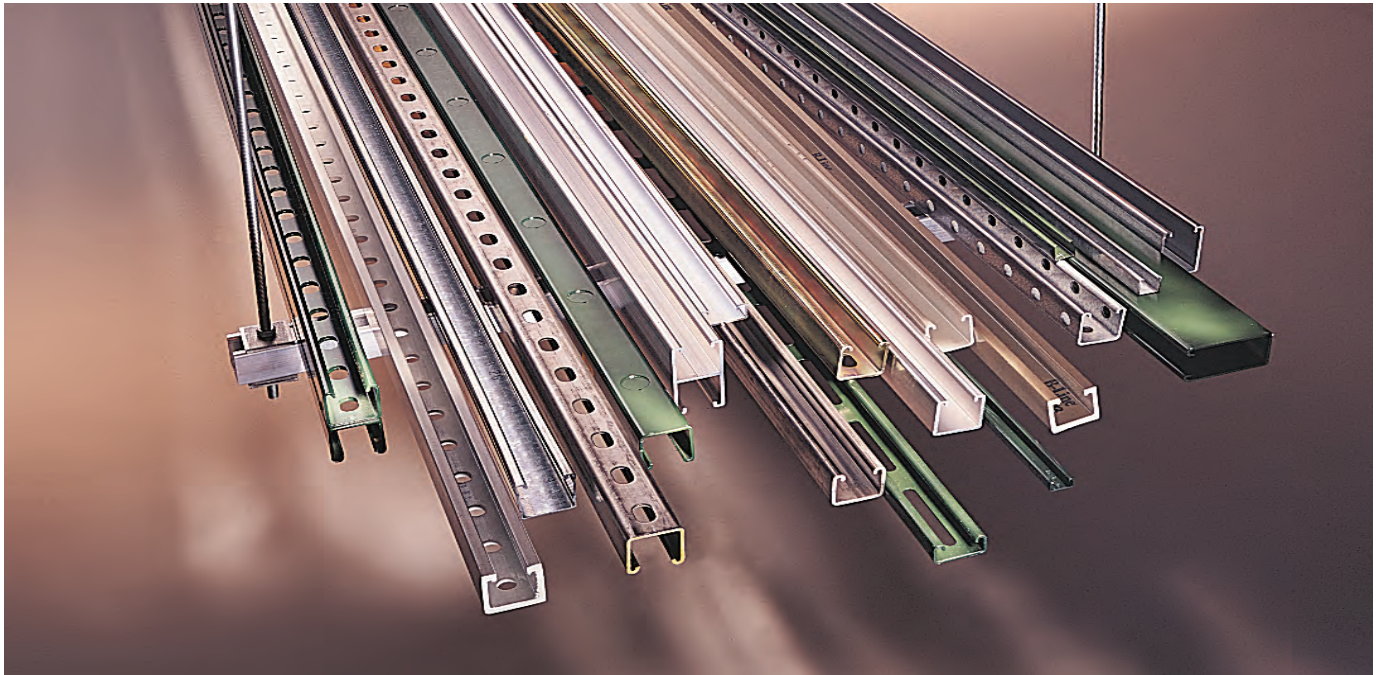


Metal Framing Channels



Channel

Metal framing channel is cold formed on our modern rolling mills from 12 Ga. (2.6mm), 14 Ga. (1.9mm), and 16 Ga. (1.5mm) low carbon steel strips. A continuous slot with inturned lips provides the ability to make attachments at any point.

Lengths & Tolerances

All channels excluding 'SH' style $\pm 1/8"$ (3.2mm) on 10' (3.05m) and $\pm 3/16"$ (4.76mm) on 20' (6.09m)

All 'SH' channels only $\pm 1/4"$ (6.35mm) on 10' (3.05m) and $\pm 1/2"$ (12.70mm) on 20' (6.09m)

Custom lengths are available upon request.

Slots

Slotted series of channels offer full flexibility. A variety of pre-punched slot patterns eliminate the need for precise field measuring for hole locations. Slots offer wide adjustments in the alignment and bolt sizing.

Holes

A variety of pre-punched $9/16"$ (14.3 mm) diameter hole patterns are available in our channels. These hole patterns provide an economical alternative to costly field drilling required for many applications.

Knockouts

When used with series B217-20 Closure Strips, knockout channels can be used to provide an economical U.L. listed surface raceway. Channels are furnished with $7/8"$ (22.2 mm) knockouts on 6" (152 mm) centers, allowing for perfect fixture alignment on spans up to 20' (6.09 m).

Materials & Finishes (Unless otherwise noted)

Steel: Plain & Pre-galvanized

12 Ga. (2.6), 14 Ga. (1.9) and 16 Ga. (1.5)

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

Design Load (Steel & Stainless Steel)

The design loads given for strut beam loads are based on a simple beam condition using an allowable stress of 25,000 psi. This allowable stress results in a safety factor of 1.68. This is based upon virgin steel minimum yield strength of 33,000 psi cold worked during rolling to an average yield stress of 42,000 psi. For aluminum channel loading multiply steel loading by a factor of 0.38.

Welding





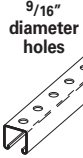


Weld spacing is maintained between 2 $1/2$ inches (63.5 mm) and 4 inches (101.6 mm) on center. Through high quality control testing of welded channels and continuous monitoring of welding equipment, we provide the most consistent combination channels available today.

Metric

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

Finish Code	Finish	Specification
PLN	Plain	ASTM A1011, 33,000 PSI min. yield
GRN	DURA GREEN™	
GLV	Pre-Galvanized	ASTM A653 33,000 PSI min. yield
HDG	Hot-Dipped Galvanized	ASTM A123
YZN	Yellow Zinc Chromate	ASTM B633 SC3 Type II
SS4	Stainless Steel Type 304	ASTM A240
SS6	Stainless Steel Type 316	ASTM A240
AL	Aluminum	Aluminum 6063-T6

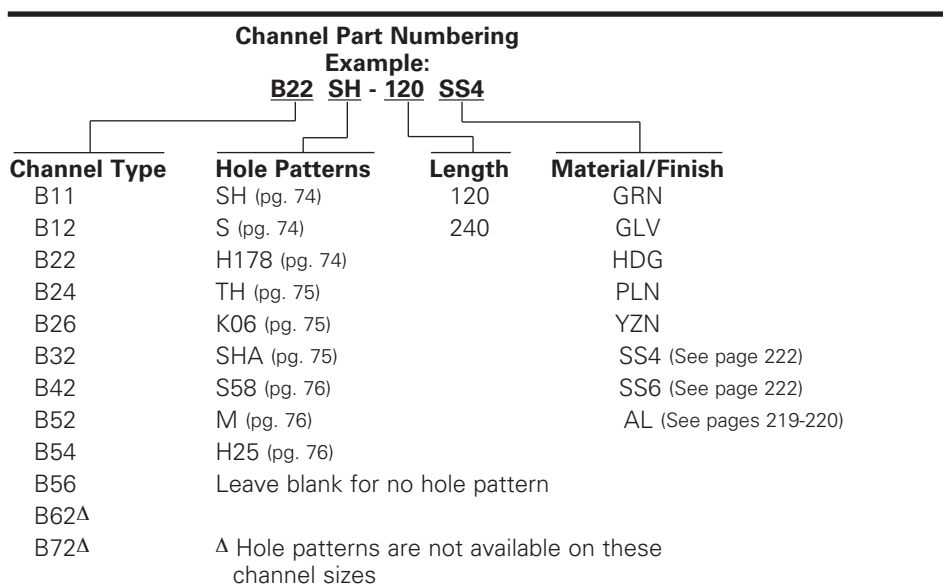
Selection Chart for Channels, Materials and Hole Patterns

Channel Type	Channel Dimensions		Material & Thickness * Stainless Steel				Channel Hole Pattern **				
	Height	Width	Steel	Alum.	Type 304	Type 316	SH	S	H17/8	TH	KO6
			1	2	3	4					
B11	3 1/4" (82.5)	1 5/8" (41.3)	12 Ga.	.105	–	–	1	1	1	–	1
B12	2 7/16" (61.9)	1 5/8" (41.3)	12 Ga.	.105	–	–	1 2	1	1 2	–	1 2
B22	1 5/8" (41.3)	1 5/8" (41.3)	12 Ga.	.105	12 Ga.	12 Ga.	1 2 3 4	1 3	1 2 3 4	1	1 2
B24	1 5/8" (41.3)	1 5/8" (41.3)	14 Ga.	.080	14 Ga.	14 Ga.	1 2 3 4	1	1 2 3 4	–	1 2
B26	1 5/8" (41.3)	1 5/8" (41.3)	16 Ga.	–	–	–	1	1	1	–	1
B32	1 3/8" (34.9)	1 5/8" (41.3)	12 Ga.	–	12 Ga.	–	1 3	1	1 3	–	1
B42	1" (25.4)	1 5/8" (41.3)	12 Ga.	–	12 Ga.	–	1 3	1	1 3	–	1
B52	1 3/16" (20.6)	1 5/8" (41.3)	12 Ga.	–	12 Ga.	12 Ga.	1 3 4	1	1	–	1
B54	1 3/16" (20.6)	1 5/8" (41.3)	14 Ga.	.080	14 Ga.	14 Ga.	1 2 3 4	1	1 2 3 4	–	1 2
B56	1 3/16" (20.6)	1 5/8" (41.3)	16 Ga.	–	–	–	1	1	1	–	1
B62	1 3/16" (20.6)	1 3/16" (20.6)	18 Ga.	–	–	–	–	–	–	–	–
B72	1 3/32" (10.3)	1 3/16" (20.6)	18 Ga.	–	–	–	–	–	–	–	–

The selection has been prepared to provide a reference for available channel, materials and hole patterns. Material types available for various hole patterns are defined by numbers 1 thru 4. Some stainless steel channels with hole patterns are available on special order only.

*Metric equivalent for thicknesses shown in chart. ** 1 - Steel
 12 Ga. = 2.6 mm 18 Ga. = 1.2 mm 2 - Aluminum
 14 Ga. = 1.9 mm .105 = 2.6 mm 3 - Type 304 Stainless Steel
 16 Ga. = 1.5 mm .080 = 2.0 mm 4 - Type 316 Stainless Steel

Properties may vary due to commercial tolerances of the material.

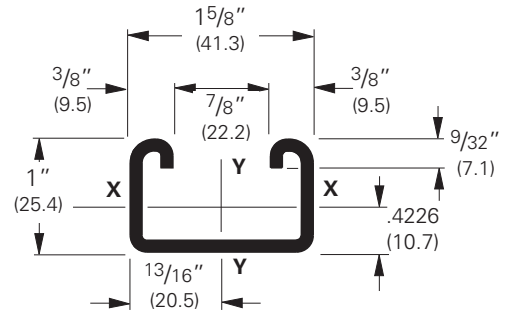
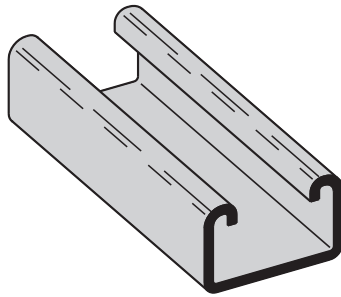


Reference page 48 for general fitting and standard finish specifications.

B42 Channel & Combinations

B42

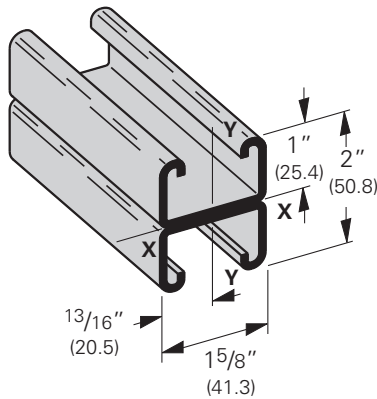
- Thickness: 12 Gauge (2.6 mm)
 - Standard lengths: 10' (3.05 m) & 20' (6.09 m)
 - Standard finishes: Plain, DURA GREEN™, Pre-Galvanized, Hot-Dipped Galvanized, Stainless Steel Type 304
 - Weight: 1.44 Lbs./Ft. (2.14 kg/m)
- Note: Also available in 14 gauge (1.9mm) material as B44



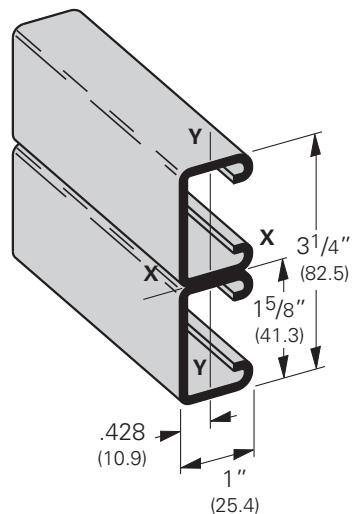
Section Properties			X - X Axis				Y - Y Axis			
Channel	Weight lbs./ft. kg/m	Areas of Section sq. in. cm ²	Moment of Inertia (I) in. ⁴ cm ⁴	Section Modulus (S) in. ³ cm ³	Radius of Gyration (r) in. cm	Moment of Inertia (I) in. ⁴ cm ⁴	Section Modulus (S) in. ³ cm ³	Radius of Gyration (r) in. cm		
B42	1.468 (2.18)	.432 (2.79)	.0554 (2.31)	.0968 (1.59)	.358 (.91)	.1645 (6.85)	.2025 (3.32)	.617 (1.57)		
B42A	2.936 (4.37)	.864 (5.57)	.2689 (11.19)	.2689 (4.41)	.558 (1.42)	.3292 (13.70)	.4052 (6.64)	.617 (1.57)		

Calculations of section properties are based on metal thicknesses as determined by the AISI Cold-Formed Steel Design Manual.

Channel & Combinations



B42A
Wt. 2.88 Lbs./Ft. (4.28 kg/m)



B42B
Wt. 2.88 Lbs./Ft. (4.28 kg/m)

Reference page 48 for general fitting and standard finish specifications.

B42 Beam & Column Loading Data

Beam Loading

Beam Span In. mm		Channel Style	Uniform Load and Deflection				Uniform Load @ Deflection =			
			1/240 Span		1/360 Span					
			Lbs.	kN	In.	mm	Lbs.	kN	Lbs.	kN
12	(305)	B42	1538	(6.84)	.022	(.56)	1538	(6.84)	1538	(6.84)
		B42A	1590*	(7.07)	.005	(.13)	1590*	(7.07)	1590*	(7.07)
24	(609)	B42	769	(3.42)	.088	(2.23)	769	(3.42)	582	(2.59)
		B42A	1590*	(7.07)	.038	(.96)	1590*	(7.07)	1590*	(7.07)
36	(914)	B42	513	(2.28)	.198	(5.03)	388	(1.72)	259	(1.15)
		B42A	1428	(6.35)	.114	(2.89)	1428	(6.35)	1248	(5.55)
48	(1219)	B42	384	(1.71)	.352	(8.94)	218	(0.97)	145	(0.64)
		B42A	1071	(4.76)	.203	(5.15)	1053	(4.68)	702	(3.12)
60	(1524)	B42	308	(1.37)	.550	(13.97)	140	(0.62)	93	(0.41)
		B42A	857	(3.81)	.318	(8.08)	674	(3.00)	449	(2.00)
72	(1829)	B42	256	(1.14)	.792	(20.11)	97	(0.43)	65	(0.29)
		B42A	714	(3.17)	.457	(11.61)	468	(2.08)	312	(1.39)
84	(2133)	B42	220	(0.98)	1.079	(27.40)	71	(0.31)	48	(0.21)
		B42A	612	(2.72)	.623	(15.82)	344	(1.53)	229	(1.02)
96	(2438)	B42	192	(0.85)	1.409	(35.79)	55	(0.24)	36	(0.16)
		B42A	535	(2.38)	.813	(20.65)	263	(1.17)	176	(0.78)
108	(2743)	B42	171	(0.76)	1.783	(45.29)	43	(0.19)	29	(0.13)
		B42A	476	(2.12)	1.029	(26.13)	208	(0.92)	139	(0.62)
120	(3048)	B42	154	(0.68)	2.202	(55.93)	35	(0.15)	23	(0.10)
		B42A	428	(1.90)	1.271	(32.28)	168	(0.75)	112	(0.50)

Based on simple beam condition using an allowable design stress of 25,000 psi (172 MPa) in accordance with MFMA, with adequate lateral bracing (see page 12 for further explanation). Actual yield point of cold rolled steel is 42,000 psi. To determine concentrated load capacity at mid span, multiply uniform load by 0.5 and corresponding deflection by 0.8. *Failure determined by weld shear.

Column Loading

Unbraced Height In. mm		Channel Style	Max. Column Loading K = .80				Max. Column Loading (Loaded @ C.G.)					
			Loaded @ C.G.		Loaded @ Slot Face		K = .65		K = 1.0		K = 1.2	
			Lbs.	kN	Lbs.	kN	Lbs.	kN	Lbs.	kN	Lbs.	kN
12	(305)	B42	9138	(40.65)	3493	(15.54)	9283	(41.23)	8916	(39.66)	8670	(38.56)
		B42A	21094	(93.83)	5834	(25.95)	21304	(94.76)	20793	(92.49)	20469	(91.05)
24	(609)	B42	8137	(36.19)	3145	(13.99)	8540	(37.99)	7589	(33.76)	7050	(31.36)
		B42A	19757	(87.88)	5585	(24.84)	20299	(90.29)	18964	(84.35)	18094	(80.48)
36	(914)	B42	7050	(31.36)	2722	(12.11)	7657	(34.06)	5925	(26.35)	4335	(19.28)
		B42A	18094	(80.48)	5237	(23.29)	19067	(84.81)	16654	(74.08)	15057	(66.98)
48	(1219)	B42	5405	(24.04)	2227	(9.90)	6786	(30.18)	3512	(15.62)	2439	(10.85)
		B42A	16139	(71.79)	4818	(21.43)	17632	(78.43)	13906	(61.86)	11387	(50.65)
60	(1524)	B42	3512	(15.62)	1718	(7.64)	5272	(23.45)	2247	(9.99)	1561**	(6.94)
		B42A	13906	(61.86)	4352	(19.36)	16008	(71.21)	10710	(47.64)	7531	(33.50)
72	(1829)	B42	2439	(10.85)	1351	(6.01)	3694	(16.43)	1561**	(6.94)	1084**	(4.82)
		B42A	11387	(50.65)	3856	(17.15)	14200	(64.16)	7531	(33.50)	5230	(23.26)
84	(2133)	B42	1792	(7.97)	1087	(4.83)	2714	(12.07)	1147**	(5.10)	796**	(3.54)
		B42A	8645	(38.45)	3332	(14.82)	12206	(54.29)	5533	(24.61)	3842	(17.09)
96	(2438)	B42	1372**	(6.10)	891	(3.96)	2078	(9.24)	878**	(3.90)	-	-
		B42A	6619	(29.44)	2873	(12.78)	10012	(44.53)	4236	(18.84)	2942**	(13.08)
108	(2743)	B42	1084**	(4.82)	743	(3.30)	1642	(7.30)	-	-	-	-
		B42A	5230	(23.26)	2495	(11.10)	7922	(35.24)	3347	(14.89)	2324**	(10.34)
120	(3048)	B42	878**	(3.90)	628	(2.79)	1330**	(5.91)	-	-	-	-
		B42A	4236	(18.84)	2182	(9.70)	6417	(28.54)	2711**	(12.06)	1883**	(8.37)

**Where the slenderness ratio $\frac{KL}{r}$ exceeds 200, and K = end fixity factor, L = actual length and r = radius of gyration.

Reference page 48 for general fitting and standard finish specifications.