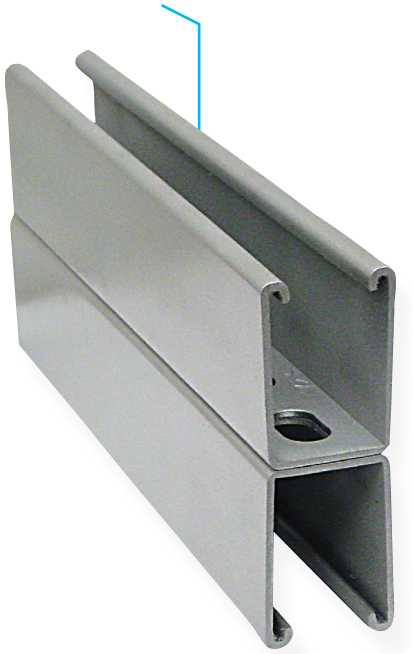
ASC Engineered Solutions

Welded Channel
Fig. AS 100BTB, AS 100

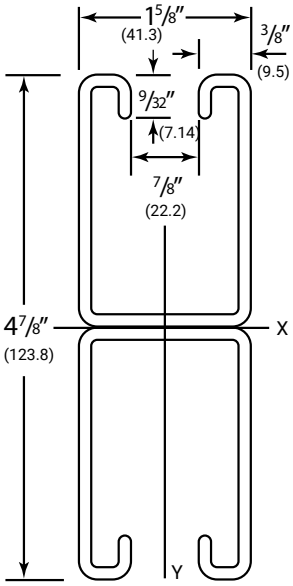


Specifications

Size:
6 1/2" X 1 5/8" (165.1 x 41.3mm)
12 Gauge Back-to-Back • wt./100 ft. - 626 lbs

Materials:
Carbon Steel
Stainless Steel
Aluminum

Finishes
Pre-Galvanized
Hot Dip Galvanized - Post Fabrication
Supr-Green Powder Coating
Zinc Trivalent Chromium
PVC



Description

Anvil-Strut channels are manufactured by a series of forming dies, or rolls, which progressively cold work the strip steel into the desired channel configuration. This method produces a cross section of uniform dimensions within a tolerance of plus or minus 0.015", on outside dimensions.

BTB Welded

☐ AS 100BTB
☐ PL, ☐ GR, ☐ PG, ☐ Other
☐ Solid, ☐ EH, ☐ H, ☐ S, ☐ Other

Other Welded

☐ AS 100 Welded
☐ PL, ☐ GR, ☐ PG, ☐ Other
☐ Solid, ☐ EH, ☐ H, ☐ S, ☐ Other
☐ BTS: Back-to-Side
☐ STS: Side-to-Side
☐ STSR: Side-to-Reverse-Side

LEGEND:
GR: Powder Coated Supr-Green **EG:** Electro-Galvanized **PG:** Pre-Galvanized **AL:** Aluminum
HG: Hot Dipped Galvanized **PL:** Plain **SS:** Stainless Steel
ZTC: Zinc Trivalent Chromium Stainless Steel (**SS**), Zinc Trivalent Chromium (**ZTC**) and Hot Dipped Galvanized (**HG**) are specialty finishes. Pricing is located in the Specialty Strut Section of the Anvil-Strut price book.

ANVIL-STRUT
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PROJECT INFORMATION	APPROVAL STAMP
Project:	☐ Approved
Address:	☐ Approved as noted
Contractor:	☐ Not approved
Engineer:	Remarks:
Submittal Date:	
Notes 1:	
Notes 2:	

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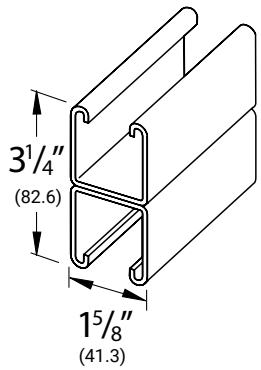
Welded Combinations

All welded combinations illustrated below are available in any of our Anvil-Strut channels (1⅝" x 1⅝" shown), in any of the following material or finishes: Plain, Pre-Galvanized, powder coated Supr-Green or Stainless Steel.

Note: Slotted channels available in all welded combinations.

Suffix BTB



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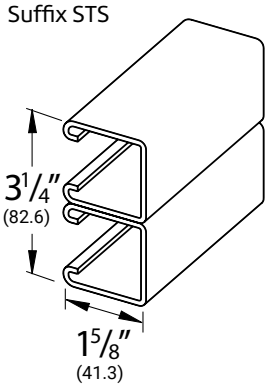

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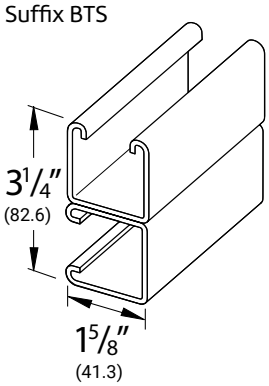
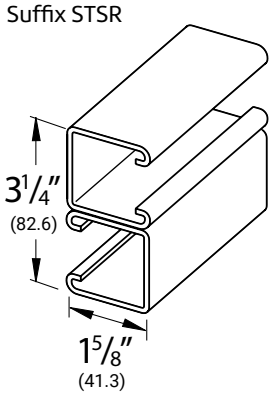
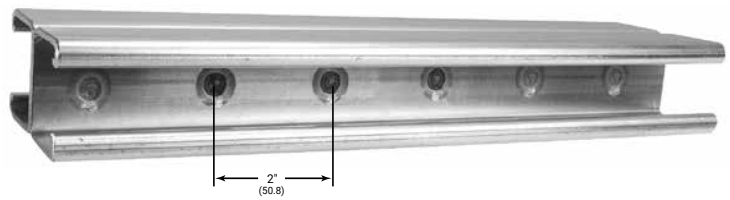


Suffix STSR



Our welded channels are spot welded 2" (50.8mm) on center, dimensions shown are for welded variations of any channelwith or without slotted holes.



ASC Engineered Solutions

Welded Channel
Fig. AS 100BTB, AS 100

Properties of Section

Catalog Number	Wt./Ft.		Area of Selection		X-X Axis						Y-Y Axis					
	Lbs.	Kg.	Sq. In.	Sq. CM	I in^4	I cm^4	S in^3	S cm^3	r in	r cm	I in^4	I cm^4	S in^3	S cm^3	r in	r cm
AS 100 BTB	6.26	9.3	1.775	11.452	6.251	260.185	1.923	31.512	1.877	4.768	0.862	35.879	1.06	17.370	0.697	1.770

I = Moment of Inertia S = Section Modulus r = Radius of Gyration

Beam and Column Loads

Span or Unbraced Height	Static Beam Load (X-X Axis)						Max. Allowable Load at Slot Face	Column Loading Data			
	Max Allowable Uniform Load	Deflection at Uniform Load	Uniform Load at Deflection					Max. Column Load Applied at C.G.			
			Span/180 Deflection	Span/240 Deflection	Span/360 Deflection	Weight of Channel		k=.65	k=.80	k=1.0	k=1.2
In	Lbs	In	Lbs	Lbs	Lbs	Lbs	Lbs	Lbs	Lbs	Lbs	Lbs
12	6,890*	0.00	6,890*	6,890*	6,890*	6.3	10,910	41,100	40,940	40,680	40,360
18	6,890*	0.01	6,890*	6,890*	6,890*	9.4	10,860	40,720	40,360	39,780	39,080
24	6,890*	0.02	6,890*	6,890*	6,890*	12.5	10,780	40,180	39,560	38,550	37,360
30	6,890*	0.02	6,890*	6,890*	6,890*	15.7	10,690	39,500	38,550	37,030	35,250
36	6,890*	0.04	6,890*	6,890*	6,890*	18.8	10,570	38,690	37,360	35,250	32,840
42	6,890*	0.05	6,890*	6,890*	6,890*	21.9	10,440	37,750	35,990	33,260	30,200
48	6,890*	0.06	6,890*	6,890*	6,890*	25.0	10,280	36,700	34,480	31,100	27,420
60	6,450	0.10	6,450	6,450	6,450	31.3	9,900	34,280	31,100	26,470	21,740
72	5,370	0.14	5,370	5,370	5,370	37.6	9,440	31,540	27,420	21,740	16,370
84	4,610	0.19	4,610	4,610	4,610	43.8	8,890	28,590	23,620	17,230	12,030
96	4,030	0.25	4,030	4,030	4,030	50.1	8,260	25,520	19,890	13,270	9,210
108	3,580	0.32	3,580	3,580	3,370	56.3	7,550	22,440	16,370	10,480	7,280
120	3,220	0.39	3,220	3,220	2,730	62.6	6,970	19,440	13,270	8,490	**
144	2,690	0.57	2,690	2,690	1,900	75.1	5,510	13,960	9,210	**	**
168	2,300	0.77	2,300	2,090	1,390	87.6	4,520	10,250	6,770	**	**
180	2,150	0.89	2,150	1,820	1,210	93.9	**	8,930	**	**	**
192	2,020	1.01	2,020	1,600	1,070	100.2	**	7,850	**	**	**
216	1,790	1.27	1,690	1,260	840	112.7	**	**	**	**	**
240	1,610	1.57	1,370	1,020	680	125.2	**	**	**	**	**

Bearing Load may limit load
* Load limited by spot weld shear
** Not recommended – KL/r exceeds 200

Notes
1. The beam capacities shown above include the weight of the strut beam. The beam weight must be subtracted from these capacities to arrive at the net beam capacity.
2. Refer to the Anvil-Strut Catalog for reduction factors for unbraced lengths
3. Allowable beam loads are based on a uniformly loaded, simply supported beam. For capacities of a beam loaded at midspan at a single point, multiply the beam capacity by 50% and deflection by 80%.
4. The above chart shows beam capacities for strut without holes. For strut with holes, multiply by the following:
   EH by 88%, S by 90%,
   H (9/16 holes) by 88%, KO by 82% .

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Beam and Column Loads – Metric

Span or Unbraced Height	Static Beam Load (X-X Axis)						Max. Allowable Load at Slot Face	Column Loading Data			
	Max Allowable Uniform Load	Deflection at Uniform Load	Uniform Load at Deflection					Max. Column Load Applied at C.G.			k=1.2
			Span/180 Deflection	Span/240 Deflection	Span/360 Deflection	Weight of Channel		k=.65	k=.80	k=1.0	
mm	Kn	mm	Kn	Kn	Kn	Kg	Kn	Kn	Kn	Kn	Kn
305	30.6*	0.0	30.6*	30.6*	30.6*	2.9	48.5	182.8	182.1	181.0	179.5
457	30.6*	0.3	30.6*	30.6*	30.6*	4.3	48.3	181.1	179.5	177.0	173.8
610	30.6*	0.5	30.6*	30.6*	30.6*	5.7	48.0	178.7	176.0	171.5	166.2
762	30.6*	0.5	30.6*	30.6*	30.6*	7.1	47.6	175.7	171.5	164.7	156.8
914	30.6*	1.0	30.6*	30.6*	30.6*	8.5	47.0	172.1	166.2	156.8	146.1
1,067	30.6*	1.3	30.6*	30.6*	30.6*	9.9	46.4	167.9	160.1	147.9	134.3
1,219	30.6*	1.5	30.6*	30.6*	30.6*	11.3	45.7	163.2	153.4	138.3	122.0
1,524	28.7	2.5	28.7	28.7	28.7	14.2	44.0	152.5	138.3	117.7	96.7
1,829	23.9	3.6	23.9	23.9	23.9	17.1	42.0	140.3	122.0	96.7	72.8
2,134	20.5	4.8	20.5	20.5	20.5	19.9	39.5	127.2	105.1	76.6	53.5
2,438	17.9	6.4	17.9	17.9	17.9	22.7	36.7	113.5	88.5	59.0	41.0
2,743	15.9	8.1	15.9	15.9	15.0	25.5	33.6	99.8	72.8	46.6	32.4
3,048	14.3	9.9	14.3	14.3	12.1	28.4	30.2	86.5	59.0	37.8	**
3,658	12.0	14.5	12.0	12.0	8.5	34.1	24.5	62.1	41.0	**	**
4,267	10.2	19.6	10.2	9.3	6.2	39.7	20.1	45.6	30.1	**	**
4,572	9.6	22.6	9.6	8.1	5.4	42.6	**	39.7	**	**	**
4,877	9.0	25.7	9.0	7.1	4.8	45.4	**	34.9	**	**	**
5,486	8.0	32.3	7.5	5.6	3.7	51.1	**	**	**	**	**
6,096	7.2	39.9	6.1	4.5	3.0	56.8	**	**	**	**	**

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Materials

Carbon Steel: Channels are formed from high-quality, structural grade carbon steel which has been manufactured in accordance with ASTM A-1011-04- SS Grade 33 (hot rolled), or ASTM 366 (cold rolled), with mechanical properties of 33 ksi minimum yield and 52 ksi minimum tensile strength. The precision roll-forming process by which the channels are formed "cold works" the steel, thereby increasing its mechanical properties.

Stainless Steel: Channels are formed from chromium-nickel stainless steel sheet manufactured in accordance with ASTM A-240 specification, offered in both AISI Type 304 and 316 material to provide protection in varying corrosive conditions.

Aluminum: Extruded aluminum channel is produced from 6063-T6 alloy, and fittings are produced from 5052-H32 alloy, both in accordance with ASTM B-221 specifications. Aluminum is suitable for use in various corrosive environments.

Finishes

Pre-Galvanized: Hot dip, mill galvanized coating produced through a process of continuously passing the steel through a bath of molten zinc. This process is performed in accordance with ASTM A-653. The thickness of the zinc coating conforms with ASTM G-90 which represents a coating thickness of .90 ounces of zinc per square foot. This coating is applied to the steel master coils prior to slitting and fabrication.

Hot Dip Galvanized - Post Fabrication: The finished channel is completely immersed in a bath of molten zinc, resulting in the complete coating of all surfaces of the product, including edges and welds. Strut channels that are hot dip galvanized, have a total coating weight of 3.0 ounces of zinc per square foot in accordance with ASTM A-123 specification. This coating provides superior results in applications calling for prolonged outdoor exposure.

Supr-Green Powder Coating: Strut channels are coated after fabrication with polyester powder finish. This coating is applied using an electrostatic spray process, beginning with cleaning and phosphating, through a bonderite pretreatment process, and ending with oven curing. The resulting finish provides a high quality appearance and durability. Powder Coating is in accordance with ASTM B-117 (standard practice for operating salt spray (fog) apparatus) to 500 hours with less than 1/8" scribe creep.

Zinc Trivalent Chromium: The finished channel undergoes a multi-step process consisting of electrogalvanizing, in accordance with ASTM B-633-85, followed by an application of zinc trivalent chromium, which provides the distinctive gold coloration of the finish. All surfaces are coated because the process is performed after fabrication.

PVC: A corrosive resistant PVC (polyvinyl chloride) coating is applied over the completed strut channel. The coating process consists of surface pretreatment, followed by preheating of the part, which is then passed through a fluidized bed of vinyl plastic powder. The powder melts onto the heated channel forming a smooth coating which undergoes a final heat curing.