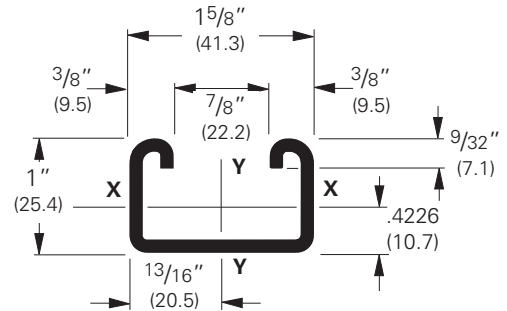
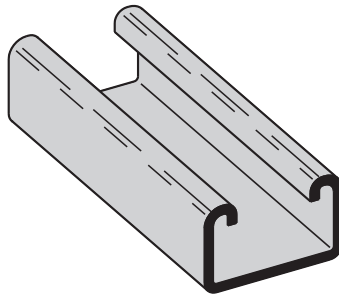


B42 Channel & Combinations

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

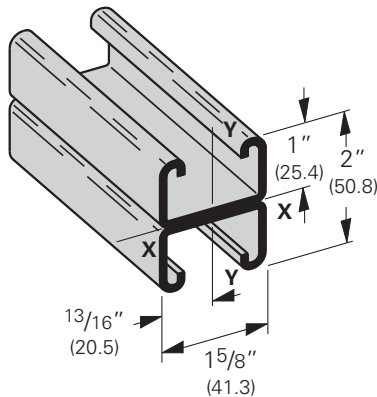


Section Properties

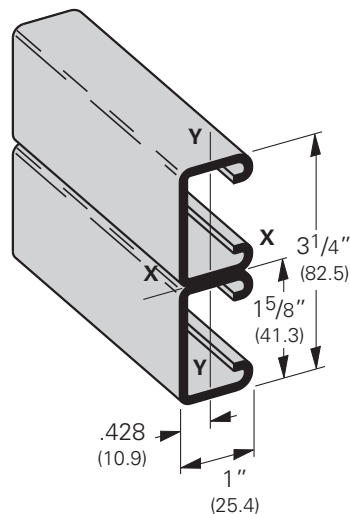
Channel	Weight lbs./ft. kg/m	Areas of Section sq. in. cm ²	X - X Axis			Y - Y Axis		
			Moment of Inertia (I) in. ⁴ cm ⁴	Section Modulus (S) in. ³ cm ³	Radius of Gyration (r) in. cm	Moment of Inertia (I) in. ⁴ cm ⁴	Section Modulus (S) in. ³ cm ³	Radius of Gyration (r) in. cm
B42	1.468 (2.18)	.432 (2.79)	.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)

B42 Beam & Column Loading Data

Beam Loading

Beam Span In. mm	Channel Style	Uniform Load and Deflection				Uniform Load @ Deflection =			
		Lbs.		kN		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 15 for general fitting and standard finish specifications.