

PLAIN (PL)

Plain finish designation means that the channel retains the oiled surface applied to the raw steel during the rolling process. The fittings have the original oiled surface of the coil or strip steel material.

Pregalvanized Zinc (PG) ASTM A653

Pregalvanized steel is zinc coated by a hot dip process. Steel strip from a coil is fed through a continuous zinc coater which cleans, fluxes and coats the steel with molten zinc. After cooling, the steel is recoiled.

The pregalvanized zinc coating conforms to a G-90 thickness designation per ASTM A653. The zinc thickness is .75 MIL or .45 oz./sq. ft. of surface area.

This coating is offered on Unistrut channel and tubing and is a well-proven, time-tested performer for indoor and outdoor applications. For severe corrosion applications, hot dip galvanizing, as described below, is a good alternative.

HOT DIP GALVANIZED (HG) ASTM A123 OR A153

In hot dip galvanizing, the finished part is immersed in a bath of molten zinc. This method results in complete zinc coverage and a thicker coating than pregalvanized or plated zinc.

The zinc coating is typically 2.6 MIL or 1.5 oz./sq. ft. of surface area.

This is the coating of choice for applications where severe corrosion is a design factor.

SPECIAL COATING

When specific applications require other than standard available finishes, special finishes can be supplied per customer requirements.

Electroplated Zinc (EG) ASTM B633, Type III SC1 or SC3

In the electroplating process, the part to be zinc coated is immersed in a solution of zinc ions. An electric current causes the zinc to be deposited on the part.

SC1 (Mild) has a Zinc coating of 0.2 and is recommended for dry indoor use. SC1 is the standard finish thickness.

SC3 (Severe) has a Zinc coating of 0.5 mill and is the standard finish thickness only on UL Listed raceway products.

Perma-Gold (ZD) ASTM B633, Type II SC3

Similar to the EG process except in a yellow color.

Unistrut Defender (DF)

Unistrut® Defender™ is a combination of two proprietary material coatings conforming to ASTM standards A1046 and A1059. Channel, Fittings and Pipe Clamps meet the physical requirements of ASTM A1011 SS GR 33, ASTM A1046 SS GR 33, or ASTM A1011 HSLAS GR 45 Class 2.

3X the corrosion resistance of HG!

Zinc Coating

Unistrut products are available in four types of zinc coatings:

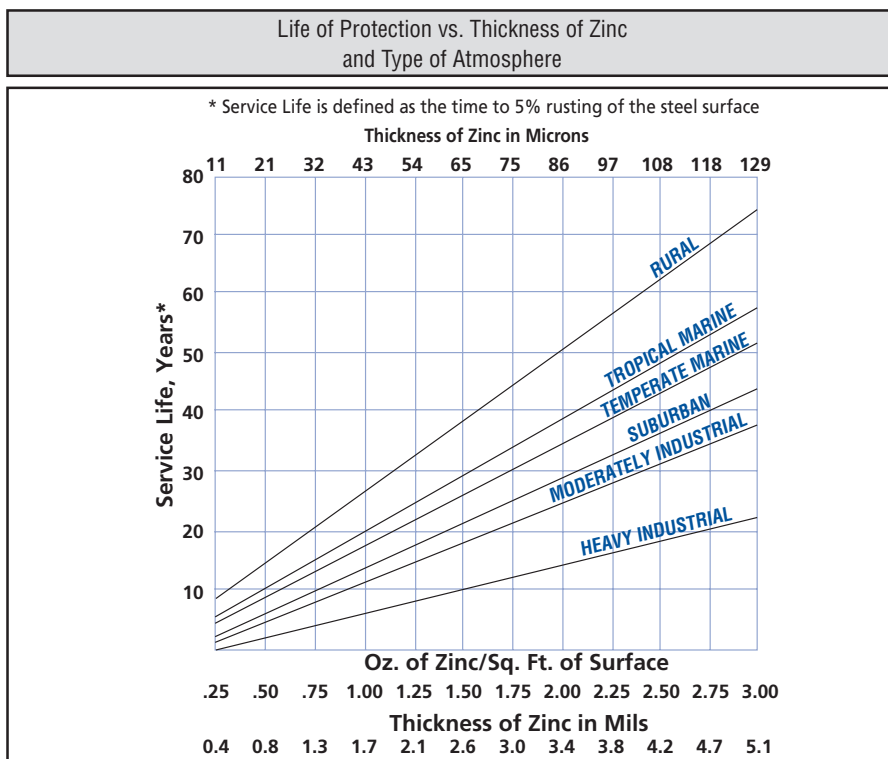
- Electroplated (EG)
- Perma-Gold (ZD)
- Pregalvanized (PG)
- Hot Dip Galvanized (HG).

Zinc offer two types of protection:

- **Barrier:** The zinc coating protects the steel substrate from direct contact with the environment.
- **Sacrificial:** The zinc coating will protect scratches, cut edges, etc. through an anodic sacrificial process.

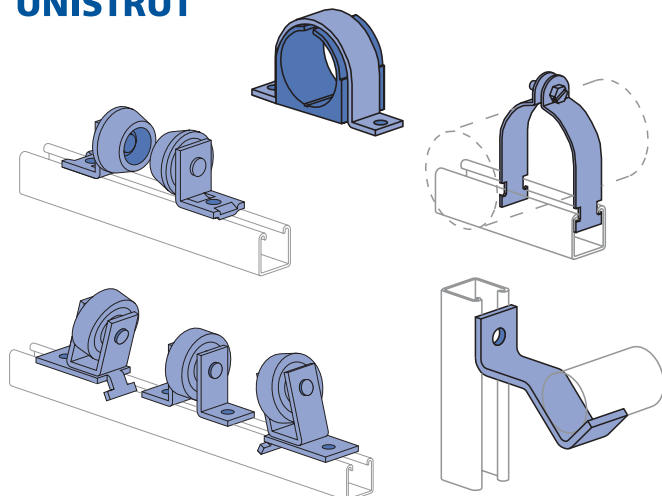
The service life of zinc coating is directly related to the zinc coating thickness as shown below.

Comparison of Zinc Finishes	
Finish	Zinc Thickness
Hot Dip Galvanized	2.6 MIL
Pre-galvanized	0.75 MIL
Electro-Galvanized (SC1)	0.2 MIL
Electro-Galvanized (SC3)	0.5 MIL
Perma-Gold (SC3)	0.5 MIL





PIPE/CONDUIT SUPPORTS



Pipe/Conduit Clamps	108 - 111
Unicushion®	112
Pipe & Tubing (Cush-A-Clamp®) Clamps	113 - 115
Pipe & Tubing (Cush-A-Grip® & Cush-A-Therm™) Clamps.....	116
Pipe Hangers	117
Pipe Rollers.....	117 - 119
Pipe Brackets	119
Reference Tables	120 - 126

MATERIAL

Unistrut pipe clamps, unless noted, are punch-press made from hot-rolled, pickled and oiled steel plates, strip, bar or coil, and conform to one or more of the following specifications: ASTM A1008, A575, A576, A635, A1011 SS GR 33, A1011 HSLAS GR 45, A1046 or A36. The fitting steel also meets the or exceeds the physical properties of ASTM A1011 GR 33. The pickling of the steel produces a smooth surface free from scale.

Many items are also available in stainless steel, aluminum and fiberglass.

Consult factory for ordering information.

FINISHES

Pipe supports are available in:

- Electro-galvanized (EG), conforming to ASTM B633 Type III SC1
- Hot-dipped galvanized (HG), conforming to ASTM A123 or A153 (hardware)
- Green Powder Coat (GR), conforming to commercial standards for Powder Coating, and plain (PL)
- Unistrut Defender (DF), conforming to ASTM A1059 or A1046

APPLICATION

Unistrut pipe clamps, pipe hangers, brackets and rollers are designed for the support of electrical and mechanical services. Supports to meet nearly every requirement can be attained using Unistrut Metal Framing components.

DIMENSIONS

Imperial dimensions are illustrated in inches. Metric dimensions are shown in parenthesis or as noted. Unless noted, all metric dimensions are in millimeters and rounded to one decimal place.

DESIGN BOLT TORQUE

BOLT SIZE	1/4"-20	5/16"-18	3/8"-16	1/2"-13	5/8"-11	3/4"-10
Rec.Torque Ft/Lbs (N•m)	6 (8)	11 (15)	19 (26)	50 (68)	100 (136)	125 (170)
Max Torque Ft/Lbs (N•m)	7 (9)	15 (20)	25 (34)	70 (95)	125 (170)	135 (183)

Note: When tightening 1/4" screws used with a two piece pipe clamp, a torque of 5 foot pounds (60 inch-pounds) should be used.

DESIGN LOAD

Design load data, where shown, is based on the ultimate strength of the connection with a safety factor of 5.0, unless otherwise noted.

When used for mechanical supports, load capacities of brackets, fittings and other supporting elements should be in compliance with the American Standard Code for Pressure Piping.

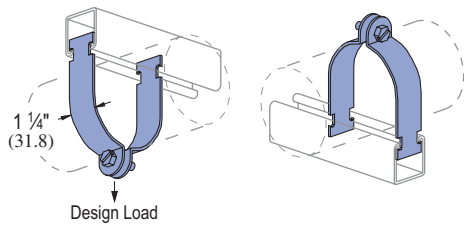
Pipe Clamps In Special Materials (P1109, P1211, P1425, P2024 Series)

Material/Finish	Part Number Suffix	Pipe Clamp Material / Finish	Fasteners (Screw & Nut) Material / Finish	Example
Electro-galvanized	EG	EG	EG	P1109 EG
Hot-dipped galvanized	HG	HG	SS	P1109 HG
Unistrut Defender	DF	DF	DF	P1109 DF
Stainless Steel Type 304	SS	SS	SS	P1109 SS
Stainless Steel Type 316	ST	ST	SS	P1109 ST
Aluminum	AL	AL	AL	P1109 AL
Copper Coated	CC	CC	CC	P1109 CC
Everdur	E EG	EG	E	P1109E EG

P1425 THRU P1431

PIPE CLAMPS FOR THIN WALL CONDUIT (E.M.T.)

DF EG HG



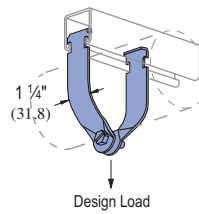
Slotted hex head screw and nut included

Part No.	Conduit Size In (mm)	O.D. Size In (mm)	Thickness Gauge (mm)	Wt/100 pcs Lbs (kg)	Design Load Lbs (kN)
P1425	3/8 9.5	0.577 14.7	16 1.5	9 4.1	400 1.78
P1426	1/2 12.7	0.706 17.9	16 1.5	11 5.0	400 1.78
P1427	3/4 19.1	0.922 23.4	16 1.5	12 5.4	400 1.78
P1428	1 25.4	1.163 29.5	14 1.9	15 6.8	600 2.67
P1429	1 1/4 31.8	1.510 38.4	14 1.9	18 8.2	600 2.67
P1430	1 1/2 38.1	1.740 44.2	12 2.7	29 13.2	800 3.56
P1431	2 50.8	2.197 55.8	12 2.7	33 15.0	800 3.56
P1118	2 1/2 63.5	2.875 73.0	12 2.7	40 18.1	800 3.56
P1119	3 76.2	3.500 88.9	12 2.7	47 21.3	800 3.56
P1120	3 1/2 88.9	4.000 101.6	11 3.0	62 28.1	1,000 4.45
P1121	4 101.6	4.500 114.3	11 3.0	67 30.4	1,000 4.45

P1211 THRU P1217

UNIVERSAL CLAMPS FOR RIGID OR THINWALL CONDUIT

DF EG HG



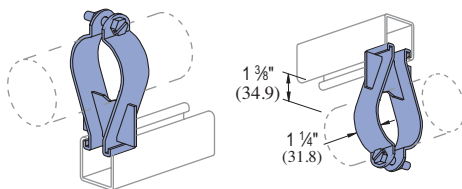
Slotted hex head screw and nut included

Part No.	Conduit Size In (mm)	Thickness Gauge (mm)	Wt/100 pcs Lbs (kg)	Design Load Lbs (kN)
P1211	1/2 12.7	16 1.5	10 4.5	400 1.78
P1212	3/4 19.1	16 1.5	11 5.0	400 1.78
P1213	1 25.4	16 1.5	12 5.4	400 1.78
P1214	1 1/4 31.8	14 1.9	18 8.2	600 2.67
P1215	1 1/2 38.1	14 1.9	20 9.1	600 2.67
P1217	2 50.8	14 1.9	22 10.0	600 2.67
P1118	2 1/2 63.5	12 2.7	40 18.1	800 3.56
P1119	3 76.2	12 2.7	47 21.3	800 3.56
P1120	3 1/2 88.9	11 3.0	62 28.1	1,000 4.45
P1121	4 101.6	11 3.0	67 30.4	1,000 4.45

P1563 THRU P1573

PARALLEL CLAMPS FOR RIGID CONDUIT AND PIPE

EG



Slotted hex head screw and nut included.

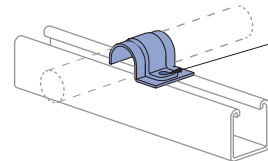
Finish: Electro-galvanized.

Part No.	Pipe Size In (mm)	O.D. Size In (mm)	Thickness Gauge (mm)	Wt/100 pcs Lbs (kg)
P1563	3/8 9.5	0.675 17.1	14 1.9	27 12.2
P1564	1/2 12.7	0.840 21.3	14 1.9	29 13.2
P1565	3/4 19.1	1.050 26.7	14 1.9	30 13.6
P1566	1 25.4	1.315 33.4	14 1.9	31 14.1
P1567	1 1/4 31.8	1.660 42.2	14 1.9	38 17.2
P1568	1 1/2 38.1	1.900 48.3	12 2.7	40 18.1
P1569	2 50.8	2.375 60.3	12 2.7	47 21.3
P1570	2 1/2 63.5	2.875 73.0	12 2.7	66 29.9
P1571	3 76.2	3.500 88.9	12 2.7	78 35.4
P1572	3 1/2 88.9	4.000 101.6	12 2.7	87 39.5
P1573	4 101.6	4.500 114.3	12 2.7	90 40.8

P2008 THRU P2020

ONE HOLE CLAMP FOR O.D. TUBING

EG HG

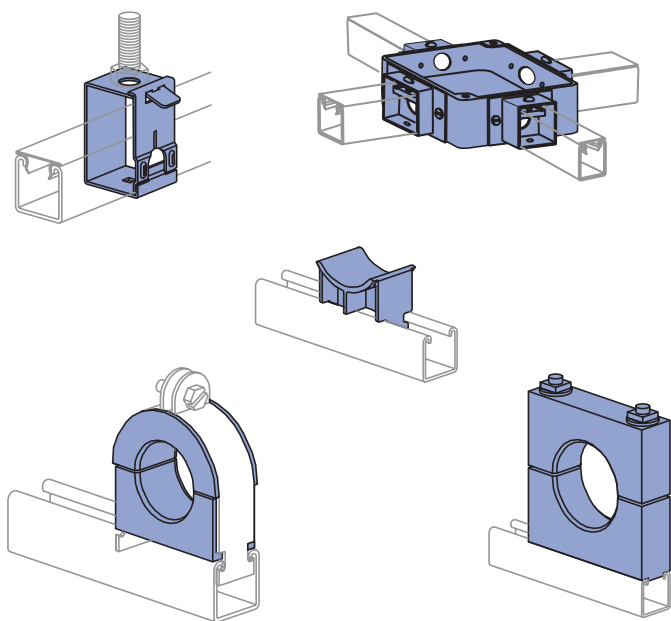


1/4" X 3/4" Round Head Machine Screw and Channel Nut Not Included

Part No.	O.D. Tube Size In (mm)	Thickness Gauge (mm)	Wt/100 pcs Lbs (kg)
P2008	1/4 6.4	16 1.5	4 1.8
P2009	5/16 7.9	16 1.5	5 2.3
P2010	3/8 9.5	16 1.5	5 2.3
P2012	1/2 12.7	16 1.5	6 2.7
P2014	5/8 15.9	14 1.9	8 3.6
P2016	3/4 19.1	14 1.9	9 4.1
P2018	7/8 22.2	14 1.9	10 4.5
P2020	1 25.4	14 1.9	11 5.0



ELECTRICAL FITTINGS



Electrical Fittings.....	128 - 130
Receptacles.....	131
Fixture Hangers.....	131
Accessories and Connectors.....	132
Junction Boxes.....	132
In-Channel Joiners.....	133
Swivel Hangers.....	133
Cable Entrance Tubing and Accessories.....	134 - 136
Electrical Fittings Technical Data.....	137 - 138

MATERIAL

Unistrut fittings, unless noted, are made from hot-rolled, pickled and oiled steel plates, strip, bar or coil, and conform to one or more of the following specifications:

ASTM A575, A576, A635, A1011 SS GR 33, A1011 HSLAS GR 45 or A36. The fitting steel also meets or exceeds the physical requirements of ASTM A1011 SS GR 33.

Maple cable saddles, cable clamps and bus bar clamps are made from kiln-dry maple treated with paraffin to a depth of $\frac{1}{16}$ " (1.6mm). Special sizes of clamps can be fabricated upon request. Cable saddles are fiberglass-reinforced polyester.

CHANNEL RACEWAYS

The Unistrut Metal Framing System includes an exclusive combination of channel, fittings and hardware listed under new UL classification 5B. This classification covers strut-type channel raceways and fittings for use in accordance with Article 384 of the National Electrical Code, NFPA 70. Included are metal strut-type channel raceways at least .071 inch (1.81mm) thick and metal or non-metal closure strips at least .040 inch (1.02mm) thick.

The Unistrut system requires no welding, drilling or other complex fabrication techniques. This means faster, easier solutions for virtually any electrical support problem.

Unistrut channel offers structural and spanning capabilities not available with conventional surface raceway products and is available in continuous lengths of up to 20 feet. Just as important, it is part of an integrated system that can be used for raceways, trapeze hangers, cable-tray supports, lighting grids, fluorescent-fixture supports and countless other electrical applications.

CHANNEL COMPATABILITY

All of the electrical components in this section are intended for use with any of the $1\frac{5}{8}$ " wide channel. They are not intended for use with $1\frac{1}{4}$ " or $1\frac{3}{16}$ " framing systems.

FINISHES

Components listed in this section are available in:

- Electro-galvanized (EG), conforming to ASTM B633 Type III SC1;
- Hot-dipped galvanized (HG), conforming to ASTM A123 or A153,
- Green Powder Coat (GR), conforming to commercial standards for Powder Coating
- Plain (PL)

Note: Many Unistrut Metal Framing components, when used with appropriate closures, are UL® listed, and CSA approved.

DESIGN LOAD

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

DIMENSIONS

Imperial dimensions are illustrated in inches. Metric dimensions are shown in parenthesis or as noted. Unless noted, all metric dimensions are in millimeters and rounded to one decimal place.

LISTINGS

UL File No. - E19459	Channel & Closure Strips
UL File No. - E25629	Fittings
CSA File No. - 013669	All Products