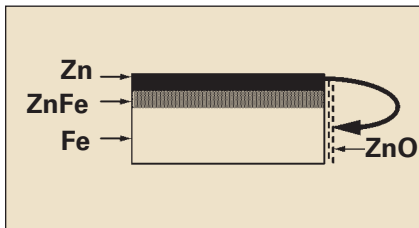


Finishes

Zinc Coatings

Zinc protects steel in two ways. First it protects the steel as a coating, and second acts as a sacrificial anode to repair bare areas such as cut edges, scratches, and gouges. The corrosion protection of zinc is directly related to its thickness and the environment. This means a .2 mil coating will last twice as long as a .1 mil coating in the same environment.

Galvanizing also protects cut and drilled edges.



Electrogalvanized Zinc

Electrogalvanized Zinc (also known as zinc plated or electroplated) is the process by which a coating of zinc is deposited on the steel by electrolysis from a bath of zinc salts.

A rating of SC3, our standard, provides a minimum zinc coating thickness of .5 mils (excluding hardware, which is SC1 = .2 mils).

When exposed to air and moisture, zinc forms a tough, adherent, protective film consisting of a mixture of zinc oxides, hydroxides, and carbonates. This film is a barrier coating which helps slow subsequent corrosive attack on the zinc. This coating is usually recommended for indoor use in relatively dry areas, as it provides ninety-six hours protection in salt spray testing per ASTM B117.

Chromium / Zinc

Chromium / Zinc is a corrosion resistant composition, which was developed to protect fasteners and small bulk items for automotive use. The coating applications have since been extended to larger parts and other markets.

Chromium/Zinc composition is an aqueous coating dispersion containing chromium, proprietary organics, and zinc flake.

This finish provides 720 hours protection in salt spray testing per ASTM B117.

Pre-Galvanized Zinc

(Mill galvanized, hot dip mill galvanized or continuous hot dip galvanized) Pre-galvanized steel is produced by coating coils of sheet steel with zinc by continuously rolling the material through molten zinc at the mills. This is also known as mill galvanized or hot dip mill galvanized. These coils are then slit to size and fabricated by roll forming, shearing, punching, or forming to produce our pre-galvanized strut products.

The G90 specification calls for a coating of .90 ounces of zinc per square foot of steel. This results in a coating of .45 ounces per square foot on each side of the sheet. This is important when comparing this finish to hot dip galvanized after fabrication.

During fabrication, cut edges and welded areas are not normally zinc coated; however, the zinc near the uncoated metal becomes a sacrificial anode to protect the bare areas after a short period of time.

Hot Dip Galvanized After Fabrication (Hot dip galvanized or batch hot dip galvanized)

Hot dip galvanized strut products are fabricated from steel and then completely immersed in a bath of molten zinc. A metallic bond occurs resulting in a zinc coating that completely coats all surfaces, including edges and welds.

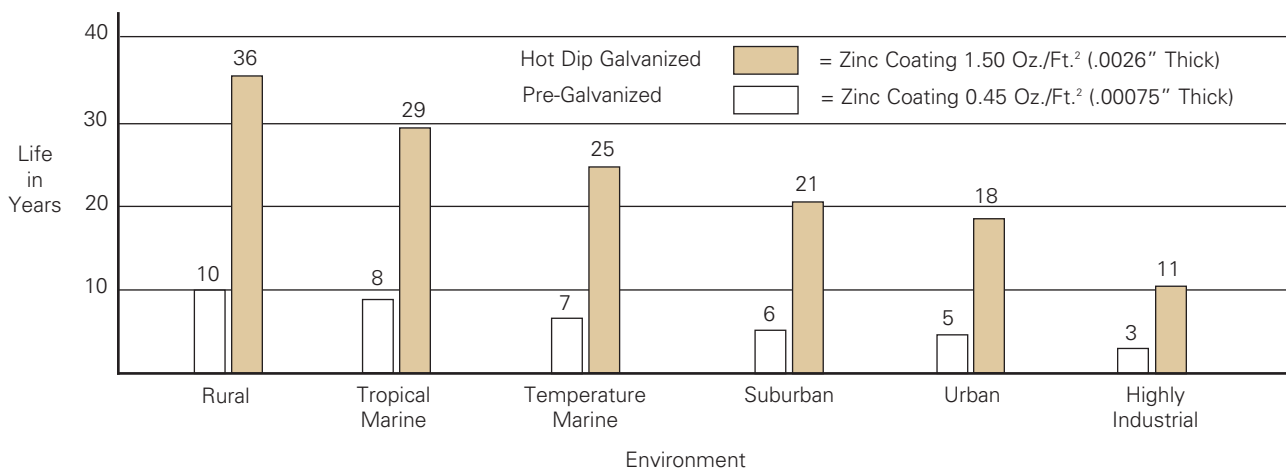
Another advantage of this method is coating thickness. Strut products that are hot dip galvanized after fabrication have a minimum thickness of 1.50 ounces per square foot on each side, or a total 3.0 ounces per square foot of steel, according to ASTM A123.

The zinc thickness is controlled by the amount of time each part is immersed in the molten zinc bath as well as the speed at which it is removed. The term "double dipping" refers to parts too large to fit into the galvanizing kettle and must be dipped one end at a time. It does not refer to extra coating thickness.

The layer of zinc which bonds to steel provides a dual protection against corrosion. It protects first as an overall barrier coating. If this coating happens to be scratched or gouged, zinc's secondary defense is called upon to protect the steel by galvanic action.

Hot-Dip Galvanized After Fabrication is recommended for prolonged outdoor exposure and will usually protect steel for 20 years or more in most atmospheric environments and in many industrial environments. For best results, a zinc rich paint (available from Eaton's B-Line Division) should be applied to field cuts. The zinc rich paint will provide immediate protection for these areas and eliminate the short time period for galvanic action to "heal" the damaged coating.

Anticipated Life of Zinc Coatings In Various Atmospheric Environments



Technical Data

DURA GREEN™ and DURA-COPPER™ Epoxy Coatings

DURA GREEN and DURA-COPPER epoxy coatings are water borne epoxy coatings applied to B-Line series products by a precisely controlled cathodic electro-deposition process. This process is accomplished using a conveyor to transport channel and fittings through several cleaning, phosphatizing and application stages prior to being baked (See diagram below).

This custom-designed paint system is used for painting all channels, channel combinations, slotted angle, and fittings.

Samples are selected on a routine basis for salt spray (fog) testing to verify the quality of the finish. These tests are performed in accordance with ASTM B117 and evaluated and related according to ASTM D1654 (Tables 1 & 2).

The DURA GREEN and DURA-COPPER epoxy coatings have been tested and listed by Underwriters Laboratories in

accordance with "Standard for Surface Metal Raceway and Fittings, UL5" and "Standard for Pipe Hanger Equipment for Fire Protection Service, UL203".

Due to DURA GREEN's organically based composition, it seats itself into porous surfaces more completely and efficiently than zinc coatings. As these porous caverns are filled along the material profile, the outer finished surface demonstrates an increased smooth uniform plane which produces considerably less off-gasing when tested.

DURA GREEN channel meets or exceeds 100 level clean room standards. This was confirmed by testing the channel in accordance with Boeing (PCL) Standards, which are more stringent and complete than ASTM E595-93. DURA GREEN was found to be a superior finish, due in part to its proven application process.

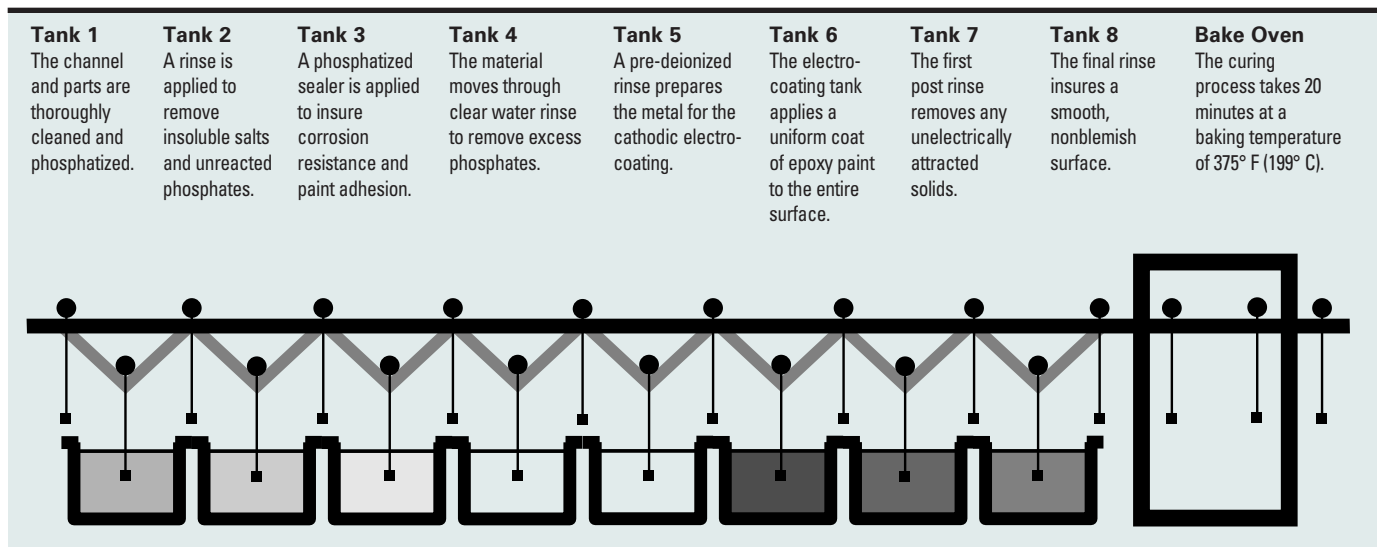
Technical Data

Salt Spray Test Results

Type of Finish	Unscribed 5% Failure (1)	Scribed 1/8" (3.2) Creepage from Scribe (1)
DURA GREEN Epoxy	1000 Hours	312 Hours
Mill Galv. (Pre-Galv.) G90	192 Hours	288 Hours
Perma-Green	438 Hours	231 Hours
Zinc Chromate	36 Hours	96 Hours
Industry Green (Range)	10 to 36 Hours	4 to 30 Hours

(1) All salt spray (fog) tests conducted in accordance with ASTM B117 and evaluated and rated according to ASTM D1654 Tables 1 & 2. Tests are performed and certified by an independent testing laboratory.

DURA GREEN / DURA-COPPER Epoxy Coating Process



Beam Clamps



Our beam attachments and pipe supports offered in this section are designed to provide supports without drilling or welding. A complete selection of beam clamps, pipe clamps, rollers, supports and accessories are designed for use with our channels and offer many installation advantages.

Materials & Finishes (Unless otherwise noted)

Pipe clamps, pipe hangers, beam clamps, brackets, and rollers are made from low carbon steel strips, plates or rod unless noted.

Note: A minimum order may apply on special material and finishes.

Load Data

The load data published includes a safety factor of 5.0 unless noted (safety factor = ratio of ultimate load to the design load).

Recommended Torque For Setscrews (unless noted)

See chart on page 106 for recommended torquing of bolts (not setscrews).

Metric

Metric dimensions are shown in parentheses. Unless noted, all metric dimensions are in millimeters.

Finish Code	Finish	Specification
PLN	Plain	ASTM A1018 Gr. 33 ASTM A1011 SS Grade 33
ZN	Electro-Plated Zinc	ASTM B633 SC3 Type III or ASTM A653
GRN	DURA GREEN™	
-	Malleable Iron	ASTM A47 Gr. 32510
HDG	Hot-Dipped Galvanized	ASTM A123
CZ	Chromium Zinc	ASTM F1136 Gr. 3
SS4	Stainless Steel Type 304	ASTM A240
SS6	Stainless Steel Type 316	ASTM A240
AL	Aluminum	ASTM B209

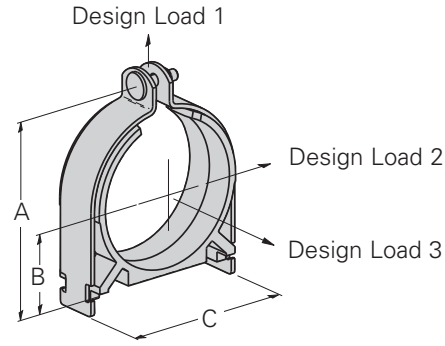
Setscrew Size	1/4"-20	3/8"-16	1/2"-13
Foot/Lbs.	4	5	11
Nm	5	7	15

Setscrew Size	5/8"-11	3/4"-10
Foot/Lbs.	21	34
Nm	28	46

Vibra-Clamp Pipe Clamps

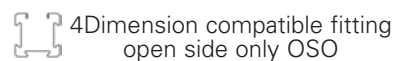
BVT Series VIBRA-CLAMP™ - Copper & O.D.

- Safety Factor of 3
- Accesses tubing sizes 1/8" (3) to 6" (150)
- Allows easy one tool installation
- Endures both high (+300°F) and low (-40°F) temperatures
- Dampens vibration and noise
- Eliminates galvanic metal to metal contact
- Resists most industrial oils and solvents
- Reduces thermal loss and gain
- Helps secure tubing firmly to channel (strut)
- Dielectric strength of 400 volts/mil
- Includes cushion, clamp, screw and nut
- Standard finishes: YZN, SS4



Catalog Number	Tubing O.D. Size		Copper Tubing Size		A		B		C		Wt./C	
	In.	mm	In.	mm	In.	mm	In.	mm	In.	mm	Lbs.	kg
BVT025	1/4"	(6.3)	1/8"	(3)	1.22	(30.9)	0.19	(4.8)	0.49	(12.4)	11	(5.0)
BVT037	3/8"	(9.5)	1/4"	(6)	1.36	(34.5)	0.25	(6.3)	0.61	(15.5)	12	(5.4)
BVT050	1/2"	(12.7)	3/8"	(10)	1.49	(37.8)	0.31	(7.8)	0.74	(18.8)	14	(6.3)
BVT062	5/8"	(15.9)	1/2"	(15)	1.62	(41.1)	0.38	(9.6)	0.86	(21.8)	15	(6.8)
BVT075	3/4"	(19.0)	5/8"	(17)	1.87	(47.4)	0.50	(12.7)	1.15	(29.2)	19	(8.6)
BVT087	7/8"	(22.2)	3/4"	(20)	2.00	(50.8)	0.56	(14.2)	1.27	(32.2)	21	(9.5)
BVT100	1"	(25.4)	-	-	2.25	(57.1)	0.69	(17.5)	1.52	(38.6)	22	(10.0)
BVT112	1 1/8"	(28.6)	1"	(25)	2.25	(57.1)	0.69	(17.5)	1.52	(38.6)	26	(11.8)
BVT125	1 1/4"	(31.7)	-	-	2.51	(63.7)	0.81	(20.6)	1.78	(45.2)	36	(16.3)
BVT137	1 3/8"	(34.9)	1 1/4"	(32)	2.51	(63.7)	0.81	(20.6)	1.78	(45.2)	38	(17.2)
BVT150	1 1/2"	(38.1)	-	-	2.74	(69.6)	0.88	(22.4)	1.96	(49.8)	35	(15.9)
BVT162	1 5/8"	(41.3)	1 1/2"	(40)	3.00	(76.2)	1.00	(25.4)	2.20	(55.9)	40	(18.1)
BVT175	1 3/4"	(44.4)	-	-	3.13	(79.5)	1.06	(26.9)	2.33	(59.1)	44	(19.9)
BVT187	1 7/8"	(47.6)	-	-	3.28	(83.3)	1.13	(28.7)	2.46	(62.5)	40	(18.1)
BVT200	2"	(50.8)	-	-	3.52	(89.4)	1.25	(31.7)	2.70	(68.6)	55	(25.0)
BVT212	2 1/8"	(54.0)	2"	(50)	3.52	(89.4)	1.25	(31.7)	2.70	(68.6)	55	(25.0)
BVT225	2 1/4"	(57.1)	-	-	3.64	(92.4)	1.31	(33.2)	2.83	(71.8)	54	(24.5)
BVT250	2 1/2"	(63.5)	-	-	3.91	(99.3)	1.43	(36.3)	3.11	(79.0)	56	(25.4)
BVT262	2 5/8"	(66.6)	2 1/2"	(65)	4.02	(102.1)	1.50	(38.1)	3.20	(81.3)	55	(25.0)
BVT300	3"	(76.2)	-	-	4.42	(112.2)	1.68	(42.6)	3.61	(91.6)	67	(30.4)
BVT312	3 1/8"	(79.4)	3"	(80)	4.53	(115.0)	1.75	(44.4)	3.70	(93.9)	64	(29.0)
BVT362	3 5/8"	(92.1)	3 1/2"	(90)	5.05	(128.2)	2.00	(50.8)	4.23	(107.4)	76	(34.5)
BVT412	4 1/8"	(104.8)	4"	(100)	5.55	(140.9)	2.25	(57.1)	4.73	(120.1)	93	(42.2)
BVT612	6 1/8"	(155.5)	6"	(150)	7.62	(193.5)	3.25	(82.5)	6.74	(171.1)	136	(61.6)

Catalog Number	Design Load 1		Design Load 2		Design Load 3	
	Lbs.	kN	Lbs.	kN	Lbs.	kN
BVT025	400	(1.78)	50	(0.22)	50	(0.22)
BVT037	400	(1.78)	50	(0.22)	50	(0.22)
BVT050	400	(1.78)	50	(0.22)	50	(0.22)
BVT062	400	(1.78)	50	(0.22)	50	(0.22)
BVT075	600	(2.67)	75	(0.33)	75	(0.33)
BVT087	600	(2.67)	75	(0.33)	75	(0.33)
BVT100	600	(2.67)	75	(0.33)	75	(0.33)
BVT112	600	(2.67)	75	(0.33)	75	(0.33)
BVT125	600	(2.67)	75	(0.33)	75	(0.33)
BVT137	600	(2.67)	75	(0.33)	75	(0.33)
BVT150	600	(2.67)	75	(0.33)	75	(0.33)
BVT162	800	(3.56)	125	(0.56)	125	(0.56)
BVT175	800	(3.56)	125	(0.56)	125	(0.56)
BVT187	800	(3.56)	125	(0.56)	125	(0.56)
BVT200	800	(3.56)	125	(0.56)	125	(0.56)
BVT212	800	(3.56)	125	(0.56)	125	(0.56)
BVT225	800	(3.56)	125	(0.56)	125	(0.56)
BVT250	800	(3.56)	125	(0.56)	125	(0.56)
BVT262	800	(3.56)	125	(0.56)	125	(0.56)
BVT300	800	(3.56)	125	(0.56)	125	(0.56)
BVT312	800	(3.56)	125	(0.56)	125	(0.56)
BVT362	1000	(4.45)	200	(0.89)	150	(0.67)
BVT412	1000	(4.45)	200	(0.89)	150	(0.67)
BVT612	1000	(4.45)	200	(0.89)	150	(0.67)



Reference page 168 for general fitting and standard finish specifications.