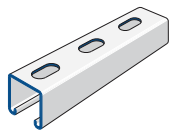
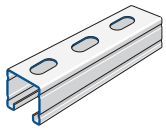
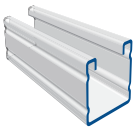
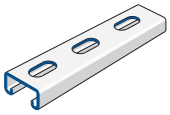
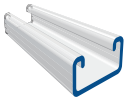
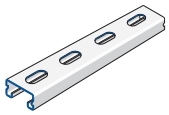
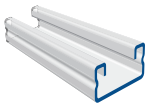
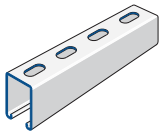
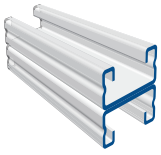
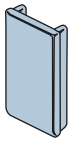
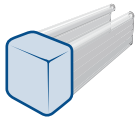
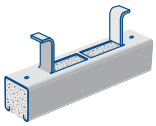
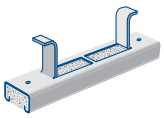
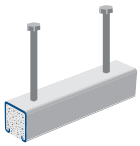
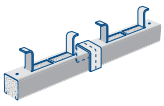
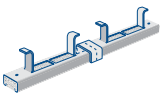
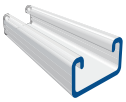
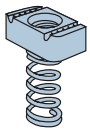
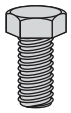
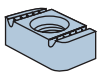
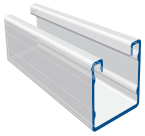
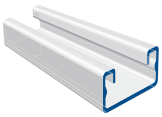
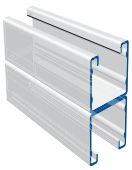
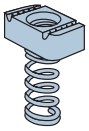
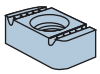
Unistrut System - Channel

 P1000T [GB/HG] pg. 84	 P1000 [GB/HG] pg. 84	 P2000T [GB/HG] pg. 85	 P2000 [GB/HG] pg. 85	 P3300T [GB/HG] pg. 86	 P3300 [GB/HG] pg. 86	 P4000T [GB/HG] pg. 87
 P4000 [GB/HG] pg. 87	 P5500T [GB/HG] pg. 88	 P5500 [GB/HG] pg. 88	 P1001 [GB/HG] pg. 89	 P2001 [GB/HG] pg. 89	 P3301 [GB/HG] pg. 90	 P4001 [GB/HG] pg. 90
 P5501 [GB/HG] pg. 91	 P1184 – Plastic Closure Strip pg. 92	 P1184A – Aluminum Closure Strip pg. 92	 P2240 pg. 92	 P4240 pg. 92	 P5580 pg. 92	 P2860-10 – Channel End Caps – Plastic pg. 92
 P1000CI pg. 94	 P3300CI pg. 94	 P3753 Heavy Duty Insert pg. 94	 P1663 CI Joint Cover pg. 94	 P4663 CI Joint Cover pg. 94	 P1000-SS Stainless Steel pg. 95	 P3300-SS Stainless Steel pg. 95
 Unistrut Channel Nuts Stainless Steel pg. 95	 UNIROD Stainless Steel pg. 95	 Hex Head Set Screw Stainless Steel pg. 95	 Hexagon Nuts Stainless Steel pg. 95	 Channels, With Springs Stainless Steel pg. 95	 Channel Nuts Without Springs Stainless Steel pg. 95	 P2000-AL Aluminum pg. 96
 P4000-AL Aluminum pg. 96	 P2001-AL Aluminum pg. 96	 P4001-AL Aluminum pg. 96	 P1184A - CLOSURE STRIP Aluminum pg. 96	 P2240 & 4240 - End Caps Aluminum pg. 96		

Unistrut System - Nuts & Bolts


For P1000 & P2000 Channels, With Springs
pg. 97

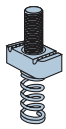

For P1000 & P2000 Channels, No Springs
pg. 97

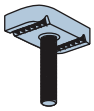

For P3300 & P4000 Channels, With Springs
pg. 97

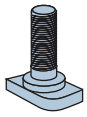

For P3300 & P4000 Channels, No Springs
pg. 97

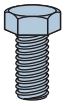

For P5500 Channels - With Springs
pg. 97


For P5500 Channels - No Springs
pg. 97

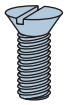

Stud Nut - P2378M6-1 to P2381M12-5
pg. 97


Fixture Stud Nut - P3116
pg. 97


Stud Bolt - USB045 to USB102
pg. 97

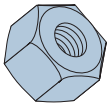

Hex Head Set Screws
pg. 98


Pan Head Screws
pg. 98


Countersunk Head Screw
pg. 98


Cone Point Set Screw
pg. 98


Slotted Hex Head Set Screws
pg. 98

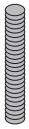

Hexagon Nuts
pg. 98

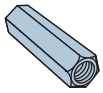

Swivel Nuts
pg. 98


Flat Washers
pg. 98

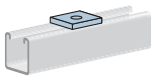

Spring Washers
pg. 98


Shakeproof Lock Washer
pg. 98

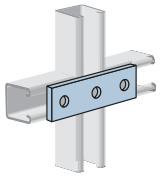

Unirod Steel Threaded Rod
pg. 98

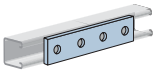

Rod Couplers
pg. 98

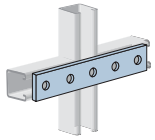
Unistrut System - Fittings

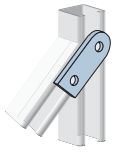

P1062 - P1964
pg. 99

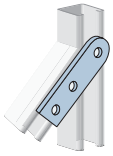

P1065
pg. 99

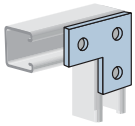

P1066
pg. 99

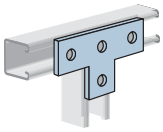

P1067
pg. 99

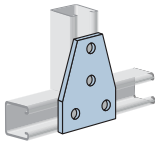

P1941
pg. 99


P2325
pg. 99


P2324
pg. 100

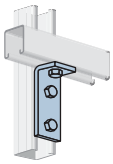

P1036
pg. 100

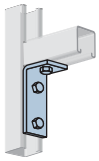

P1031
pg. 100

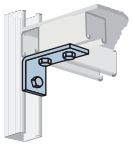

P1358
pg. 100

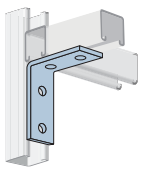

P1026
pg. 100

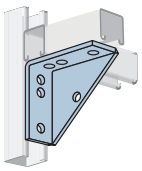

P1068
pg. 100

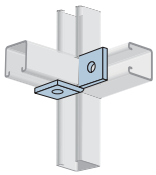

P1326
pg. 100

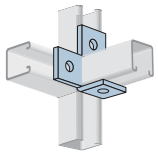

P1346
pg. 100


P1458
pg. 100


P1325
pg. 100


P2484
pg. 100


P1038
pg. 100


P1034
pg. 101

P1037
pg. 101

P1033
pg. 101

P1359
pg. 101

P1035
pg. 101

P1357
pg. 101

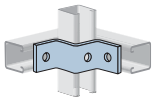
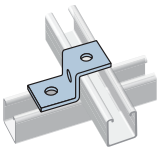
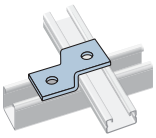
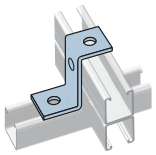
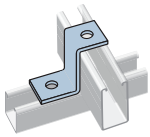
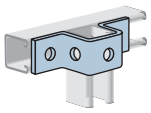
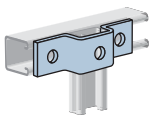
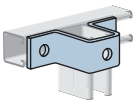
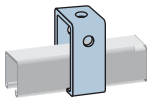
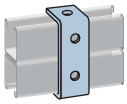
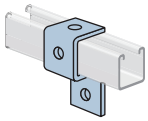
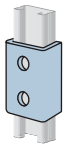
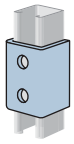
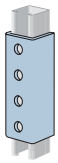
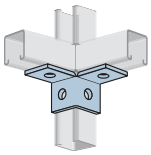
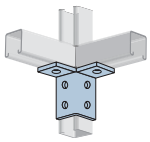
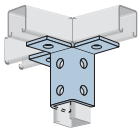
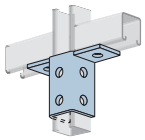
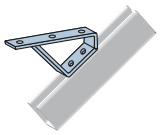
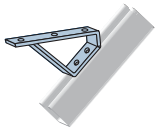
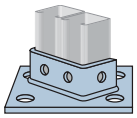
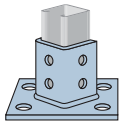
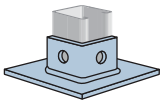
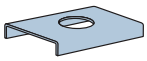
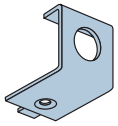
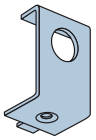
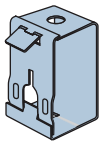
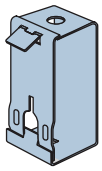
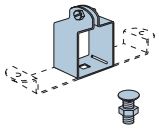
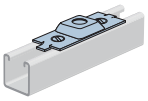
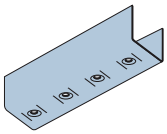
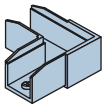
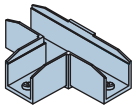
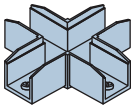
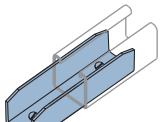
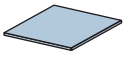
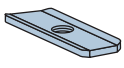
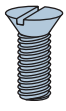
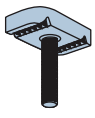
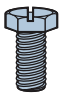
P2101 & P2103
pg. 101

P2095 to P1546
pg. 101

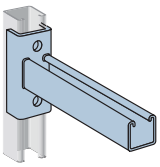
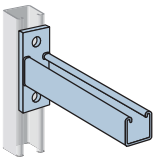
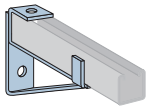
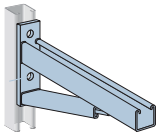
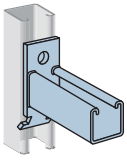
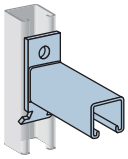
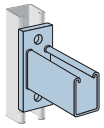
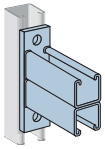
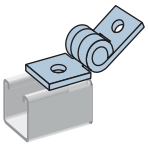
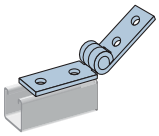
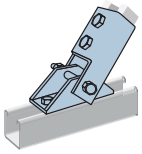
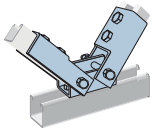
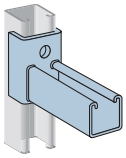
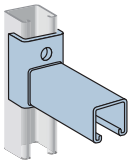
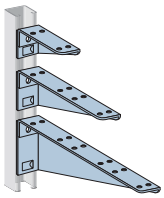
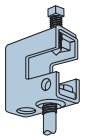
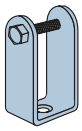
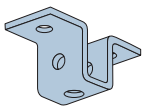
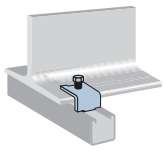
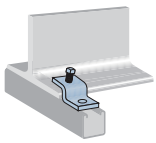
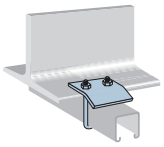
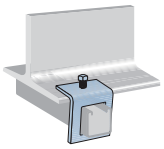
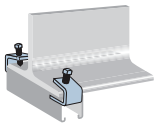
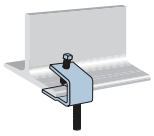
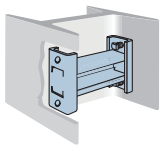
P2452
pg. 101

P2106 to P1186
pg. 101

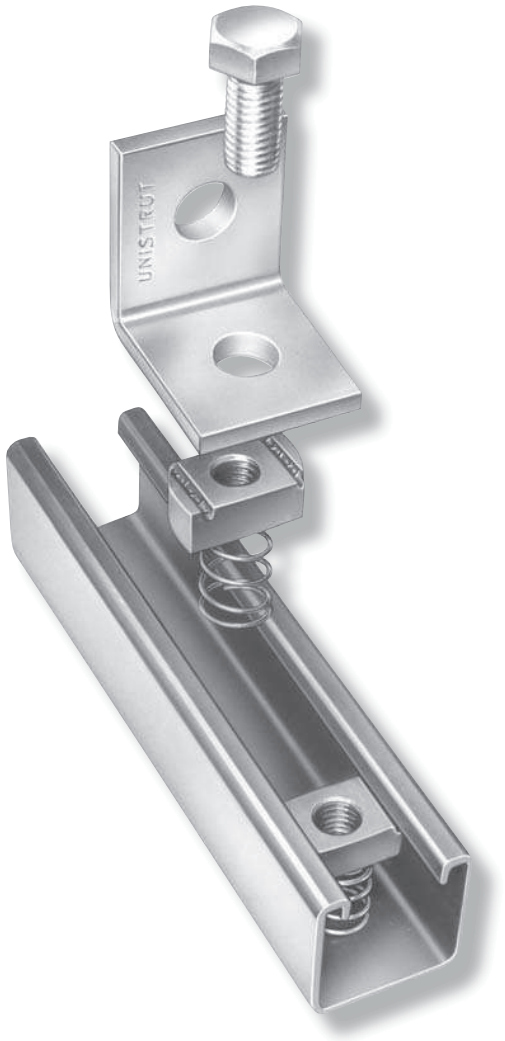
Unistrut System - Fittings (Cont.)

 P1736 pg. 101	 P1045 pg. 101	 P4045 pg. 102	 P1453 pg. 102	 P5545 pg. 102	 P1047 pg. 102	 P4047 pg. 102
 P5547 pg. 102	 P1834 pg. 102	 P1044 pg. 102	 P1046 pg. 102	 P4376 pg. 102	 P1376 pg. 102	 P1377 pg. 102
 P2223 pg. 103	 P2224 pg. 103	 P2228 pg. 103	 P2346 pg. 103	 P2655 pg. 103	 P1944 pg. 103	 P2073 pg. 103
 P2072A pg. 103	 P2072S1 pg. 103	 P2541 - Spacer Clevis pg. 104	 P2521 - Conduit End Connector pg. 104	 P5521 - Conduit End Connector pg. 104	 P2855 pg. 104	 P2755 pg. 104
 P2539 - Fixture Hanger Fitting pg. 104	 P2535 - Conduit Hanger Fitting pg. 104	 P2377 - Splice Fitting pg. 105	 P2902 Two Way pg. 105	 P2901 Three Way pg. 105	 P2903 Four Way pg. 105	 P2900 One Way pg. 105
 P2552 –Wire Retainer [FIbre] pg. 105	 P3016 - Trunking Nuts pg. 106	 Countersunk Head Screw pg. 106	 P3116 - Fixture Stud Nut pg. 106	 SHS0620 - Slotted Hex Head Screw pg. 106	P2749 pg. 107	P2750 pg. 107
P2751 pg. 107	P2950 pg. 107	P1834 – Trolley Support pg. 107	P1834A – Trolley Support pg. 107			

Unistrut System - Brackets & Beam Clamps

 P2233 & P2234 pg. 108	 P2663-250 to P2663-700 pg. 108	 P1075-8 pg. 108	 PCL150 to PCL600 pg. 108	 P2513 thru P2516 pg. 109	 P2513A thru P2516A pg. 109	 P5663-300 thru P5663-750 pg. 109
 P2542 thru P2546 pg. 109	 P1843 pg. 110	 P1354 pg. 110	 P2815 pg. 110	 P2815D pg. 110	 P2231 & P2232 pg. 110	 P2231A & P2232A pg. 110
 P2491R-L thru P2500R-L pg. 110	 P2676 pg. 111	 P2679 - Swivel Nut pg. 111	 P2677 pg. 111	 P2682 pg. 111	 P1386 pg. 111	 P1379 pg. 111
 P2785 & P2786 pg. 112	 P1796 pg. 112	 P1271 pg. 112	 P1272 pg. 112	 P1270 pg. 112	 P3087 pg. 112	

ADJUSTABLE, DEMOUNTABLE, REUSABLE



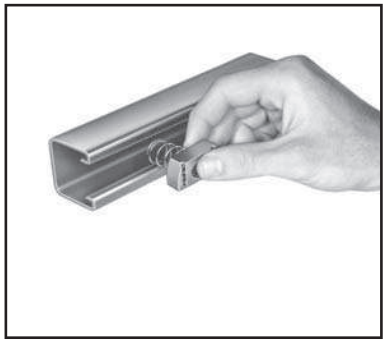
LOOK FOR THESE FEATURES:

Large chamfer in the nut eases starting of bolt.

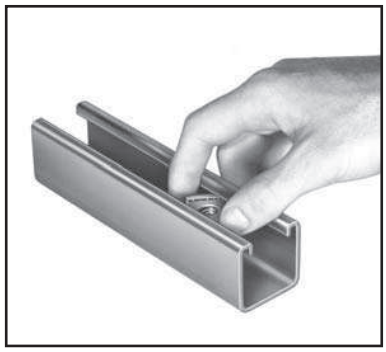
Special shaped inturned edges and tapered, serrated grooves produce strong vice-like grip between channel and nut.

- Channel edges and nut's tapered grooves act as guides to provide positive alignment of connection.
- Nut teeth grip the channel's inturned edges, tying the channel sides together in a "box" conflguration for added strength.
- Longitudinal movement of nut is resisted as hardened teeth bite into the inturned edges.

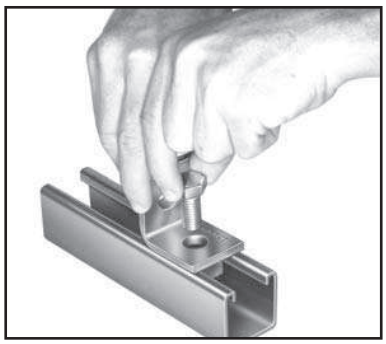
Spring allows precision placement anywhere along channel length, then holds nut in position while connection is completed - the installer's "third hand".



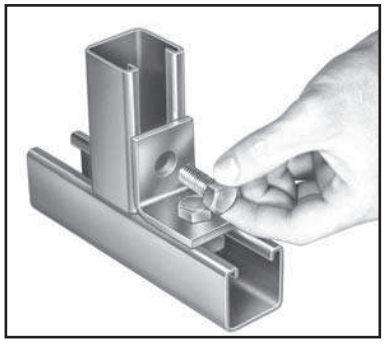
Spring nut is inserted anywhere along continuous slot. Rounded nut ends permit easy insertion.



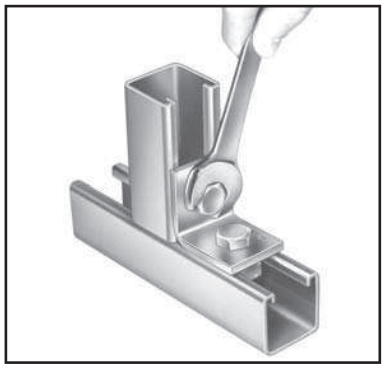
A 90° turn positions the serrated grooves in the nut with the inturned edges of the channel.



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



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



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

FRAMING MEMBERS

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

FITTINGS

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

CHANNEL 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 channel and to prevent any further turning of the nut. Two serrated grooves in the top of the nut engage the inturned edges of the channel 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 Channel members are accurately and carefully rolled from strip steel to AS1594 and AS1365. Spot-welded combination members are welded 75mm (maximum) on centre. Some members may require fillet welding.

Standard Lengths

Standard lengths of the above channels are 6m. Facilities are available to cut standard lengths into any special lengths for a small cutting charge.

Section Shape

The roll forming process used by UNISTRUT AUSTRALIA produces a consistant channel within the manufacturing tolerance allowed . The process includes stresses within the section itself which we are released when the channel 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 channels are available in Plain, Hot Dipped Galvanised, Galvabond, Zinc Plated and Polyester finishes.

Plain - Plain finish on UNISTRUT channel is an oiled finish that is applied to the raw material by the steel mill. The cold rolling process used to form UNISTRUT channel 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 Channel - 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 - Channel 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.

Hot Dipped 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 - Channel, 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 channel 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 channels 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.

We reserve the right to make specification changes without notice in the interest of improving our products.

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 Fy has been taken as 264MPa for plain channels, 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/NZS4600:1996. 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:

$$\delta_2 = (W2 / W1) \times (L2 / L1)^3 \times \delta_1$$

where:

W1 = tabulated load in kN
δ_1 = corresponding tabulated deflection in mm
L1 = corresponding tabulated length in mm
W2 = new load
L2 = new length
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 Australia Pty Limited 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: $\delta_2 = 0.80 \times \delta_1$ 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

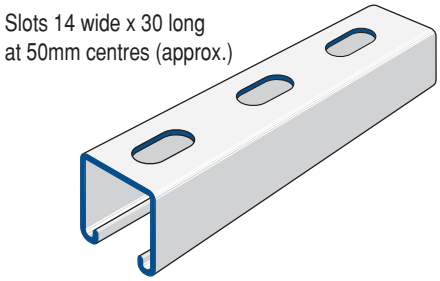
FINISHES:

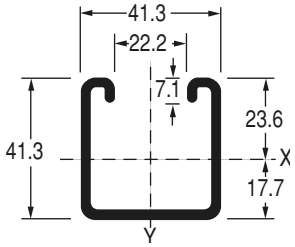
AL Aluminium
GB Galvabond
HG Hot Dipped Galvanised
MG Mechanically Galvanised
PL Plain
PVC Plastic
SS Stainless Steel
ZP Zinc Plated
ZA Zinc Plated Chromate

MEASUREMENT:

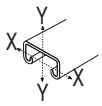
m metre
mm Millimetre
kg Kilogram

P1000T [GB/HG]





Mass: 2.32kg/m



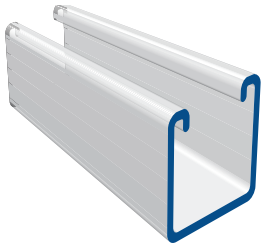
A	=	295mm^2	
kg/m	=	2.32kg/m	
I x-x	=	0.059 10^6mm^4	
Z x-x	=	2.698 10^3mm^3	
r x-x	=	14.1mm	
I y-y	=	0.091 10^6mm^4	
Z y-y	=	4.423 10^3mm^3	
r y-y	=	17.6mm	

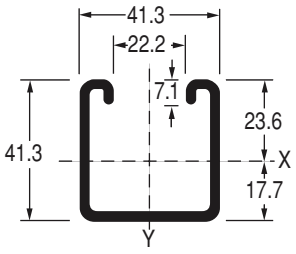
L (mm)	Fmax (kN) F	fmax (mm) f	F(kN)
250	13.35	0.20	40.96
500	6.68	0.78	33.16
750	4.45	1.77	25.40
1000	3.34	3.15	19.30
1250	2.67	4.91	14.78
1500	2.22	7.08	11.88
1750	1.91 (2)	9.64	9.90
2000	1.66 (2)	12.59	8.41
2250	1.48 (2)	15.93	7.24
2500	1.33 (2)	19.66	6.31
2750	1.21 (2)	23.80	5.53
3000	1.12 (2)	28.32	-

(2) See Note 2, Page 83

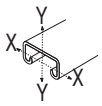
Part No.	Material Thickness	Length
P1000T-GB	2.5mm	6m
P10003T-GB	2.5mm	3m
P1000T-HG	2.5mm	6m
P10003T-HG	2.5mm	3m

P1000 [GB/HG]





Mass: 2.61kg/m



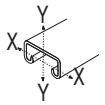
A	=	330mm^2	
kg/m	=	2.66 kg/m	
I x-x	=	0.069 10^6mm^4	
Z x-x	=	2.920 10^3mm^3	
r x-x	=	14.5mm	
I y-y	=	0.092 10^6mm^4	
Z y-y	=	4.451 10^3mm^3	
r y-y	=	16.7mm	

L (mm)	Fmax (kN) F	fmax (mm) f	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	-

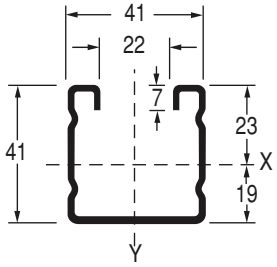
(2) See Note 2, Page 83

Part No.	Material Thickness	Length
P1000-GB	2.5mm	6m
P10003-GB	2.5mm	3m
P1000-HG	2.5mm	6m
P10003-HG	2.5mm	3m

P2000T [GB/HG]

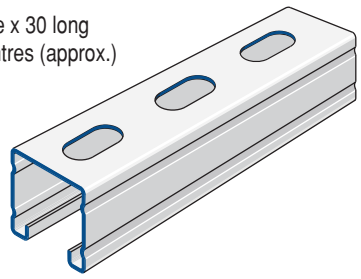


A = 206mm^2
kg/m = 1.62kg/m
I x-x = 0.045 10^{6}mm^4
Z x-x = 2.136 10^{3}mm^3
r x-x = 14.7mm
I y-y = 0.065 10^{6}mm^4
Z y-y = 3.125 10^{3}mm^3
r y-y = 17.7mm



Mass: 1.62kg/m

Slots 14 wide x 30 long
at 50mm centres (approx.)

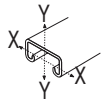


Part No.	Material Thickness	Length
P2000T-GB	1.6mm	6m
P20003T-GB	1.6mm	3m
P2000T-HG	1.6mm	6m
P20003T-HG	1.6mm	3m

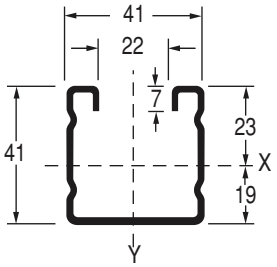
L (mm)	Fmax (kN)	fmax (mm)	F(kN)
250	9.27	0.18	29.63
500	5.45	0.85	23.90
750	3.64	1.91	17.29
1000	2.73	3.39	11.62
1250	2.18	5.30	8.13
1500	1.82	7.63	6.20
1750	1.56 (2)	10.39	5.00
2000	1.14 (2)	7.57	4.91
2250	1.22 (2)	17.16	3.62
2500	1.09 (2)	21.20	3.18
2750	0.99 (2)	25.64	2.83
3000	0.91 (2)	30.52	2.54

(2) See Note 2, Page 83

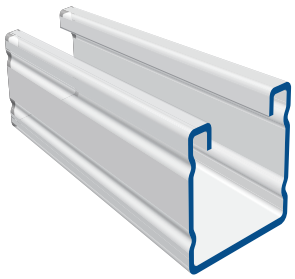
P2000 [GB/HG]



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

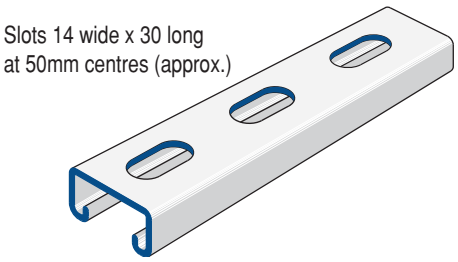


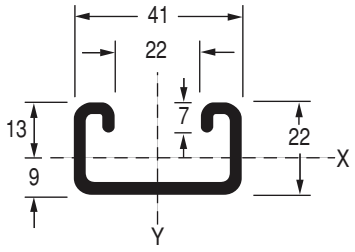
Part No.	Material Thickness	Length
P2000-GB	1.6mm	6m
P20003-GB	1.6mm	3m
P2000-HG	1.6mm	6m
P20003-HG	1.6mm	3m

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

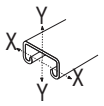
(2) See Note 2, Page 83

P3300T [GB/HG]





Mass: 1.55kg/m



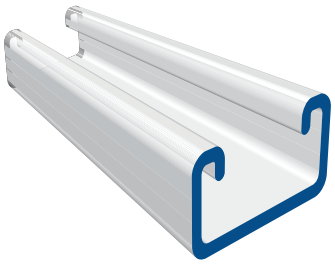
A = 197mm²
kg/m = 1.55kg/m
I x-x = 0.011 10⁶mm⁴
Z x-x = 0.912 10³mm³
r x-x = 7.5mm
I y-y = 0.054 10⁶mm⁴
Z y-y = 2.634 10³mm³
r y-y = 16.6mm

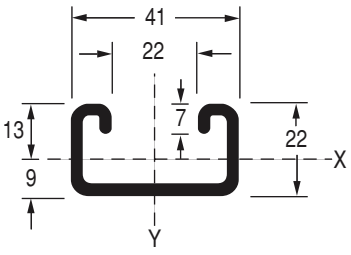
L (mm)	Fmax (kN) F	fmax (mm)	F(kN)
250	4.97	0.38	31.39
500	2.48	1.51	24.98
750	1.66	3.41	17.48
1000	1.24	6.07	10.87
1250	0.99	9.48	7.11
1500	0.83	13.64	5.00
1750	0.71 (2)	18.57	-
2000	0.62 (2)	24.26	-
2250	0.55 (2)	30.70	-
2500	0.50 (2)	37.90	-
2750	0.45 (2)	45.86	-
3000	0.41 (2)	54.57	-

Part No.	Material Thickness	Length
P3300T-GB	2.5mm	6m
P33003T-GB	2.5mm	3m
P3300T-HG	2.5mm	6m
P33003T-HG	2.5mm	3m

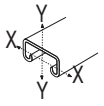
(2) See Note 2, Page 83

P3300 [GB/HG]





Mass: 1.88kg/m



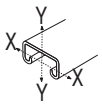
A = 232mm²
kg/m = 1.88 kg/m
I x-x = 0.013 10⁶mm⁴
Z x-x = 0.999 10³mm³
r x-x = 7.6mm
I y-y = 0.055 10⁶mm⁴
Z y-y = 2.661 10³mm³
r y-y = 15.4mm

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

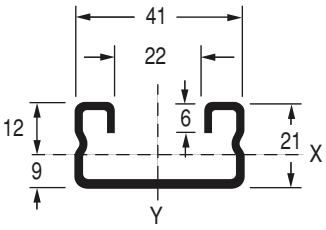
Part No.	Material Thickness	Length
P3300-GB	2.5mm	6m
P33003-GB	2.5mm	3m
P3300-HG	2.5mm	6m
P33003-HG	2.5mm	3m

(2) See Note 2, Page 83

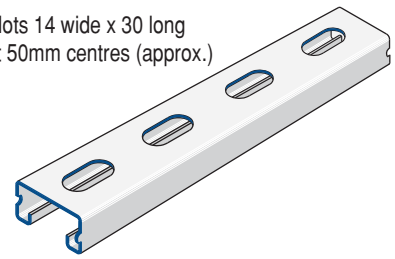
P4000T [GB/HG]



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



Mass: 1.08kg/m

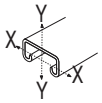


Part No.	Material Thickness	Length
P4000T-GB	1.6mm	6m
P40003T-GB	1.6mm	3m
P4000T-HG	1.6mm	6m
P40003T-HG	1.6mm	3m

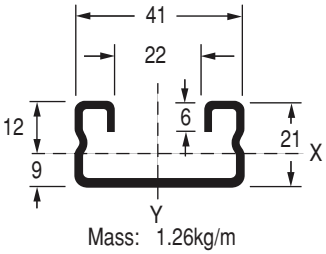
L (mm)	Fmax (kN)	fmax (mm)	F(kN)
250	3.78	0.40	20.12
500	1.89	1.59	14.67
750	1.26	3.58	9.41
1000	0.95	6.37	5.89
1250	0.76	9.96	4.09
1500	0.63 (2)	14.35	3.02
1750	0.54 (2)	19.52	-
2000	0.47 (2)	25.50	-
2250	0.42 (2)	32.27	-
2500	0.38 (2)	39.84	-
2750	0.34 (2)	48.21	-
3000	0.32 (2)	57.21	-

(2) See Note 2, Page 83

P4000 [GB/HG]



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



Mass: 1.26kg/m

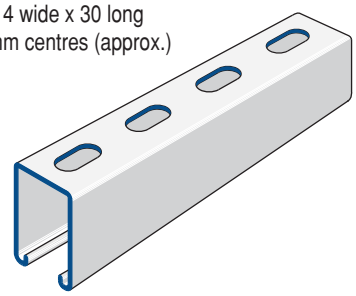
Part No.	Material Thickness	Length
P4000-GB	1.6mm	6m
P40003-GB	1.6mm	3m
P4000-HG	1.6mm	6m
P40003-HG	1.6mm	3m

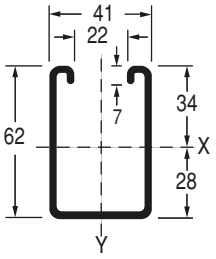
L (mm)	Fmax (kN)	fmax (mm)	F(kN)
250	4.20	0.44	22.36
500	2.10	1.77	16.30
750	1.40	3.98	10.46
1000	1.05	7.08	6.54
1250	0.84	11.07	4.54
1500	0.70 (2)	15.94	3.35
1750	0.60 (2)	21.69	-
2000	0.52 (2)	28.33	-
2250	0.47 (2)	35.86	-
2500	0.42 (2)	44.27	-
2750	0.38 (2)	53.57	-
3000	0.35 (2)	63.57	-

(2) See Note 2, Page 83

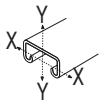
P5500T [GB/HG]

Slots 14 wide x 30 long
at 50mm centres (approx.)





Mass: 3.12kg/m



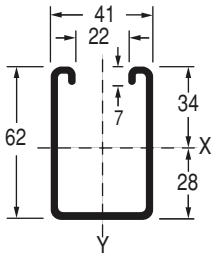
A = 398mm^2
kg/m = 3.12kg/m
I x-x = 0.170 10^{6}mm^4
Z x-x = 5.322 10^{3}mm^3
r x-x = 20.7mm
I y-y = 0.130 10^{6}mm^4
Z y-y = 6.300 10^{3}mm^3
r y-y = 18.1mm

L (mm)	Fmax (kN) F	fmax (mm) f	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

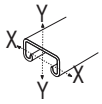
(2) See Note 2, Page 83

Part No.	Material Thickness	Length
P5500T-GB	2.5mm	6m
P55003T-GB	2.5mm	3m
P5500T-HG	2.5mm	6m
P55003T-HG	2.5mm	3m

P5500 [GB/HG]



Mass: 3.43kg/m



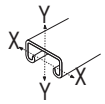
A = 433mm^2
kg/m = 3.43 kg/m
I x-x = 0.197 10^{6}mm^4
Z x-x = 5.730 10^{3}mm^3
r x-x = 21.3mm
I y-y = 0.131 10^{6}mm^4
Z y-y = 6.328 10^{3}mm^3
r y-y = 17.4mm

L (mm)	Fmax (kN) F	fmax (mm) f	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	9.89
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

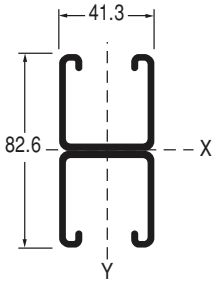
(2) See Note 2, Page 83

Part No.	Material Thickness	Length
P5500-GB	2.5mm	6m
P55003-GB	2.5mm	3m
P5500-HG	2.5mm	6m
P55003-HG	2.5mm	3m

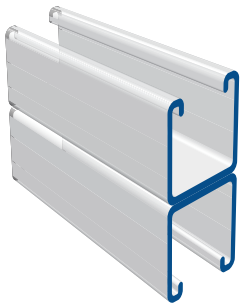
P1001 [GB/HG]



A	=	660mm^2
kg/m	=	5.32kg/m
I x-x	=	0.318 10^{6}mm^4
Z x-x	=	7.711 10^{3}mm^3
r x-x	=	22.0mm
I y-y	=	0.184 10^{6}mm^4
Z y-y	=	8.902 10^{3}mm^3
r y-y	=	16.7mm



Mass: 5.22kg/m

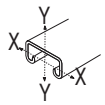


Part No.	Material Thickness	Length
P1001-GB	2.5mm	6m
P1001-HG	2.5mm	6m

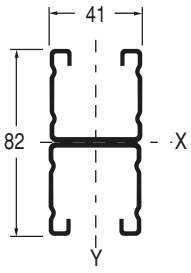
L (mm)	Fmax (kN) F f	fmax (mm)	F(kN)
250	25.64 (1)	0.08	97.71
500	19.58	0.50	94.09
750	13.06	1.13	88.35
1000	9.79	2.00	80.90
1250	7.83	3.13	72.23
1500	6.53	4.50	62.89
1750	5.60 (2)	6.13	53.40
2000	4.90 (2)	8.01	44.21
2250	4.35 (2)	10.13	35.62
2500	3.92 (2)	12.51	28.85
2750	3.56 (2)	15.14	23.85
3000	3.26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

(1) See Note 1, Page 83 ,(2) See Note 2, Page 83

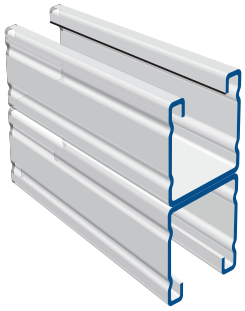
P2001 [GB/HG]



A	=	462mm^2
kg/m	=	3.58 kg/m
I x-x	=	0.261 10^{6}mm^4
Z x-x	=	6.321 10^{3}mm^3
r x-x	=	23.8mm
I y-y	=	0.131 10^{6}mm^4
Z y-y	=	6.367 10^{3}mm^3
r y-y	=	16.9mm



Mass: 3.58kg/m

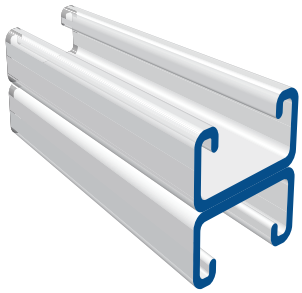


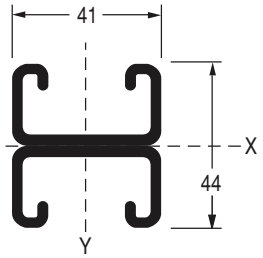
Part No.	Material Thickness	Length
P2001-GB	1.6mm	6m
P2001-HG	1.6mm	6m

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

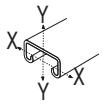
(1) See Note 1, Page 83 ,(2) See Note 2, Page 83

P3301 [GB/HG]





Mass: 3.76kg/m



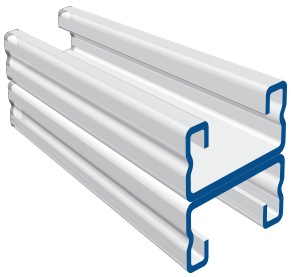
A	=	465mm^2	
kg/m	=	3.76kg/m	
I x-x	=	0.063 10^{6}mm^4	
Z x-x	=	2.841 10^{3}mm^3	
r x-x	=	11.6mm	
I y-y	=	0.110 10^{6}mm^4	
Z y-y	=	5.329 10^{3}mm^3	
r y-y	=	15.4mm	

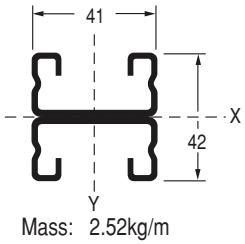
L (mm)	Fmax (kN)	F / f	fmax (mm)	F(kN)
250	15.58		0.25	73.20
500	7.79		1.01	67.32
750	5.19		2.26	58.55
1000	3.90		4.02	48.16
1250	3.12		6.28	37.47
1500	2.60		9.05	27.50
1750	2.23 (2)		12.32	20.21
2000	1.95 (2)		16.09	15.47
2250	1.73 (2)		20.36	12.22
2500	1.56 (2)		25.13	-
2750	1.42 (2)		30.41	-
3000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

(2) See Note 2, Page 83

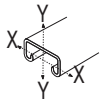
Part No.	Material Thickness	Length
P3301-GB	2.5mm	6m
P3301-HG	2.5mm	6m

P4001 [GB/HG]





Mass: 2.52kg/m



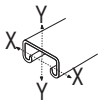
A	=	320mm^2	
kg/m	=	2.52 kg/m	
I x-x	=	0.044 10^{6}mm^4	
Z x-x	=	2.082 10^{3}mm^3	
r x-x	=	11.7mm	
I y-y	=	0.078 10^{6}mm^4	
Z y-y	=	3.764 10^{3}mm^3	
r y-y	=	15.6mm	

L (mm)	Fmax (kN)	F / f	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	-

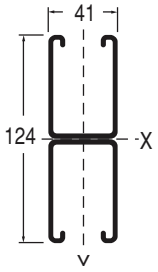
(2) See Note 2, Page 83

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

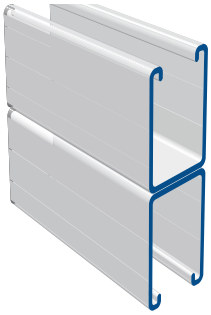
P5501 [GB/HG]



A = 867mm^2
kg/m = 6.86kg/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: 6.86kg/m

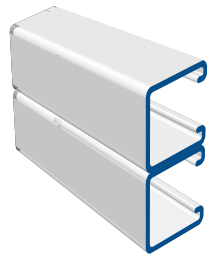


Part No.	Material Thickness	Length
P5501-GB	2.5mm	6m
P5501-HG	2.5mm	6m

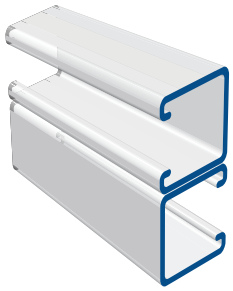
L (mm)	Fmax (kN)	fmax (mm)	F(kN)
250	27.04 (1)	0.03	122.16
500	27.04 (1)	0.21	118.17
750	27.04	0.71	111.82
1000	20.50	1.27	103.50
1250	16.40	1.98	93.71
1500	13.67	2.86	82.98
1750	11.72	3.89	71.88
2000	10.25	5.08	60.91
2250	9.11 (2)	6.43	50.48
2500	8.20 (2)	7.93	41.04
2750	7.46 (2)	9.60	33.92
3000	6.83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

(1) See Note 1, Page 83, (2) See Note 2, Page 83

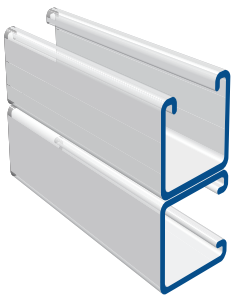
OPTIONAL COMBINATIONS



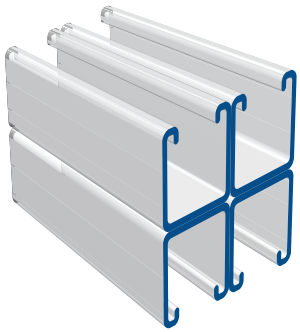
P1001A



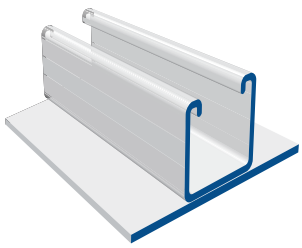
P1001B



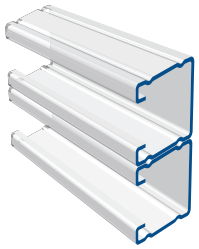
P1001C



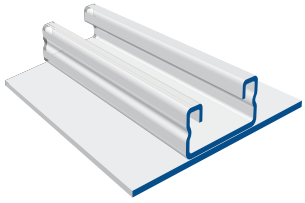
P1001C41



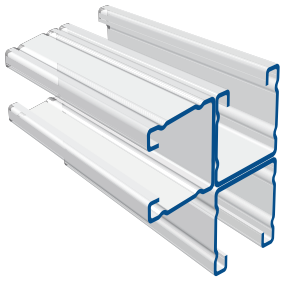
P1003



P2001A

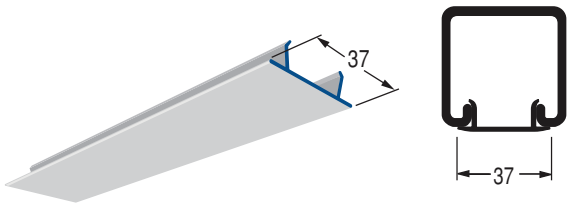


P4002-1



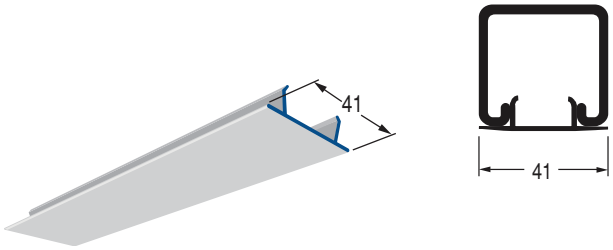
P2001C3

P1184 – Plastic Closure Strip [UV Stabilised)



Standard Length: 3m
Mass: 0.11kg/m

P1184A – Aluminum Closure Strip



Standard Length: 3m
Mass: 0.18kg/m

Channel End Caps – Plastic, UV Stabilised

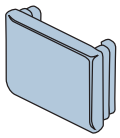
P2240

Mass: 0.70kg/100

For P1000 & P2000 Channels

P4240

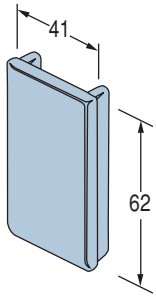
Mass: 0.40kg/100



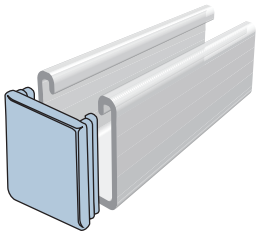
For P3300 & P4000 Channels

P5580

Mass: 1.2kg/100



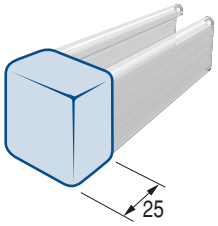
For P5500 Channels



Typical Installation

P2860-10 – Channel End Caps – Plastic

Fits P1000 & P2000 Channel



Mass: 1.54kg/100

Note: Caps provide a protective covering on protruding channels to guard against personal injury or damage to clothing. They slip easily over the ends of channel.

Concrete Inserts are manufactured from standard Unistrut channel 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.

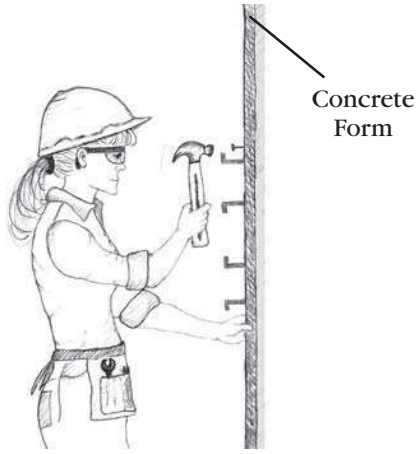
Finishes

Unistrut Concrete Inserts are available in the following styles and finishes - P1000 & P3300 in Hot Dipped Galvanised and Stainless Steel - Grade 316.

Note: Test results are available on request.

Installing Concrete Insert

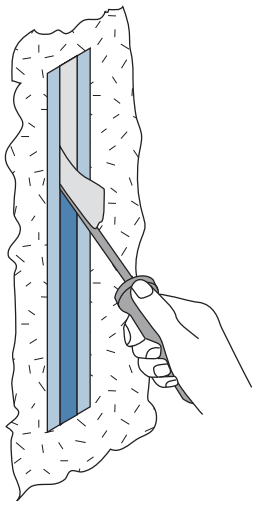
1. Nail insert to concrete form using prepunched nail holes



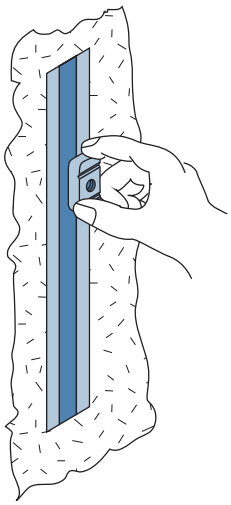
2. Attach rebars to flanges on insert

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 channel.

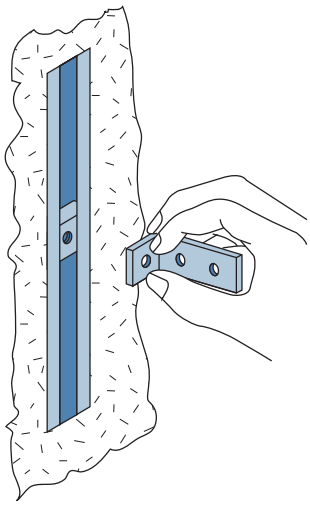
Using Installed Concrete Insert



1. Scrape out filler



2. Insert channel nut.



3. Attach fitting

P1000CI

Mass: 2.80kg/m

Standard Length: 6m

Finish: Hot Dipped Galvanised and Stainless Steel grade 316.

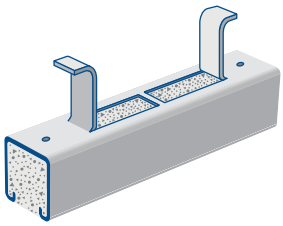
Loading Data: The support capacity of any concrete insert depends largely on the strength of the concrete used. Therefore, we cannot guarantee any particular load.

Recommended Pullout Loading*:

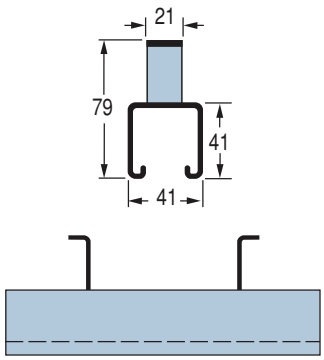
Inserts 300mm and over 8.83kN per 300mm.

Factor of Safety; Approximately 3

Design load based on 21mpa concrete



Lugs at 100mm centres



Note: Exercise care during installation - Do not bend lugs.

P3300CI

Mass: 1.94kg/m

Standard Length: 6m

Finish: Hot Dipped Galvanised and Stainless Steel grade 316.

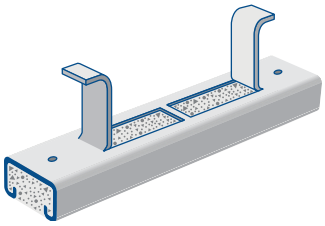
Loading Data: The support capacity of any concrete insert depends largely on the strength of the concrete used. Therefore, we cannot guarantee any particular load.

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

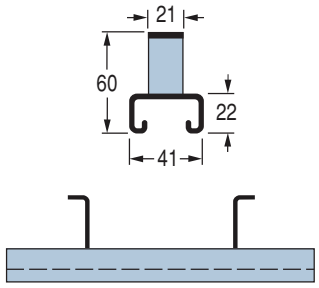
Factor of Safety: Approximately 3

Design load based on 21mpa concrete

Note: Exercise care during installation - Do not bend lugs.



Lugs at 100mm centres



P3753 HEAVY DUTY INSERT

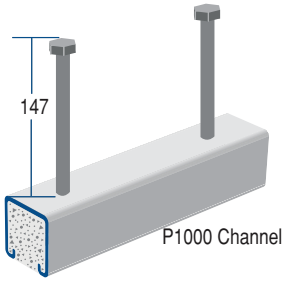
Standard Length: 300mm

Finish: Hot Dipped Galvanised and Stainless Steel grade 316.

Loading Data: Because the support capacity of any Concrete Insert depends largely on the strength of the concrete used, we cannot guarantee any particular load.

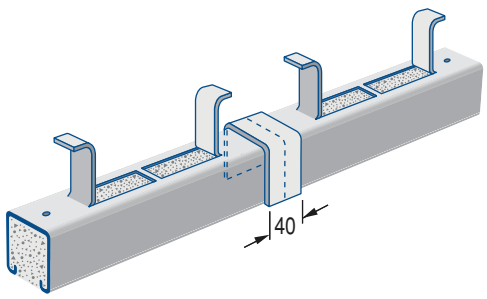
Recommended Pullout Loading*: 11kN
Spacing of pull out loads 76mm.
Max allowable uniform load 22kN

Recommended Loading*: We can supply a range of heavy duty inserts to suit different applications requiring load capacities outside the range of our normal concrete insert. Please contact your local Customer Service Centre for assistance in these cases.



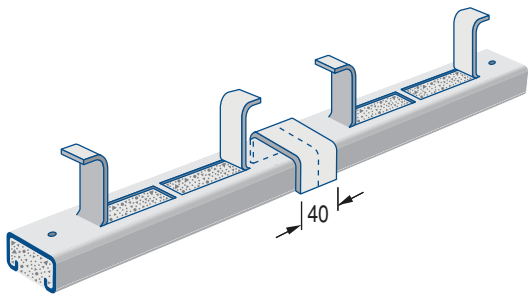
P1663 CI Joint Cover

Mass: 4.5kg/100

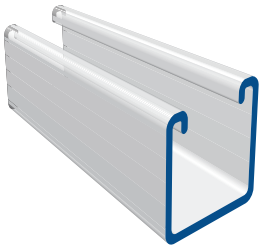


P4663 CI Joint Cover

Mass: 2.7kg/100

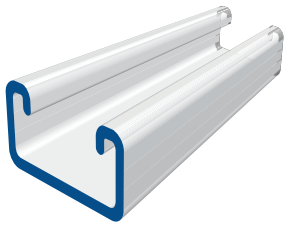


P1000-SS & P3300-SS



Part No.	Material	Mass kg/m
P1000-SS	Stainless Steel - Grade 316	2.76
P3300-SS	Stainless Steel - Grade 316	1.96

Standard Length: 6m



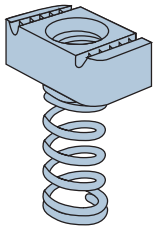
P1000
41.3 x 41.3
2.5mm Thick

P3300
41.3 x 22.2
2.5mm Thick

UNISTRUT NUTS, BOLTS & UNIROD

UNISTRUT CHANNEL NUTS

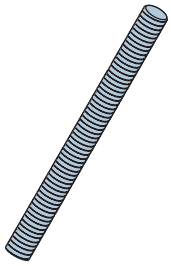
Part No.	Size	Mass kg/100
P1006SS	M6	3.18
P1007SS	M8	2.72
P1008SS	M10	4.54
P1013SS	M12	5.45



UNIROD

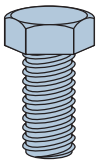
Part No.	Size	Mass kg/m
UR06SS	M6	0.2
UR08SS	M8	0.4
UR10SS	M10	0.5
UR12SS	M12	0.8

Standard Length: 3m



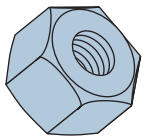
HEX HEAD SET SCREW

Part No.	Size	Mass kg/100
HHS0620SS	M6	0.6
HHS0825SS	M8	1.4
HHS1025SS	M10	2.1
HHS1225SS	M12	4.3

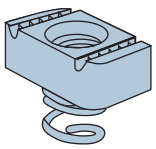


HEXAGON NUTS

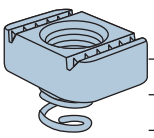
Part No.	Size	Mass kg/100
HN06SS	M6	0.2
HN08SS	M8	0.5
HN10SS	M10	0.8
HN12SS	M12	1.8



For P3300 & P4000 Channels, With Springs



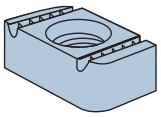
P4006/7/8/10



P4012S

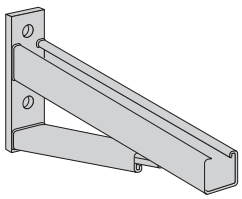
Part No.	Size	Mass kg/100
P4006SS	M6	2.73
P4007SS	M8	2.73
P4008SS	M10	4.42
P4010SS	M12	3.65
P4012SS	M16	4.99

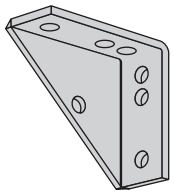
Channel Nuts Without Springs

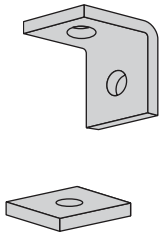


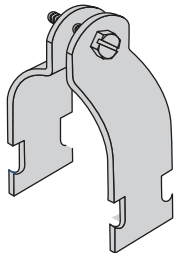
Part No.	Size	Mass kg/100
P3006SS	M6	2.80
P3007SS	M8	2.80
P3008SS	M10	4.56
P3013SS	M12	4.20

UNISTRUT FITTINGS, CANTILEVER BRACKETS & PIPE CLAMPS



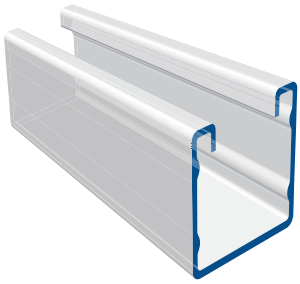






Most fittings, as shown in this catalogue can be supplied in stainless steel on special order.

P2000-AL

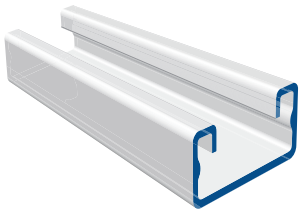


41.3W x 41.3H

Standard Length: 6m
Material: Aluminium
Type: 6106-T6

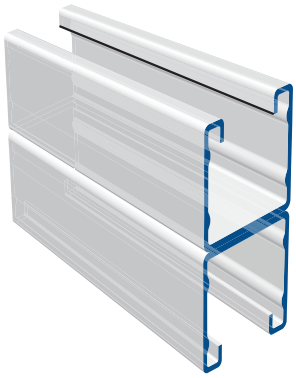
Part No.	Mass kg/m
P2000-AL	0.77
P2001-AL	0.91
P4000-AL	0.56
P4001-AL	0.93
P4003-AL	1.31
P4004-AL	1.68

P4000-AL



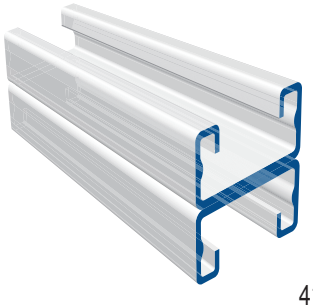
41.3W x 20.6H

P2001-AL



41.3W x 82.6H

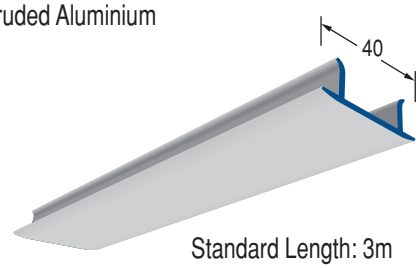
P4001-AL



41.3W x 41.3H

P1184A - CLOSURE STRIP

Extruded Aluminium

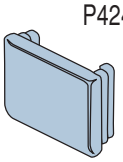


Standard Length: 3m

Mass 0.68kg/m

P2240 & 4240 - END CAPS

P4240



P2240

Part No.	For Channel	Mass kg/100
P2240	P2000-AL	0.70
P4240	P4000-AL	0.40

Plastic for Extruded Aluminium Channels

LOAD DATA

Approximate beam load capacities for channel 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.

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 inturned edge of the Unistrut channel. Similar nuts without springs are also available. Stud 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.

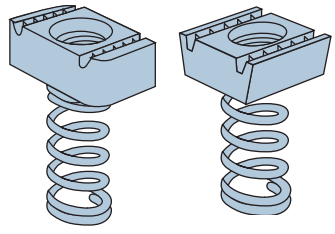
Threads – All threads on the nuts and bolts are metric coarse.

Design Bolt Torque – Refer to Engineering Data Page 118

Finishes –

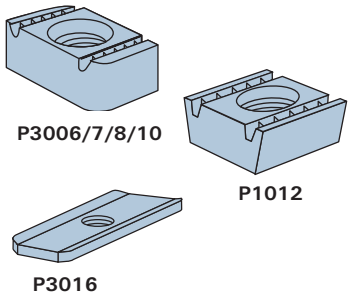
Nuts and bolts are zinc plated to Australian Standards AS1897, selected sizes also available in hot dipped galvanised to AS1214.

For P1000 & P2000 Channels, With Springs



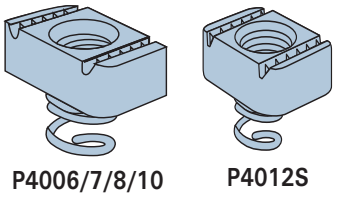
Part No.	Size	Mass kg/100
P1006	M6	3.18
P1007	M8	3.18
P1008	M10	4.54
P1010	M12	5.45
P1012S	M16	9.53

For P1000 & P2000 Channels, No Springs



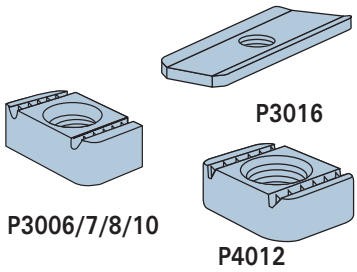
Part No.	Size	Mass kg/100
P3016	M6	1.00
P3006	M6	2.72
P3007	M8	2.72
P3008	M10	4.41
P3010	M12	3.64
P1012	M16	9.08

For P3300 & P4000 Channels, With Springs



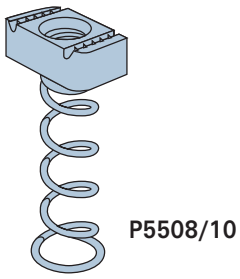
Part No.	Size	Mass kg/100
P4006	M6	2.73
P4007	M8	2.73
P4008	M10	4.42
P4010	M12	3.65
P4012S	M16	4.99

For P3300 & P4000 Channels, No Springs



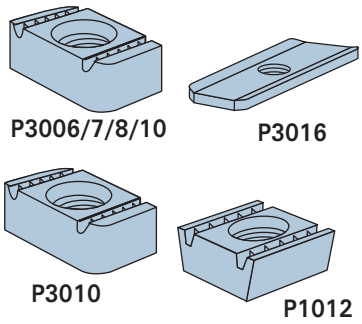
Part No.	Size	Mass kg/100
P3016	M6	1.00
P3006	M6	2.72
P3007	M8	2.72
P3008	M10	4.41
P3013	M12	4.20
P4012	M16	4.54

For P5500 Channels - With Springs



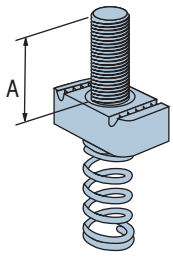
Part No.	Size	Mass kg/100
P5508	M10	4.54
P5510	M12	5.54

For P5500 Channels - No Springs



Part No.	Size	Mass kg/100
P3016	M6	1.00
P3006	M6	2.72
P3007	M8	2.72
P3008	M10	4.41
P3010	M12	3.64
P1012	M16	9.08

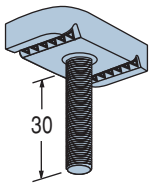
Stud Nut - P2378M6-1 to P2381M12-5



Part No.	Size	Dim "A"	Mass kg/100
P2378M6-1	M6	22	3.63
P2378M6-3	M6	34	4.09
P2380M10-1	M10	22	5.90
P2380M10-4	M10	41	6.18
P2381M12-2	M12	22	6.36
P2381M12-5	M12	41	8.17

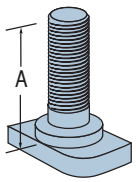
Note : Grooves Serrated

Fixture Stud Nut - P3116



Part No.	Size	Dim "A"	Mass kg/100
P3116	M6	30	3.50

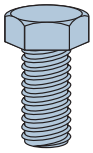
Stud Bolt - USB045 to USB102



Part No.	Size	Dim "A"	Mass kg/100
USB045	M16	45	10.00
USB076	M16	76	14.00
USB102	M16	102	18.00

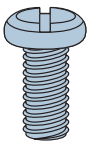
Hex Head Set Screws

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 24	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



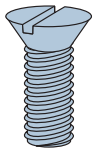
Pan Head Screws

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



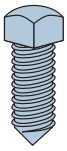
Countersunk Head Screw

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



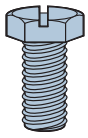
Cone Point Set Screw

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

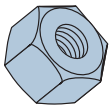
Part No.	Size	Mass kg/100
SHS0620	M6 x 20	0.6
SHS0825	M8 x 25	1.2
SHS0830	M8 x 30	1.3



All screws grade 4.6, grade 8.8 available on request.

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

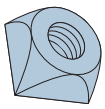


Flat Washers

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

Swivel Nuts

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

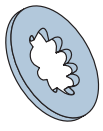


Spring Washers

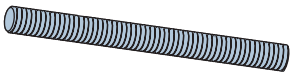
Part No.	Size	Mass kg/100
SW06	M6	0.1
SW08	M8	0.2
SW10	M10	0.3
SW12	M12	0.4
SW16	M16	0.6
SW20	M20	1.0

Shakeproof Lock Washer

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



Unirod Steel Threaded Rod



Part No.	Size	Max. Recommended Tensile Load (kN)	Mass kg/100
UR06	M6	3.22	0.20
UR08*	M8	5.84	0.35
UR10*	M10	9.28	0.50
UR12*	M12	13.48	0.80
UR16*	M16	25.12	1.30
UR20*	M20	39.20	2.10

Standard Finish: Zinc Plated.

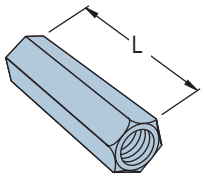
*Also available in Hot Dipped Galvanised.

Standard Length: 3m

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

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 Hot Dipped Galvanised.

Fittings - 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 seperately.

Design Load Data

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

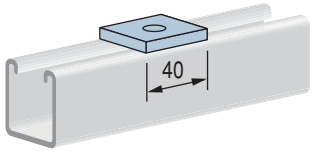
Design Bolt Torque

Refer to Engineering Data (See Page 118).

Finishes

All fittings in this section are available in zinc plated finish to Australian Standard AS1789 and Hot Dipped Galvanised to AS/NS4680.

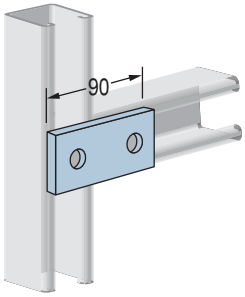
P1062 - P1964



Part No.	Bolt Size	Hole Size	Mass kg/100
P1062	8	9	7.0
P1063	10	12	6.8
P1064	12	14	6.6
P1964	16	18	6.4

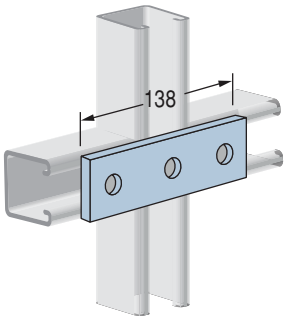
P1065

Mass: 16kg/100



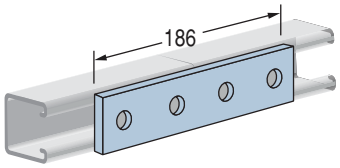
P1066

Mass: 24kg/100



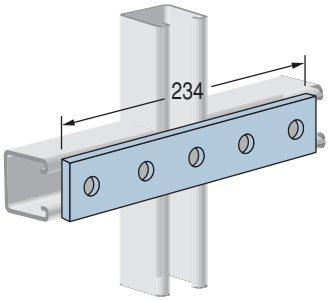
P1067

Mass: 32kg/100



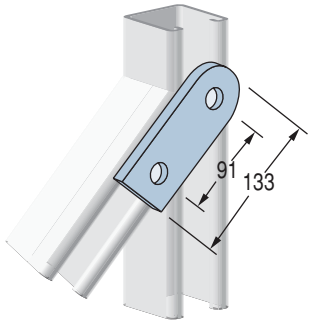
P1941

Mass: 41kg/100



P2325

Mass: 23kg/100

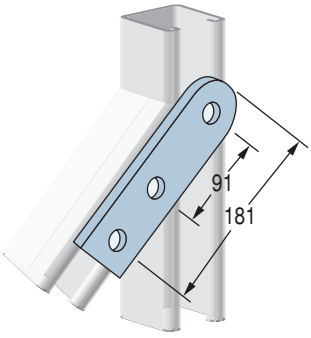


Standard Dimensions for 41mm width series channel fittings *(Unless Otherwise Shown on Drawing)*

Hole Diameter: 14mm; Hole Spacing - From End: 21mm; Hole Spacing - On Center: 48mm; Width: 40mm; Thickness: 6mm

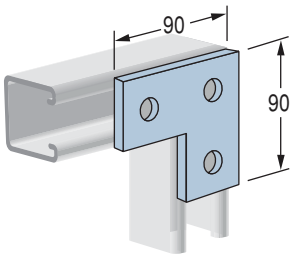
P2324

Mass: 31kg/100



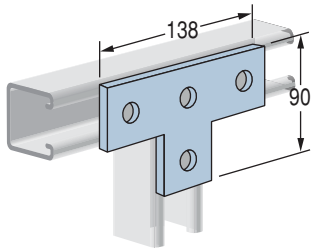
P1036

Mass: 25kg/100



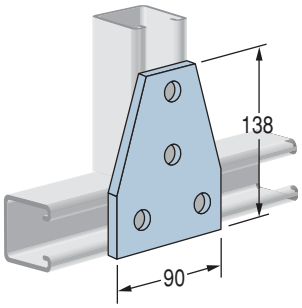
P1031

Mass: 35kg/100



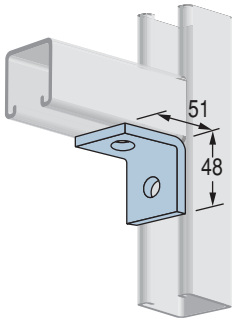
P1358

Mass: 48kg/100



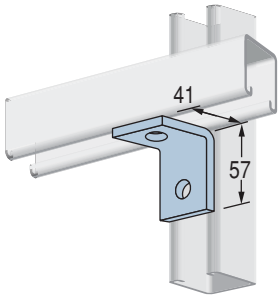
P1026

Mass: 17kg/100



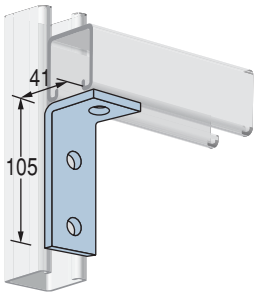
P1068

Mass: 17kg/100



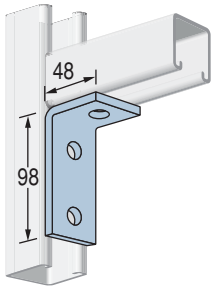
P1326

Mass: 24kg/100



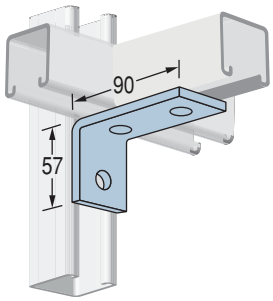
P1346

Mass: 24kg/100



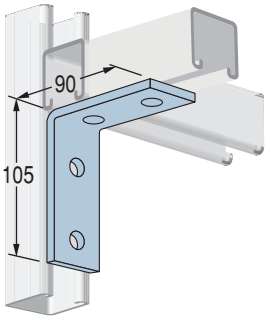
P1458

Mass: 24kg/100



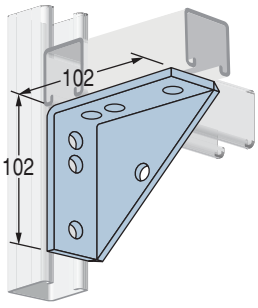
P1325

Mass: 33kg/100



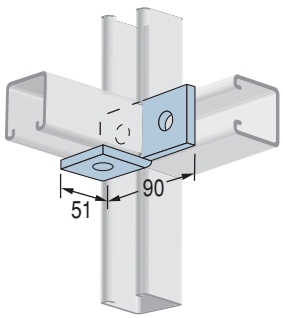
P2484

Mass: 61kg/100



P1038

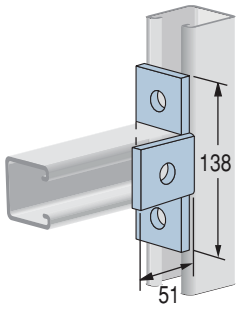
Mass: 25 kg/100



Standard Dimensions for 41mm width series channel fittings *(Unless Otherwise Shown on Drawing)*
Hole Diameter: 14mm; Hole Spacing - From End: 21mm; Hole Spacing - On Center: 48mm; Width: 40mm; Thickness: 6mm

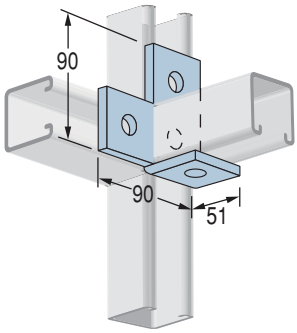
P1033

Mass: 35kg/100



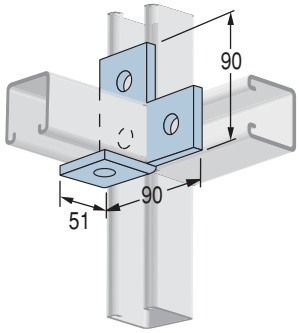
P1034

Mass: 35kg/100



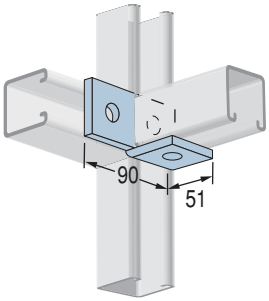
P1035

Mass: 35kg/100



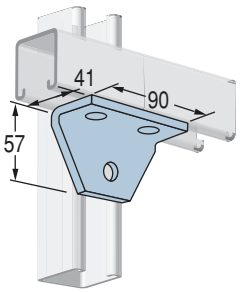
P1037

Mass: 25kg/100



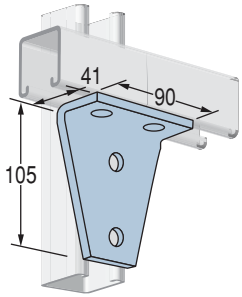
P1357

Mass: 32kg/100



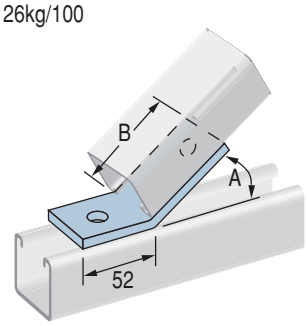
P1359

Mass: 48kg/100



P2101 & P2103

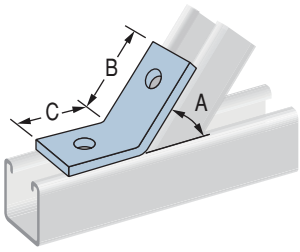
Mass: 26kg/100



Part No.	A	B
P2101	30	83
P2103	15	84

P1546, P2095, P2097

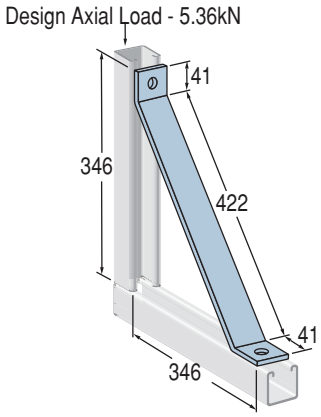
Mass: 26kg/100



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

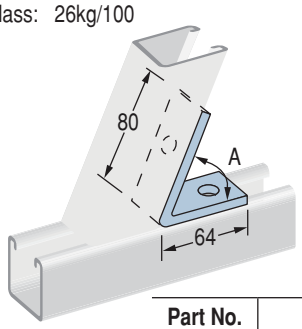
P2452

Mass: 103kg/100



P1186, P2106, P2108

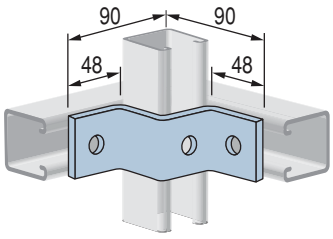
Mass: 26kg/100



Part No.	A
P1186	45
P2106	75
P2108	60

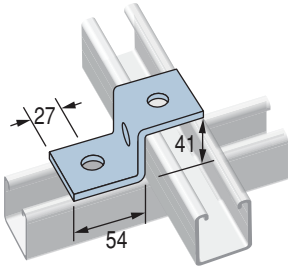
P1736

Mass: 27kg/100



P1045

Mass: 24kg/100

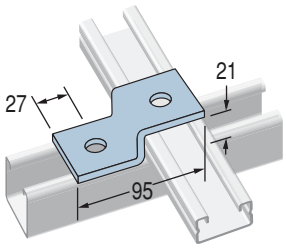


Standard Dimensions for 41mm width series channel fittings *(Unless Otherwise Shown on Drawing)*

Hole Diameter: 14mm; Hole Spacing - From End: 21mm; Hole Spacing - On Center: 48mm; Width: 40mm; Thickness: 6mm

P4045

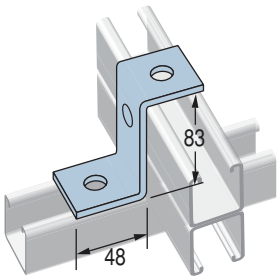
Mass: 20kg/100



P4000 Shown

P1453

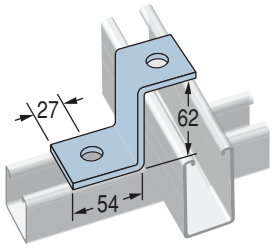
Mass: 30kg/100



P1001 Shown

P5545

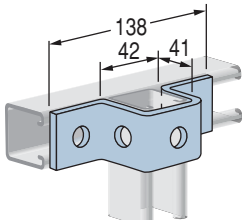
Mass: 29kg/100



P5500 Shown

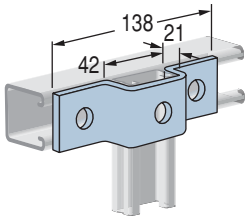
P1047

Mass: 37kg/100



P4047

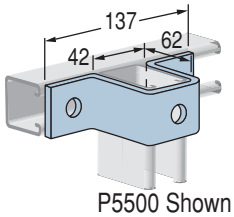
Mass: 30kg/100



P4000 Shown

P5547

Mass: 47kg/100

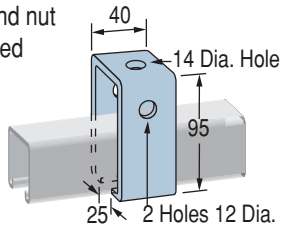


P5500 Shown

P1834

Mass: 46kg/100

M10 x 70
bolt and nut
included

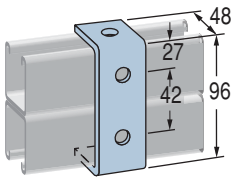


Design Load: 5.34kN

Channel Trolley Support

P1044

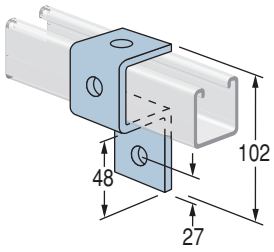
Mass: 30kg/100



P1001 Shown

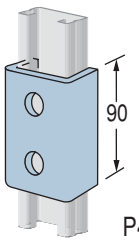
P1046

Mass: 35kg/100



P4376

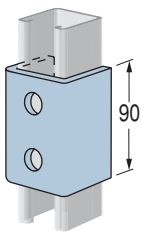
Mass: 38kg/100



P4000

P1376

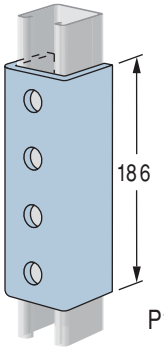
Mass: 56kg/100



P1000

P1377

Mass: 115kg/100

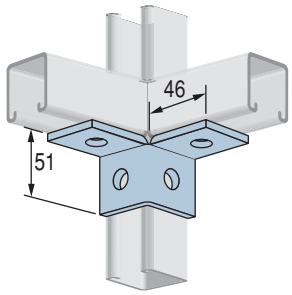


P1000

Standard Dimensions for 41mm width series channel fittings *(Unless Otherwise Shown on Drawing)*
Hole Diameter: 14mm; Hole Spacing - From End: 21mm; Hole Spacing - On Center: 48mm; Width: 40mm; Thickness: 6mm

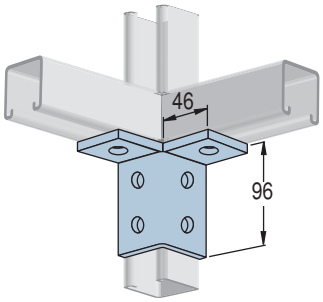
P2223

Mass: 34kg/100



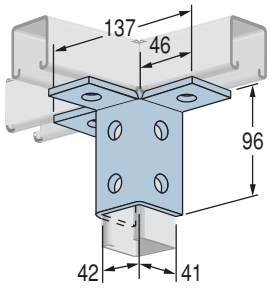
P2224

Mass: 50kg/100



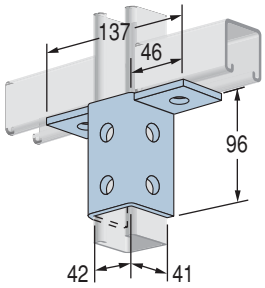
P2228

Mass: 78kg/100



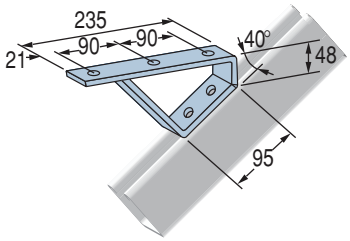
P2346

Mass: 66kg/100



P2655

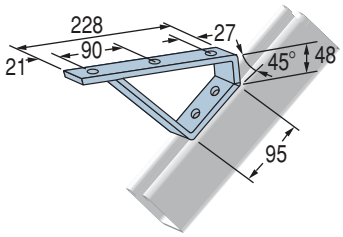
Mass: 95kg/100



40" Star Tread Support

P1944

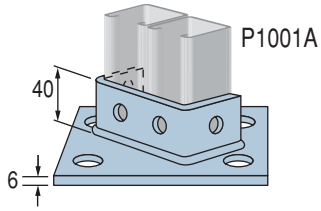
Mass: 96kg/100

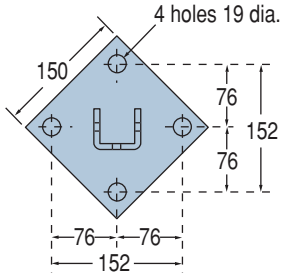


45" Star Tread Support

P2073

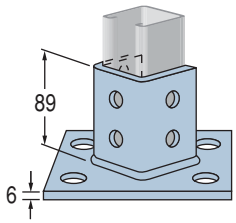
Mass: 140kg/100

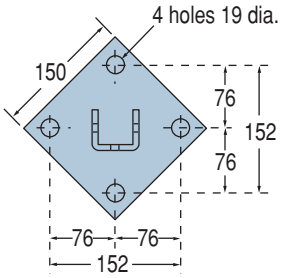




P2072A

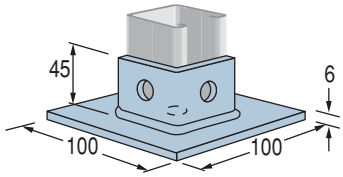
Mass: 164kg/100

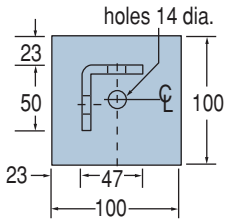




P2072S1

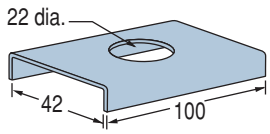
Mass: 62kg/100

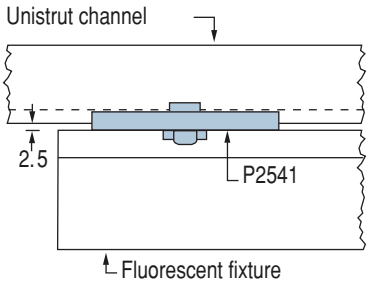




Standard Dimensions for 41mm width series channel fittings *(Unless Otherwise Shown on Drawing)*
Hole Diameter: 14mm; Hole Spacing - From End: 21mm; Hole Spacing - On Center: 48mm; Width: 40mm; Thickness: 6mm

P2541 - Spacer Clevis

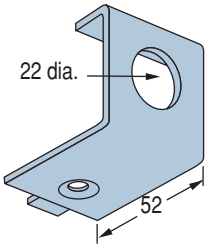


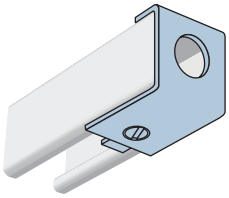


P2521 - Conduit End Connector

Mass: 12kg/100

Finish: Zinc Plated



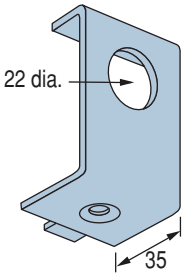


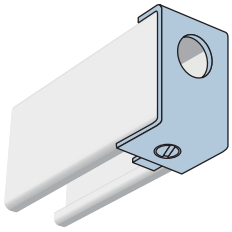
Fitted to end of trunking for attachment of electrical conduit. P2521 for use with P1000 and P2000 Channels. Countersunk head screw and clamping nut included.

P5521 - Conduit End Connector

Mass: 12kg/100

Finish: Zinc Plated

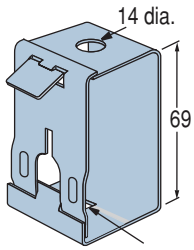




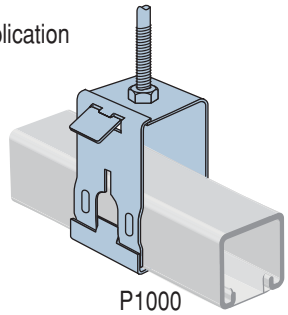
Fitted to end of trunking for attachment of electrical conduit. P5521 for use with P5500 Channel. Countersunk head screw and clamping nut included.

P2855

Mass: 19kg/100



Application

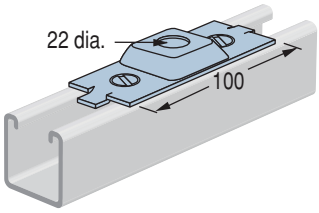


Design Load: 0.5kN
Finish: Zinc Plated

P2535 - Conduit Hanger Fitting

Mass: 13kg/100

M6 x 15 Countersunk screws and P3016 nuts included

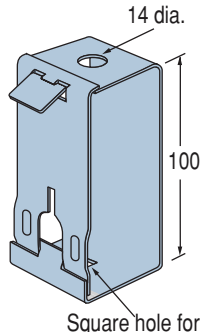


Conduit hanger fitting for rigid attachment to Unistrut channel.

Design Load: 0.5kN
Finish: Zinc Plated

P2755

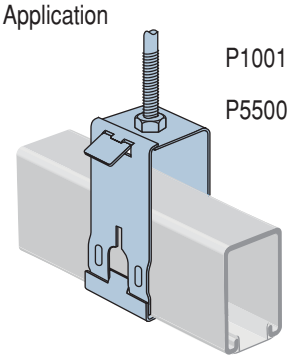
Mass: 30kg/100



Application

P1001

P5500

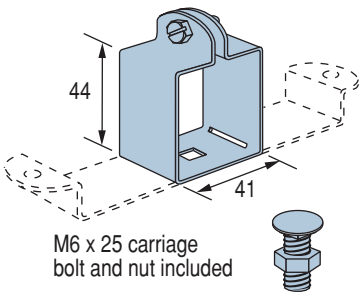


Design Load: 0.5kN
Finish: Zinc Plated

P2539 - Fixture Hanger Fitting

Mass: 11kg/100

M6 x 20 screw and nut included.

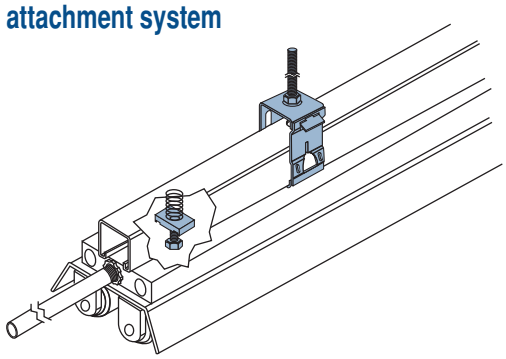


Design Load: 0.5kN
Finish: Zinc Plated

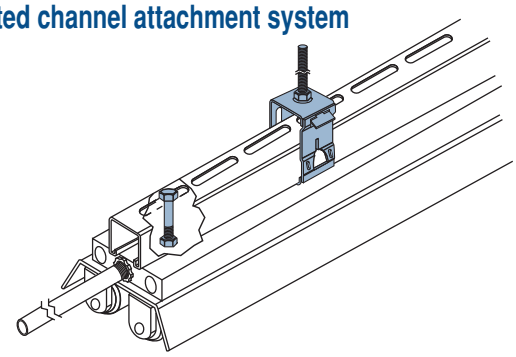
Fluorescent hanger fittings provide a means of mounting fixtures to Unistrut. They are shipped flat and are easily bent to form around the Unistrut channel. For use with P1000 and P2000 Unistrut channels.

Fluorescent Fixture – Support Applications

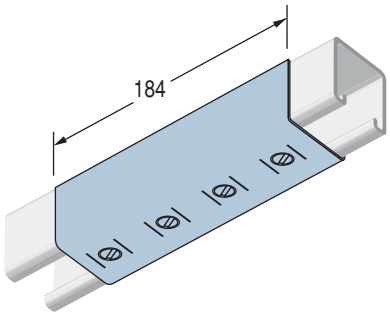
Spring-Nut attachment system



Slotted channel attachment system



P2377 - Splice Fitting



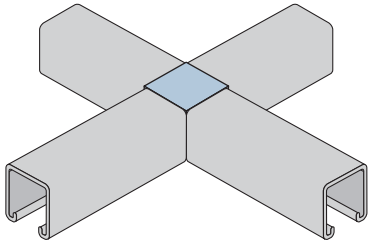
For joining together continuous runs of trunking channel. P2377 external 41 deep, for use with P1000 and P2000 trunking. Four P3016 (page 106) clamping nuts and four M6 x 15 countersunk head screws should be ordered with each fitting.

Finish: Zinc Plated

Mass: 25kg/100

Joiner Fittings

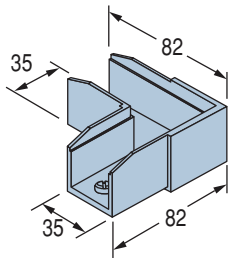
Cast aluminium fittings designed to fit inside the channel section and provide a continuous profile on external surfaces. Fittings are secured to the channel by a pre-installed screw and washer assembly. Closure strip can be clipped into channel and extended over the fitting to complete a neat installation.



Typical Assembly

P2902 Two Way

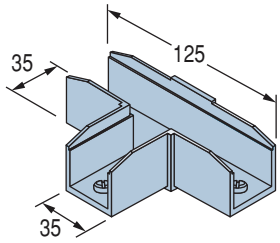
Mass: 12.2kg/100



Socket Cup Point Set Screws Included
Material: Cast aluminum.

P2901 Three Way

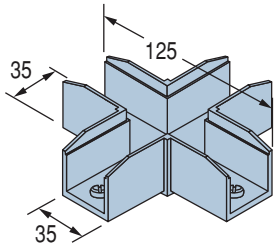
Mass: 15.9kg/100



Socket Cup Point Set Screws Included
Material: Cast aluminum.

P2903 Four Way

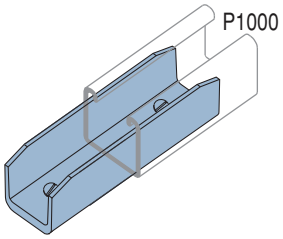
Mass: 20.4kg/100



Socket Cup Point Set Screws Included
Material: Cast aluminum.

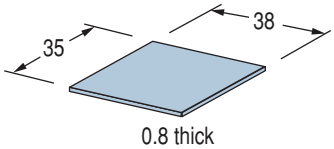
P2900 One Way

Mass: 9.1 kg/100

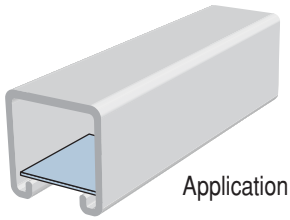


Socket Cup Point Set Screws Included
Material: Cast aluminum.

P2552 –Wire Retainer [Fibre]



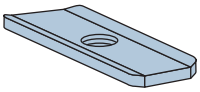
Wire retainer is pushed into Unistrut Channel to support wires until the Closure Strip is installed.



Application

P3016 - Trunking Nuts

Mass: 1kg/100

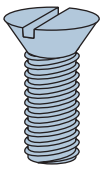


For the fixing of fittings and accessories
6mm diameter

CKS0615 - Countersunk Head Screw

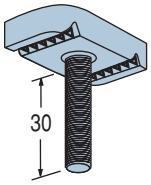
Mass: 0.3kg/100

Size: M6 x 15



P3116 - Fixture Stud Nut

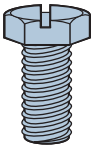
Mass: 3.5kg/100



Size: M6 x 30

SHS0620 - Slotted Hex Head Screw

Mass: 0.6kg/100



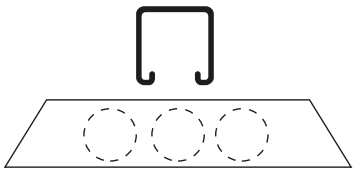
Size: M6 x 20

Loading Data

Unistrut Channel and Spacing of 1220mm Long Fluorescent Fittings.

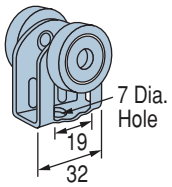
		1 x 36W 6kg	2 x 36W 9kg	3 x 36W 12kg	4 x 36W 14kg	1 x 58W 8kg	2 x 58W 13kg
		Hanger Rod Spacing In Metres					
P1000	Continuous run of fittings	4.1	3.8	3.6	3.6	3.9	3.5
	Fittings 600mm apart	4.4	4.1	3.9	3.8	4.2	3.9
	Fittings 1200mm apart	4.5	4.3	4.1	4.0	4.4	4.1
P2000	Continuous run of fittings	4.0	3.7	3.4	3.3	3.7	3.4
	Fittings 600mm apart	4.2	3.9	3.7	3.6	4.0	3.7
	Fittings 1200mm apart	4.4	4.2	3.9	3.8	4.2	3.9
P5500	Continuous run of fittings	5.2	4.9	4.6	4.5	5.0	4.6
	Fittings 600mm apart	5.5	5.2	5.0	4.8	5.3	4.9
	Fittings 1200mm apart	5.6	5.4	5.2	5.1	5.5	5.1
P2001	Continuous run of fittings	5.5	5.2	4.9	4.8	5.3	4.8
	Fittings 600mm apart	5.8	5.5	5.3	5.1	5.6	5.2
	Fittings 1200mm apart	6.0	5.7	5.5	5.4	5.8	5.4
P1001	Continuous run of fittings	5.7	5.4	5.2	5.0	5.6	5.1
	Fittings 600mm apart	6.0	5.7	5.5	5.4	5.8	5.4
	Fittings 1200mm apart	6.1	5.9	5.7	5.6	6.0	5.6

Note: Spacings have been calculated to limit section deflections between hangers to approximately 10mm, with sections considered continuous over three spans.
For Single spans - multiply spacing by 0.85. For Double spans - multiply spacing by 1.07.
For greater than 3 spans - use table above. Spacings have been calculated for Unistrut Channel opening on the underside.

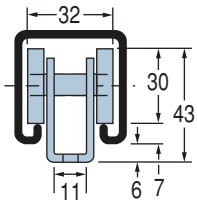


P2749

Mass: 10kg/100

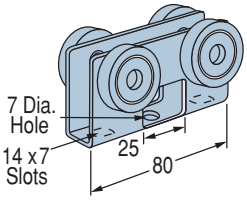


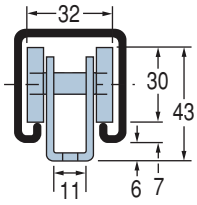
Clevis 2.5mm



P2750

Mass: 22kg/100



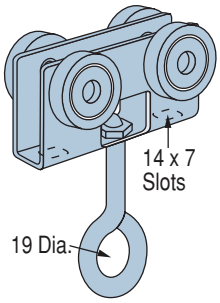


Loads (kN)

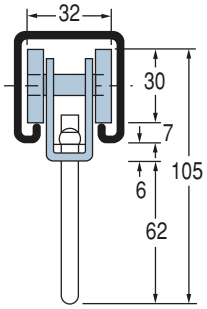
Part No.	Wheel – Steel Ball Bearing Approx. Design Load kN
P2749	0.22
P2750	0.45
P2751	0.45

P2751

Mass: 26kg/100

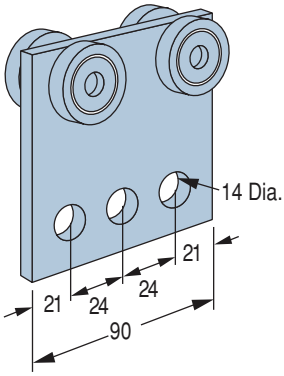


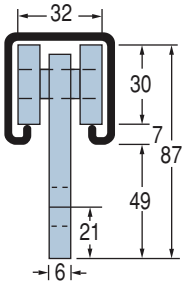
Clevis 2.5mm



P2950

Mass: 48kg/100

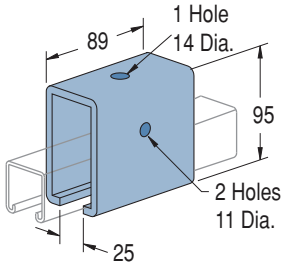




MPM	RPM	Design Load in P1000 kN
54	600	1.33
27	300	2.00
9	100	2.67

P1834A – Trolley Support

Mass: 46kg/100

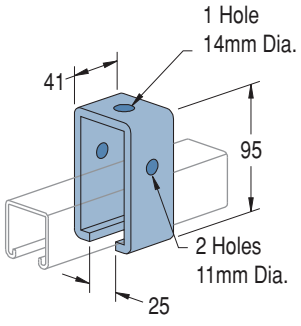


M10 x 70 Bolt & Nut Included

Design Load - 11.12kN

P1834 – Trolley Support

Mass: 46.3 kg/100



M10 x 70 Bolt & Nut Included

Design Load - 5.34 kN

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 118).

Finishes

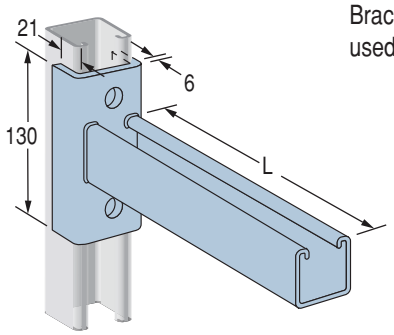
All fittings in this section are Hot Dipped Galvanised to AS/NZS4680 unless otherwise shown.

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
Thickness	- 6mm

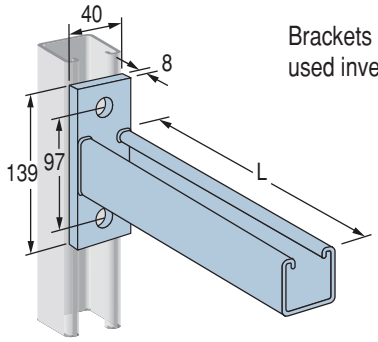
P2233 & P2234



Brackets can be used inverted

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

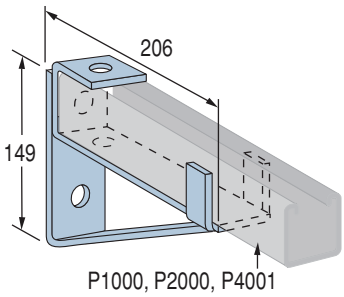
P2663-250 to P2663-700



Brackets can be used inverted

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

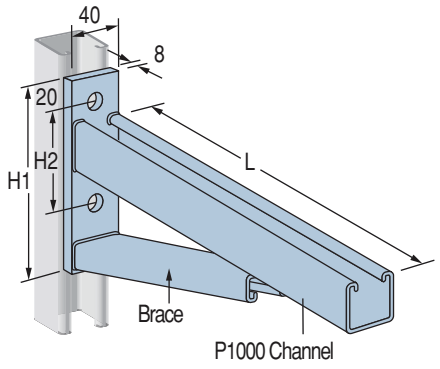
P1075-8



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

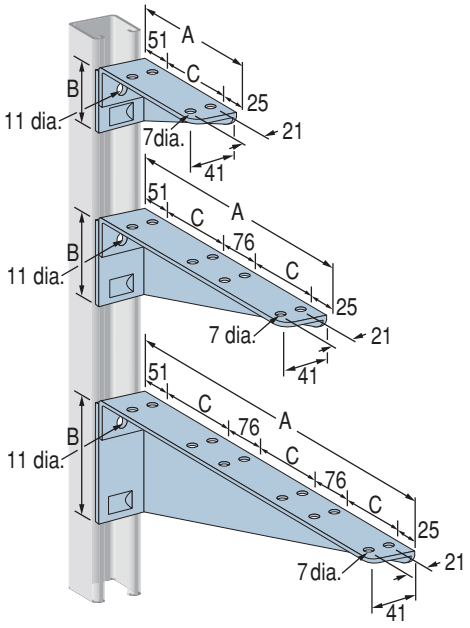
** Applies only to fittings and not to strength of Unistrut arm. Designed for use with "Unistrut" nuts, do not use through bolts.*

PCL150 to PCL600



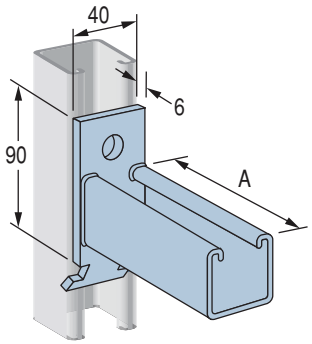
Part No.	L	H1	H2	Design Uniform Load kN	Mass kg/100
PCL150	320	165	86	4.47	170
PCL300	470	165	86	3.17	230
PCL450	635	215	112	3.33	340
PCL600	780	215	112	2.80	380

P2491R-L thru P2500R-L



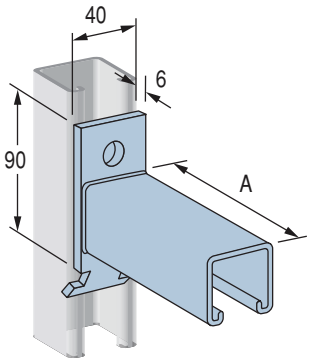
Part No.	A	B	C	Design Uniform Load kN	Mass kg/100
P2491R	152	56	76	1.57	30
P2491L	152	56	76	1.57	30
P2494R	305	87	76	1.37	69
P2494L	305	87	76	1.37	69
P2497R	457	125	152	1.01	121
P2497L	457	125	152	1.01	121
P2500R	610	164	127	0.98	182
P2500L	610	164	127	0.98	182

P2513 thru P2516



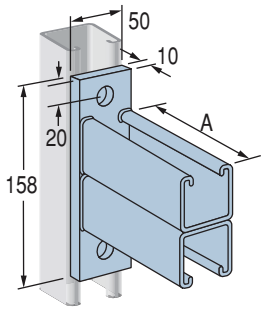
Part No.	A	Design Uniform Load kN	Mass kg/100
P2513	250	1.77	91
P2514	400	1.10	128
P2515	550	0.80	177
P2516	700	0.62	216

P2513A thru P2516A



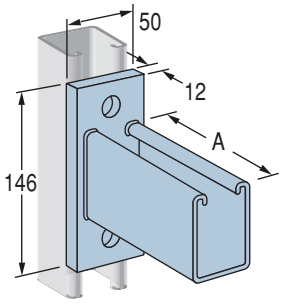
Part No.	A	Design Uniform Load kN	Mass kg/100
P2513A	250	1.77	91
P2514A	400	1.10	128
P2515A	550	0.80	177
P2516A	700	0.62	216

P2542 thru P2546



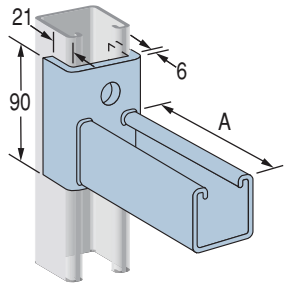
Part No.	A	Design Uniform Load kN	Mass kg/100
P2542	305	7.57	228
P2543	460	5.22	314
P2544	610	3.98	400
P2545	760	3.21	487
P2546	915	2.67	574

P5663-300 thru P5663-750



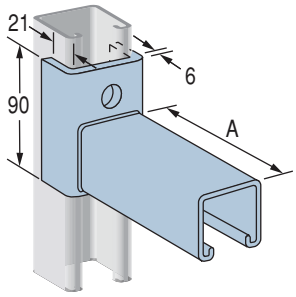
Part No.	A	Design Uniform Load kN	Mass kg/100
P5663-300	300	6.93	173
P5663-450	450	4.78	224
P5663-600	600	3.62	276
P5663-750	750	2.91	327

P2231 & P2232



Part No.	A	Design Uniform Load kN	Mass kg/100
P2231	152	6.46	81
P2232	305	3.78	124

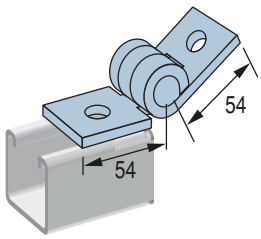
P2231A & P2232A



Part No.	A	Design Uniform Load kN	Mass kg/100
P2231A	152	6.46	81
P2232A	305	3.78	124

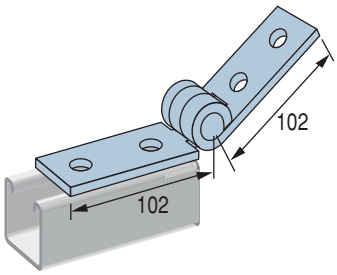
P1843

Mass: 31kg/100



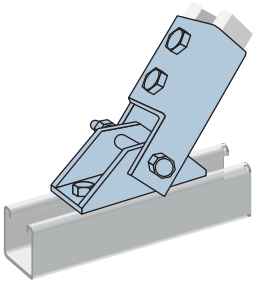
P1354

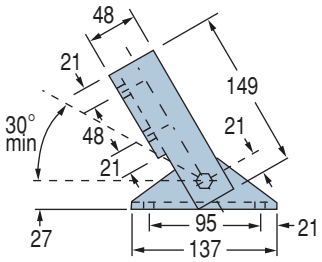
Mass: 49kg/100



P2815

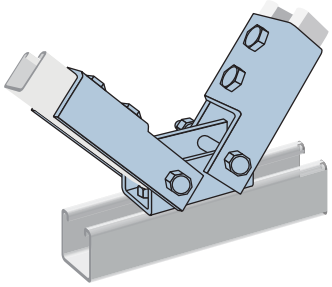
Mass: 139kg/100

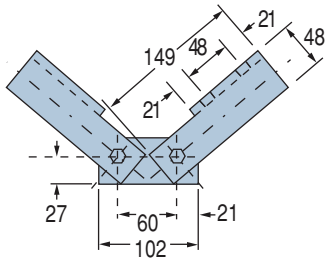




P2815D

Mass: 26kg/100





Beam Clamps- General Information

Applications

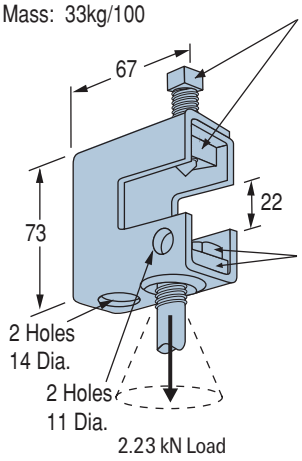
Beam Clamps are designed to provide a fast easy attachment to overhead structures. They alleviate the need for drilling and welding as well as being completely adjustable.

Finishes – Standard finishes as shown.

Design Bolt Torque – Refer to Engineering Data (page 118)

P2676

Mass: 33kg/100



M12 x 50 cone-pointed screw & nut included

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 and lock nuts to be ordered separately.

Clamp may also be used with P2677 as illustrated in application drawings.

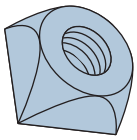
Swivel nut and Lock nut not included

Standard Finishes – Z.P, H.D.G. & S.S.

Clamp material 3mm thick

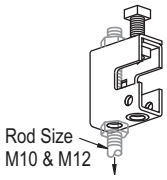
Rod size M10 & M12
Rod swivel 15° all directions

P2679 - Swivel Nut



Part No.	Size	Mass kg/100
P267910	M10	17
P267912	M12	1.5

Note: Swivel nuts are used with P2676, P2682 and P2677. Order size as required.

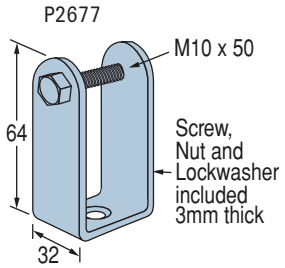


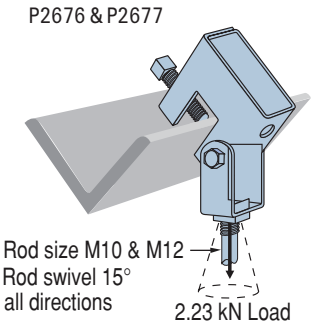
Design Load
1.33 kN

Design Load
2.23 kN

P2677

Mass: 15kg/100





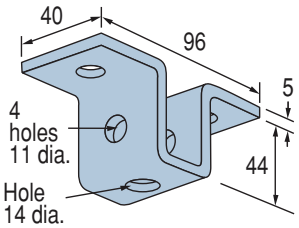
P2677 clevis hanger to be used with P2676 to provide angle adjustment and 15 degree free swing for up to M12 rod suspension.

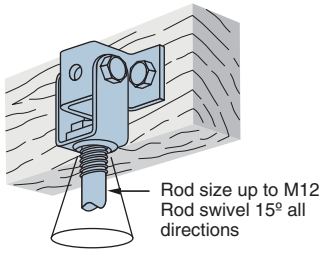
Order P2679 series swivel nuts required.

Standard Finish: Z.P

P2682

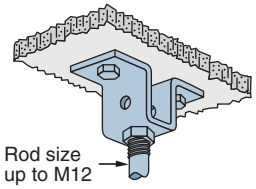
Mass: 23kg/100





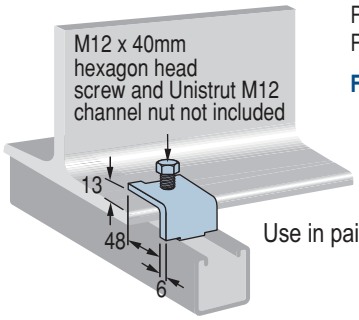
Hanger clevis for up to M12 rod suspension. Suitable for wood ceilings. May also be used with P2677 as illustrated in application drawings.

Standard Finishes: Z.P.



P1386

Mass: 12kg/100



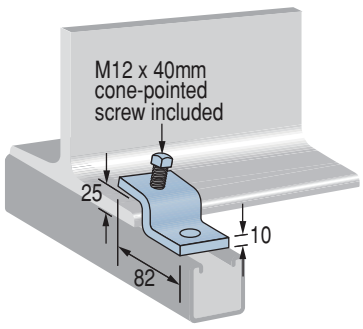
Use in pairs only

Design Load Per Pair:
P1000 - 5.30kN
P2000 - 3.92kN

Finishes: Z.P. & H.D.G

P1379

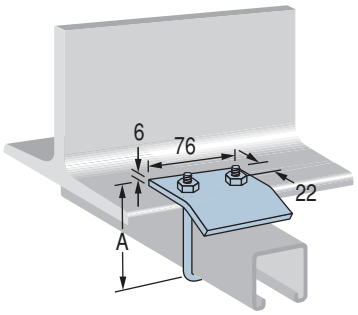
Mass: 34kg/100



Design Load Per Pair:
P1000 - 5.34kN
P2000 - 3.92kN
Finishes: Z.P. & H.D.G.

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

P2785 & P2786



Design Load Per Pair: 8.82kN
Finishes: Z.P & H.D.G

Use in pairs only

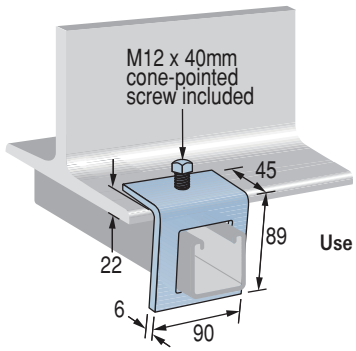
P2785 accepts following channels:
P1000, P2000, P3300, P4000
A = 86 Mass: 38kg/100

P2786 accepts following channels
P1001, P2001, P5500
For use with beams up to 19mm
A = 127 Mass: 41kg/100

P1796

Mass: 49kg/100

Suits P1000 & P2000
Design Load Per Pair: 4.32kN
Finishes: Z.P & H.D.G.

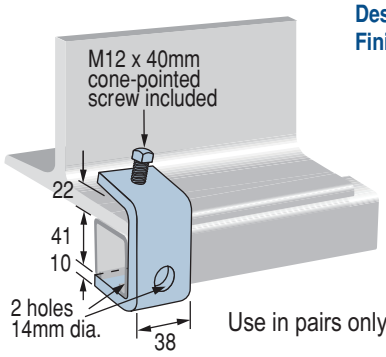


Use in pairs only

P1271

Mass: 43kg/100

Design Load Per Pair: 4.50kN
Finishes: H.D.G.



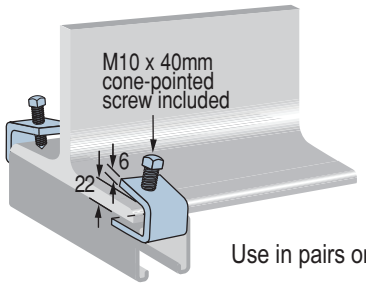
Requires P1010
Channel nut & bolt

Use in pairs only

P1272

Mass: 18kg/100

Design Load Per Pair: 3.92kN
Finishes: Z.P., H.D.G., & S.S.

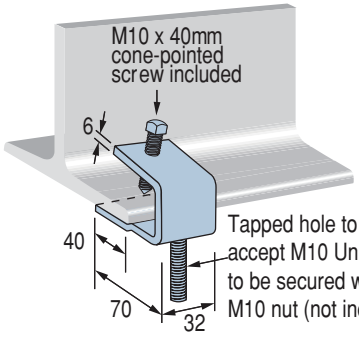


Use in pairs only

P1270

Mass: 29kg/100

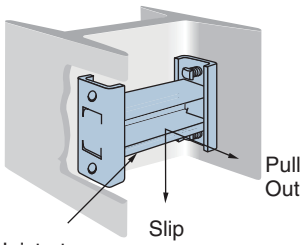
Design Load 0.38kN
Finishes: Z.P. & H.D.G.

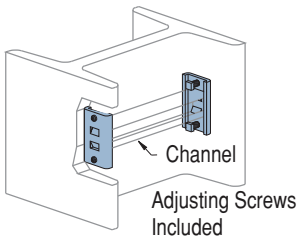


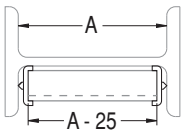
P3087

Mass: 45kg/100

4 Hardened cone-point
adjusting screws included







Channel Type	Design Pullout Load kN	Design Slip Load kN
P1000	4.41	3.53
P2000	2.11	1.32

Safety Factor: 3
Standard Finishes: Z.P. & H.D.G.

Engineering Data - Beams & Columns

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 83, and 'How to use Load Tables' pages 122-123.

Beams & Columns - P1000 Channel & Combination

Beam Span or Column Unsupported Height mm	Section Number	Uniform Beam Working Load kN	Deflection at Uniform Working Load mm	Max. Loading of Column kN
250	P1000	14.83	0.22	45.51
	P1001	25.64 (1)	0.08	97.71
	P1001-3	27.90 (1)	0.02	146.48
	P1001C3	25.64 (1)	0.05	145.92
	P1001C41	25.64 (1)	0.04	195.70
	P1003	17.46	0.15	78.01
	P1004A	26.33 (1)	0.02	157.31
500	P1000	7.42	0.87	36.84
	P1001	19.58	0.50	94.09
	P1001-3	27.90	0.19	141.13
	P1001C3	25.64	0.39	138.70
	P1001C41	25.64	0.30	188.76
	P1003	8.73	0.59	74.48
	P1004A	26.33	0.14	153.24
750	P1000	4.94	1.97	28.22
	P1001	13.06	1.13	88.35
	P1001-3	27.90	0.65	132.53
	P1001C3	18.61 (2)	0.96	128.60
	P1001C41	25.64	1.02	178.34
	P1003	5.82	1.33	68.94
	P1004A	26.33	0.47	146.68
1000	P1000	3.71	3.50	21.44
	P1001	9.79	2.00	80.90
	P1001-3	23.76	1.31	121.36
	P1001C3	13.96 (2)	1.72	117.29
	P1001C41	21.16	2.00	165.65
	P1003	4.36	2.37	61.87
	P1004A	26.33	1.12	137.97
1250	P1000	2.97	5.46	16.42
	P1001	7.83	3.13	72.23
	P1001-3	19.01	2.05	108.36
	P1001C3	11.17 (2)	2.68	105.77
	P1001C41	16.93	3.13	151.78
	P1003	3.49	3.70	53.84
	P1004A	22.82 (2)	1.90	127.53
1500	P1000	2.47	7.87	13.20
	P1001	6.53	4.50	62.89
	P1001-3	15.84	2.95	94.35
	P1001C3	9.31 (2)	3.86	94.42
	P1001C41	14.11	4.50	137.52
	P1003	2.91	5.33	45.43
	P1004A	19.02	2.73	115.84

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
1750	P1000	2.12 (2)	10.71	11.00
	P1001	5.60 (2)	6.13	53.40
	P1001-3	13.58 (2)	4.02	80.11
	P1001C3	7.98 (2)	5.25	83.31
	P1001C41	12.09	6.13	123.36
	P1003	2.49	7.25	37.16
	P1004A	16.30 (2)	3.72	103.39
2000	P1000	1.85 (2)	13.99	9.35
	P1001	4.90 (2)	8.01	44.21
	P1001-3	11.88 (2)	5.25	66.33
	P1001C3	6.98 (2)	6.86	72.48
	P1001C41	10.58	8.01	109.59
	P1003	2.18	9.48	29.41
	P1004A	14.26 (2)	4.86	90.69
2250	P1000	1.65 (2)	17.70	8.05
	P1001	4.35 (2)	10.13	35.62
	P1001-3	10.56 (2)	6.65	53.44
	P1001C3	6.20 (2)	8.68	62.04
	P1001C41	9.41	10.13	96.41
	P1003	1.94	11.99	23.24
	P1004A	12.68 (2)	6.15	78.16
2500	P1000	1.48 (2)	21.85	7.01
	P1001	3.92 (2)	12.51	28.85
	P1001-3	9.50 (2)	8.21	43.29
	P1001C3	5.58 (2)	10.72	52.11
	P1001C41	8.47 (2)	12.51	83.93
	P1003	1.75	14.81	18.82
	P1004A	11.41 (2)	7.59	66.20
2750	P1000	1.35 (2)	26.44	6.14
	P1001	3.56 (2)	15.14	23.85
	P1001-3	8.64 (2)	9.93	35.78
	P1001C3	5.08 (2)	12.97	44.05
	P1001C41	7.70 (2)	15.13	72.11
	P1003	3.56	15.14	23.85
	P1004A	10.37 (2)	9.19	55.06
3000	P1000	1.24 (2)	31.47	0.00
	P1001	3.26 (2)	18.02	20.04
	P1001-3	7.92 (2)	11.82	30.07
	P1001C3	4.65 (2)	15.44	37.67
	P1001C41	7.05 (2)	18.01	62.18
	P1003	1.45 (2)	21.32	0.00
	P1004A	9.51 (2)	10.93	46.27

Elements of Section - P1000 Channel & Combination

Part No.	Mass kg/m	Area of Section mm^2	Axis XX			Axis YY		
			I 10^6mm^4	Z 10^3mm^3	r mm	I 10^6mm^4	Z 10^3mm^3	r mm
P1000	2.66	330	0.069	2.920	14.5	0.092	4.451	16.7
P1001	5.32	660	0.318	7.711	22.0	0.184	8.902	16.7
P1001-3	7.98	991	1.178	18.713	34.5	0.276	13.365	16.7
P1001C3	7.98	991	0.530	10.995	23.1	0.576	13.945	24.1
P1001D3	7.98	991	0.481	10.203	22.0	0.557	13.491	23.7
P1001C41	10.64	1322	0.688	16.670	22.8	0.931	22.546	26.5
P1003	4.57	580	0.120	3.771	14.4	0.300	6.007	22.8
P1004A	9.15	1162	1.529	24.660	36.3	0.424	18.336	19.1

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

For Slip and Pullout Performance details refer to this Tab Section. (page 118)

Beam & Column - P2000 Channel & Combination

Beam Span or Column Unsupported Height mm	Section Number	Uniform Beam Working Load kN	Deflection at Uniform Working Load mm	Max. Loading of Column kN
250	P2000	10.30	0.20	32.92
	P2001	11.78 (1)	0.05	70.84
	P2001C3	11.77 (1)	0.03	106.31
500	P2000	6.06	0.94	26.55
	P2001	11.78	0.37	68.18
	P2001C3	11.77 (1)	0.24	101.69
750	P2000	4.04	2.12	19.21
	P2001	11.09	1.17	63.96
	P2001C3	11.77 (2)	0.24	94.74
1000	P2000	3.03	3.77	12.91
	P2001	8.32	2.07	58.50
	P2001C3	10.91	1.80	86.31
1250	P2000	2.42	5.89	9.03
	P2001	6.65	3.24	52.15
	P2001C3	8.73 (2)	2.82	77.21
1500	P2000	2.02	8.48	6.89
	P2001	5.54	4.67	45.32
	P2001C3	7.28 (2)	4.06	68.03

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
1750	P2000	1.73 (2)	11.54	5.56
	P2001	4.75 (2)	6.35	38.39
	P2001C3	6.24 (2)	5.53	59.16
2000	P2000	1.27 (2)	8.41	5.46
	P2001	3.48 (2)	4.63	31.77
	P2001C3	4.01 (2)	3.97	58.18
2250	P2000	1.35 (2)	19.07	4.02
	P2001	3.70 (2)	10.50	25.48
	P2001C3	4.85 (2)	9.13	43.10
2500	P2000	1.21 (2)	23.55	3.53
	P2001	3.33 (2)	12.96	20.64
	P2001C3	4.37 (2)	11.28	36.13
2750	P2000	1.10 (2)	28.49	3.14
	P2001	3.02 (2)	15.68	17.06
	P2001C3	3.97 (2)	13.64	30.72
3000	P2000	1.01 (2)	33.91	2.82
	P2001	2.77 (2)	18.66	14.33
	P2001C3	3.64 (2)	16.24	26.44

Note:
The table should be read in conjunction with 'Notes on Derivation of Structural Data' (page 83) and 'How to use Load Tables' (pages 122-123) in this Tab Section.

Elements of Section - P2000 Channel & 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 118)

Beam & Column - P3300 Channel & Combination

Beam Span or Column Unsupported Height mm	Section Number	Uniform Beam Working Load kN	Deflection at Uniform Working Load mm	Max. Loading of Column kN
250	P3300	5.52	0.42	34.88
	P3301	15.58	0.25	73.20
500	P3300	2.76	1.68	27.76
	P3301	7.79	1.01	67.32
750	P3300	1.84	3.79	19.42
	P3301	5.19	2.26	58.55
1000	P3300	1.38	6.74	12.08
	P3301	3.90	4.02	48.16
1250	P3300	1.10	10.53	7.90
	P3301	3.12	6.28	37.47
1500	P3300	0.92	15.16	5.56
	P3301	2.60	9.05	27.50

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
1750	P3300	0.79 (2)	20.63	0.00
	P3301	2.23 (2)	12.32	20.21
2000	P3300	0.69 (2)	26.95	0.00
	P3301	1.95 (2)	16.09	15.47
2250	P3300	0.61 (2)	34.11	0.00
	P3301	1.73 (2)	20.36	12.22
2500	P3300	0.55 (2)	42.11	0.00
	P3301	1.56 (2)	25.13	0.00
2750	P3300	0.50 (2)	50.95	0.00
	P3301	1.42 (2)	30.41	0.00
3000	P3300	0.46 (2)	60.63	0.00
	P3301	1.30 (2)	36.19	0.00

Note:

The table should be read in conjunction with 'Notes on Derivation of Structural Data' (page 83) and 'How to use Load Tables' (pages 122-123) in this Tab Section.

Elements of Section - P3300 Channel & 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	1.88	232	0.013	0.999	7.6	0.055	2.661	15.4
P3301	3.76	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 118)

Beam & Column - P4000 Channel & Combination

Beam Span or Column Unsupported Height mm	Section Number	Uniform Beam Working Load kN	Deflection at Uniform Working Load mm	Max. Loading of Column kN
250	P4000	4.20	0.44	22.36
	P4001	10.39	0.24	49.05
	P4003	11.16 (1)	0.06	73.53
	P4002-1	4.71	0.25	51.41
500	P4000	2.10	1.77	16.30
	P4001	5.55	1.03	45.24
	P4003	11.16	0.51	68.80
	P4002-1	2.35	0.99	42.12
750	P4000	1.40	3.98	10.46
	P4001	3.70	2.33	39.54
	P4003	10.02	1.53	62.23
	P4002-1	2.35	0.99	42.12
1000	P4000	1.05	7.08	6.54
	P4001	2.78	4.14	32.74
	P4003	7.52	2.73	53.62
	P4002-1	1.18	3.95	18.99
1250	P4000	0.84	11.07	4.54
	P4001	2.22	6.46	25.69
	P4003	6.01	4.26	44.23
	P4002-1	0.94	6.18	12.16
1500	P4000	0.70 (2)	15.94	3.35
	P4001	1.85 (2)	9.31	19.06
	P4003	5.01	6.13	34.96
	P4002-1	0.78	8.89	0.00

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
1750	P4000	0.60 (2)	21.69	0.00
	P4001	1.59 (2)	12.67	14.00
	P4003	4.30 (2)	8.35	26.45
	P4002-1	0.67	12.10	0.00
2000	P4000	0.52 (2)	28.33	0.00
	P4001	1.39 (2)	16.54	10.72
	P4003	3.76 (2)	10.90	20.25
	P4002-1	0.59	15.81	0.00
2250	P4000	0.47 (2)	35.86	0.00
	P4001	1.23 (2)	20.94	8.47
	P4003	3.34 (2)	13.80	16.01
	P4002-1	0.52	20.01	0.00
2500	P4000	0.42 (2)	44.27	0.00
	P4001	1.11 (2)	25.85	0.00
	P4003	3.01 (2)	17.04	12.97
	P4002-1	0.47	24.70	0.00
2750	P4000	0.38 (2)	53.57	0.00
	P4001	1.01 (2)	31.28	0.00
	P4003	2.73 (2)	20.61	0.00
	P4002-1	0.43	29.89	0.00
3000	P4000	0.35 (2)	63.57	0.00
	P4001	0.93 (2)	37.22	0.00
	P4003	2.51 (2)	24.53	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 83) and 'How to use Load Tables' (pages 122-123) in this Tab Section.

Elements of Section - P4000 Channel & 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	7.8	0.039	1.880	15.6
P4001	2.52	320	0.044	2.082	11.7	0.078	3.764	15.6
P4002-1	3.22	410	0.019	1.036	6.9	0.247	4.946	24.6
P4003	3.78	480	0.180	5.636	19.3	0.083	4.002	13.1

Note:

I - Moment of Inertia

Z - Section Modulus

r - Radius of Gyration

For Slip and Pullout Performance details, refer to this Tab Section. (page 118)

Beam & Column - P5500 Channel & Combination

Beam Span or Column Unsupported Height mm	Section Number	Uniform Beam Working Load kN	Deflection at Uniform Working Load mm	Max. Loading of Column kN
250	P5500	27.04	0.14	57.03
	P5501	27.04 (1)	0.03	122.16
500	P5500	13.84	0.57	45.91
	P5501	27.04 (1)	0.21	118.17
750	P5500	9.23	1.29	33.78
	P5501	27.04	0.71	111.82
1000	P5500	6.92	2.29	23.85
	P5501	20.50	1.27	103.50
1250	P5500	5.54	3.58	17.38
	P5501	16.40	1.98	93.71
1500	P5500	4.61	5.15	13.76
	P5501	13.67	2.86	82.98
1750	P5500	3.95 (2)	7.01	11.48
	P5501	11.72	3.89	71.88
2000	P5500	3.46 (2)	9.16	9.89
	P5501	10.25	5.08	60.91

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
2250	P5500	3.08 (2)	11.59	8.72
	P5501	9.11 (2)	6.43	50.48
2500	P5500	2.77 (2)	14.31	7.81
	P5501	8.20 (2)	7.93	41.04
2750	P5500	2.52 (2)	17.31	7.06
	P5501	7.46 (2)	9.60	33.92
3000	P5500	2.31 (2)	20.61	6.43
	P5501	6.83 (2)	11.42	28.50
3250	P5500	2.13 (2)	24.18	5.89
	P5501	6.31 (2)	13.41	24.28
3500	P5500	1.98 (2)	28.05	0.00
	P5501	5.86 (2)	15.55	0.00
3750	P5500	1.85 (2)	32.20	0.00
	P5501	5.47 (2)	17.85	0.00
4000	P5500	1.73 (2)	36.63	0.00
	P5501	5.13 (2)	20.31	0.00

Note:

The table should be read in conjunction with 'Notes on Derivation of Structural Data' (page 83) and 'How to use Load Tables' (pages 122-123) in this Tab Section.

Elements of Section - P5500 Channel & 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	433	0.197	5.730	21.3	0.131	6.328	17.4
P5501	6.86	867	1.052	16.990	34.8	0.261	12.662	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 118)

Slip & Pullout Performance - Zinc Plated

Channel Type	Nut Type	Pullout (kN)	Slip (kN)	Torque (Nm)
P1000	P1006	7.3	2.7*	9
	P1007	10.1	5.2*	22
	P1008	16.5	8.7*	44
	P1010	16.5	12.9*	77
P2000	P3016	2.1	0.3	9
	P1006	4.8	1.1*	9
	P1007	5.0	4.0*	22
	P1008	10.8	7.1*	37
	P1010	10.8	6.7*	37
P3300	P3016	2.2	0.6	9
	P4006	7.3	2.7*	9
	P4007	10.1	5.2*	22
	P4008	16.5	8.7*	44
	P4010	16.5	12.9*	77
P4000	P3016	2.1	0.3	9
	P4006	4.8	1.1*	9
	P4007	5.0	4.0*	22
	P4008	10.8	7.1*	37
	P4010	10.8	6.7*	37
A1000	A1008	11.3	3.7*	44
P5500	P5508	16.5	8.7*	44
	P5510	16.5	12.9*	77

Slip & Pullout Performance - Stainless Steel

Channel Type	Nut Type	Pullout (kN)	Slip (kN)	Torque (Nm)
P1000SS	P1006SS	5.7	0.4	3.5
	P1007SS	8.2	0.5	8.5
	P1008SS	11.6	1.0	17.0
	P1013SS	12.1	1.2	30.0

Slip & Pullout Performance - Alum. 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%

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.

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.

Hot Dipped Galvanised Channel Nuts

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

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

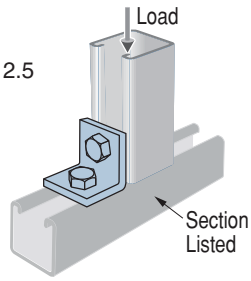
These figures are results obtained from a comprehensive series of tests carried out by a NATA registered laboratory.

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

Note: Some fittings, as shown in this catalogue can be supplied in Aluminium on special order.

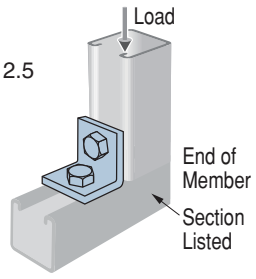
Safe Bearing Loads

Safety Factor: 2.5



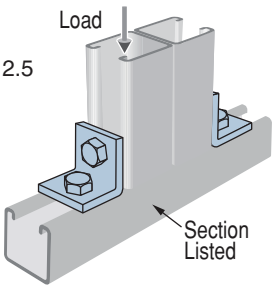
Section	Recommended Load kN
P1000	21.4
P2000	10.8
P3300	25.8
P4000	12.7

Safety Factor: 2.5



Section	Recommended Load kN
P1000	13.5
P2000	6.6
P3300	15.2
P4000	7.2

Safety Factor: 2.5



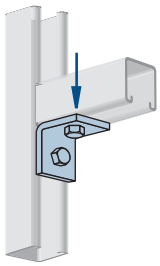
Section	Recommended Load kN
P1000	30.3
P2000	14.6
P3300	50.9
P4000	33.4

Design Load Data - Typical Channel 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)

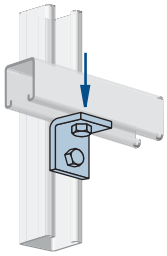
P1026



P1000 9.5kN
P2000 4.5kN

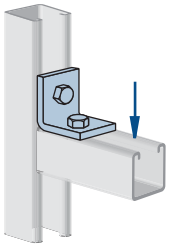
Both Ends Supported

P1068



P1000 3.2kN
P2000 3.2kN

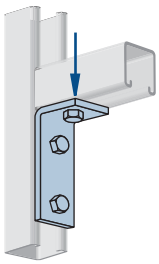
P1026



P1000 7.5kN
P2000 2.7kN

Both Ends Supported

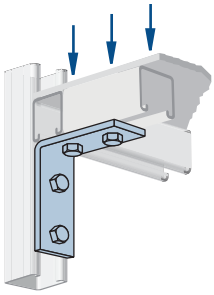
P1346



P1000 10.1kN
P2000 5.4kN

Both Ends Supported

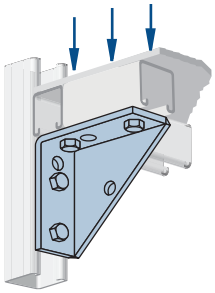
P1325



P1000 12.1kN
P2000 6.3kN

Both Ends Supported

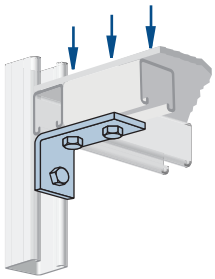
P2484



P1000 18.7kN
P2000 8.5kN

Both Ends Supported

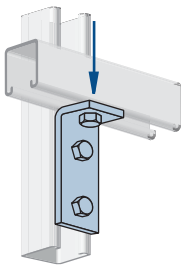
P1458



P1000 9.3kN
P2000 6.1kN

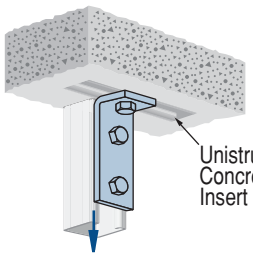
Both Ends Supported

P1326



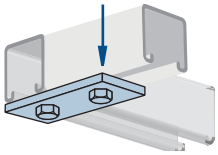
P1000 6.8kN
P2000 4.1kN

P1346



P1000 6.8kN
P2000 5.9kN

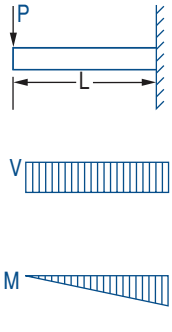
Flat Plate Fittings – P1065



P1000 6.5kN
P2000 2.5kN

Both Ends Supported

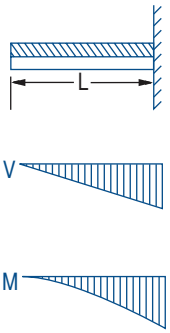
Cantilever Beams



$V_{max.} = P$

$M_{max.} = PL$

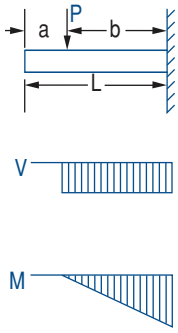
$\Delta_{max.} = \frac{PL^3}{3EI}$



$V_{max.} = W$

$M_{max.} = \frac{WL}{2}$

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

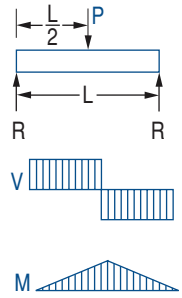


$V_{max.} = P$

$M_{max.} = Pb$

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

Simple Beams

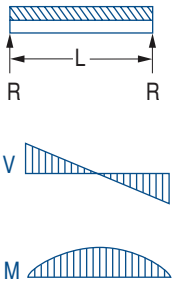


$R = \frac{P}{2}$

$V_{max.} = \frac{P}{2}$

$M_{max.} = \frac{PL}{4}$

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

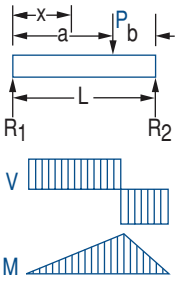


$R = \frac{W}{2}$

$V_{max.} = \frac{W}{2}$

$M_{max.} = \frac{WL}{8}$

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



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

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

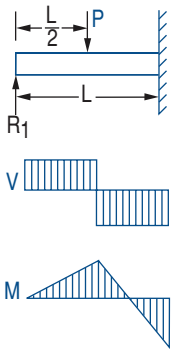
$V_{max.} = \frac{Pa}{L}$

$M_{max.} = \frac{Pab}{L}$

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

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

Beams Fixed One End, Supported at Other



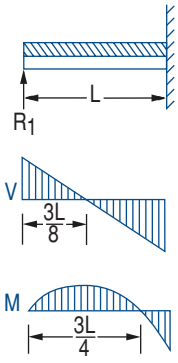
$R_1 = \frac{5P}{16}$

$V_{max.} = \frac{11P}{16}$

$M_{max.} = \frac{3PL}{16}$

$\Delta_{max.}$ at $x = 0.447L$

$\Delta_{max.} = 0.009317\,\frac{PL^3}{EI}$



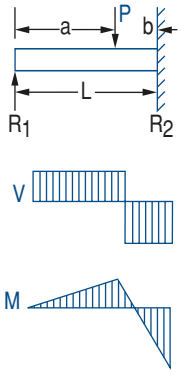
$R_1 = \frac{3W}{8}$

$V_{max.} = \frac{5W}{8}$

$M_{max.} = \frac{WL}{8}$

$\Delta_{max.}$ at $x = 0.4215L$

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



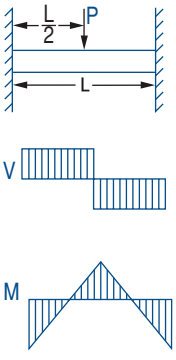
$R1 = \frac{Pb^2}{2L^3}(a + 2L)$

$R2 = \frac{Pa}{2L^3}(3L2 - a^2)$

M at point of load $= R1\,a$

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

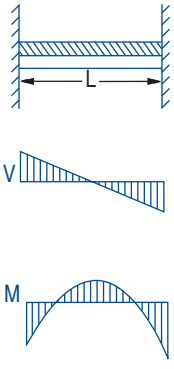
Beams Fixed at Both Ends



$V_{max.} = \frac{P}{2}$

$M_{max.} = \frac{PL}{8}$

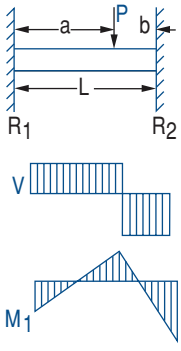
$\Delta_{max.} = \frac{PL^3}{192EI}$



$V_{max.} = \frac{W}{2}$

$M_{max.} = \frac{WL}{12}$

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



$R1 = \frac{Pb^2}{L^3}(3a + b)$

$R2 = \frac{Pa^2}{L^3}(a + 3b)$

$M1 = \frac{Pab^2}{L^2}$

$M2 = \frac{Pa^2b}{L^2}$

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

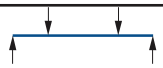
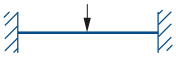
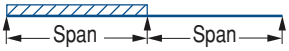
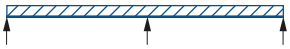
W - Total uniform load (N)
V - Shear
L - Length (mm)

Δ - Deflection (mm)
E - Modulus of Elasticity (MPa)
I - Moment of Inertia (mm^4)

Conversion Factors for Beams with various Static Loading Conditions

Load tables in this catalogue for 41mm channel width series and 32mm channel width series are for single span beams supported at the ends. These can be used in the majority of cases. There are times when it is necessary to know what happens with other loading and support conditions. Some common arrangements are shown in Table 1. Simply multiply the loads from the Beam Load Tables by the load factors given in Table 1. Similarly, multiply the deflections from the Beam Load Tables by the deflection factor given in Table 1.

Table 1

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

Unistrut Column Loading

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

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

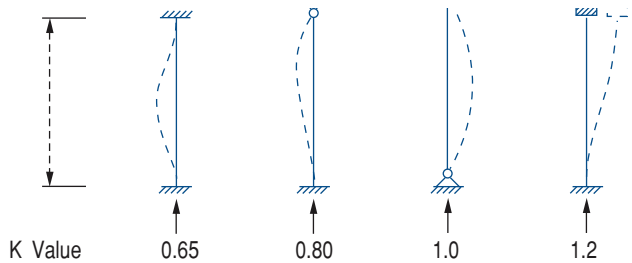
Assumed K values (effective length factors) for columns with varying end restraints are as follows:

End Condition Code

Rotation fixed and translation fixed

Rotation free and translation fixed

Rotation fixed and translation free



HOW TO USE LOAD TABLES

Unistrut Sections as Beams

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

a. the nature of the load.

b. the particular section to be used.

c. the span of the beam.

d. the beam-load capacity of the section for a given span.

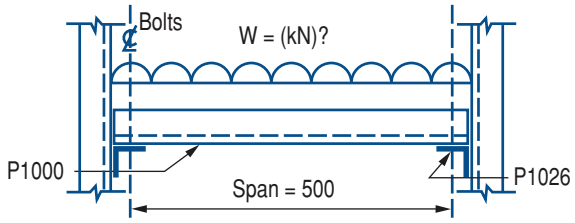
e. the load capacity of the connectors used to support the beams on the columns.

f. 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 113, 500mm and Section P1000, W = 7.42kN.

Step 2

- Find load capacity of connectors.
- From Safe Bearing Loads in load table on page 119. for P1000 section supported on P1026 connectors; Support load = 4.75kN
  Beam load = 2 x support load = 2 x 4.75 = 9.5kN.

Step 3

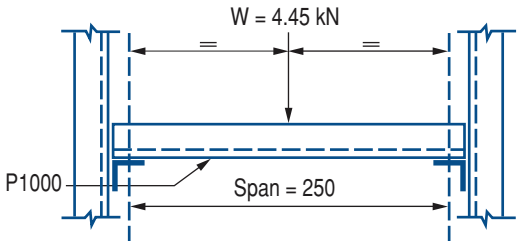
- Check deflection limitations.
- No special deflection considerations apply.

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 = 757kg 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 x 2 = 8.9kN.

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 = 9.5kN.
- 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 113)

- From Beam load table for P1000 section with L1 = 250mm, W1 = 14.83kN and $\delta_1 = 0.22$mm
- From example data and step 1 above W2 = 8.9kN, L2 = 250mm
- Substituting values in formula $\delta_2 = (8.9/14.83) \times (250/250)^3 \times 0.22 = 0.14$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 x 0.8 = 0.11mm.

HOW TO USE LOAD TABLES

Unistrut Sections as Columns

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

a. the particular section used.

b. the actual height of the column, measured between centres of connections to horizontal members.

c. 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).

d. the restraint to various kinds of movements of the column offered by the connections to horizontal members at various levels.

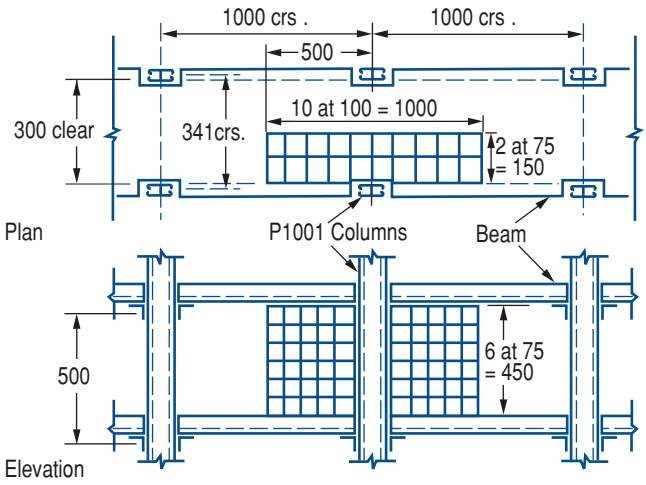
If a) and b) are known and if c) and d), for the case being considered, match the conditions in Structural Data Notes then the load capacity of the section can be read directly from the tables under 'maximum column load'.

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 x 150 = 150,000mm2
- This area can be packed with 20 packages
  75 x 100mm in plan i.e. 120 packages per shelf.

Hence mass per shelf = 6.5 x 120kg
and load per shelf = 6.5 x 120 x 0.0098
= 7.64kN per column.

Step 2

- Determine load capacity of P1001 section.
- From P1001 Beams and Columns Table on page 89 for P1001 with height 500mm.
- Maximum column load = 94.09kN.

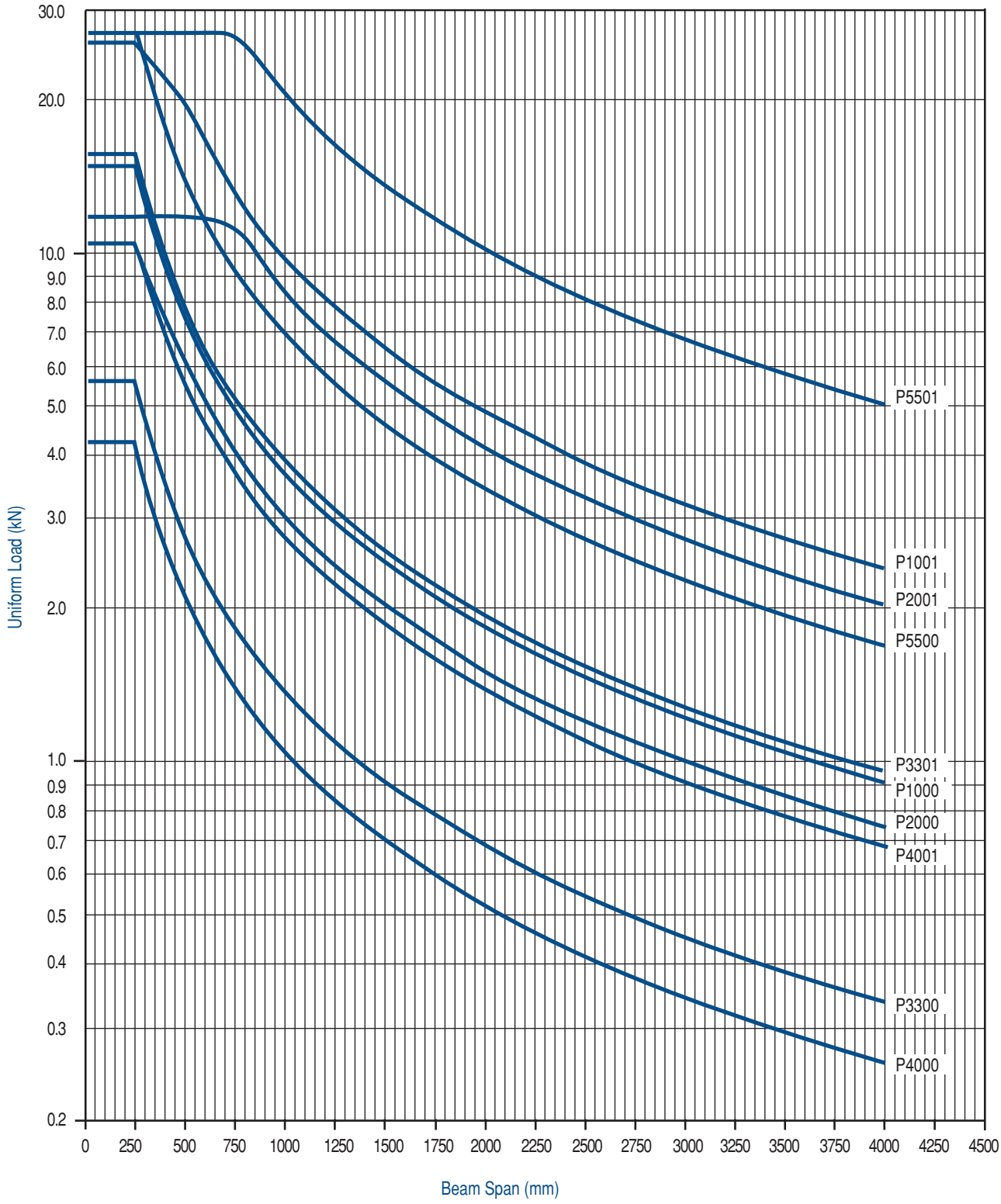
Step 3

- 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 x 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 30.3 kN.

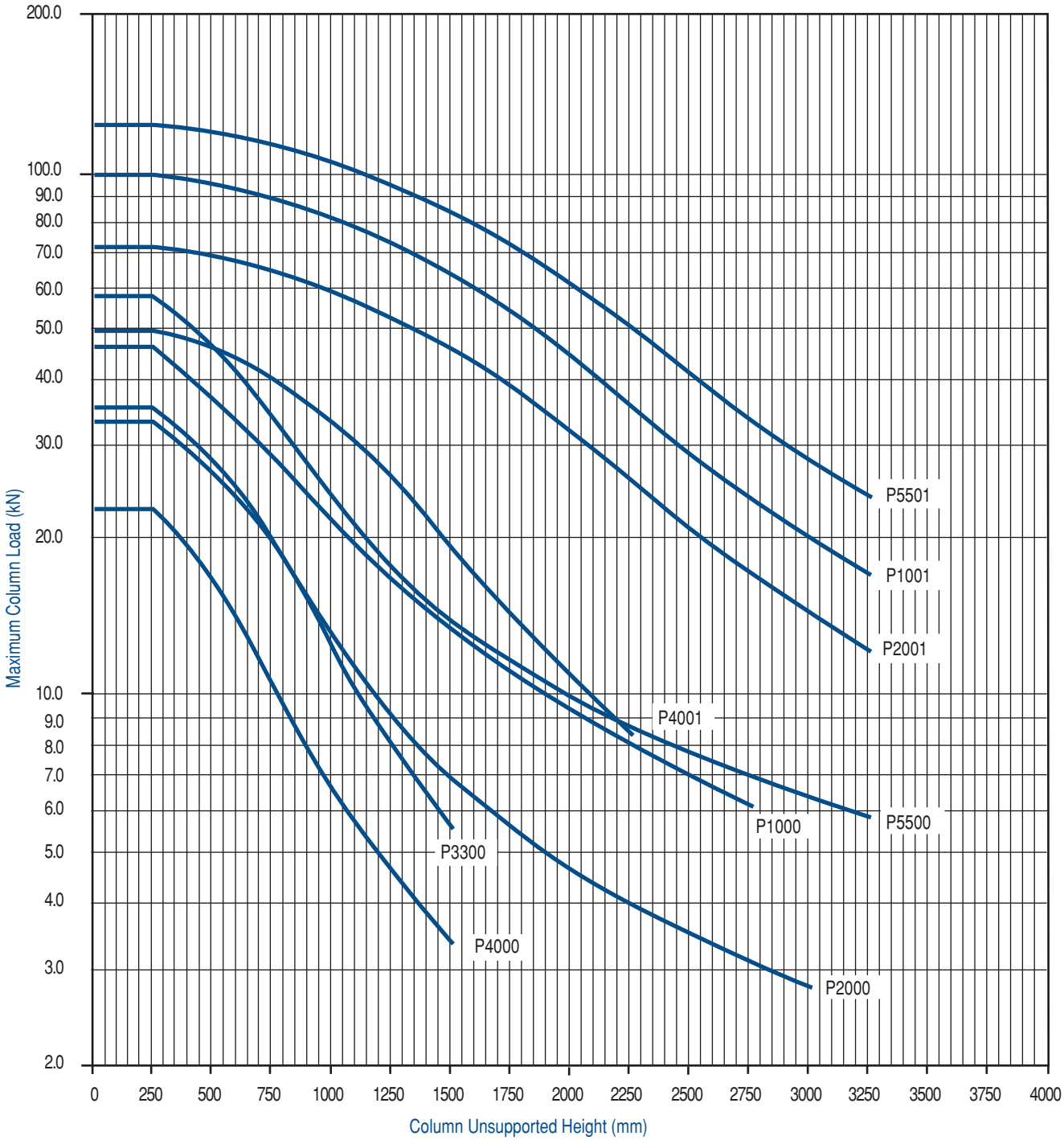
The number of shelves would then be given by: 30.3 / 7.64 = 3.96
i.e. 3 shelves, totalling 1.5 metres high.

UNIFORM WORKING LOAD FOR SIMPLY SUPPORTED BEAMS



Note: *(Ultimate divided by 1.5)*

MAXIMUM WORKING COLUMN LOADS



Note: *(Ultimate divided by 1.5)*