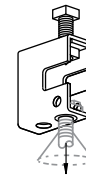
P2676 - SWIVEL NUT

Part No.	Size	Mass kg/100
P267910	M10	1.7
P267912	M12	1.5

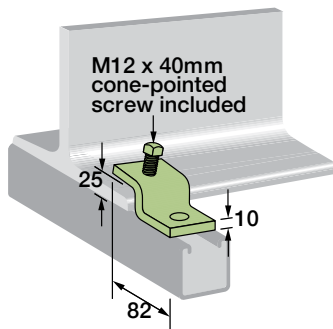
Note: Swivel nuts are used with P2676 and P2677. Order size as required.



Design Load
1.33 kN



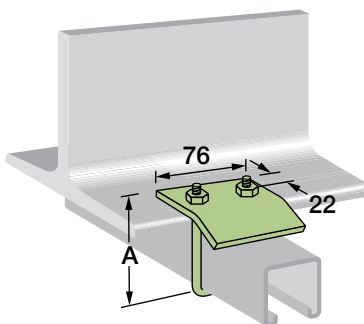
Design Load
2.23 kN



P1379

- Mass: 34kg/100
- Design Load each: P1000@ - 2.67kN P2000 - 2.00kN
- Standard Finishes: H.G
- Each clamp requires: M12 x 30 Hex Head Set Screw and M12 Channel Nut (not included)

**Use in pairs only

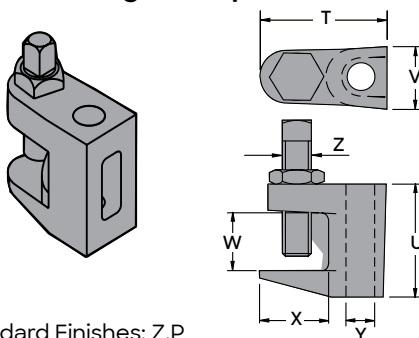


P2785 & P2786

- P2785 accepts following channels: P1000@, P2000, P3300, P4000
- A = 86 Mass: 38kg/100
- For use with beams up to 19mm
- P2786 accepts following channels: P1001, P2001, P5500
- A = 127 Mass: 41kg/100
- For use with beams up to 19mm
- Design Load each: 4.45kN
- Standard Finishes: H.G

**Use in pairs only

EF1600 - Flange Clamp



Standard Finishes: Z.P

The simplest, quickest and most cost-effective method of suspending building services from steel beams and suitable for use with parallel or tapered flange beams, the EF1600 is supplied with the back hole drilled to accept a threaded rod. The EF1600 uses a grade 8.8 cup point setscrew to provide a maximum bite into steelwork and maximum load performance.

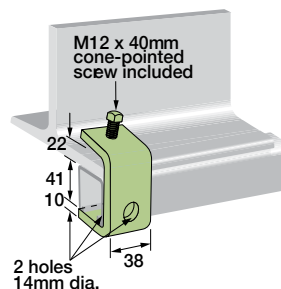
Product Code	Drop Rod	Tensile Loads Safe Working Load 4:1(kN)	Setscrew Torque (Nm)	Lockout Torque (Nm)	T	U	V	W	X	Y	Z
EF1600-10	M10	2.4	8	22	45	40	22	19	22	11	10
EF1600-12	M12	3.1	8	22	50	46	25	23	28	13	10

Beam Clamps

P1271

- Mass: 43kg/100
- Design Load each: 2.22kN
- Standard Finishes: H.G
- Requires P1010 Channel nut & bolt

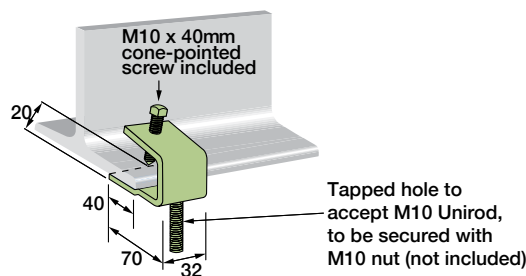
**Use in pairs only



P1270

- Mass: 29kg/100
- Design Load each: 0.38kN
- Standard Finishes: H.G

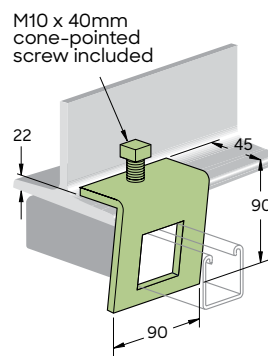
**Use in pairs only



P1796

- Mass: 49kg/100
- Suits P1000@ & P2000
- Design Load each: 2.22kN
- Standard Finishes: H.G

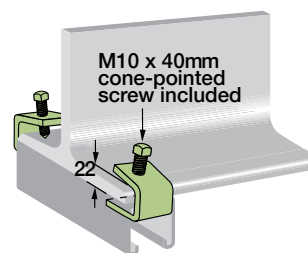
**Use in pairs only



P1272

- Mass: 18kg/100
- Design Load Per Pair: 2.00kN
- Standard Finishes: H.G

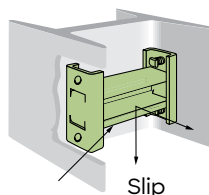
**Use in pairs only



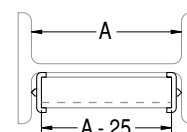
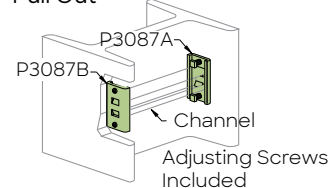
P3087

- Mass: 124kg/100 (pair)
- Safety Factor: 3
- Standard Finishes: H.G

Channel Type	Design Pullout Load kN	Design Slip Load kN
P1000	4.45	3.56
P2000	2.22	1.33



Pull Out

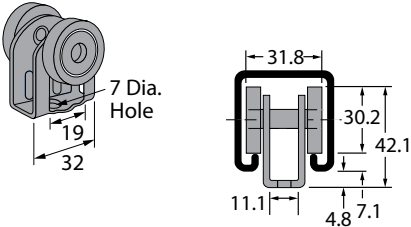


Unistrut® Channel not included
Hardened cone-point adjusting screws included

Trolley Assemblies

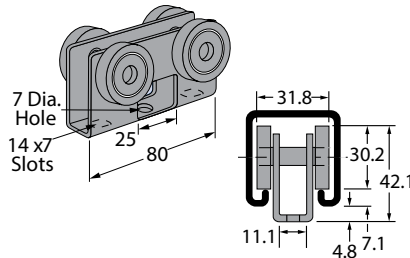
P2749

- Mass: 10kg/100
- Clevis 2.5mm



P2750

- Mass: 22kg/100



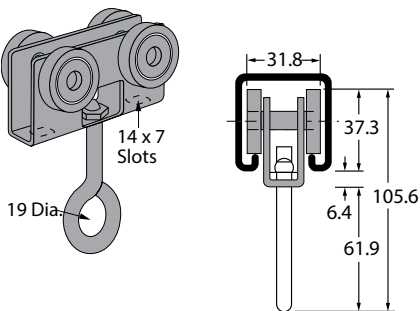
LOADS (kN)

Part No.	Wheel - Steel Ball Bearing Approx. Design Load kN
P2749	0.22
P2750	0.45
P2751	0.45

Part No.	Wheel - Acetal Approx. Design Load kN
P2749N	0.04
P2750N	0.09
P2751N	0.09

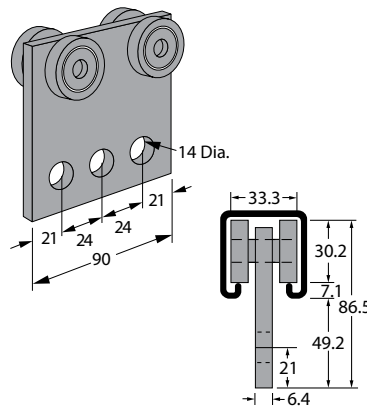
P2751

- Mass: 26kg/100
- Clevis 2.5mm



P2950

- Mass: 48kg/100

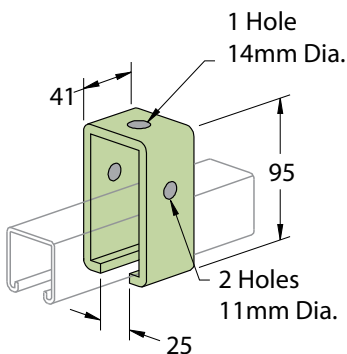


P2950 LOADS (kN)

MPM	RPM	Design Load in P1000® kN
54	600	1.33
27	300	2.00
9	100	2.67

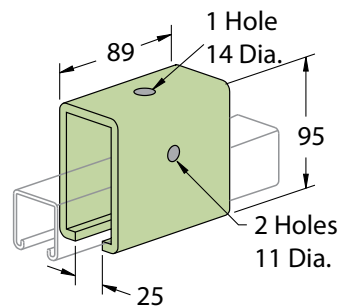
P1834 - Trolley Support

- Mass: 99.8kg/100 Design Load: 5.34kN
- Requires M10 x 70 Bolt & Nut. Not Included.



P1834a - Trolley Support

- Mass: 46kg/100 Design Load: 11.12kN
- Requires M10 x 70 Bolt & Nut. Not Included.



Engineering Data Slip and Pullout

Slip & Pullout Performance - Zinc Plated

Channel Type	Nut Type	Pullout (kN)	Slip (kN)	Torque (Nm)
P1000	P1006	2.67	1.33*	9
	P1007	3.56	2.22*	22
	P1008	4.45	3.56*	44
	P1010	8.9	6.67*	77
P2000	P1006	2.67	1.33*	9
	P1007	3.56	1.78*	22
	P1008	4.45	3.34*	37
	P1010	4.45	4.54*	37
P3300	P4006	2.67	1.33*	9
	P4007	3.56	2.22*	22
	P4008	4.45	3.56*	44
	P4010	6.67	6.67*	77
P4000	P4006	2.67	1.33*	9
	P4007	3.56	1.78*	22
	P4008	4.45	3.34*	37
	P4010	4.45	4.54*	37
P5500	P5508	4.45	3.56*	44
	P5510	8.9	6.67*	77

Load capacities have been calculated in accordance with the provisions of AS/NZS 4600:1996 "Cold-formed steel structures", and in particular, Section 6.2.2.7. The bolting system chosen using the data provided in the tables will perform as specified when design, fabrication and erection are carried out in accordance with Unistrut's recommendations and accepted building practice.

Note

To simplify the table, channel nuts with springs only shown with the exception of P3016. Unistrut® nuts without springs will have identical performance.

Nut design loads include a minimum safety factor of 3.

Figures marked with (*) in the table opposite were obtained using high strength (Grade 8.8) screws.

Figures not marked with (*) were obtained using standard strength (Grade 4.6) screws. It should be noted that unless otherwise specified, standard strength screws (Grade 4.6) are supplied.

For Slip Loads using 4.6 Grade Commercial bolts and screws, Contact your local Unistrut® Service Centre.

Slip & Pullout Performance - Stainless Steel

Channel Type	Nut Type	Pullout (kN)	Slip (kN)	Torque (Nm)
P1000	P1006SS	2.45	0.2	3.5
	P1007SS	4.41	0.3	8.5
	P1008SS	6.86	0.6	17.0
	P1013SS	6.86	0.6	30.0

Heavy Duty Galvanised Channel Nuts

- Apply Pullout Loads as listed
- For Slip Loads - refer to your local Unistrut® Service Centre.

Note

These figures are results obtained from a comprehensive series of tests carried out by a NATA registered laboratory.

For further technical information please contact your nearest Unistrut® Service Centre.

Note

Stainless steel grade 316 screws, nuts and channel used to determine loads.

Slip & Pullout Performance - Aluminium Load Data

Approximate beam load capacities for channel sections may be obtained from the engineering data sections in this catalogue. Multiply data by the percentage in the table below.

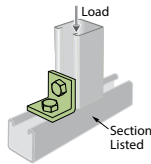
Nut pullout strength and resistance to slip for sections may be obtained from the engineering data sections in this catalogue. Multiply data by the percentages in the table below.

Material	Load Percentage Factor	Slip Percentage Factor	Pullout Percentage Factor
Extruded Aluminium	33%	75%	50%

Engineering Data Bearing and Design Load

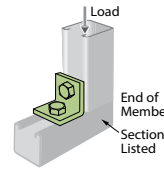
Safety Factor: 2.5

Section	Recommended Load kN
P1000	29.8
P2000	11.2
P3300	30.25
P4000	11.57



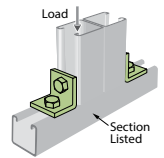
Safety Factor: 2.5

Section	Recommended Load kN
P1000	13.79
P2000	5.34
P3300	14.23
P4000	5.34



Safety Factor: 2.5

Section	Recommended Load kN
P1000	34.25
P2000	13.34
P3300	34.7
P4000	13.34

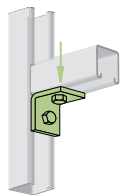


Design Load Data - Typical Strut Connection

Safety Factor = 2.5 based on ultimate strength of connection. Load diagrams indicate up to two design loads, one for 2.5mm sections (listed as P1000), and one for 1.6mm sections (P2000). Loads are calculated using high tensile (Grade 8.8) screws.

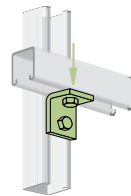
Ninety Degree Fittings - (When used in Position Shown)

P1026



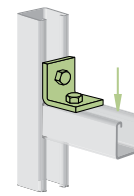
P1000®: 6.67kN
P2000: 3.34kN
Both Ends Supported

P1068



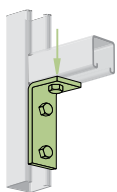
P1000®: 2.22kN
P2000: 2.22kN

P1026



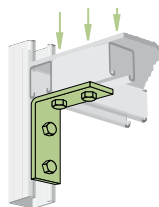
P1000®: 4.45kN
P2000: 2.22kN
Both Ends Supported

P1346



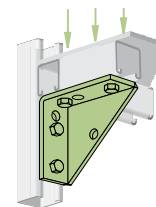
P1000®: 8.9kN
P2000: 4.0kN
Both Ends Supported

P1325



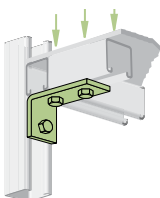
P1000®: 8.9kN
P2000: 6.67kN
Both Ends Supported

P2484



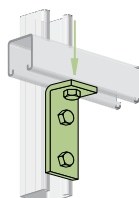
P1000®: 13.34kN
P2000: 6.67kN
Both Ends Supported

P1458



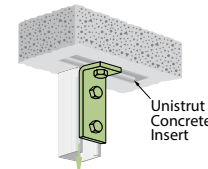
P1000®: 6.67kN
P2000: 4.45kN
Both Ends Supported

P1326



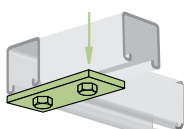
P1000®: 2.22kN
P2000: 2.22kN

P1346



P1000®: 5.34kN
P2000: 4.45kN

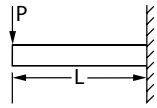
FLAT PLATE FITTING - P1065



P1000®: 4.45kN
P2000: 2.67kN
Both Ends Supported

Engineering Data Beam Formulae

Cantilever Beams

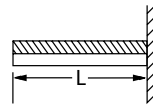
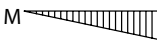


$$V \text{ max.} = P$$

$$M \text{ max.} = PL$$



$$\Delta \text{ max.} = \frac{PL^3}{3EI}$$

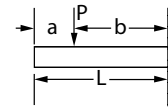


$$V \text{ max.} = W$$

$$M \text{ max.} = \frac{WL}{2}$$



$$\Delta \text{ max.} = \frac{WL^3}{8EI}$$

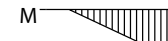


$$V \text{ max.} = P$$

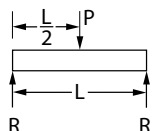
$$M \text{ max.} = Pb$$



$$\Delta \text{ max.} = \frac{Pb^2(3L-b)}{6EI}$$



Simple Beams

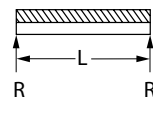


$$R = \frac{P}{2}$$

$$V \text{ max.} = \frac{P}{2}$$

$$M \text{ max.} = \frac{PL}{4}$$

$$\Delta \text{ max.} = \frac{PL^3}{48EI}$$

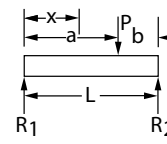


$$R = \frac{W}{2}$$

$$V \text{ max.} = \frac{W}{2}$$

$$M \text{ max.} = \frac{WL}{8}$$

$$\Delta \text{ max.} = \frac{5WL^3}{384EI}$$

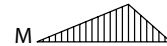


$$R_1 = \frac{Pb}{L}$$

$$R_2 = \frac{Pa}{L}$$

$$V \text{ max.} = \frac{Pa}{L}$$

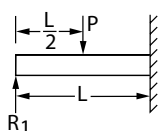
$$M \text{ max.} = \frac{Pab}{L}$$



$$\Delta \text{ max. at } x = \sqrt{\frac{a(a+2b)}{3}}$$

$$\Delta \text{ max.} = \frac{Pab(a+2b)\sqrt{3a(a+2b)}}{27 EIL}$$

Beams Fixed One End, Supported at Other



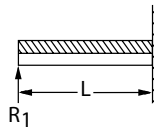
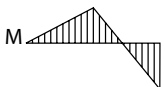
$$R_1 = \frac{5P}{16}$$

$$V \text{ max.} = \frac{11P}{16}$$

$$M \text{ max.} = \frac{3PL}{16}$$

$$\Delta \text{ max. at } x = 0.447L$$

$$\Delta \text{ max.} = 0.009317 \frac{PL^3}{EI}$$



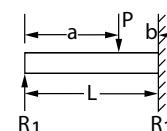
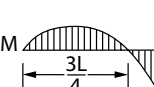
$$R_1 = \frac{3W}{8}$$

$$V \text{ max.} = \frac{5W}{8}$$

$$M \text{ max.} = \frac{WL}{8}$$

$$\Delta \text{ max. at } x = 0.4215L$$

$$\Delta \text{ max.} = \frac{WL^3}{185EI}$$



$$R_1 = \frac{Pb^2}{2L^3} (a + 2L)$$

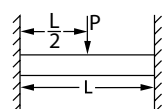
$$R_2 = \frac{Pa}{2L^3} (3L^2 - a^2)$$



$$M \text{ at point of load} = R_1a$$

$$M \text{ at fixed end} = \frac{Pab}{2L^2} (a + L)$$

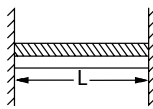
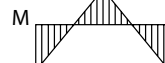
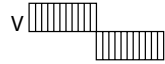
Beams Fixed at Both Ends



$$V \text{ max.} = \frac{P}{2}$$

$$M \text{ max.} = \frac{PL}{8}$$

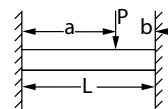
$$\Delta \text{ max.} = \frac{PL^3}{192EI}$$



$$V \text{ max.} = \frac{W}{2}$$

$$M \text{ max.} = \frac{WL}{12}$$

$$\Delta \text{ max.} = \frac{WL^3}{384EI}$$

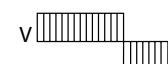


$$R_1 = \frac{Pb^2}{L^3} (3a + b)$$

$$R_2 = \frac{Pa^2}{L^3} (a + 3b)$$

$$M_1 = \frac{Pab^2}{L^2}$$

$$M_2 = \frac{Pa^2b}{L^2}$$



R - Reaction
M - Moment(Nmm)
P - Concentrated load (N)

W - Total uniform load (N)
V - Shear
L - Length (mm)

Δ - Deflector(mm)
E - Modulus of Elasticity(MPa)
I - Moment of Inertia (mm⁴)



Engineering Data Conversion Factors

Design Load Data - Typical Strut Connection

Load tables in this catalogue for 41mm Strut width series are for single span beams supported at the ends. These can be used in the majority of cases. There are times when it is necessary to know what happens with other loading and support conditions. Some common arrangements are shown in Table 1. Simply multiply the loads from the Beam Load Tables by the load factors given in Table 1. Similarly, multiply the deflections from the Beam Load Tables by the deflection factor given in Table 1.

Table 1

Load and Support Condition		Load Factor	Deflection Factor
1	Simple Beam - Uniform Load	1.00	1.00
2	Simple Beam Concentrated Load at Centre	0.50	0.80
3	Simple Beam - Two Equal Concentrated Loads at 1/4 Points	1.00	1.10
4	Beam Fixed at Both Ends - Uniform Load	1.50	0.30
5	Beam Fixed at Both Ends - Concentrated Load at Centre	1.00	0.40
6	Cantilever Beam - Uniform Load	0.25	2.40
7	Cantilever Beam - Concentrated Load at End	0.12	3.20
8	Continuous Beam - Two Equal Spans - Uniform Load on One Span	1.30	0.92
9	Continuous Beam - Two Equal Spans - Uniform Load on Both Ends	1.00	0.42
10	Continuous Beam - Two Equal Spans - Concentrated Load at Centre of One Span	0.62	0.71
11	Continuous Beam - Two Equal Spans - Concentrated Load at Centre of Both Spans	0.67	0.48




Unistrut® Column Loading

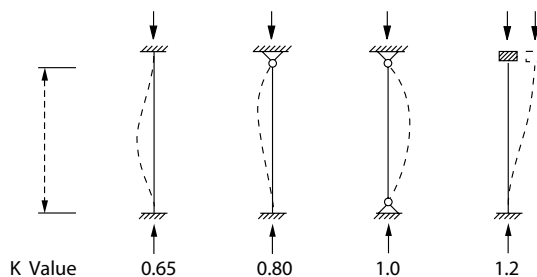
The strength of axially loaded columns or compression members is, in part, dependent on the end conditions, that is, the degree of end fixity or restraint. A column with both ends fixed will support more load than one with both ends free or pin-ended.

Column loads published for UNISTRUT® sections in this catalogue are offered as a guide and assume a partially fixed end condition as usually found in flat ended columns that are laterally tied and braced, i.e. $K = 1.0$.

Assumed K values (effective length factors) for columns with varying end restraints are as follows:

End Condition Code

-  Rotation fixed and translation fixed
-  Rotation free and translation fixed
-  Rotation fixed and translation free



How To Use Load Tables

Unistrut[®] Sections as Beams

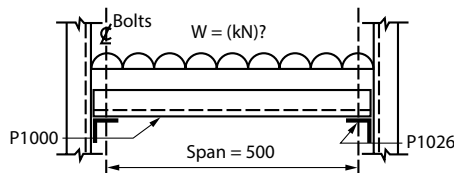
The load capacity of Unistrut[®] members acting as a horizontal beam, between two vertical Unistrut[®] members acting as columns, is governed by:

- The nature of the load.
- The particular section to be used.
- The span of the beam.
- The beam-load capacity of the section for a given span.
- The load capacity of the connectors used to support the beams on the columns.
- The load limitations, if any, resulting from special deflection considerations.

If items a), b) and c) are known, the load capacity is the smallest value of d), e), and f) as read or derived from the listed values in the appropriate tables.

Example 1

What is the uniformly distributed load capacity of a P1000[®] section used as a beam to span 500mm if P1026 connectors are used to support the beam?



Step 1

- Find beam load at maximum permissible stress.
- From P1000[®] Beam and Column in load table page 29, 500mm and Section P1000[®], $W = 7.42\text{kN}$.

Step 2

- Find load capacity of connectors.
- From Safe Bearing Loads in load table on page 53, for P1000 section supported on P1026 connectors; Support load = 6.67kN
- Beam load = $2 \times$ support load = $2 \times 6.67 = 13.34\text{kN}$.

Step 3

- Check deflection limitations.
- No special deflection considerations apply.

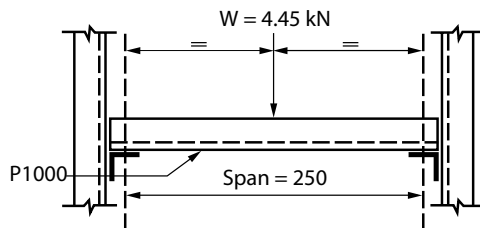
Step 4

- Select smallest load value from Step 1 to 3.
- Smallest value is 7.42kN .
- To convert to mass units divide by 0.0098 , hence load capacity $W = 7.42 / 0.0098 = 757\text{kg}$ uniformly distributed.

Engineering Data Examples

Example 2

A beam of 250mm span is to carry a central point load of 4.45kN. Check if P1000® section is a satisfactory beam and if so, what type of connector should be used for supports and what is the resultant central deflection?



Step 1

- Convert point load to equivalent uniformly distributed load by multiplying by 2 (see note on point loads).
- Equivalent U.D.L. = $4.45 \times 2 = 8.9\text{kN}$.

Step 2

- Compare with beam load capacity for P1000® section spanning 250mm. From P1000® Beam and Columns in this Tab Section. Tabulated value = 14.83kN.
- Since this is greater than load to be applied, the P1000® section is satisfactory.

Step 3

- Determine support loads, which are each half the applied load. Support load = 2.23kN.

Step 4

- Select appropriate connector from Safe Bearing Loads in this Tab Section.
- Recommended load for P1026 supporting P1000® = 6.67kN.
- As the P1026 connectors exceed the required support load of 2.23kN, use P1026 connectors at each end.

Step 5

- Calculate central Deflection of beam from
- $\delta_2 = (W_2 / W_1) \times (L_2 / L_1)^3 \times \delta_1$
- (See P1000® Elements of Section, Page 29)
- From Beam load table for P1000 section with $L_1 = 250\text{mm}$, $W_1 = 14.83\text{kN}$ and $\delta_1 = 0.22\text{mm}$
- From example data and step 1 above $W_2 = 8.9\text{kN}$, $L_2 = 250\text{mm}$
- Substituting values in formula
- $\delta_2 = (8.9/14.83) \times (250/250)^3 \times 0.22 = 0.14\text{mm}$
- As this is the value for the equivalent uniformly applied load a correction is necessary to account for a central point load. This is done by multiplying the uniform load deflection by 0.8 (see Notes to Tables). Hence deflection under applied point load:
- $= 0.14 \times 0.8 = 0.11\text{mm}$.



Engineering Data Examples

How to use Load Tables

Unistrut[®] Sections as Columns

The load capacity of Unistrut[®] Sections acting as columns depends on:

- the particular section used.
- the actual height of the column, measured between centres of connections to horizontal members.
- the location of the resultant axial load with respect to the centre of gravity, CG, of the section (i.e. the intersection of the XX and YY axes as shown on the section diagrams).
- the restraint to various kinds of movements of the column offered by the connections to horizontal members at various levels.

If a) and b) are known and if c) and d), for the case being considered, match the conditions in Structural Data Notes then the load capacity of the section can be read directly from the tables under 'maximum column load'.

It is emphasised that, for tabulated values to be used directly, the resultant load must be concentric (i.e. act through the C.G.) and connections at each end of a free column height must restrain those ends from both horizontal and torsional movement. If these conditions do not apply, reference should be made to the appropriate sections of AS/NZS 4600 since it is most likely that a smaller value than the listed one should be used.

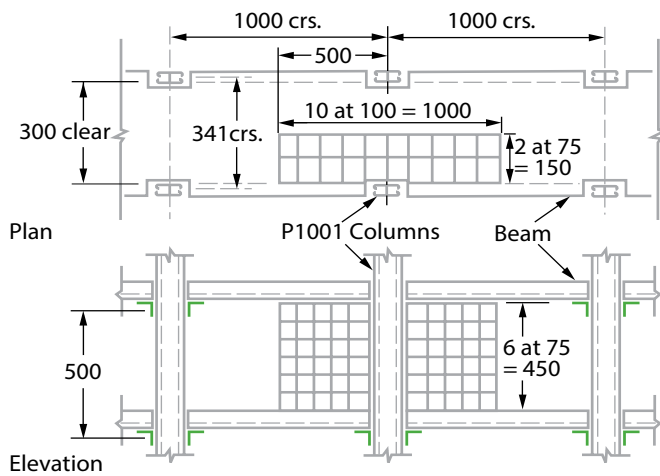
Example 3

Island-type storage shelving is to be constructed using P1001 main posts (columns) at 1000 x 341mm centres. Shelves are to be at 500mm vertical spacing starting from the floor and connected to the posts so that concentric loading and translational and torsional restraint are provided at each level under full load conditions.

If the shelves are to carry packages of bolts stacked six high per shelf and the packages measure 75 x 75 x 100mm with a mass of 6.5kg each, what is the maximum height (number) of shelving that can be used?



Engineering Data Examples



Note

If the bottoms of the columns bear onto P1000® bearers, which in turn are fixed to the ground, the load capacity of the column would be determined by the Recommended Bearing Load, (refer to Safe Bearing Loads in this Tab Section) of 34.25 kN.

The number of shelves would then be given by: $34.25 / 7.64 = 4.48$ i.e. 4 shelves, totalling 2.0 metres high.

Step 1

- Determine Concentric load for shelf.
- Plan area supported by each main column = $1000 \times 150 = 150,000\text{mm}^2$
- This area can be packed with 20 packages
- $75 \times 100\text{mm}$ in plan i.e. 120 packages per shelf.
 - Hence mass per shelf = $6.5 \times 120\text{kg}$
 - and load per shelf = $6.5 \times 120 \times 0.0098$
 - = 7.64kN per column.

Step 2

- Determine load capacity of P1001 section.
- From P1001 Beams and Columns Table on page 29 for P1001 with height 500mm.
- Maximum column load = 94.09kN .

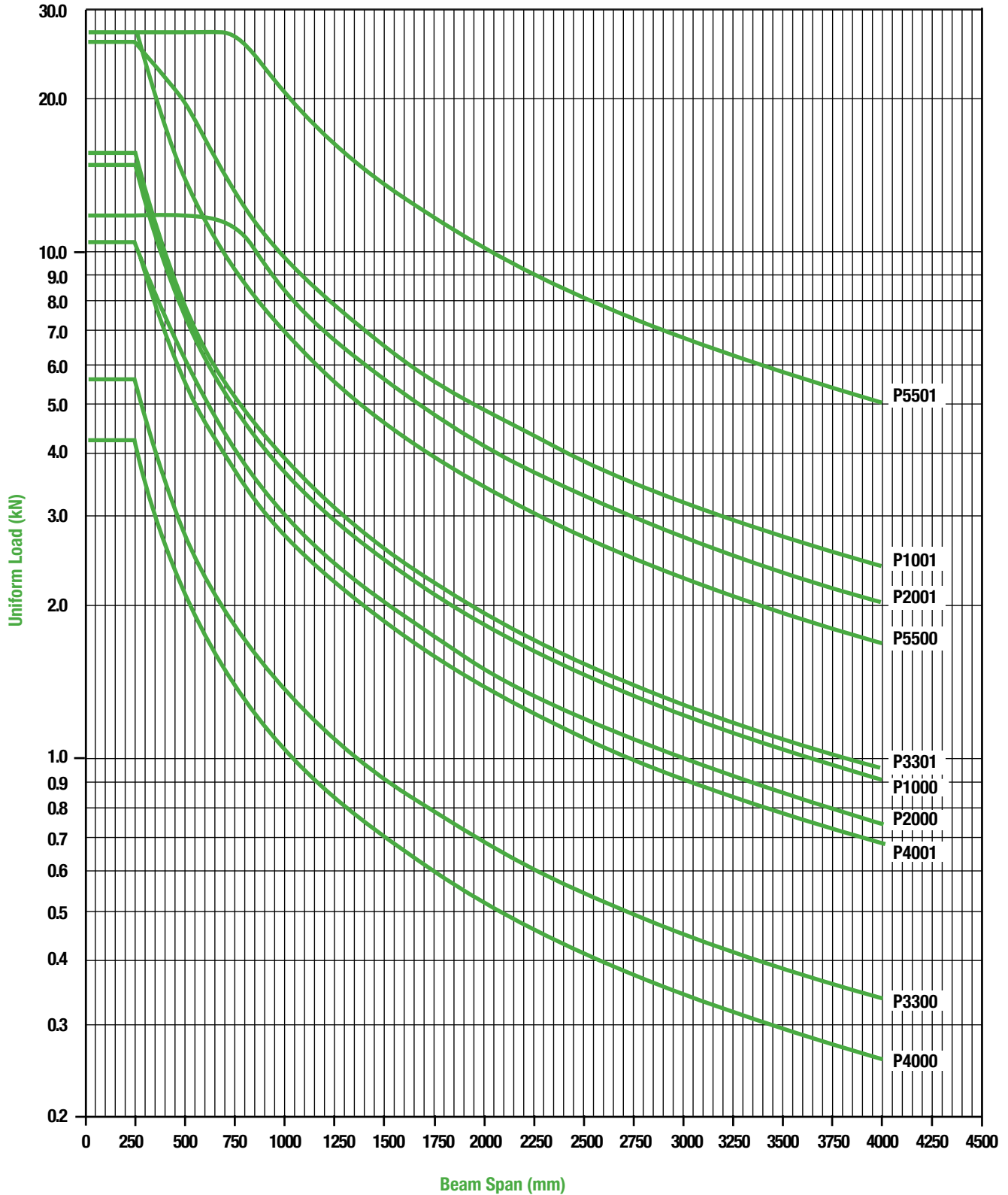
Step 3

- Determine number of shelves.
- Divide column load capacity by the load per shelf. i.e. Number of shelves = $94.09 / 7.64 = 12.31$
- Hence maximum number of shelves = 12
- i.e. max. height of shelving = $12 \times 0.5 = 6.0$ metres.



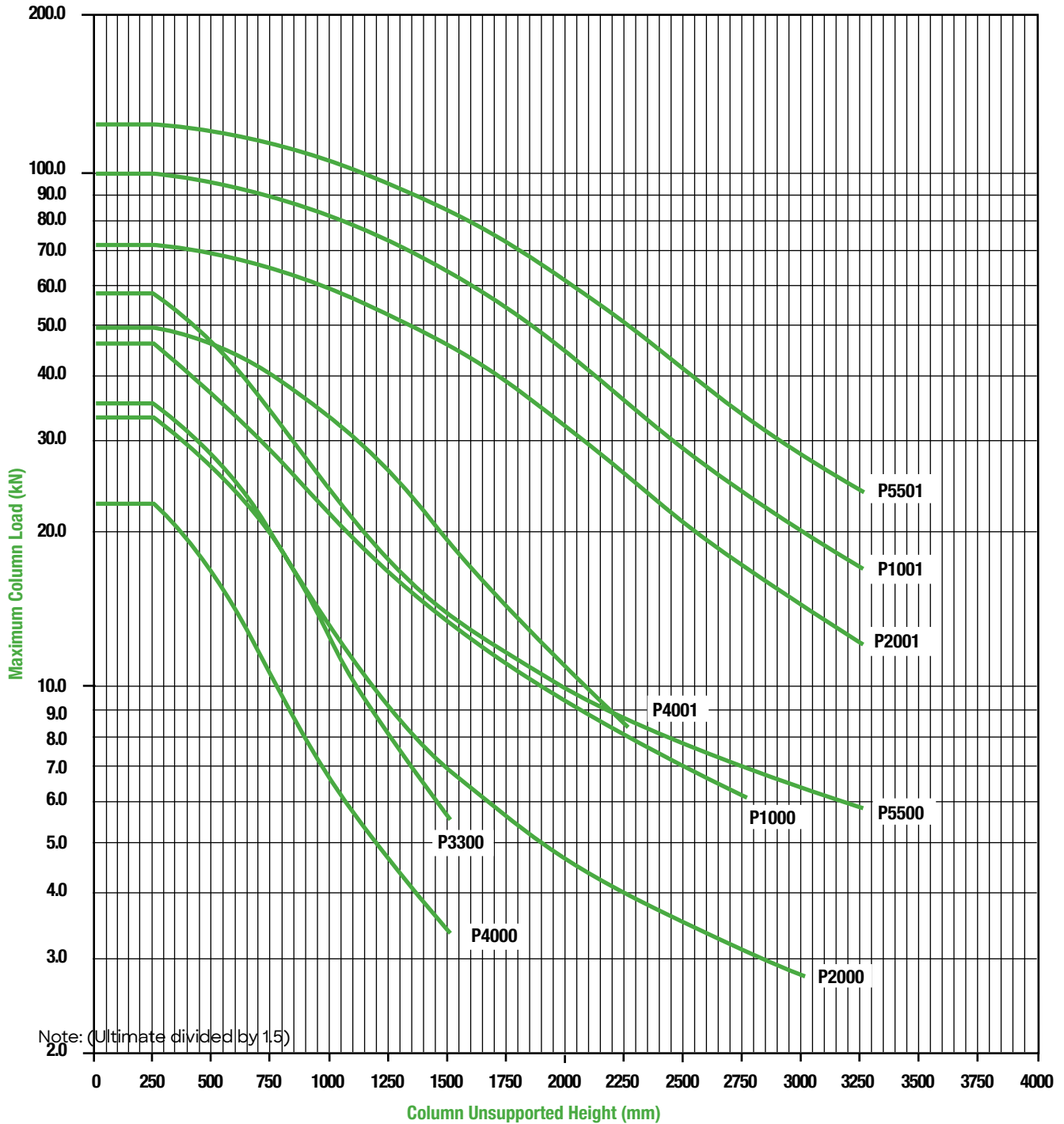
Engineering Data Load Chart

UNIFORM WORKING LOAD FOR SIMPLY SUPPORTED BEAMS



Engineering Data Load Chart

UNIFORM WORKING COLUMN LOADS





Allied Tube & Conduit • AFC Cable Systems • Heritage Plastics • Unistrut
Unistrut Construction • United Poly Systems • Calbrite • Calbond • Cii • US Tray
Power-Strut • Calconduit • Razor Ribbon • Calpipe Security • Vergokan • Marco
Columbia-MBF • Eastern Wire + Conduit • ACS/Uni-Fab • Sasco Strut • Kaf-Tech
Cope • FRE Composites • Queen City Plastics • Four Star Industries • Flexicon

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