

CATALOGUE

METAL FRAMING

UNISTRUT®

A PART OF  **atkore**
INTERNATIONAL



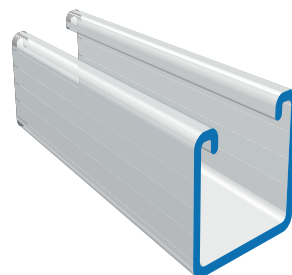
UNISTRUT®

THE MOST COMPLETE METAL FRAMING SYSTEM

P1000®

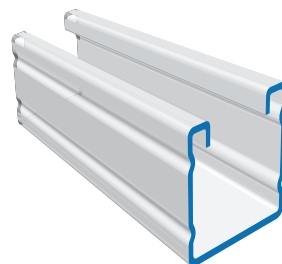
STRUT SIZE: 41mm x 41mm
MATERIAL THICKNESS: 2.5MM

15

**P2000**

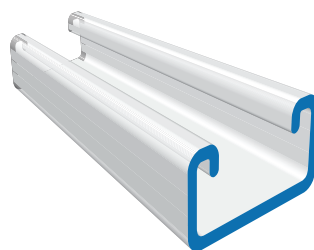
STRUT SIZE: 41mm x 41mm
MATERIAL THICKNESS: 1.6mm

16

**P3300**

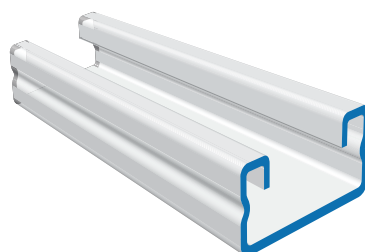
STRUT SIZE: 41mm x 22mm
MATERIAL THICKNESS: 2.5mm

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**P4000**

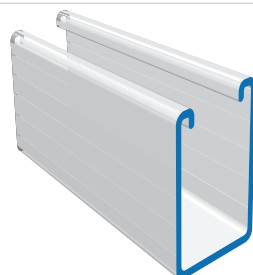
STRUT SIZE: 41mm x 21mm
MATERIAL THICKNESS: 1.6mm

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**P5500**

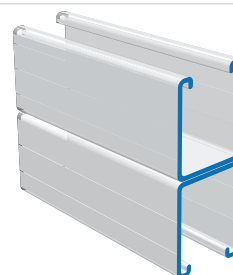
STRUT SIZE: 41mm x 62mm
MATERIAL THICKNESS: 2.5mm

19

**COMBINATIONS**

STRUT SIZE: VARIES
MATERIAL THICKNESS: 2.5mm

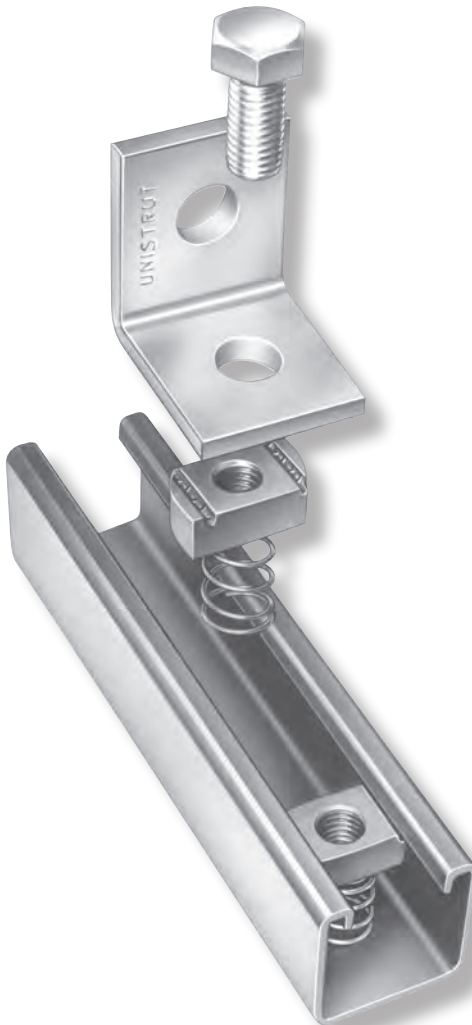
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UNISTRUT®

THE ORIGINAL STRUT SYSTEM

ADJUSTABLE, DEMOUNTABLE, REUSABLE



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".



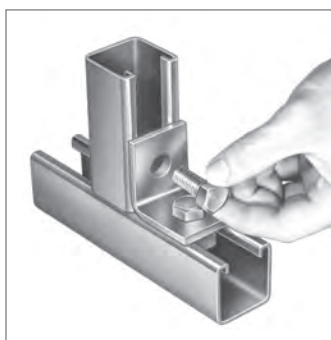
Spring nut is inserted anywhere along continuous slot. Rounded nut ends permit easy insertion.



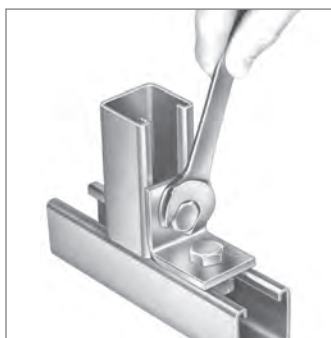
A 90° turn positions the serrated grooves in the nut with the inturned edges of the Strut.



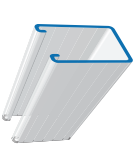
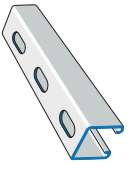
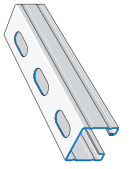
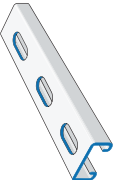
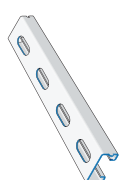
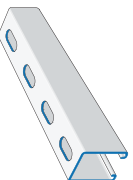
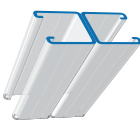
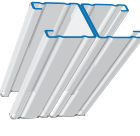
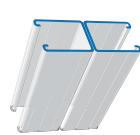
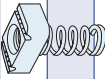
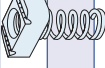
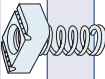
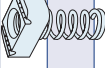
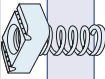
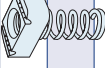
Fittings may be placed anywhere along Strut slot permitting complete freedom of adjustment. The need for drilling holes is eliminated.



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.

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	
12mm	 P1010	 P1010	 P4010	 P4010	 P5510
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	 P3013	 P3013	 P3010
16mm	 P1012	 P1012	 P4012	 P4012	 P1012

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

UNISTRUT®

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 intumed edges. Secure attachments may be made to the framing member with the use of hardened, toothed, grooved nuts which engage the intumed 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 intumed 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 AS1594 and AS1365. 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.

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 AS1397 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 AS1789. Fasteners are electroplated generally in accordance with AS1897 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.

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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.

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.

ABBREVIATIONS:

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

FINISHES:

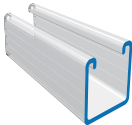
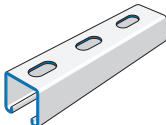
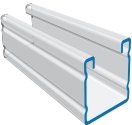
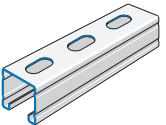
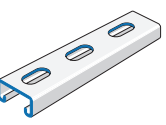
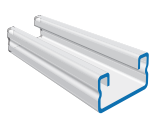
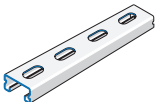
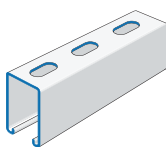
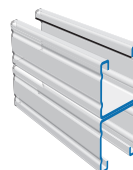
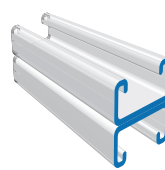
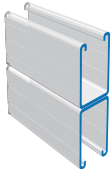
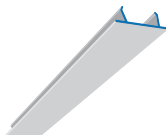
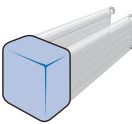
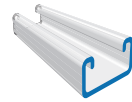
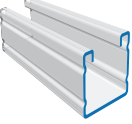
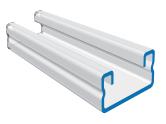
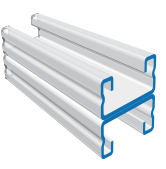
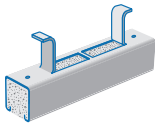
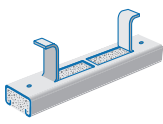
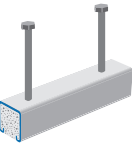
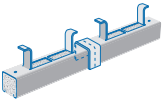
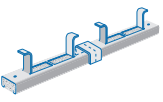
AL Aluminium
GB Galvabond
HG Heavy Duty Galvanised
MG Mechanically Galvanised
PL Plain

MEASUREMENT:

m Metre
mm Millimetre
kg Kilogram

UNISTRUT®

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STRUT SYSTEMS - STRUT						
						
P1000® [PL/GB/HG] PG. 15	P1000T [PL/GB/HG] PG. 15	P2000 [PL/GB/HG] PG. 16	P2000T [PL/GB/HG] PG. 16	P3300 [PL/GB/HG] PG. 17	P3300T [PL/GB/HG] PG. 17	P4000 [PL/GB/HG] PG. 18
						
P4000T [PL/GB/HG] PG. 18	P5500 [PL/GB/HG] PG. 19	P5500T [PL/GB/HG] PG. 19	P1001 [PL/GB/HG] PG. 20	P2001 [PL/GB/HG] PG. 20	P3301 [PL/GB/HG] PG. 21	P4001 [PL/GB/HG] PG. 21
						
P5501 [PL/GB/HG] PG. 22	P1184 PG. 23	P2860-10 – P2240, P4240, P5580 STRUT END CAPS – PLASTIC PG. 23				
STRUT SPECIAL METALS						
						
P1000-SS STAINLESS STEEL PG. 24	P3300-SS STAINLESS STEEL PG. 24	P2000-AL ALUMINUM PG. 24	P4000-AL ALUMINUM PG. 24	P2001-AL ALUMINUM PG. 24	P4001-AL ALUMINUM PG. 24	
STRUT CONCRETE INSERT						
						
P1000CI PG. 31/32	P3300CI PG. 31/32	P3753 HEAVY DUTY INSERT PG. 31	P1663 CI JOINT COVER PG. 31	P4663 CI JOINT COVER PG. 31		

UNISTRUT®

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STRUT NUTS AND HARDWARE

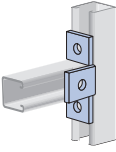
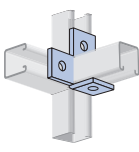
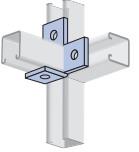
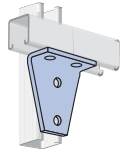
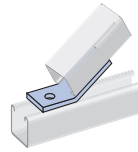
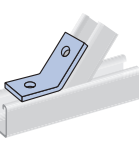
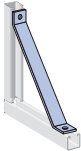
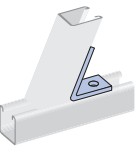
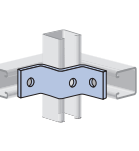
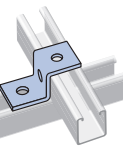
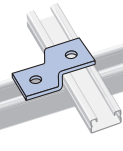
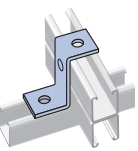
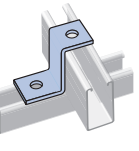
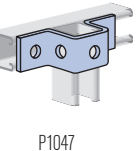
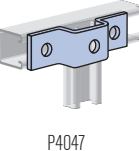
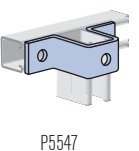
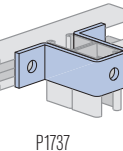
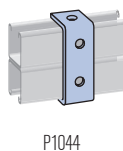
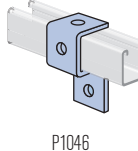
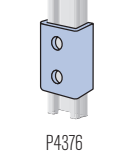
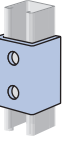
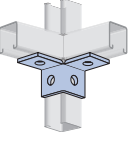
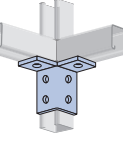
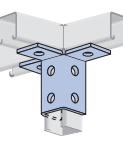
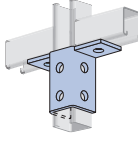
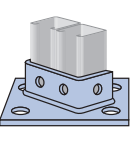
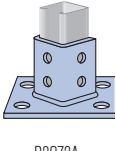
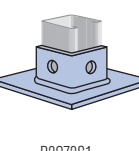
FOR P1000® & P2000 STRUT NUTS, WITH SPRINGS	FOR P3300 & P4000 STRUT NUTS, WITH SPRINGS	FOR P5500 STRUT NUTS, WITH SPRINGS	STUD NUT - P2378M6-1 TO P2381M12-5	FOR P1000® & P2000 STRUT NUTS, NO SPRINGS	FOR P3300 & P4000 STRUT NUTS, NO SPRINGS	FOR P5500 STRUT NUTS, NO SPRINGS
PG. 33	PG. 33	PG. 33	PG. 33	PG. 34	PG. 34	PG. 34
FIXTURE STUD NUT - P3116	STUD BOLT - USB045 TO USB102	HEX HEAD SET SCREWS	PAN HEAD SCREWS	COUNTERSUNK HEAD SCREW	CONE POINT SET SCREW	SLOTTED HEX HEAD SET SCREWS
PG. 34	PG. 34	PG. 35	PG. 35	PG. 35	PG. 35	PG. 35
HEXAGON NUTS	FLAT WASHERS	SPRING WASHERS	SHAKEPROOF LOCK WASHER	UNIROD STEEL THREADED ROD	ROD COUPLERS	SWIVEL NUT
PG. 35	PG. 35	PG. 35	PG. 35	PG. 35	PG. 35	PG. 35

STRUT FITTINGS

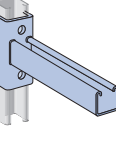
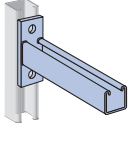
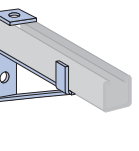
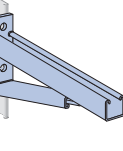
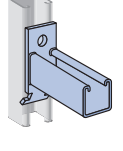
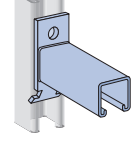
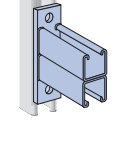
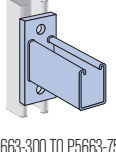
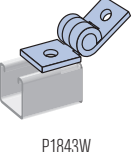
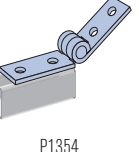
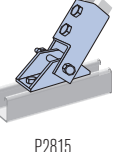
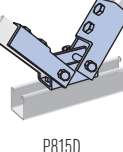
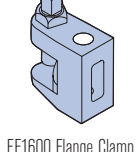
P1062 - P1964	P1065	P1066	P1067	P1941	P2325	P2324
PG. 36	PG. 36	PG. 36	PG. 36	PG. 36	PG. 36	PG. 36
P1036	P1873	P1358	P1031	P1028	P1026	P1068
PG. 36	PG. 36	PG. 37	PG. 37	PG. 37	PG. 37	PG. 37
P1326	P1346	P1458	P1325	P2484	P1037	P1038
PG. 37	PG. 37	PG. 37	PG. 37	PG. 37	PG. 37	PG. 37

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STRUT FITTINGS (CONT.)

						
P1033 PG. 38	P1034 PG. 38	P1035 PG. 38	P1357 PG. 38	P1359 PG. 38	P2101 & P2103 PG. 38	P1546, P2095, P2097 PG. 38
						
P2452 PG. 38	P1186, P2106, P2108 PG. 38	P1736 PG. 38	P1045 PG. 38	P4045 PG. 38	P1453 PG. 39	P5545 PG. 39
						
P1047 PG. 39	P4047 PG. 39	P5547 PG. 39	P1737 PG. 39	P1044 PG. 39	P1046 PG. 39	P4376 PG. 39
						
P1376 PG. 39	P1377 PG. 39	P2223 PG. 39	P2224 PG. 40	P2228 PG. 40	P2346 PG. 40	P2073 PG. 40
						
P2072A PG. 40	P2072S1 PG. 40					

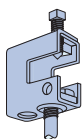
CANTILEVER BRACKETS AND ADJUSTABLE BRACES

						
P2233 & P2234 PG. 41	P2663-250 TO P2663-700 PG. 41	P1075-8 PG. 41	PCL150 TO PCL900 PG. 41	P2513 TO P2516 PG. 42	P2513A TO P2516A PG. 42	P2542 TO P2546 PG. 42
						
P5663-300 TO P5663-750 PG. 42	P1843W PG. 43	P1354 PG. 43	P2815 PG. 43	P815D PG. 43	EF1600 Flange Clamp PG. 43	

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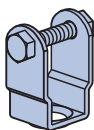
BEAM CLAMPS



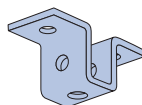
P2676
PG. 44



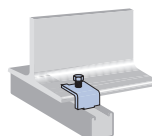
P2676 - SWIVEL NUT
PG. 44



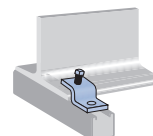
P2677
PG. 44



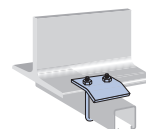
P2682
PG. 44



P1386
PG. 44



P1379
PG. 44



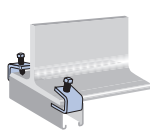
P2785 & P2786
PG. 45



P1796
PG. 45



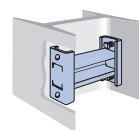
P1271
PG. 45



P1272
PG. 45



P1270
PG. 45

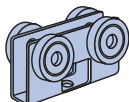


P3087
PG. 45

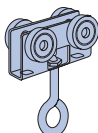
TROLLEY ASSEMBLIES



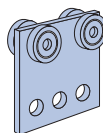
P2749 / P2749N
PG. 46



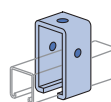
P2750 / P2750N
PG. 46



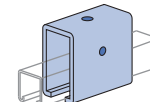
P2751 / P2751N
PG. 46



P2950
PG. 46



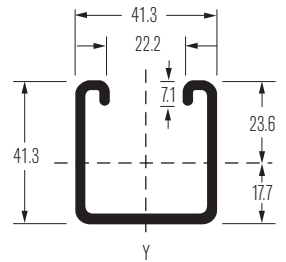
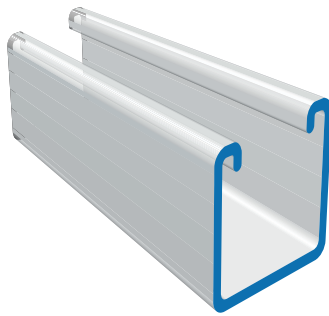
P1834 - TROLLEY SUPPORT
PG. 46



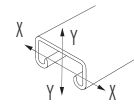
P1834A - TROLLEY SUPPORT
PG. 46

P1000®

PL/GB/HG



Mass: 2.59kg/m



A	-	330mm ²
kg/m	-	2.59kg/m
I x-x	=	0.069 10 ⁶ mm ⁴
Z x-x	=	2.920 10 ³ mm ³
r x-x	=	14.5mm
I y-y	=	0.092 10 ⁶ mm ⁴
Z y-y	=	4.451 10 ³ mm ³
r y-y	=	16.7mm

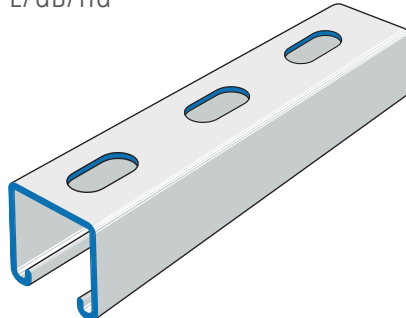
L(mm)	Fmax(kN)	f	fmax(mm)	F(kN)
250	14.83		0.22	45.51
500	7.42		0.87	36.84
750	4.94		1.97	28.22
1000	3.71		3.50	21.44
1250	2.97		5.46	16.42
1500	2.47		7.87	13.20
1750	2.12 (2)		10.71	11.00
2000	1.85 (2)		13.99	9.35
2250	1.65 (2)		17.70	8.05
2500	1.48 (2)		21.85	7.01
2750	1.35 (2)		26.44	6.14
3000	1.24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

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

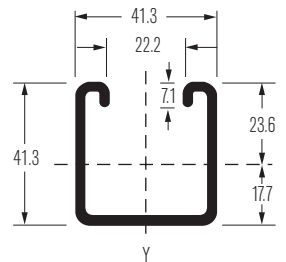
(2) See Note 2 Page 10

P1000T

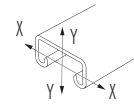
PL/GB/HG



Slots 14 wide x 28 long
at 50mm centres (approx.)



Mass: 2.32kg/m



A	-	295mm ²
kg/m	-	2.32kg/m
I x-x	=	0.059 10 ⁶ mm ⁴
Z x-x	=	2.698 10 ³ mm ³
r x-x	=	14.1mm
I y-y	=	0.091 10 ⁶ mm ⁴
Z y-y	=	4.423 10 ³ mm ³
r y-y	=	17.6mm

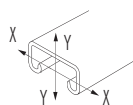
L(mm)	Fmax(kN)	f	fmax(mm)	F(kN)
250	13.35		0.20	40.96
500	6.68		0.78	33.16
750	4.49		1.77	25.40
1000	3.34		3.15	19.30
1250	2.67		4.91	14.78
1500	2.22		7.08	11.88
1750	1.91 (2)		9.64	9.90
2000	1.66 (2)		12.59	8.41
2250	1.48 (2)		15.93	7.24
2500	1.33 (2)		19.66	6.31
2750	1.21 (2)		23.80	5.53
3000	1.12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

Part No.	Material Thickness	Length
P1000T-PL	2.5mm	6m
P1000T-GB	2.5mm	6m
P1000T-HG	2.5mm	6m

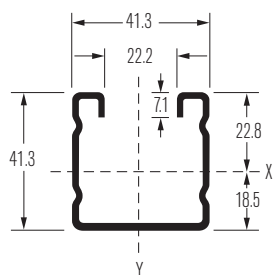
(2) See Note 2 Page 10

UNISTRUT®

P2000



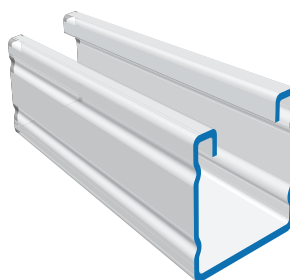
A	-	228mm ²
kg/m	-	1.79 kg/m
I x-x	=	0.052 10 ⁶ mm ⁴
Z x-x	=	2.297 10 ³ mm ³
r x-x	=	15.2mm
I y-y	=	0.065 10 ⁶ mm ⁴
Z y-y	=	3.143 10 ³ mm ³
r y-y	=	16.9mm



Mass: 1.79kg/m

PL/GB/HG

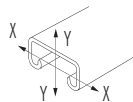
P2000



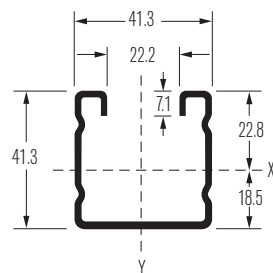
Part No.	Material Thickness	Length
P2000-PL	1.6mm	6m
P2000-GB	1.6mm	6m
P2000-HG	1.6mm	6m

L(mm)	Fmax(kN)	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

(2) See Note 2 Page 10



A	-	206mm ²
kg/m	-	1.62kg/m
I x-x	=	0.045 10 ⁶ mm ⁴
Z x-x	=	2.136 10 ³ mm ³
r x-x	=	14.7mm
I y-y	=	0.065 10 ⁶ mm ⁴
Z y-y	=	3.125 10 ³ mm ³
r y-y	=	17.7mm

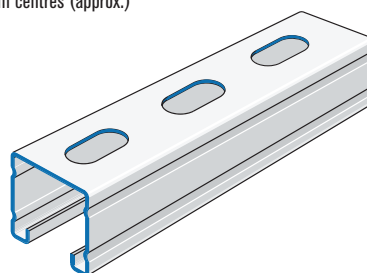


Mass: 1.62kg/m

Slots 11 wide x 28 long
at 50mm centres (approx.)

PL/GB/HG

P2000T



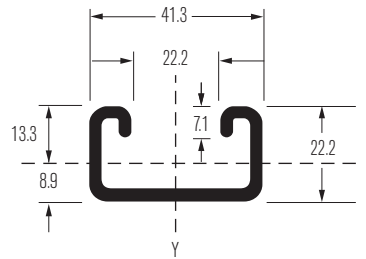
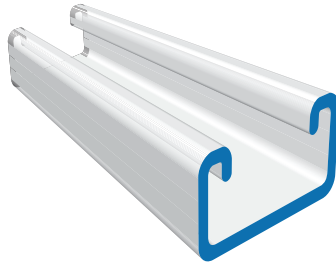
Part No.	Material Thickness	Length
P2000T-PL	1.6mm	6m
P2000T-GB	1.6mm	6m
P2000T-HG	1.6mm	6m

L(mm)	Fmax(kN)	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	2.54

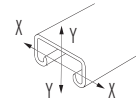
(2) See Note 2 Page 10

P3300

PL/GB/HG



Mass: 1.82kg/m



A	-	232mm ²
kg/m	-	1.82 kg/m
I x-x	=	0.013 10 ⁶ mm ⁴
Z x-x	=	0.999 10 ³ mm ³
r x-x	=	7.6mm
I y-y	=	0.055 10 ⁶ mm ⁴
Z y-y	=	2.661 10 ³ mm ³
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	-

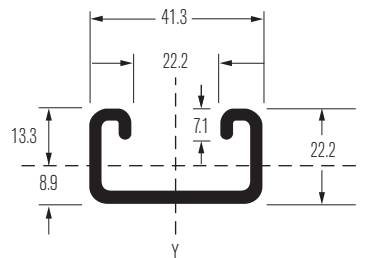
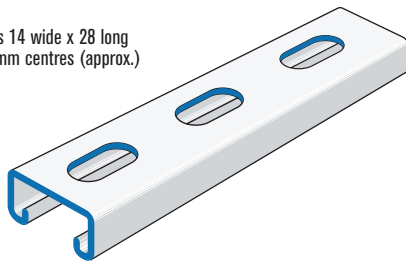
Part No.	Material Thickness	Length
P3300-PL	2.5mm	6m
P3300-GB	2.5mm	6m
P3300-HG	2.5mm	6m

(2) See Note 2 Page 10

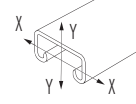
P3300T

PL/GB/HG

Slots 14 wide x 28 long
at 50mm centres (approx.)



Mass: 1.55kg/m



A	-	197mm ²
kg/m	-	1.55kg/m
I x-x	=	0.011 10 ⁶ mm ⁴
Z x-x	=	0.912 10 ³ mm ³
r x-x	=	7.5mm
I y-y	=	0.054 10 ⁶ mm ⁴
Z y-y	=	2.634 10 ³ mm ³
r y-y	=	16.6mm

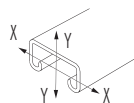
L(mm)	Fmax(kN)	f	fmax(mm)	F(kN)
250	4.97		0.38	31.39
500	2.48		1.51	24.98
750	1.66		3.41	17.48
1000	1.24		6.07	10.87
1250	0.99		9.48	7.11
1500	0.83		13.64	5.00
1750	0.71 (2)		18.57	-
2000	0.62 (2)		24.26	-
2250	0.55 (2)		30.70	-
2500	0.50 (2)		37.90	-
2750	0.45 (2)		45.86	-
3000	0.41 (2)		54.57	-

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

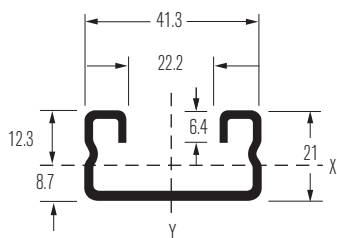
(2) See Note 2 Page 10

UNISTRUT®

P4000



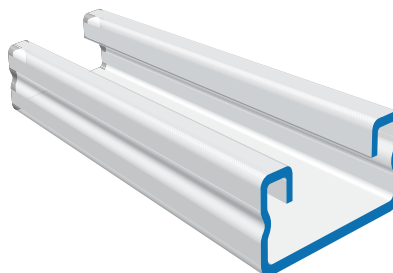
A	-	160mm ²
kg/m	-	1.26kg/m
I x-x	=	0.010 10 ⁶ mm ⁴
Z x-x	=	0.786 10 ³ mm ³
r x-x	=	7.8mm
I y-y	=	0.039 10 ⁶ mm ⁴
Z y-y	=	1.880 10 ³ mm ³
r y-y	=	15.6mm



Mass: 1.26kg/m

PL/GB/HG

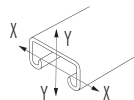
P4000



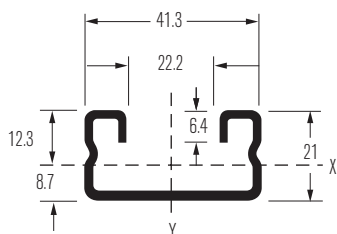
Part No.	Material Thickness	Length
P4000-PL	1.6mm	6m
P4000-GB	1.6mm	6m
P4000-HG	1.6mm	6m

L(mm)	Fmax(kN)	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	-

(2) See Note 2 Page 10



A	-	138mm ²
kg/m	-	1.08kg/m
I x-x	=	0.008 10 ⁶ mm ⁴
Z x-x	=	0.729 10 ³ mm ³
r x-x	=	7.6mm
I y-y	=	0.038 10 ⁶ mm ⁴
Z y-y	=	1.862 10 ³ mm ³
r y-y	=	16.7mm

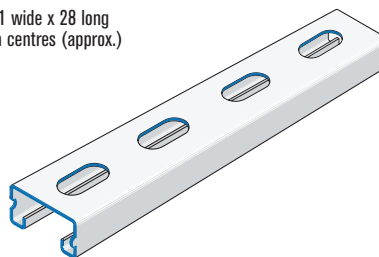


Mass: 1.08kg/m

PL/GB/HG

P4000T

Slots 11 wide x 28 long
at 50mm centres (approx.)



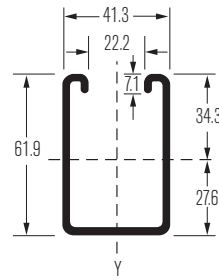
Part No.	Material Thickness	Length
P4000T-PL	1.6mm	6m
P4000T-GB	1.6mm	6m
P4000T-HG	1.6mm	6m

L(mm)	Fmax(kN)	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	-

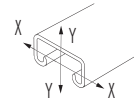
(2) See Note 2 Page 10

P5500

PL/GB/HG



Mass: 3.40kg/m



A	-	433mm ²
kg/m	-	3.40 kg/m
I x-x	=	0.197 10 ⁶ mm ⁴
Z x-x	=	5.730 10 ³ mm ³
r x-x	=	21.3mm
I y-y	=	0.131 10 ⁶ mm ⁴
Z y-y	=	6.328 10 ³ mm ³
r y-y	=	17.4mm

L(mm)	Fmax(kN)	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

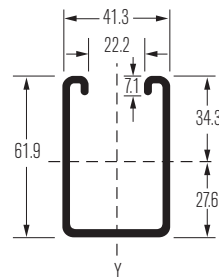
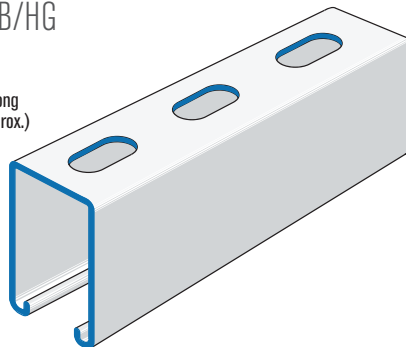
Part No.	Material Thickness	Length
P5500-PL	2.5mm	6m
P5500-GB	2.5mm	6m
P5500-HG	2.5mm	6m

(2) See Note 2 Page 10

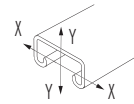
P5500T

PL/GB/HG

Slots 14 wide x 28 long
at 50mm centres (approx.)



Mass: 3.12kg/m



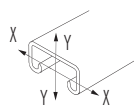
A	-	398mm ²
kg/m	-	3.12kg/m
I x-x	=	0.170 10 ⁶ mm ⁴
Z x-x	=	5.322 10 ³ mm ³
r x-x	=	20.7mm
I y-y	=	0.130 10 ⁶ mm ⁴
Z y-y	=	6.300 10 ³ mm ³
r y-y	=	18.1mm

L(mm)	Fmax(kN)	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

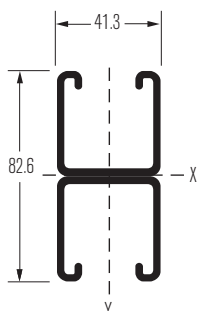
Part No.	Material Thickness	Length
P5500T-PL	2.5mm	6m
P5500T-GB	2.5mm	6m
P5500T-HG	2.5mm	6m

(2) See Note 2 Page 10

UNISTRUT® COMBINATION STRUTS



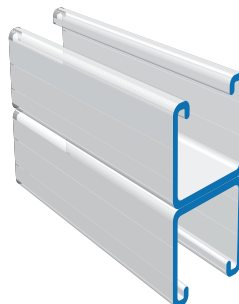
A - 660mm²
 kg/m - 5.18kg/m
 $I_{x-x} = 0.318 \cdot 10^6 \text{mm}^4$
 $Z_{x-x} = 7.711 \cdot 10^3 \text{mm}^3$
 $r_{x-x} = 22.0 \text{mm}$
 $I_{y-y} = 0.184 \cdot 10^6 \text{mm}^4$
 $Z_{y-y} = 8.902 \cdot 10^3 \text{mm}^3$
 $r_{y-y} = 16.7 \text{mm}$



Mass: 5.18kg/m

PL/GB/HG

P1001



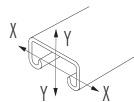
Part No.	Material Thickness	Length
P1001-PL	2.5mm	6m
P1001-GB	2.5mm	6m
P1001-HG	2.5mm	6m

L(mm)	Fmax(kN)	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

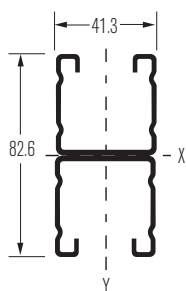
*Limited by weldshear

(1) See Note 1 Page 10

(2) See Note 2 Page 10



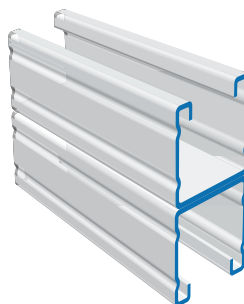
A - 462mm²
 kg/m - 3.58 kg/m
 $I_{x-x} = 0.261 \cdot 10^6 \text{mm}^4$
 $Z_{x-x} = 6.321 \cdot 10^3 \text{mm}^3$
 $r_{x-x} = 23.8 \text{mm}$
 $I_{y-y} = 0.131 \cdot 10^6 \text{mm}^4$
 $Z_{y-y} = 6.367 \cdot 10^3 \text{mm}^3$
 $r_{y-y} = 16.9 \text{mm}$



Mass: 3.58kg/m

PL/GB/HG

P2001



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

L(mm)	Fmax(kN)	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

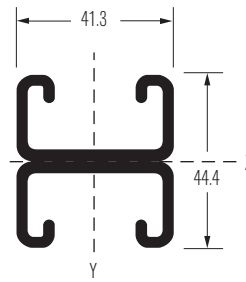
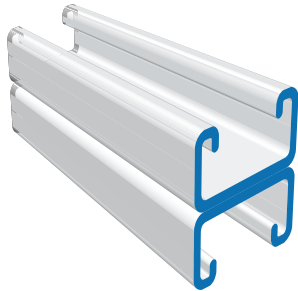
(1) See Note 1 Page 10

(2) See Note 2 Page 10

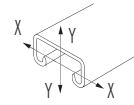
UNISTRUT® COMBINATION STRUTS

P3301

PL/GB/HG



Mass: 3.64kg/m



A	-	465mm ²
kg/m	-	3.64kg/m
I x-x	=	0.063 10 ⁶ mm ⁴
Z x-x	=	2.841 10 ³ mm ³
r x-x	=	11.6mm
I y-y	=	0.110 10 ⁶ mm ⁴
Z y-y	=	5.329 10 ³ mm ³
r y-y	=	15.4mm

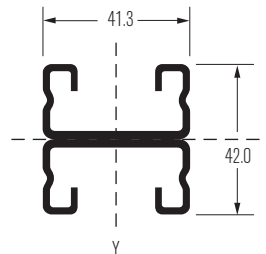
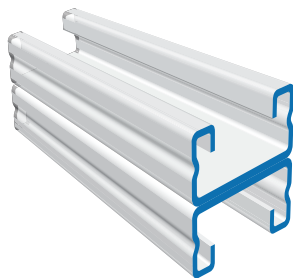
L(mm)	Fmax(kN)	fmax(mm)	F(kN)
250	15.58	0.25	73.20
500	7.79	1.01	67.32
750	5.19	2.26	58.55
1000	3.90	4.02	48.16
1250	3.12	6.28	37.47
1500	2.60	9.05	27.50
1750	2.23 (2)	12.32	20.21
2000	1.95 (2)	16.09	15.47
2250	1.73 (2)	20.36	12.22
2500	1.56 (2)	25.13	-
2750	1.42 (2)	30.41	-
3000	1.30 (2)	36.19	-

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

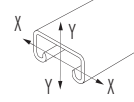
(2) See Note 2 Page 10

P4001

PL/GB/HG



Mass: 2.52kg/m



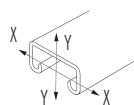
A	-	320mm ²
kg/m	-	2.52 kg/m
I x-x	=	0.044 10 ⁶ mm ⁴
Z x-x	=	2.082 10 ³ mm ³
r x-x	=	11.7mm
I y-y	=	0.078 10 ⁶ mm ⁴
Z y-y	=	3.764 10 ³ mm ³
r y-y	=	15.6mm

L(mm)	Fmax(kN)	fmax(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	-

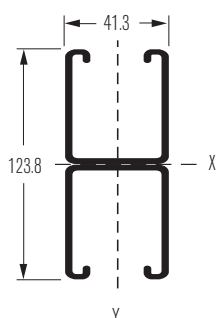
Part No.	Material Thickness	Length
P4001-PL	1.6mm	6m
P4001-GB	1.6mm	6m
P4001-HG	1.6mm	6m

(2) See Note 2 Page 10

UNISTRUT® COMBINATION STRUTS



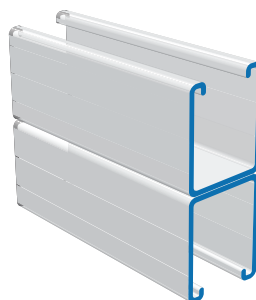
A	-	867mm ²
kg/m	-	6.80kg/m
I x-x	=	1.052 10 ⁶ mm ⁴
Z x-x	=	16.990 10 ³ mm ³
r x-x	=	34.8mm
I y-y	=	0.261 10 ⁶ mm ⁴
Z y-y	=	12.662 10 ³ mm ³
r y-y	=	17.4mm



Mass: 6.80kg/m

PL/GB/HG

P5501



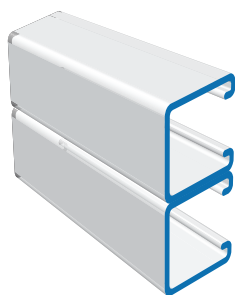
Part No.	Material Thickness	Length
P5501-PL	2.5mm	6m
P5501-GB	2.5mm	6m
P5501-HG	2.5mm	6m

L(mm)	Fmax(kN)	fmax(mm)	F(kN)
250	2704 (1)	0.03	122.16
500	2704 (1)	0.21	118.17
750	2704	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

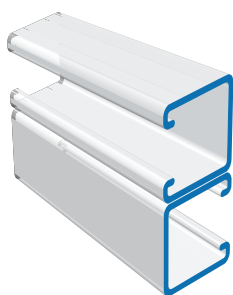
(1) See Note 1 Page 10

(2) See Note 2 Page 10

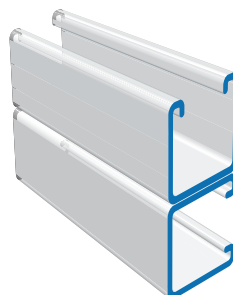
OPTIONAL COMBINATIONS



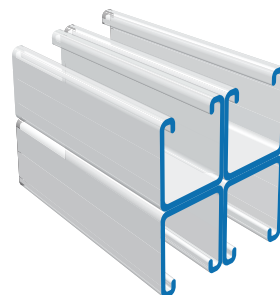
P1001A



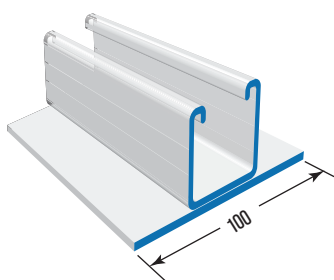
P1001B



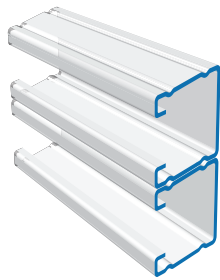
P1001C



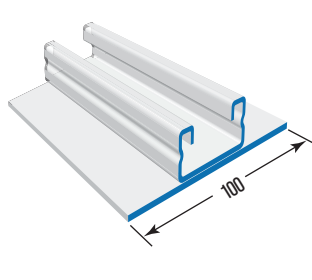
P1001C 41



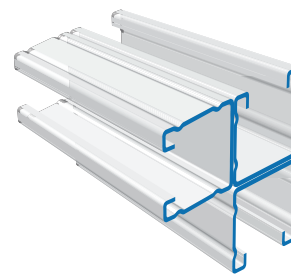
P1003



P2001A



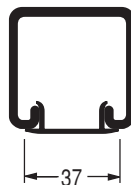
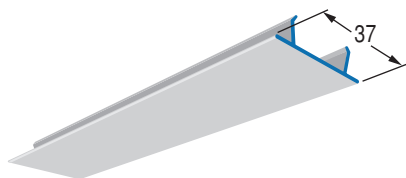
P4002-1



P2001C3

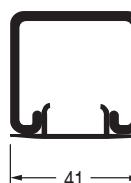
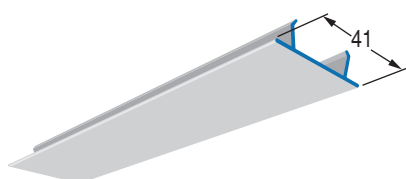
UNISTRUT® STRUT ACCESSORIES

P1184 – PLASTIC CLOSURE STRIP (UV STABILISED)



Standard Length: 3m
Mass: 0.11kg/m

P1184A – ALUMINUM CLOSURE STRIP



Standard Length: 3m
Mass: 0.18kg/m

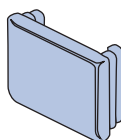
STRUT END CAPS – PLASTIC, UV STABILISED

P2240



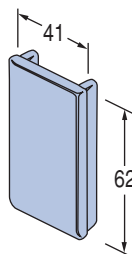
For P1000® & P2000 Strut
Mass: 0.70kg/100

P4240

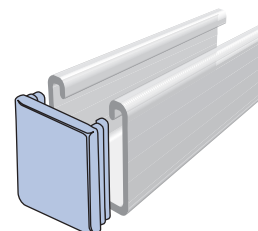


For P3300 & P4000 Strut
Mass: 0.40kg/100

P5580

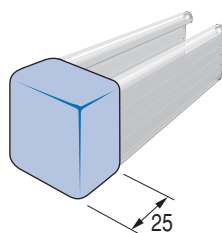


For P5500 Strut
Mass: 1.2kg/100



Typical Installation

P2860-10 – STRUT END CAPS – PLASTIC



Fits P1000® & P2000 Strut
Mass: 1.54kg/100

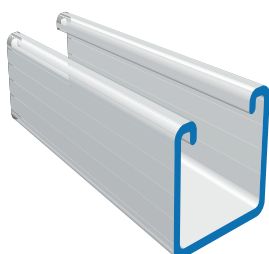
Note: Caps struts provide a protective covering on protruding Struts to guard against personal injury or damage to clothing. They slip easily over the ends of strut.
Available: White or black only.

UNISTRUT®

STRUT - SPECIAL METALS

STAINLESS 316 STRUT

P1000-SS

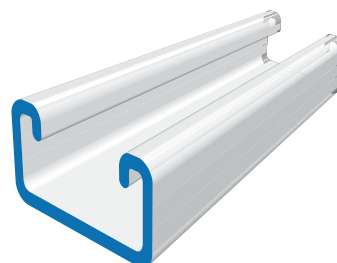


P1000®
41.3 x 41.3
2.5mm thick

Part No.	Material Length	Material Thickness	Mass kg/m
P1000-SS	6m	2.5mm	2.76
P3300-SS	6m	2.5mm	1.96

P3300
41.3 x 22.2
2.5mm thick

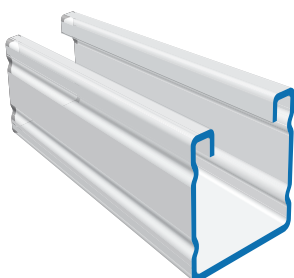
P3300-SS



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

ALUMINIUM STRUT

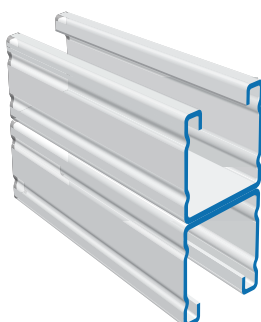
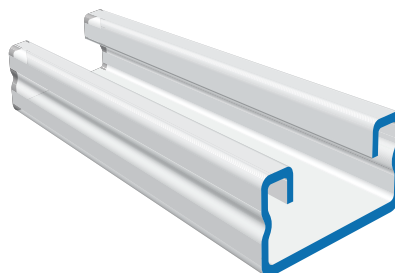
P2000-AL



P2000
41.3 x 41.3

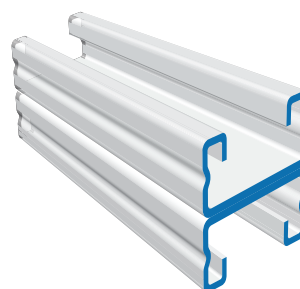
Part No.	Material Length	Mass kg/m
P2000-AL	6m	0.77mm
P4000-AL	6m	0.58mm

P4000
41.3 x 20.6



P2001
41.3 x 82.6

P4001
41.3 x 41.3



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 Aluminium	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 Aluminium	75%	50%

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

UNISTRUT®

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 10, and 'How to use Load Tables' pages 51-52.

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	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	1750	P1000	2.12 (2)	10.71	11.00
	P1001	25.64 (1)	0.08	97.71		P1001	5.60 (2)	6.13	53.40
	P1001C41	25.64 (1)	0.04	195.70		P1001C41	12.09	6.13	123.36
	P1003	17.46	0.15	78.01		P1003	2.49	7.25	37.16
500	P1000	7.42	0.87	36.84	2000	P1000	1.85 (2)	13.99	9.35
	P1001	19.58	0.50	94.09		P1001	4.90 (2)	8.01	44.21
	P1001C41	25.64	0.30	188.76		P1001C41	10.58	8.01	109.59
	P1003	8.73	0.59	74.48		P1003	2.18	9.48	29.41
750	P1000	4.94	1.97	28.22	2250	P1000	1.65 (2)	17.70	8.05
	P1001	13.06	1.13	88.35		P1001	4.35 (2)	10.13	35.62
	P1001C41	25.64	1.02	178.34		P1001C41	9.41	10.13	96.41
	P1003	5.82	1.33	68.94		P1003	1.94	11.99	23.24
1000	P1000	3.71	3.50	21.44	2500	P1000	1.48 (2)	21.85	7.01
	P1001	9.79	2.00	80.90		P1001	3.92 (2)	12.51	28.85
	P1001C41	21.16	2.00	165.65		P1001C41	8.47 (2)	12.51	83.93
	P1003	4.36	2.37	61.87		P1003	1.75	14.81	18.82
1250	P1000	2.97	5.46	16.42	2750	P1000	1.35 (2)	26.44	6.14
	P1001	7.83	3.13	72.23		P1001	3.56 (2)	15.14	23.85
	P1001C41	16.93	3.13	151.78		P1001C41	7.70 (2)	15.13	72.11
	P1003	3.49	3.70	53.84		P1003	3.56	15.14	23.85
1500	P1000	2.47	7.87	13.20	3000	P1000	1.24 (2)	31.47	0.00
	P1001	6.53	4.50	62.89		P1001	3.26 (2)	18.02	20.04
	P1001C41	14.11	4.50	137.52		P1001C41	7.05 (2)	18.01	62.18
	P1003	2.91	5.33	45.43		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 10 ⁶ mm ⁴	Axis YY 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 47)

UNISTRUT®

BEAM AND COLUMN LOADS

BEAM & COLUMN - 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 10) and 'How to use Load Tables' (pages 51-52) in this Tab Section.

ELEMENTS OF SECTION - P2000 STRUT & COMBINATION

Part No.	Mass kg/m	Area of Section mm ²	Axis XX			Axis YY		
			I 106mm ⁴	Z 103mm ³	r mm	I 106mm ⁴	Z 103mm 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 47)

UNISTRUT®

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 10) and 'How to use Load Tables' (pages 51-52) in this Tab Section.

ELEMENTS OF SECTION - P3300 STRUT & COMBINATION

Part No.	Mass kg/m	Area of Section mm ²	Axis XX			Axis YY		
			I 106mm ⁴	Z 103mm ³	r mm	I 106mm ⁴	Z 103mm 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 47)

UNISTRUT®

BEAM AND COLUMN LOADS

BEAM & COLUMN - 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 Unsupported 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 10) and 'How to use Load Tables' (pages 51-52) in this Tab Section.

ELEMENTS OF SECTION - P4000 STRUT & COMBINATION

Part No.	Mass kg/m	Area of Section mm ²	Axis XX			Axis YY		
			I 106mm ⁴	Z 103mm ³	r mm	I 106mm ⁴	Z 103mm ³	r mm
P4000	1.26	160	0.010	0.786	78	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 47)

UNISTRUT®

BEAM AND COLUMN LOADS

BEAM & COLUMN - 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

Note:

The table should be read in conjunction with 'Notes on Derivation of Structural Data' (page 10) and 'How to use Load Tables' (pages 51-52) in this Tab Section.

ELEMENTS OF SECTION - P5500 STRUT & COMBINATION

Part No.	Mass kg/m	Area of Section mm ²	Axis XX			Axis YY		
			I 106mm ⁴	Z 103mm ³	r mm	I 106mm ⁴	Z 103mm 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 47)

UNISTRUT® 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 track welded or wired to reinforcement.

FILLER METHODS

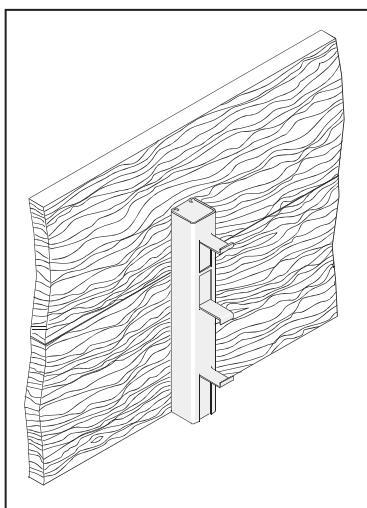
Unistrut® Concrete Inserts are supplied foam filled to prevent the ingress of grout and cement.

FINISHES

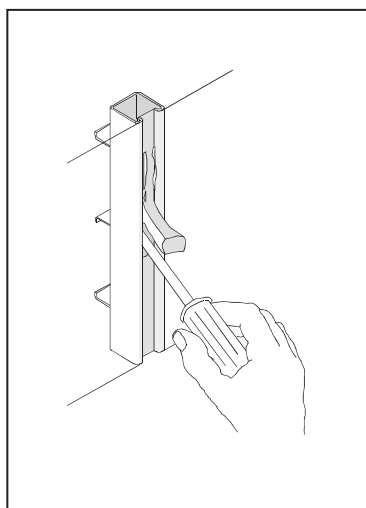
Unistrut® Concrete Inserts are available in the following styles and finishes - P1000® & P3300 in Heavy Duty Galvanised.

Note: Test results are available on request.

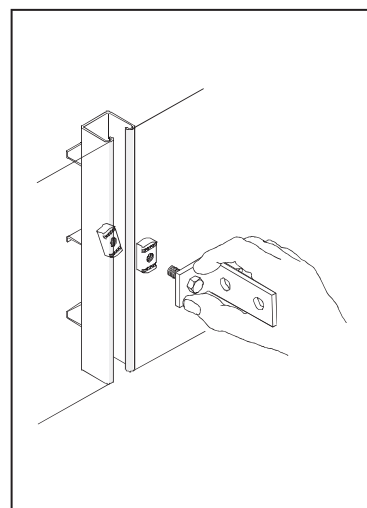
INSTALLING



1. INSTALL CONCRETE INSERT.



2. SCRAPE OUT FILLER.



3. INSERT STRUT NUT AND ATTACH FITTING.

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.

UNISTRUT® CONCRETE INSERTS

Standard Length: 3m or 6m

Mass: 2.80kg/m

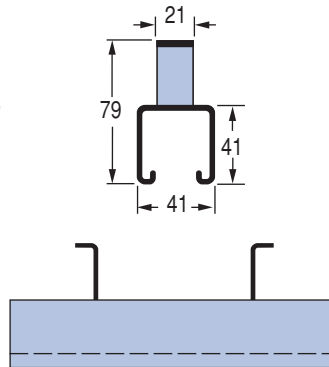
Finish: Heavy Duty Galvanised.

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.

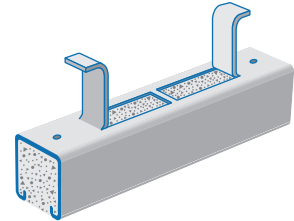
Recommended Pullout Loading*: Inserts 300mm and over 8.83kN per 300mm.

Factor of Safety: Approximately 3
Design load based on 34mpa concrete

**NOTE: Exercise care during installation - Do not bend lugs.
Lugs at 100mm centres**



P1000CI



Standard Length: 3m or 6m

Mass: 1.94kg/m

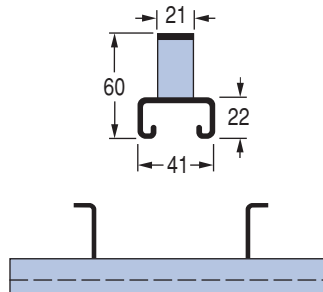
Finish: Heavy Duty Galvanised.

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.

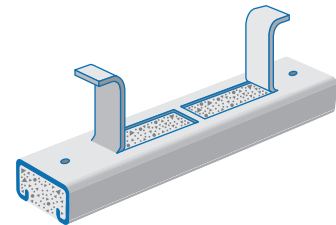
Recommended Pullout Loading*: Inserts 300mm and over 6.37kN per 300mm.

Factor of Safety: Approximately 3
Design load based on 34mpa concrete

**NOTE: Exercise care during installation - Do not bend lugs.
Lugs at 100mm centres**



P3300CI



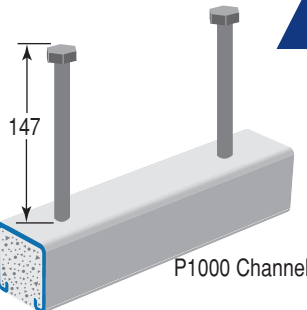
Standard Length: 300mm

Finish: Heavy Duty 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.

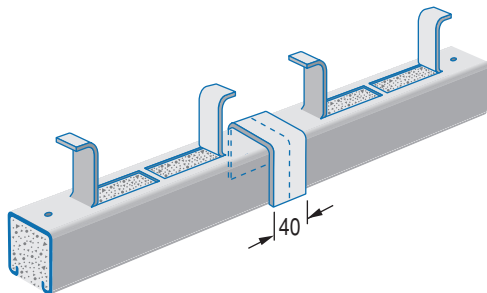
Recommended Loading*: The recommended design load is based on using two P1010 nuts at no less than 75mm O.C. and no closer than 50mm to either end of the insert. The distance between the insert centreline and the concrete edge must be a minimum of 75mm.



P3753 HEAVY DUTY INSERT

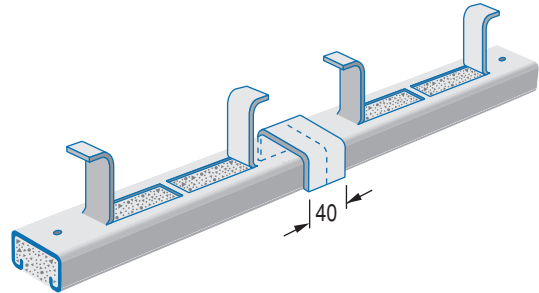
P1663 CI JOINT COVER

Mass: 4.5kg/100



P4663 CI JOINT COVER

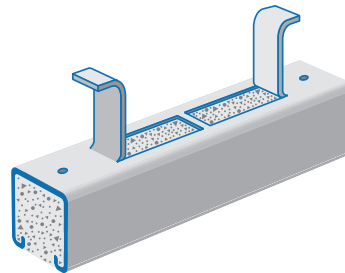
Mass: 2.7kg/100



UNISTRUT® CONCRETE INSERTS

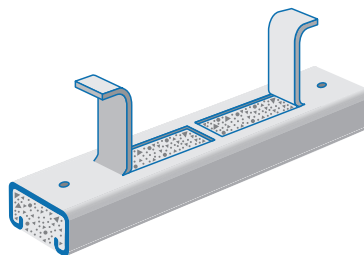
P1000® INSERTS 41MM X 41MM

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



UNISTRUT® 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 intumed 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 AS1111 & AS1112.

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

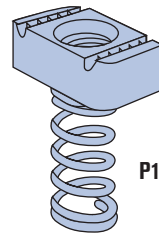
Design Bolt Torque: Refer to Engineering Data Page 47

Finishes: Nuts and bolts are zinc plated to Australian Standards AS1897, selected sizes also available in heavy duty galvanised to AS1214.

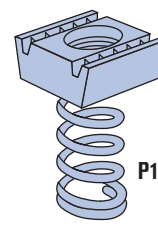
Stainless Steel: Grade 316 class 70

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



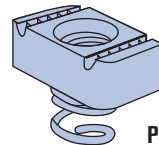
P1006/7/8/10



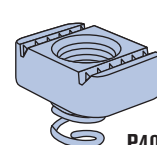
P1012S

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



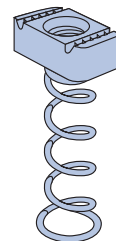
P4006/7/8/10



P4012S

FOR P5500 STRUT NUTS - WITH SPRINGS

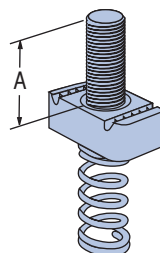
Size	Part No. ZP	Part No. HG	Part No. SS	Mass Kg/100
M10	P5508	-	-	4.5
M12	P5510	-	-	5.4



P5508/10

STUD NUT - P2378M6-1 TO P2381M12-5

Size	DIM "A" mm	Part No. ZP	Mass Kg/100
M6	25	P2378M6-1	3.6
M6	38	P2378M6-3	4.1
M10	25	P2380M10-1	5.9
M10	45	P2380M10-4	6.8
M12	25	P2381M12-2	6.4
M12	45	P2381M12-5	8.2



UNISTRUT®

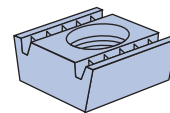
STRUT NUTS NO SPRINGS

P1000® & P2000 STRUT NUTS, NO SPRINGS

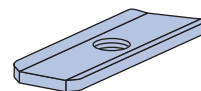
Size	Part No. ZP	Part No. HG	Part No. SS	Mass Kg/100
M6	P3016	P3016MG	P3016SS	1
M6	P3006	P3006H	P3006SS	2.7
M8	P3007	P3007H	P3007SS	2.7
M10	P3008	P3008H	P3008SS	4.1
M12	P3010	P3010MG	P3013SS	5
M16	P1012	P1012H	-	9.1



P3006/7/8/13



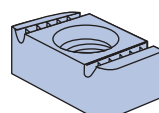
P1012



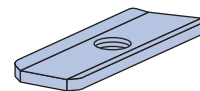
P3016

P3300 & P4000 STRUT NUTS, NO SPRINGS

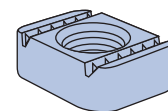
Size	Part No. ZP	Part No. HG	Part No. SS	Mass Kg/100
M6	P3016	P3016MG	P3016SS	1
M6	P3006	P3006H	P3006SS	2.7
M8	P3007	P3007H	P3007SS	2.7
M10	P3008	P3008H	P3008SS	4.1
M12	P3013	P3013MG	P3013SS	3.6
M16	P4012	P4012H	P4012SS	5



P3006/7/8/13



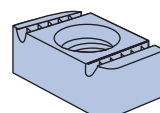
P3016



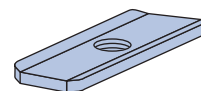
P4012

P5500 STRUT NUTS, NO SPRINGS

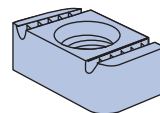
Size	Part No. ZP	Part No. HG	Part No. SS	Mass Kg/100
M6	P3016	P3016MG	P3016SS	1
M6	P3006	P3006H	P3006SS	2.7
M8	P3007	P3007H	P3007SS	2.7
M10	P3008	P3008H	P3008SS	4.1
M12	P3010	P3010MG	P3013SS	3.6
M16	P1012	P1012H	-	9.1



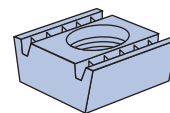
P3006/7/8



P3016



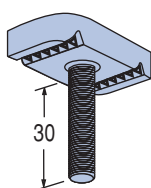
P3010



P1012

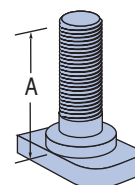
FIXTURE STUD NUT - P3116

Size	DIM "A" mm	Part No. ZP	Part No. MG	Mass Kg/100
M6	30	P3116	P3116MG	3.5



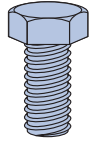
STUD BOLT - USB045 TO USB102

Size	DIM "A" mm	Part No. ZP	Mass Kg/100
M16	45	USB045	10
M16	76	USB076	14
M16	102	USB102	18



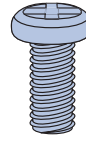
HEX HEAD SET SCREWS

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
HHS1224	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



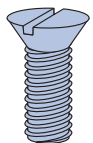
PAN HEAD SCREWS

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



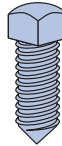
COUNTERSUNK HEAD SCREW

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



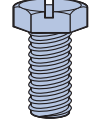
CONE POINT SET SCREW

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



SLOTTED HEX HEAD SET SCREWS

Part No.	Size	Mass kg/100
SHS0620	M6 x 20	0.6
SHS0825	M8 x 25	1.2
SHS0830	M8 x 30	1.3



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



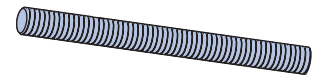
SHAKEPROOF LOCK WASHERS

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/ea
UR06	M6	3.22	0.6
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.

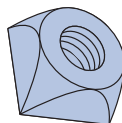
Standard Length: 2m

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

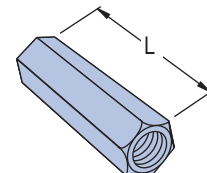
Part No.	Size	Mass kg/100
P267910	M10	1.7
P267912	M12	1.5

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



ROD COUPLERS

Part No.	Size	Length 'A'	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.

UNISTRUT® 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, except where noted otherwise. All 14mm diameter holes use M12 x 25 hex head set screws and M12 nuts - P1010, P4010 or P5510 - depending on the Strut used. 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

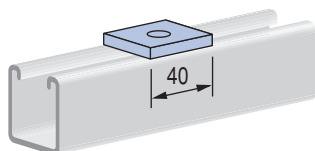
Refer to Engineering Data page 47.

FINISHES

All fittings in this section are available in Heavy Duty Galvanised finish to Australian Standard AS1789. Other finishes available on request.

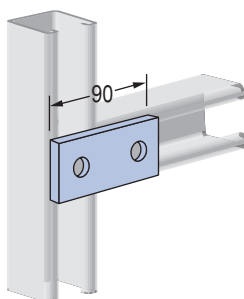
P1062 - P1964

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



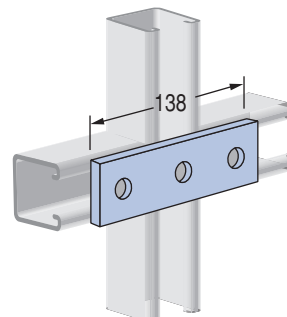
P1065

Mass: 13.4kg/100



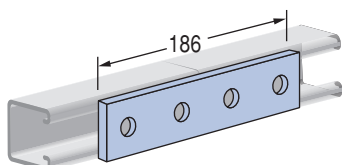
P1066

Mass: 20kg/100



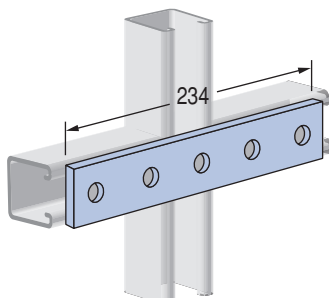
P1067

Mass: 26.7kg/100



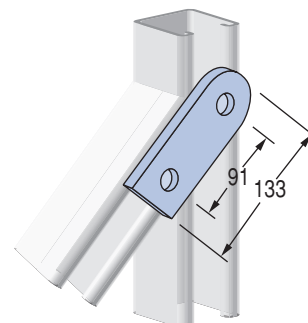
P1941

Mass: 34.2kg/100



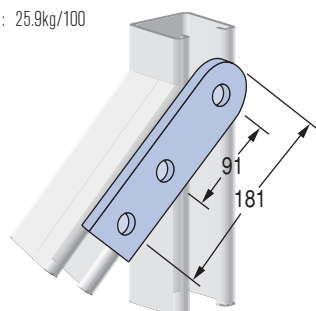
P2325

Mass: 19.2kg/100



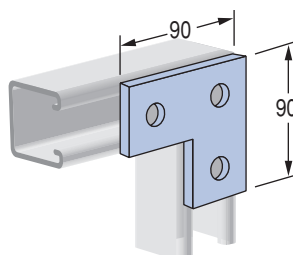
P2324

Mass: 25.9kg/100



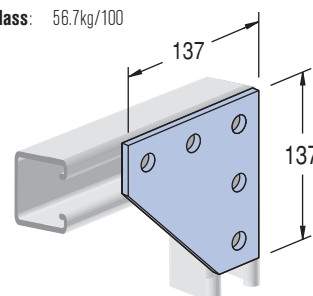
P1036

Mass: 20.9kg/100



P1873

Mass: 56.7kg/100



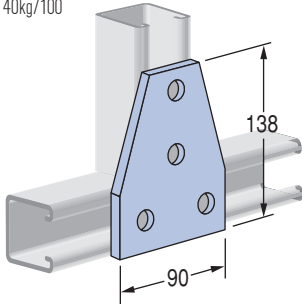
Standard Dimensions for 41mm width series Strut fittings (Unless Otherwise Shown on Drawing)
Hole Diameter: 14mm; Hole Spacing - From End: 21mm; Hole Spacing - On Centre: 48mm; Width: 40mm

UNISTRUT®

FITTINGS - FLAT PLATE & 90° ANGLE

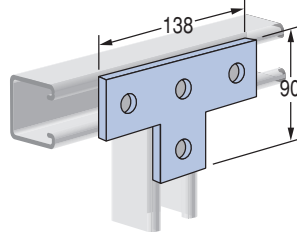
P1358

Mass: 40kg/100



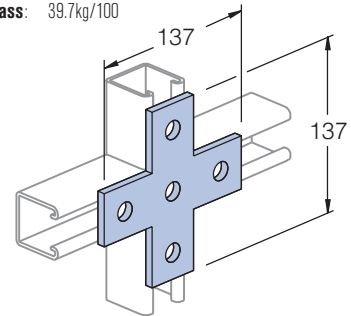
P1031

Mass: 29.2 kg/100



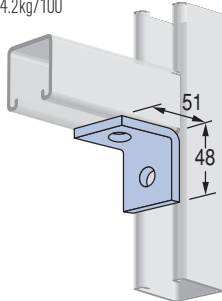
P1028

Mass: 39.7kg/100



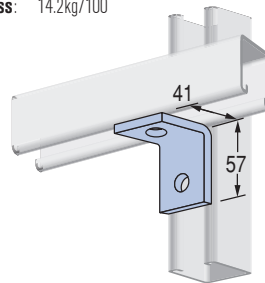
P1026

Mass: 14.2kg/100



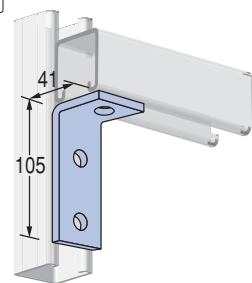
P1068

Mass: 14.2kg/100



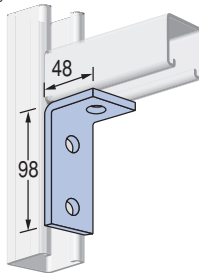
P1326

Mass: 20kg/100



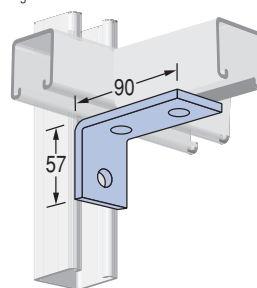
P1346

Mass: 20kg/100



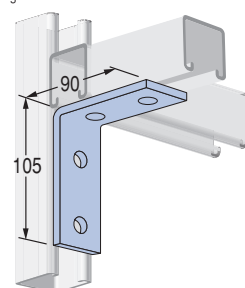
P1458

Mass: 20kg/100



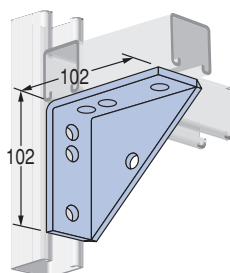
P1325

Mass: 27.5kg/100



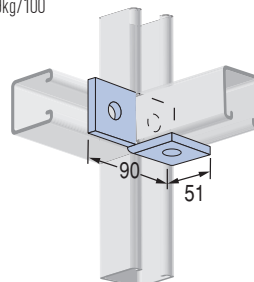
P2484

Mass: 50.9kg/100



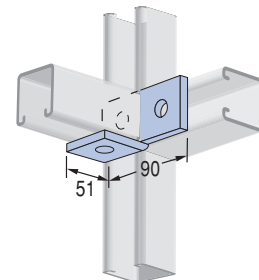
P1037

Mass: 20.9kg/100



P1038

Mass: 20.9kg/100

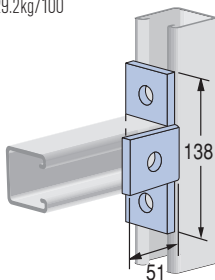


Standard Dimensions for 41mm width series Strut fittings (Unless Otherwise Shown on Drawing)
Hole Diameter: 14mm; Hole Spacing - From End: 21mm; Hole Spacing - On Centre: 48mm; Width: 40mm

UNISTRUT® FITTINGS - 90°, ANGULAR & "Z" SHAPE

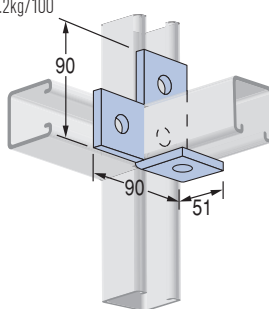
P1033

Mass: 29.2kg/100



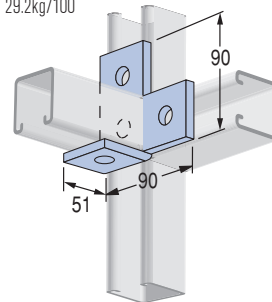
P1034

Mass: 29.2kg/100



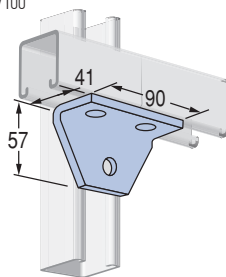
P1035

Mass: 29.2kg/100



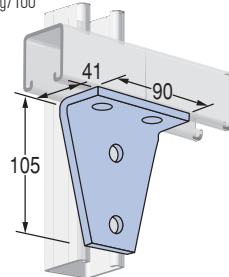
P1357

Mass: 26.7kg/100



P1359

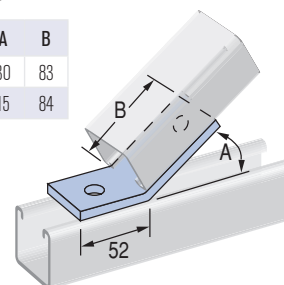
Mass: 40kg/100



P2101 & P2103

Mass: 21.7kg/100

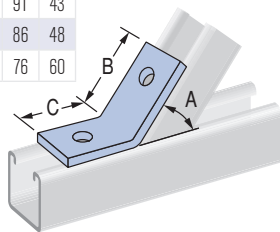
Part No.	A	B
P2101	30	83
P2103	15	84



P1546, P2095, P2097

Mass: 21.7kg/100

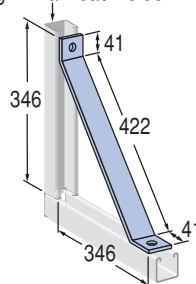
Part No.	A	B	C
P2095	75	91	43
P2097	60	86	48
P1546	45	76	60



P2452

Mass: 85.9kg/100

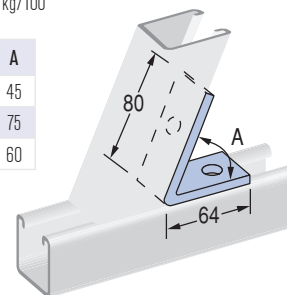
Design Axial Load - 5.36kN



P1186, P2106, P2108

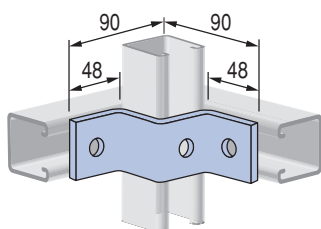
Mass: 21.7kg/100

Part No.	A
P1186	45
P2106	75
P2108	60



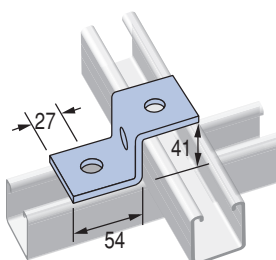
P1736

Mass: 22.5kg/100



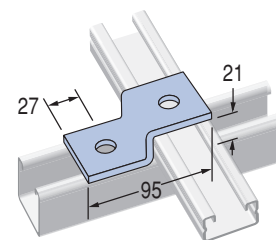
P1045

Mass: 20kg/100



P4045

Mass: 16.7kg/100



P4000 Shown

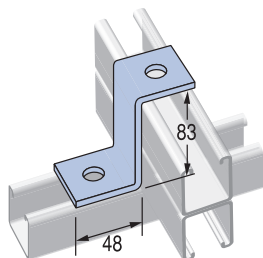
Standard Dimensions for 41mm width series Strut fittings (Unless Otherwise Shown on Drawing)
Hole Diameter: 14mm; Hole Spacing - From End: 21mm; Hole Spacing - On Centre: 48mm; Width: 40mm

UNISTRUT®

FITTINGS - “Z”, “U” AND WING SHAPE

P1453

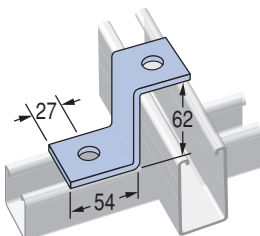
Mass: 25kg/100



P1001 Shown

P5545

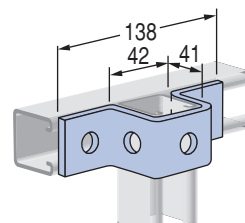
Mass: 24.2kg/100



P1000® and P5500 Shown

P1047

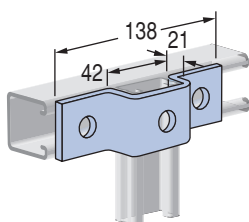
Mass: 30.9kg/100



P1000® Shown

P4047

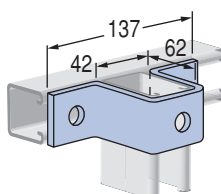
Mass: 25kg/100



P1000® and P4000 Shown

P5547

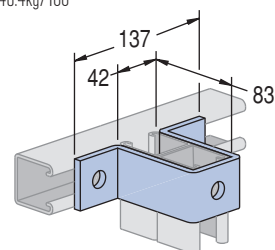
Mass: 39.2kg/100



P1000® and P5500 Shown

P1737

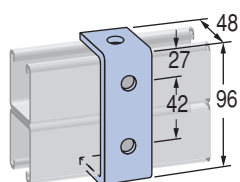
Mass: 48.4kg/100



P1000® (shown), and P2001

P1044

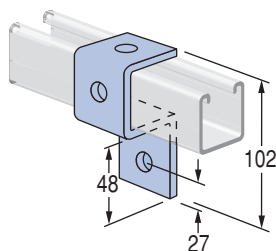
Mass: 25kg/100



P1001 Shown

P1046

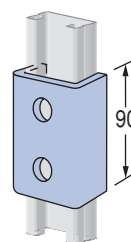
Mass: 29.2kg/100



P1000® Shown

P4376

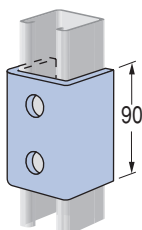
Mass: 31.7kg/100



P4000 Shown

P1376

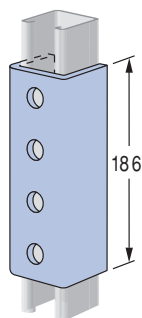
Mass: 46.7kg/100



P1000® Shown

P1377

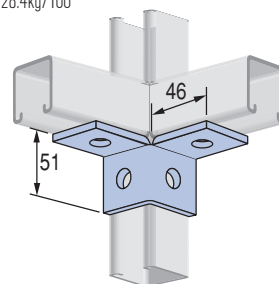
Mass: 95.9kg/100



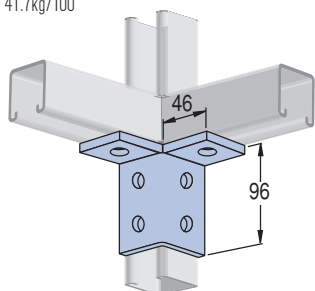
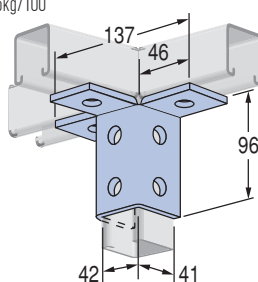
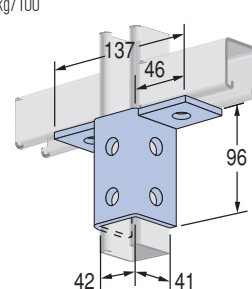
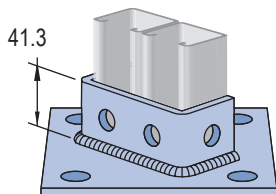
P1000® Shown

P2223

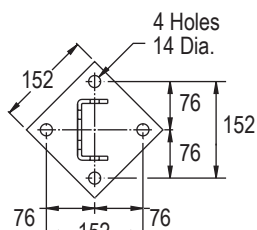
Mass: 28.4kg/100



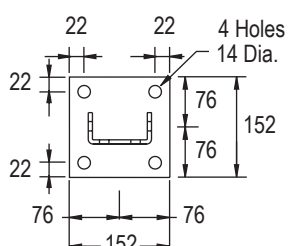
Standard Dimensions for 41mm width series Strut fittings (Unless Otherwise Shown on Drawing)
Hole Diameter: 14mm; Hole Spacing - From End: 21mm; Hole Spacing - On Centre: 48mm; Width: 40mm

UNISTRUT®**FITTINGS - WING SHAPE, POST BASES****P2224****Mass:** 41.7kg/100**P2228****Mass:** 65kg/100**P2346****Mass:** 55kg/100**P2073/P2073SQ****Mass:** 116.7kg/100

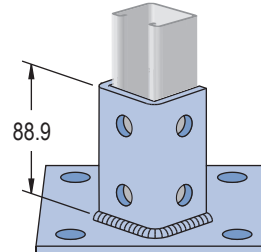
P1001 Shown



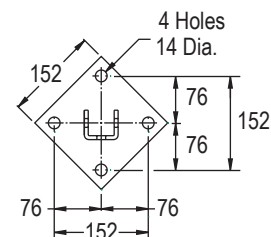
P2073



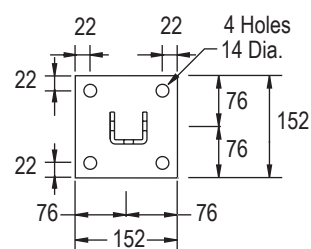
P2073SQ

P2072A/P2072ASQ**Mass:** 136.7kg/100

P1000® Shown



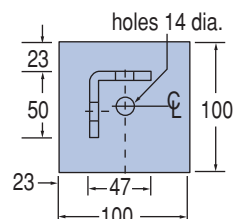
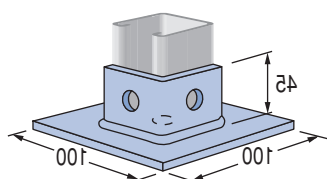
P2072A



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

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.

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 47).

FINISHES

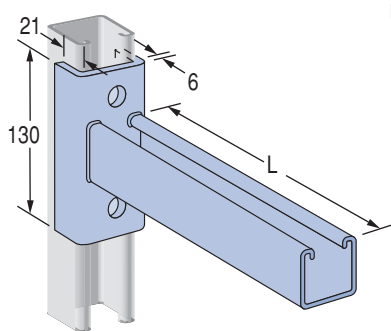
All fittings in this section are Heavy Duty Galvanised to AS/NZS4680 unless otherwise shown.

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

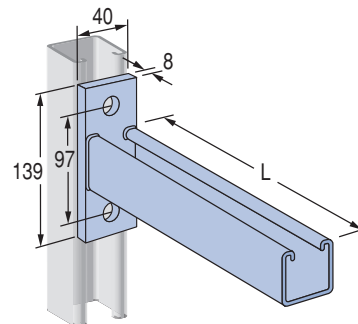
P2233 & P2234



Part No.	L	Design Uniform Load - kN	Mass kg/100
P2233	457	3.14	189
P2234	610	1.97	232

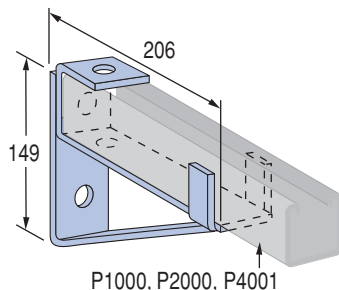
Note: Non stock item made to order

P2663 - 250 TO P2663 - 700



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

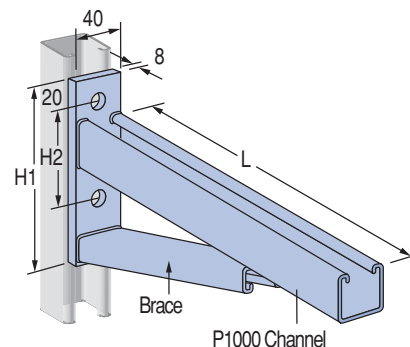
P1075 TO P1078



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

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

PCL150 TO PCL900

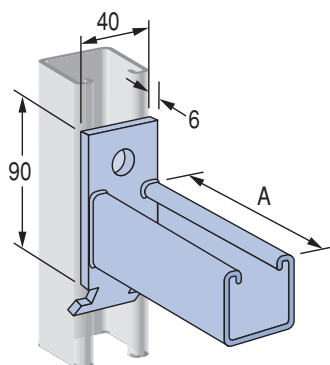


Part No.	L	H1	H2	Design Uniform Load kN	Mass kg/100
PCL150	320	165	86	4.47	170
PCL300	470	165	86	3.17	230
PCL450	635	215	112	3.33	340
PCL600	780	215	112	2.80	380
PCL750	930	280	160	1.24	470
PCL900	1080	280	160	1.08	510

UNISTRUT®

CANTILEVER BRACKETS

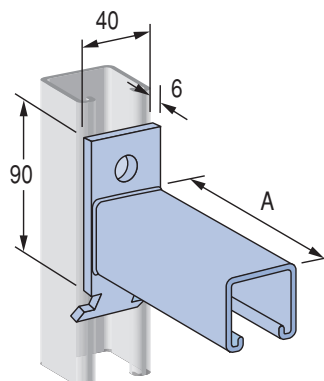
P2513 TO P2516



Part No.	A	Design Uniform - Load kN	Mass kg/100
P2513	250	1.77	91
P2514	400	1.10	128
P2515	550	0.80	177
P2516	700	0.62	216

Note: Non stock item made to order

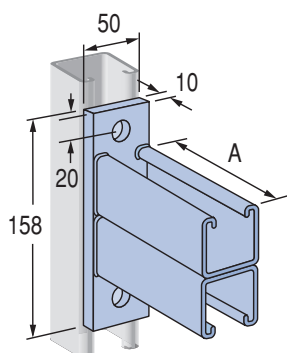
P2513A TO P2516A



Part No.	A	Design Uniform - Load kN	Mass kg/100
P2513A	250	1.77	91
P2514A	400	1.10	128
P2515A	550	0.80	177
P2516A	700	0.62	216

Note: Non stock item made to order

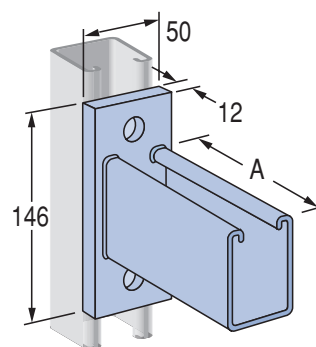
P2542 TO P2546



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

Note: Non stock item made to order

P5663 - 300 TO P5663 - 750



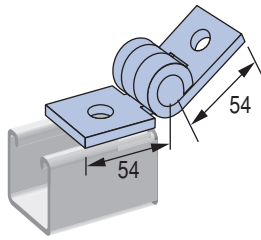
Part No.	A	Design Uniform - Load kN	Mass kg/100
P5663-300	300	6.93	173
P5663-450	450	4.78	224
P5663-600	600	3.62	276
P5663-750	750	2.91	327

Note: Non stock item made to order

ADJUSTABLE BRACE FITTINGS & BEAM CLAMPS

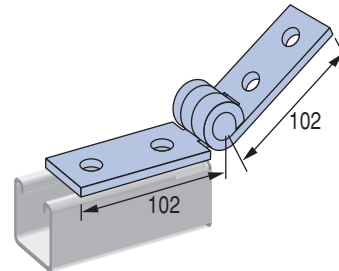
P1843W

Mass: 31kg/100



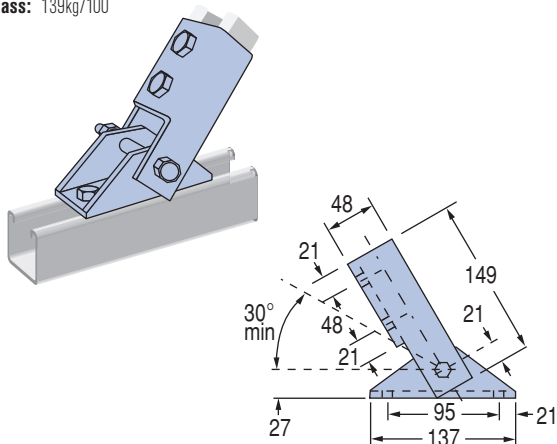
P1354

Mass: 49kg/100



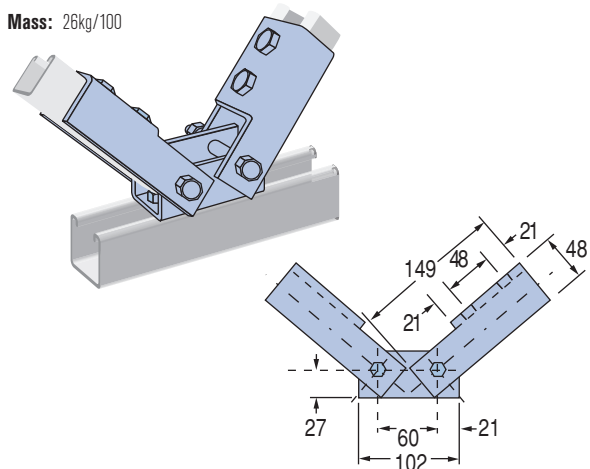
P2815

Mass: 139kg/100

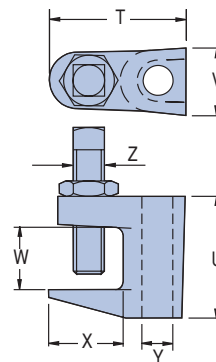
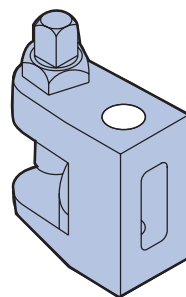


P2815D

Mass: 26kg/100



EF1600 - FLANGE CLAMP



Standard Finishes: Z.P

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

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 can be 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.

UNISTRUT® BEAM CLAMPS

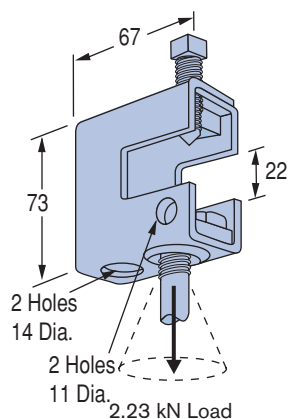
APPLICATION

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 47)

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

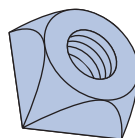
Clamp material 3mm thick

Swivel nut and Lock nut not included

Rod size up to M12

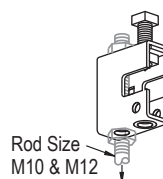
Rod swivel 15° all directions

P2676 – SWIVEL NUT

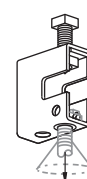


Part No.	Size	Mass kg/100
P267910	M10	1.7
P267912	M12	1.5

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

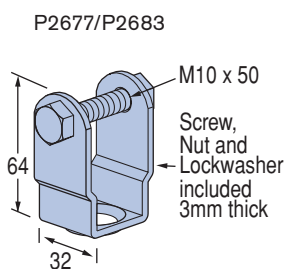


Design Load
1.33 kN



Design Load
2.23 kN

P2677/P2683

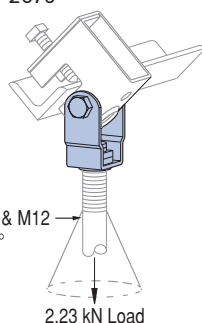


Mass: 13.6kg/100

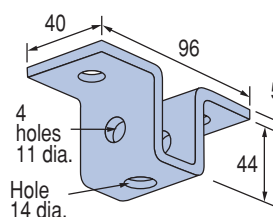
P2677/P2683 clevis hanger to be used with P2677/P2683 to provide angle adjustment and 15 degree free swing for up to M12 rod suspension. Order P2679 series swivel nuts required.

Standard Finishes: Z.P

P2677 & P2679



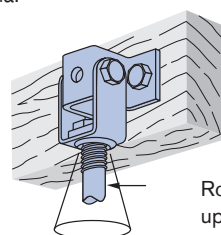
P2682



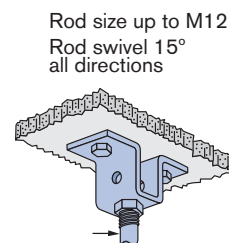
Mass: 23kg/100

Hanger clevis for up to M12 rod suspension. Suitable for wood ceilings. May also be used with P2677 as illustrated in application drawings.

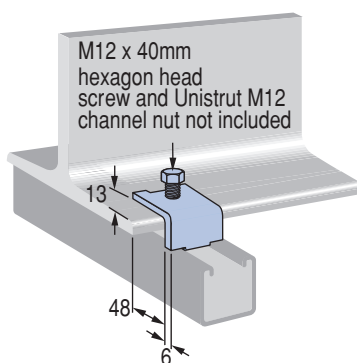
Standard Finishes: Z.P



Rod size
up to M12



P1386



Mass: 12kg/100

Design Load each:

P1000® - 2.67kN

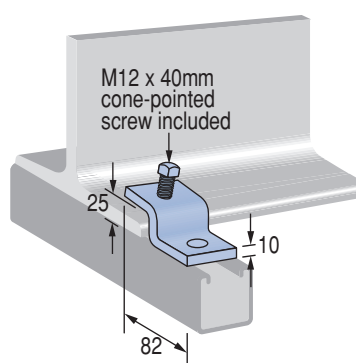
P2000 - 2.00kN

Standard Finishes:

H.G

Use in pairs only

P1379



Mass: 34kg/100

Design Load each:

P1000® - 2.67kN

P2000 - 2.00kN

Standard Finishes:

H.G

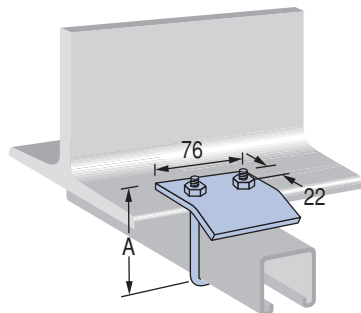
Each clamp requires:

M12 x 30 Hex Head Set Screw and M12 Channel Nut (not included)

Use in pairs only

UNISTRUT® BEAM CLAMPS

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

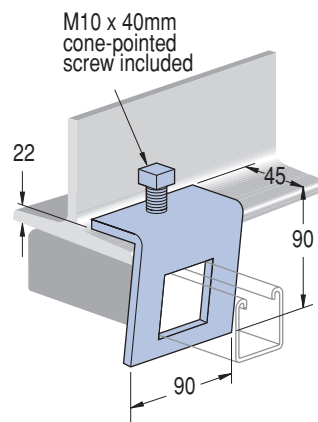
For use with beams up to 19mm

Design Load each:
4.45kN

Standard Finishes:
H.G

Use in pairs only

P1796



Mass: 49kg/100

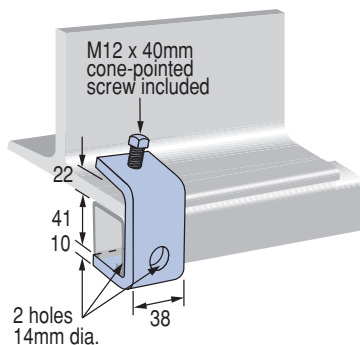
Suits P1000® & P2000

Design Load each:
2.22kN

Standard Finishes:
H.G

Use in pairs only

P1271



Mass: 43kg/100

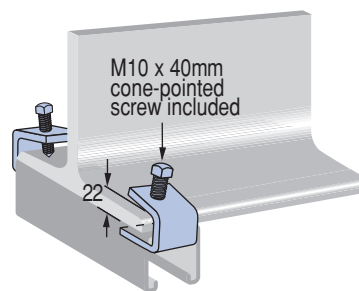
Design Load each:
2.22kN

Standard Finishes:
H.G

Requires P1010 Channel
nut & bolt

Use in pairs only

P1272



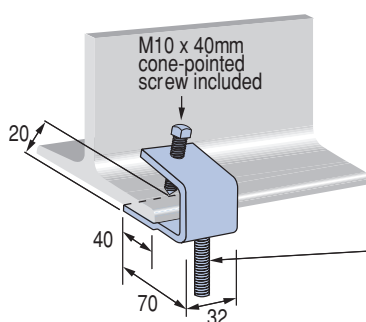
Mass: 18kg/100

Design Load Per Pair:
2.00kN

Standard Finishes:
H.G

Use in pairs only

P1270



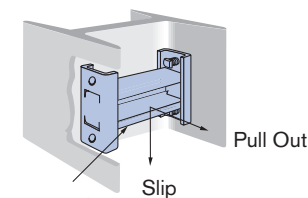
Mass: 29kg/100

Design Load each:
0.38kN

Standard Finishes:
H.G

Tapped hole to
accept M10 Unirod,
to be secured with
M10 nut (not included)

P3087

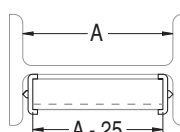
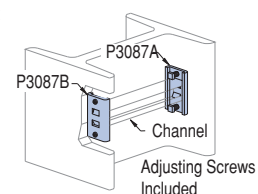


Mass: 124kg/100 (pair)

Safety Factor: 3

Standard Finishes:
H.G

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



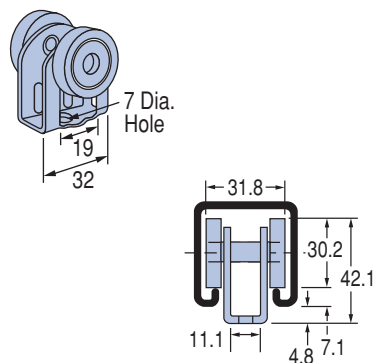
Channel Type	Design Pullout Load kN	Design Slip Load kN
P1000	4.45	3.56
P2000	2.22	1.33

UNISTRUT®

TROLLEY ASSEMBLIES

P2749/P2749N

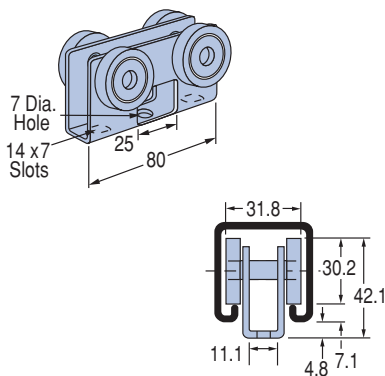
Mass: 10kg/100
Clevis: 2.5mm



Note: 'N' indicates Acetal wheels

P2750/P2750N

Mass: 22kg/100



Note: 'N' indicates Acetal wheels

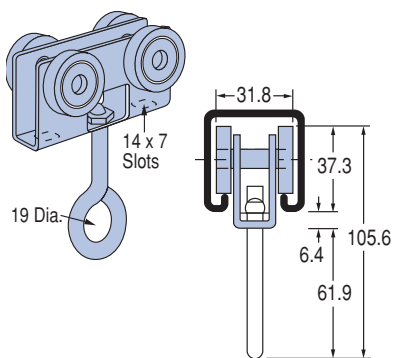
LOADS (kN)

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/P2751N

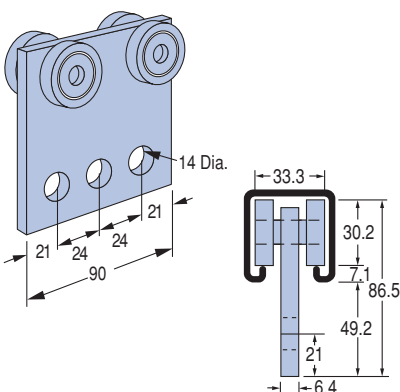
Mass: 26kg/100
Clevis: 2.5mm



Note: 'N' indicates Acetal wheels

P2950

Mass: 48kg/100

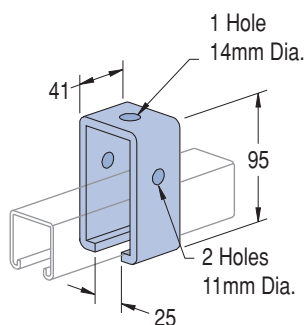


P2950 LOADS (kN)

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

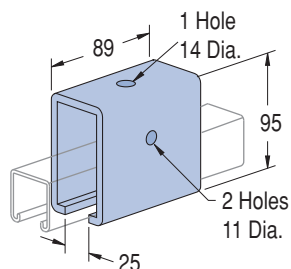
P1834 - TROLLEY SUPPORT

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.

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.

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

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.

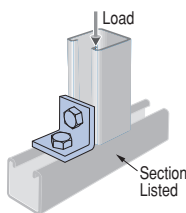
Material	Load Percentage Factor	Slip Percentage Factor	Pullout Percentage Factor
Extruded Aluminium	33%	75%	50%

ENGINEERING DATA [BEARING AND DESIGN LOAD]

SAFE BEARING LOADS

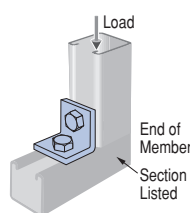
Safety Factor: 2.5

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



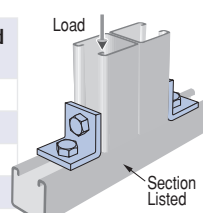
Safety Factor: 2.5

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

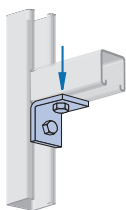


DESIGN LOAD DATA - TYPICAL STRUT CONNECTION

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.

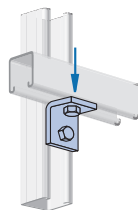
NINETY DEGREE FITTINGS - (WHEN USED IN POSITION SHOWN)

P1026



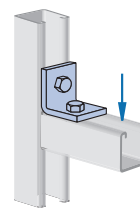
P1000®: 6.67kN
P2000: 3.34kN
Both Ends Supported

P1068



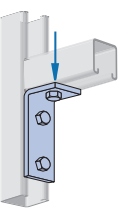
P1000®: 2.22kN
P2000: 2.22kN

P1026



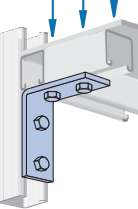
P1000®: 4.45kN
P2000: 2.22kN
Both Ends Supported

P1346



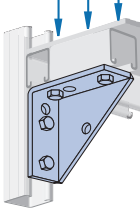
P1000®: 8.9kN
P2000: 4.0kN
Both Ends Supported

P1325



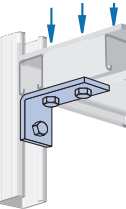
P1000®: 8.9kN
P2000: 6.67kN
Both Ends Supported

P2484



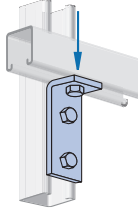
P1000®: 13.34kN
P2000: 6.67kN
Both Ends Supported

P1458



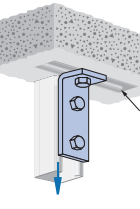
P1000®: 6.67kN
P2000: 4.45kN
Both Ends Supported

P1326



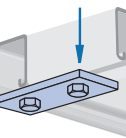
P1000®: 2.22kN
P2000: 2.22kN

P1346



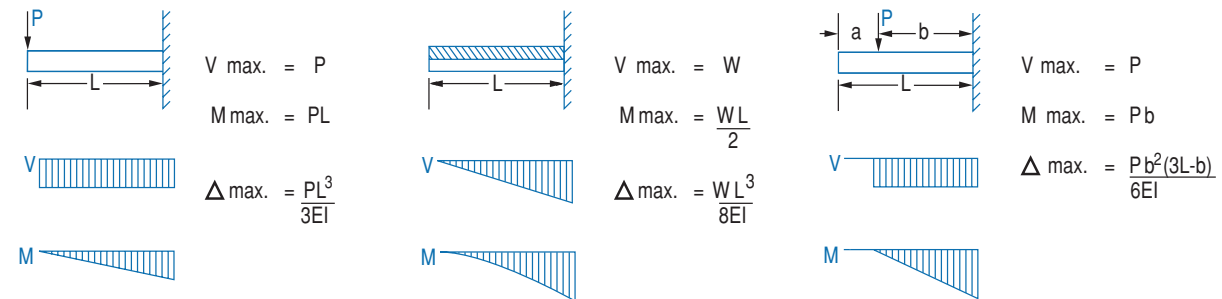
P1000®: 5.34kN
P2000: 4.45kN

FLAT PLATE FITTING - P1065

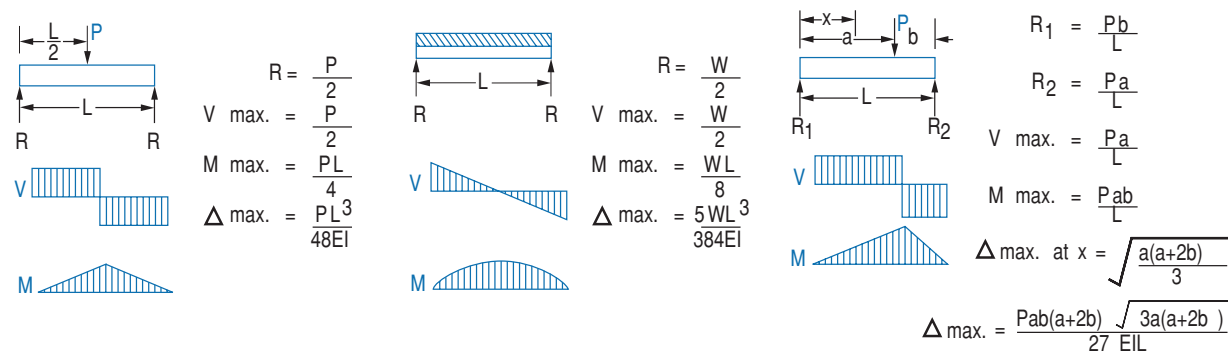


P1000®: 4.45kN
P2000: 2.67kN
Both Ends Supported

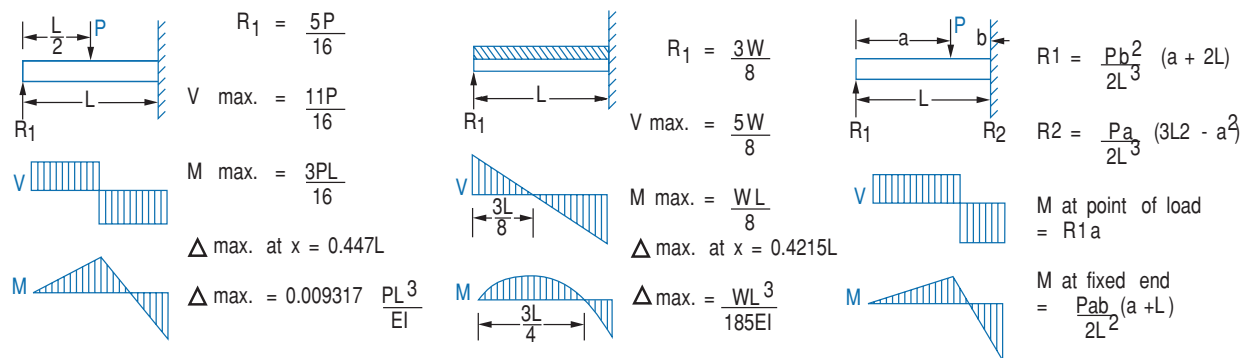
CANTILEVER BEAMS



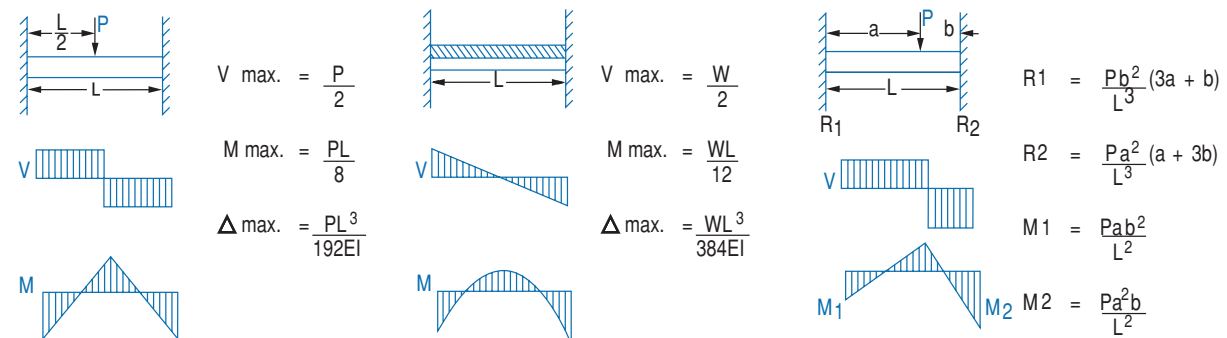
SIMPLE BEAMS



BEAMS FIXED ONE END, SUPPORTED AT OTHER



BEAMS FIXED AT BOTH ENDS



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

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

Δ - Deflection (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

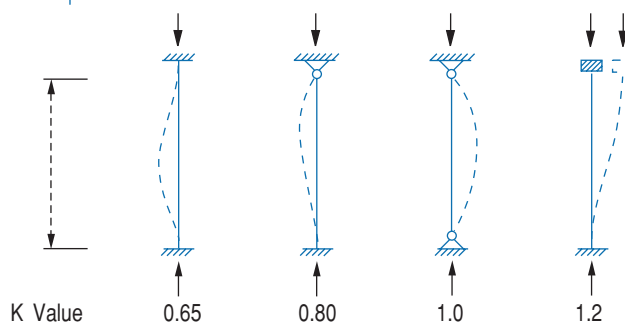
The strength of axially loaded columns or compression members is, in part, dependent on the end conditions, that is, the degree of end fixity or restraint. A column with both ends fixed will support more load than one with both ends free or pin-ended.

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



UNISTRUT® ENGINEERING DATA [EXAMPLES]

HOW TO USE LOAD TABLES

UNISTRUT® SECTIONS AS BEAMS

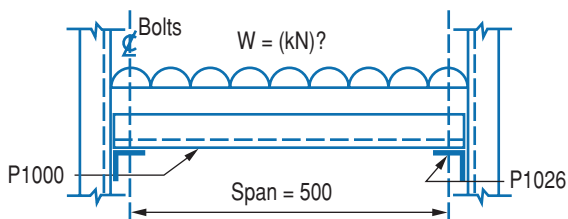
The load capacity of Unistrut® members acting as a horizontal beam, between two vertical Unistrut® members acting as columns, is governed by:

- 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 24, 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 50, for P1000 section supported on P1026 connectors; Support load = 6.67kN
Beam load = 2 x support load = 2 x 6.67 = 13.34kN.

STEP 3

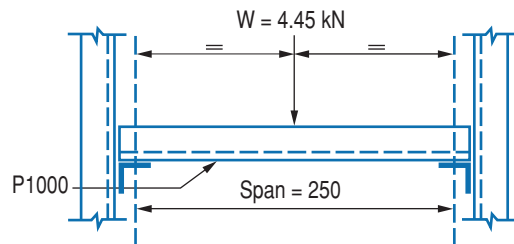
- Check deflection limitations.
- No special deflection considerations apply.

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.

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 24)

- 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:

$$= 0.14 \times 0.8 = 0.11\text{mm}.$$

UNISTRUT® 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.

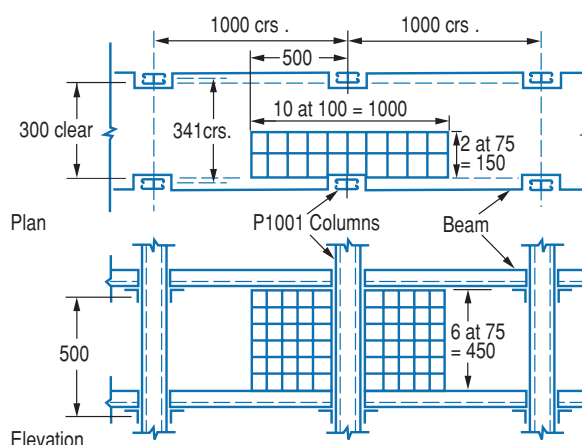
If a) and b) are known and if c) and d), for the case being considered, match the conditions in Structural Data Notes then the load capacity of the section can be read directly from the tables under 'maximum column load'.

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?



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 x 100mm in plan i.e. 120 packages per shelf.

$$\begin{aligned}\text{Hence mass per shelf} &= 6.5 \times 120\text{kg} \\ \text{and load per shelf} &= 6.5 \times 120 \times 0.0098 \\ &= 7.64\text{kN per column.}\end{aligned}$$

STEP 2

- Determine load capacity of P1001 section.
- From P1001 Beams and Columns Table on page 24 for P1001 with height 500mm.
- Maximum column load = 94.09kN.

STEP 3

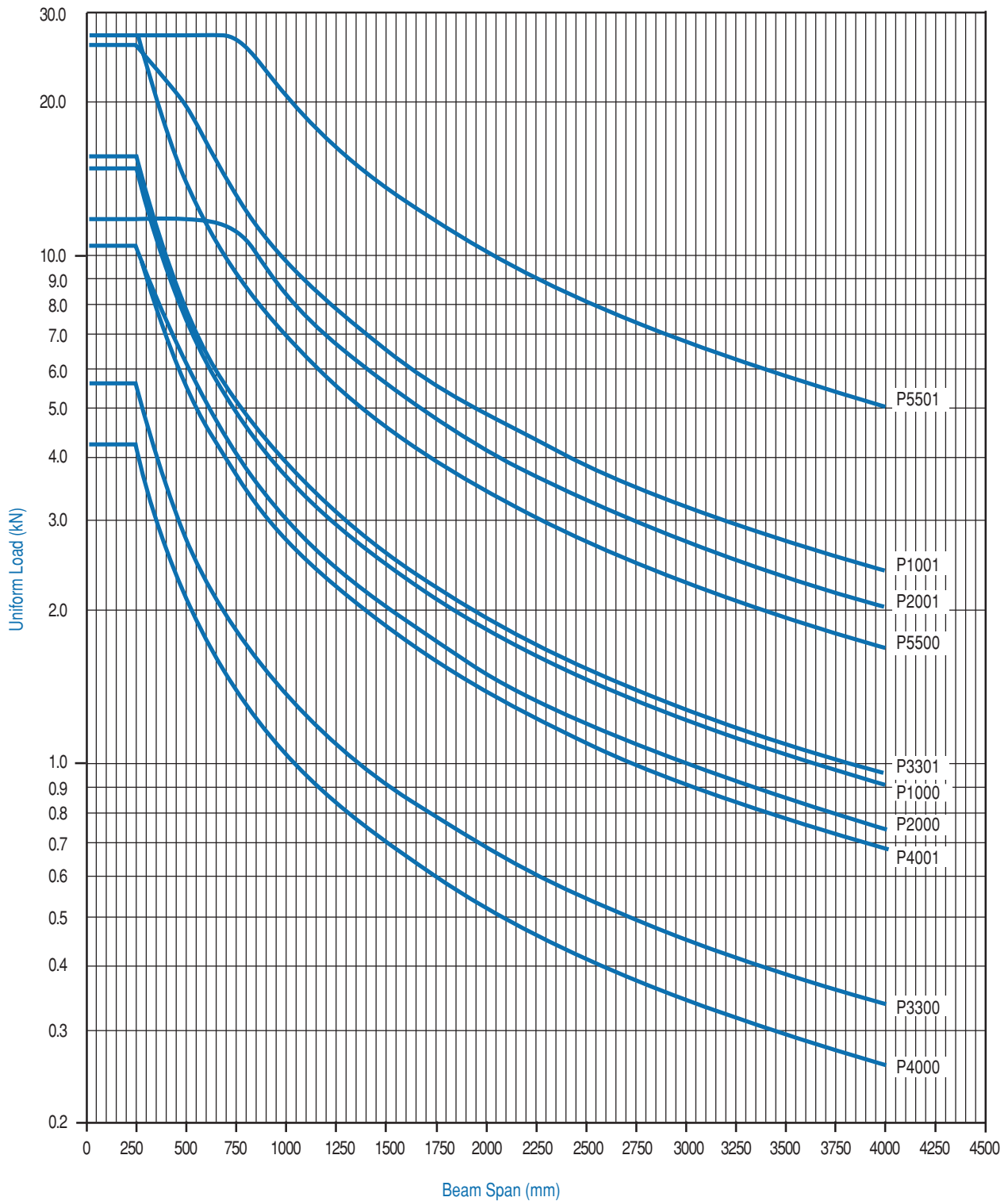
- Determine number of shelves.
- Divide column load capacity by the load per shelf.
i.e. Number of shelves = $94.09 / 7.64 = 12.31$
- Hence maximum number of shelves = 12
i.e. max. height of shelving
 $= 12 \times 0.5 = 6.0$ metres.

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.

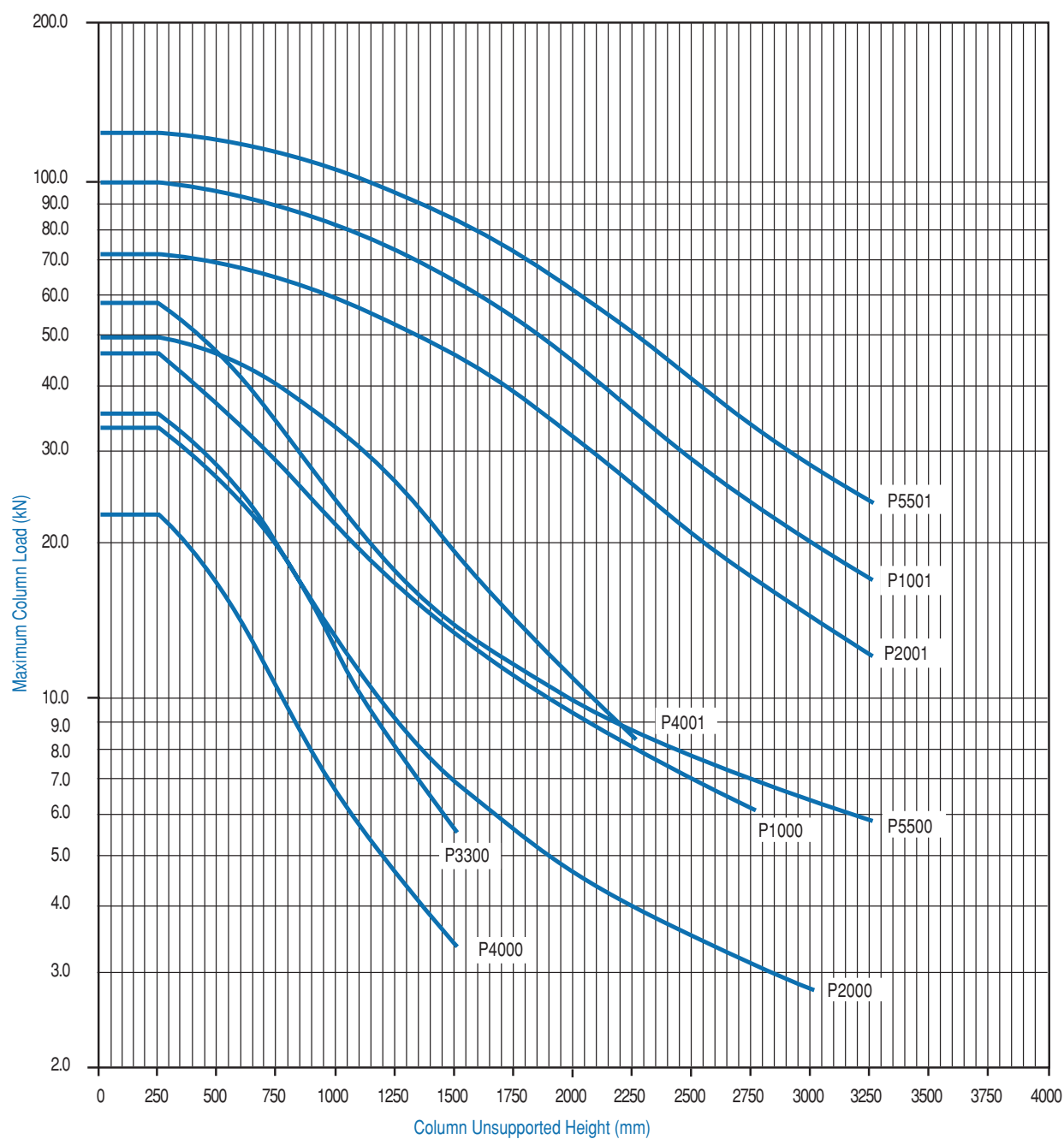
UNIFORM WORKING LOAD FOR SIMPLY SUPPORTED BEAMS



Note: (Ultimate divided by 1.5)

ENGINEERING DATA [LOAD CHART]

UNIFORM WORKING COLUMN LOADS



Note: (Ultimate divided by 1.5)