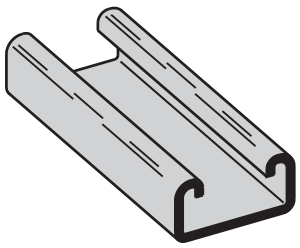
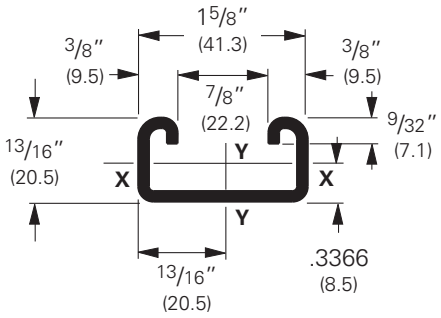
B52 Channel & Combinations

B52

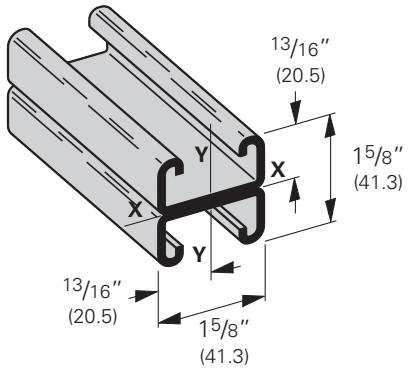
- Thickness: 12 Gauge (2.6 mm)
- Standard lengths: 10' (3.05 m) & 20' (6.09 m)
- Standard finishes: Plain, DURA GREEN™, Pre-Galvanized, Stainless Steel Type 304 or 316, Hot-Dipped Galvanized
- Weight: 1.27 Lbs./Ft. (1.89 kg/m)



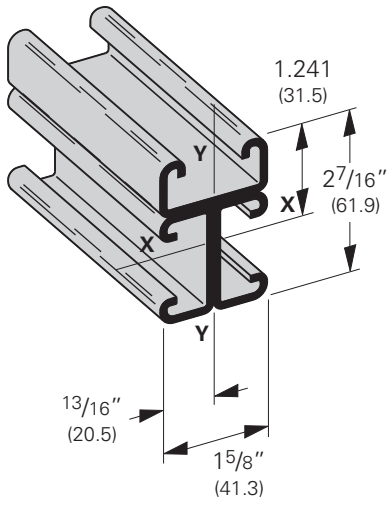


Section Properties				X - X Axis			Y - Y Axis		
Channel	Weight lbs./ft. kg/m	Areas of Section sq. in. cm^2	Momentof Inertia (I) $in.^4$ cm^4	Section Modulus (S) $in.^3$ cm^3	Radius of Gyration (r) in. cm	Moment of Inertia (I) $in.^4$ cm^4	Section Modulus (S) $in.^3$ cm^3	Radius of Gyration (r) in. cm
B52	1.313 (1.95)	.386 (2.49)	.0320 (1.33)	.0673 (1.10)	.288 (.73)	.1404 (5.84)	.1728 (2.83)	.603 (1.53)
B52A	2.627 (3.91)	.773 (4.99)	.1517 (6.31)	.1868 (3.06)	.443 (1.13)	.2809 (11.69)	.3457 (5.67)	.603 (1.53)

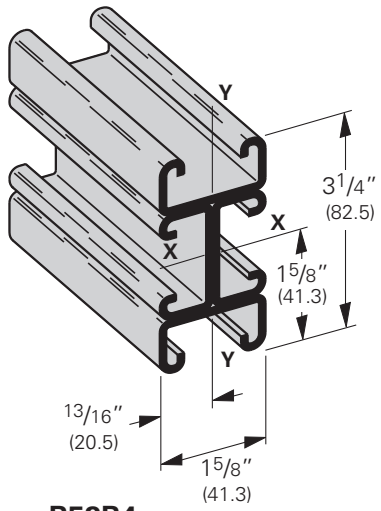
Calculations of section properties are based on metal thicknesses as determined by the AISI Cold-Formed Steel Design Manual.



B52A
Wt. 2.54 Lbs./Ft. (3.78 kg/m)



B52B3
Wt. 3.81 Lbs./Ft. (5.67 kg/m)



B52B4
Wt. 5.08 Lbs./Ft. (7.56 kg/m)

Reference page 15 for general fitting and standard finish specifications.

Beam Loading

Beam Span In.	Beam Span mm	Channel Style	Uniform Load and Deflection Lbs.	Uniform Load and Deflection kN	Uniform Load and Deflection In.	Uniform Load and Deflection mm	Uniform Load @ Deflection = 1/240 Span Lbs.	Uniform Load @ Deflection = 1/240 Span kN	Uniform Load @ Deflection = 1/360 Span Lbs.	Uniform Load @ Deflection = 1/360 Span kN
12	(305)	**B52**	1079	(4.80)	.026	(.66)	1079	(4.80)	1079	(4.80)
		B52A	1270*	(5.65)	.006	(.15)	1270*	(5.65)	1270*	(5.65)
24	(609)	**B52**	539	(2.40)	.106	(2.69)	506	(2.25)	337	(1.50)
		B52A	1270*	(5.65)	.052	(1.32)	1270*	(5.65)	1270*	(5.65)
36	(914)	**B52**	360	(1.60)	.240	(6.09)	225	(1.00)	150	(0.67)
		B52A	1013	(4.50)	.141	(3.58)	1013	(4.50)	719	(3.20)
48	(1219)	**B52**	270	(1.20)	.427	(10.84)	126	(0.56)	84	(0.37)
		B52A	759	(3.37)	.250	(6.35)	607	(2.70)	404	(1.80)
60	(1524)	**B52**	216	(0.96)	.667	(16.94)	81	(0.36)	54	(0.24)
		B52A	608	(2.70)	.391	(9.93)	388	(1.72)	259	(1.15)
72	(1829)	**B52**	180	(0.80)	.960	(24.38)	56	(0.25)	37	(0.16)
		B52A	506	(.225)	.563	(14.30)	270	(1.20)	180	(0.80)
84	(2133)	**B52**	154	(0.68)	1.307	(33.20)	41	(0.18)	28	(0.12)
		B52A	434	(1.93)	.766	(19.45)	198	(0.88)	132	(0.59)
96	(2438)	**B52**	135	(0.60)	1.707	(43.36)	32	(0.14)	21	(0.93)
		B52A	380	(1.69)	1.001	(25.42)	152	(0.67)	101	(0.45)
108	(2743)	**B52**	120	(0.53)	2.160	(54.86)	25	(0.11)	17	(0.75)
		B52A	338	(1.50)	1.267	(32.18)	120	(0.53)	80	(0.35)
120	(3048)	**B52**	108	(0.48)	2.667	(67.74)	20	(0.89)	13	(0.58)
		B52A	304	(.135)	1.564	(39.72)	97	(0.43)	65	(0.29)

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.	Unbraced Height mm	Channel Style	Max. Column Loading K = .80 Loaded@ C.G. Lbs.	Max. Column Loading K = .80 Loaded@ C.G. kN	Max. Column Loading K = .80 Loaded@ Slot Face Lbs.	Max. Column Loading K = .80 Loaded@ Slot Face kN	Max. Column Loading (Loaded @ C.G.) K = .65 Lbs.	K = .65 kN	K = 1.0 Lbs.	K = 1.0 kN	K = 1.2 Lbs.	K = 1.2 kN
12	(305)	**B52**	8407	(37.36)	3162	(14.06)	8543	(38.00)	8205	(36.50)	7989	(35.54)
		B52A	19160	(85.23)	5290	(23.53)	19425	(86.41)	18777	(83.52)	18363	(81.68)
24	(609)	**B52**	7519	(33.44)	2755	(12.25)	7879	(35.05)	6521	(29.01)	5397	(24.01)
		B52A	17444	(77.59)	4955	(22.04)	18144	(80.71)	16412	(73.00)	15275	(67.94)
36	(914)	**B52**	5397	(24.01)	2152	(9.57)	6653	(29.59)	3616	(16.08)	2511	(11.17)
		B52A	15275	(67.94)	4496	(20.00)	16547	(73.60)	13376	(59.50)	11243	(50.01)
48	(1219)	**B52**	3178	(14.13)	1560	(6.94)	4785	(21.28)	2034	(9.05)	1412**	(6.28)
		B52A	12692	(56.46)	3963	(17.63)	14667	(65.24)	9683	(43.07)	6780	(30.16)
60	(1524)	**B52**	2034	(9.05)	1159	(5.15)	3081	(13.70)	1302**	(5.79)	904**	(4.02)
		B52A	9683	(43.07)	3383	(15.05)	12516	(55.67)	6248	(27.79)	4339	(19.30)
72	(1829)	**B52**	1412**	(6.28)	891	(3.96)	2139	(9.51)	904**	(4.02)	–	–
		B52A	6780	(30.16)	2799	(12.45)	10084	(44.85)	4339	(19.30)	3013	(13.42)
84	(2133)	**B52**	1038**	(4.62)	704	(3.13)	1572	(6.99)	664**	(2.95)	–	–
		B52A	4981	(22.15)	2337	(10.39)	7545	(33.56)	3188	(14.18)	2214**	(9.85)
96	(2438)	**B52**	794**	(3.53)	570	(2.53)	1203**	(5.35)	–	–	–	–
		B52A	3814	(16.96)	1973	(8.77)	5777	(25.70)	2441**	(10.86)	1695**	(7.54)
108	(2743)	**B52**	-	-	470	(2.09)	951**	(4.23)	–	–	–	–
		B52A	3013	(13.40)	1684	(7.49)	4564	(20.30)	1928**	(8.57)	1339**	(5.95)
120	(3048)	**B52**	-	-	394	(1.75)	770**	(3.42)	–	–	–	–
		B52A	2441**	(10.86)	1452	(6.46)	3697	(16.44)	1562**	(6.95)	–	–

**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.