



P3301 - 1-5/8" x 1 3/4", 12 Gauge, Back-to-Back, Solid

12 Gauge Welded Strut Channel P3301 (back-to-back solid) channel is our 12 gauge channel that is commonly used for trapeze supports, seismic bracing, ceiling grids, pipe, conduit, duct and cable tray supports, racks, and other general framing. For application examples, refer to our Application Showcase.

Features

- Product dimensions are 1 5/8" wide x 1 3/4" tall x 12 ga. thick, solid.
- Punched holes are also available for ease of installation
- This profile is used mainly for electrical applications because of its low profile and lower load carrying capacity
- Often, a deeper profile overshoots the load capacity needs of the project.
- Our P3301 is available in the following finishes: Pre-Galvanized (PG), Atkore Defender (DF), Hot-Dip Galvanized (HG), Plain (PL), Green (GR), Zinc Dichromate (ZD), Stainless Steel (SS or ST).
- Made in the USA

Standard Lengths:

- **10 feet:** 10' or 10' 1/8" (3.05m) ± 1/8" (3 mm)
- **20 feet:** 20' or 20' 3/8" (6.11m) ± 1/8" (3 mm)

Special Lengths:

- Available with a tolerance of ±1/8" (3 mm). Request quote.

Curved Channel:

- Many Unistrut channel sections can be supplied with a curve. Click here for our ordering form, specifications, and instructions.

Load Data:

- All beam and column load data pertains to carbon steel and stainless steel channels.
- Load tables apply only to UNISTRUT brand channel. Look for "UNISTRUT" on the product.
- Load tables and charts are constructed to be in accordance with the SPECIFICATION FOR THE DESIGN OF COLD-FORMED STEEL STRUCTURAL MEMBERS 2007 EDITION published by the AMERICAN IRON AND STEEL INSTITUTE USING ASD METHOD.
- Loads are based on 33 ksi steel cold formed to 42 ksi.
- Safety Factor to Yield Strength is 1.67 for Beam Loads and 1.80 for Column Loads.
- Beam loads are based on a simple beam and are given as a total uniform load (W) in pounds. For proper calculation procedures, refer to our Beam Load Calculation Guide under Resources.
- For bearing loads, reference our bearing loads page.

Welds:

- Welded channels are spot welded 2" (51 mm) or 3" (76 mm) on-center.

Materials & Finishes - Standard:

- **Pregalvanized (PG):** Conforms to ASTM A653 SS GR 33, G90.
- **Unistrut Defender (DF):** Conforms to ASTM A1046 SS GR 33
- **Hot Dip Galvanized (HG):** Steel conforms to ASTM A1011 SS GR 33, Finish conforms to ASTM A123
- **Perma-Green (GR):** Steel conforms to ASTM A1011 SS GR 33, E-Coat finish
- **Perma-Gold (ZD):** Steel conforms to ASTM A1011 SS GR 33, Finish conforms to ASTM B633, Type II SC3
- **Plain (PL):** Conforms to ASTM A1011 SS GR 33

Materials & Finishes - Special Metals:

- **Stainless Steel, Type 304 (SS):** ASTM A240, Type 304 *
- **Stainless Steel, Type 316 (ST):** ASTM A240, Type 316 *
- **Aluminum (EA):** ASTM B221, Type 6063-T6 (Extruded) *

* These materials have different physical properties and performance characteristics. Please contact us for design support.



Catalog Number	Length (ft)	Gauge	Material Type	Surface Finish	Part Weight (lb/ft)	Standard Package Qty (ft)	Standard Package Weight (lb)
P3301 10GR	10	12	Steel	Green E-Coat	2.7	250	675
P3301 10HG	10	12	Steel	Hot-Dip Galvanized	2.69	250	672.5
P3301 10PG	10	12	Steel	Pre-Galvanized	2.7	250	675
P3301 10PL	10	12	Steel	Plain/Oil	2.69	250	672.5
P3301 10SS	10	12	Stainless Steel - 304		2.7	250	675
P3301 10ST	10	12	Stainless Steel - 316		2.7	250	675
P3301 10ZD	10	12	Steel	Zinc Dichromate	2.69	250	672.5
P3301 20DF	20	12	Steel	Defender	2.69	500	1345
P3301 20GR	20	12	Steel	Green E-Coat	2.7	500	1350
P3301 20HG	20	12	Steel	Hot-Dip Galvanized	2.69	500	1345
P3301 20PG	20	12	Steel	Pre-Galvanized	2.7	500	1350
P3301 20PL	20	12	Steel	Plain/Oil	2.69	500	1345
P3301 20SS	20	12	Stainless Steel - 304		2.7	500	1350
P3301 20ZD	20	12	Steel	Zinc Dichromate	2.69	500	1345

Span (in)	Max Allow. Uniform Load (lbs)	Deflection at Uniform Load (in)	Uniform Loading at Deflection			Lateral Bracing Reduction Factor
			Span/180 (lbs)	Span/240 (lbs)	Span/360 (lbs)	
24	1,690	0.06	1,690	1,690	1,690	1.00
36	1,130	0.13	1,130	1,130	860	1.00
48	840	0.23	840	720	480	1.00
60	680	0.37	620	460	310	1.00
72	560	0.52	430	320	210	0.97
84	480	0.71	310	240	160	0.95
96	420	0.93	240	180	120	0.92
108	380	1.20	190	140	100	0.90
120	340	1.47	150	120	80	0.87
144	280	2.09	110	80	50	0.82

Refer to the General Specifications for loading information.

Unbraced Height (in)	Allowable Load at Slot Face (lbs)	Max Column Load Applied at C.G.			
		K=0.65 (lbs)	K=0.80 (lbs)	K=1.0 (lbs)	K=1.2 (lbs)
24	4,290	16,990	16,580	15,770	14,720
36	4,150	15,890	14,720	12,980	11,120
48	3,940	14,160	12,360	9,880	7,510
60	3,650	12,210	9,880	6,940	4,820
72	3,270	10,190	7,510	4,820	3,350
84	2,800	8,220	5,530	3,540	KL/r>200
96	2,410	6,420	4,240	KL/r>200	KL/r>200
108	2,080	5,070	3,350	KL/r>200	KL/r>200

Refer to the General Specifications for loading information.

Area of Section	0.790 in ² (5.1 cm ²)	
	Axis 1-1	Axis 2-2
Moment of Inertia (I)	0.176 in ⁴ (7.3 cm ⁴)	0.285 in ⁴ (11.9 cm ⁴)
Section Modulus (S)	0.201 in ³ (3.3 cm ³)	0.351 in ³ (5.8 cm ³)
Radius of Gyration (r)	0.472 in (1.2 cm)	0.601 in (1.5 cm)