

 W14		<div>Table 4-1a (continued)</div> <div>Available Strength in</div> <div>Axial Compression, kips</div> <div>$F_y = 50$ ksi</div> <div>W-Shapes</div>											
Shape		W14x											
lb/ft		145		132		120		109		99		90	
Design		P_n/Ω_c		$\phi_c P_n$		P_n/Ω_c		$\phi_c P_n$		P_n/Ω_c		$\phi_c P_n$	
		ASD	LRFD	ASD	LRFD	ASD	LRFD	ASD	LRFD	ASD	LRFD	ASD	LRFD
Effective length, L_c (ft), with respect to least radius of gyration, r_y	0	1280	1920	1160	1750	1060	1590	958	1440	871	1310	793	1190
	6	1250	1880	1130	1700	1030	1550	932	1400	848	1270	772	1160
	7	1240	1860	1120	1680	1020	1530	923	1390	839	1260	764	1150
	8	1230	1840	1110	1660	1010	1510	913	1370	830	1250	755	1140
	9	1210	1820	1090	1640	994	1490	901	1350	819	1230	745	1120
	10	1200	1800	1080	1620	980	1470	888	1340	807	1210	735	1100
	11	1180	1770	1060	1600	965	1450	874	1310	794	1190	723	1090
	12	1160	1750	1040	1570	948	1430	859	1290	780	1170	710	1070
	13	1140	1720	1020	1540	931	1400	843	1270	766	1150	697	1050
	14	1120	1690	1000	1510	912	1370	826	1240	750	1130	682	1030
	15	1100	1650	982	1480	892	1340	808	1210	733	1100	667	1000
	16	1080	1620	960	1440	872	1310	789	1190	716	1080	652	979
	17	1060	1590	937	1410	850	1280	770	1160	698	1050	635	955
	18	1030	1550	913	1370	828	1240	750	1130	680	1020	618	929
	19	1010	1510	888	1330	805	1210	729	1100	661	994	601	903
	20	980	1470	862	1300	782	1180	708	1060	642	964	583	877
	22	927	1390	810	1220	734	1100	664	998	602	904	547	822
	24	872	1310	756	1140	685	1030	620	931	561	843	509	766
	26	816	1230	702	1060	635	955	574	863	519	781	472	709
	28	759	1140	648	974	586	880	529	796	478	719	434	653
	30	703	1060	594	893	537	807	485	729	438	658	397	597
	32	647	973	542	814	489	735	441	663	398	598	361	543
	34	593	891	491	738	443	665	399	600	360	541	326	490
	36	540	812	442	664	398	598	359	539	323	485	292	439
	38	489	735	397	596	357	536	322	484	290	435	262	394
	40	441	663	358	538	322	484	290	437	261	393	237	356
Available Strength Parameters for Concentrated Forces [¶]													
P_{wo} , kips		192	287	175	263	151	227	128	192	112	167	96.1	144
P_{wi} , kip/in.	22.7		34.0	21.5	32.3	19.7	29.5	17.5	26.3	16.2	24.3	14.7	22.0
P_{wb} , kips	476		716	407	611	312	469	220	330	173	260	129	194
P_{tb} , kips	222		334	199	298	165	249	138	208	114	171	94.3	142
Properties													
L_p , ft		14.1		13.3		13.2		13.2		13.5		15.1	
L_r , ft		61.7		55.8		51.9		48.5		45.3		42.5	
A_g , in. ²		42.7		38.8		35.3		32.0		29.1		26.5	
I_x , in. ⁴		1710		1530		1380		1240		1110		999	
I_y , in. ⁴		677		548		495		447		402		362	
r_y , in.		3.98		3.76		3.74		3.73		3.71		3.70	
r_x/r_y		1.59		1.67		1.67		1.67		1.66		1.66	
$P_{ex} L_c^2/10^4$, kip-in. ²		48900		43800		39500		35500		31800		28600	
$P_{ey} L_c^2/10^4$, kip-in. ²		19400		15700		14200		12800		11500		10400	
ASD	LRFD	[¶] Flange local buckling, web local buckling, and web compression buckling are considered. Web local crippling, web sidesway buckling, and web panel zone shear are not addressed in this table.											
$\Omega_c = 1.67$	$\phi_c = 0.90$												

AMERICAN INSTITUTE OF STEEL CONSTRUCTION