

### Allowable Wind Force at Mid-height, $F_a$ (lbs) & Allowable Axial Force, $P_a$ (lbs) - Group IA and IC Posts

Post Size	Weight, $D_p$ lbs / ft	Fence Height, H (ft)																
		5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	
<b>Schedule 40 / ASTM F1043 / Group 1A / 30 ksi</b>																		
1-5/8"	2.3	$F_a$ 182 $P_a$ 1,745*	152 1,212*	130 890*	114 681*	-	-	-	-	-	-	-	-	-	-	-	-	-
1-7/8"	2.7	$F_a$ 252 $P_a$ 2,773*	210 1,926*	180 1,415*	157 1,083*	140 856*	-	-	-	-	-	-	-	-	-	-	-	-
2-3/8"	3.7	$F_a$ 427 $P_a$ 5,943	356 4,127	305 3,032*	267 2,321*	237 1,834*	213 1,485*	194 1,227*	178 1,031*	-	-	-	-	-	-	-	-	-
2-7/8"	5.8	$F_a$ 817 $P_a$ 13,272	680 9,494	583 6,975	510 5,340*	453 4,219*	408 3,418*	371 2,824*	340 2,373*	314 2,022*	291 1,743*	272 1,519*	-	-	-	-	-	-
3-1/2"	7.6	$F_a$ 1,310 $P_a$ 22,458	1,092 17,944	936 13,733	819 10,514	728 8,307	655 6,729*	595 5,561*	546 4,673*	504 3,981*	468 3,433*	436 2,990*	409 2,628*	385 2,328*	364 2,076*	-	-	-
4"	9.1	$F_a$ 1,809 $P_a$ 30,535	1,507 25,757	1,292 21,064	1,130 16,666	1,005 13,168	904 10,666	822 8,815*	753 7,407*	695 6,311*	646 5,442*	603 4,740*	565 4,166*	532 3,690*	502 3,292*	476 2,954*	452 2,666*	
4-1/2"	10.8	$F_a$ 2,419 $P_a$ 39,301	2,016 34,390	1,728 29,370	1,512 24,481	1,344 19,876	1,209 16,100	1,099 13,305	1,008 11,180	930 9,526*	864 8,214*	806 7,155*	756 6,289*	711 5,570*	672 4,969*	636 4,459*	604 4,025*	
5-9/16"	14.6	$F_a$ 4,069 $P_a$ 59,190	3,391 54,288	2,906 49,016	2,543 43,565	2,260 38,117	2,034 32,830	1,849 27,809	1,695 23,367	1,565 19,910	1,453 17,167	1,356 14,955*	1,271 13,144*	1,196 11,643*	1,130 10,385*	1,070 9,321*	1,017 8,412*	
6-5/8"	19.0	$F_a$ 6,319 $P_a$ 81,532	5,266 76,751	4,514 71,462	3,949 65,810	3,511 59,943	3,159 54,002	2,872 48,119	2,633 42,408	2,430 36,967	2,257 31,890	2,106 27,780	1,974 24,416	1,858 21,628	1,755 19,291*	1,663 17,314*	1,579 15,626*	
8-5/8"	28.6	$F_a$ 12,434 $P_a$ 129,849	10,362 125,342	8,881 120,217	7,771 114,564	6,908 108,477	6,217 102,056	5,652 95,401	5,181 88,609	4,782 81,773	4,440 74,982	4,144 68,314	3,885 61,841	3,657 55,623	3,454 49,640	3,272 44,552	3,108 40,208	
<b>40 Weight / ASTM F1043 / Group 1C / 50 ksi</b>																		
1-5/8"	1.8	$F_a$ 244 $P_a$ 1,455*	203 1,010*	174 742*	152 568*	-	-	-	-	-	-	-	-	-	-	-	-	-
1-7/8"	2.3	$F_a$ 350 $P_a$ 2,385	292 1,656*	250 1,217*	219 931*	194 736*	175 596*	-	-	-	-	-	-	-	-	-	-	-
2-3/8"	3.1	$F_a$ 608 $P_a$ 5,178	507 3,596	434 2,642*	380 2,022*	338 1,598*	304 1,294*	276 1,069*	253 899*	-	-	-	-	-	-	-	-	-
2-7/8"	4.6	$F_a$ 1,095 $P_a$ 11,274	912 7,829	782 5,752	684 4,404*	608 3,479*	547 2,818*	497 2,329*	456 1,957*	421 1,667*	391 1,438*	365 1,252*	-	-	-	-	-	-
4"	6.6	$F_a$ 2,222 $P_a$ 28,899	1,852 22,018	1,587 16,247	1,389 12,439	1,234 9,828	1,111 7,961	1,010 6,579*	926 5,528*	854 4,710*	793 4,061*	740 3,538*	694 3,109*	653 2,754*	617 2,457*	584 2,205*	555 1,990*	
4-1/2"	7.4	$F_a$ 2,851 $P_a$ 37,346	2,376 30,183	2,036 23,447	1,782 17,951	1,584 14,184	1,425 11,489	1,296 9,495	1,188 7,978	1,096 6,798*	1,018 5,861*	950 5,106*	891 4,487*	838 3,975*	792 3,546*	750 3,182*	712 2,872*	
<b>Schedule 40 / ASTM F1083 / Group 1A / 50 ksi</b>																		
1-5/8"	2.3	$F_a$ 304 $P_a$ 1,745*	254 1,212*	217 890*	190 681*	-	-	-	-	-	-	-	-	-	-	-	-	-
1-7/8"	2.7	$F_a$ 420 $P_a$ 2,773*	350 1,926*	300 1,415*	262 1,083*	233 856*	-	-	-	-	-	-	-	-	-	-	-	-
2-3/8"	3.7	$F_a$ 712 $P_a$ 5,943	594 4,127	509 3,032*	445 2,321*	396 1,834*	356 1,485*	324 1,227*	297 1,031*	-	-	-	-	-	-	-	-	-
2-7/8"	5.8	$F_a$ 1,361 $P_a$ 13,672	1,134 9,494	972 6,975	851 5,340*	756 4,219*	680 3,418*	618 2,824*	567 2,373*	523 2,022*	486 1,743*	453 1,519*	-	-	-	-	-	-
3-1/2"	7.6	$F_a$ 2,184 $P_a$ 26,641	1,820 18,692	1,560 13,733	1,365 10,514	1,213 8,307	1,092 6,729*	993 5,561*	910 4,673*	840 3,981*	780 3,433*	728 2,990*	682 2,628*	642 2,328*	606 2,076*	-	-	-
4"	9.1	$F_a$ 3,015 $P_a$ 39,325	2,513 29,614	2,154 21,768	1,884 16,666	1,675 13,168	1,507 10,666	1,370 8,815*	1,256 7,407*	1,159 6,311*	1,077 5,442*	1,005 4,740*	942 4,166*	887 3,690*	837 3,292*	793 2,954*	753 2,666*	
4-1/2"	10.8	$F_a$ 4,032 $P_a$ 53,507	3,360 42,832	2,880 32,857	2,520 25,156	2,240 19,876	2,016 16,100	1,832 13,305	1,680 11,180	1,550 9,526*	1,440 8,214*	1,344 7,155*	1,260 6,289*	1,185 5,570*	1,120 4,969*	1,061 4,459*	1,008 4,025*	
5-9/16"	14.6	$F_a$ 6,782 $P_a$ 86,539	5,651 74,928	4,844 63,197	4,238 51,924	3,767 41,542	3,391 33,649	3,082 27,809	2,825 23,367	2,608 19,910	2,422 17,167	2,260 14,955*	2,119 13,144*	1,994 11,643*	1,883 10,385*	1,784 9,321*	1,695 8,412*	
6-5/8"	19.0	$F_a$ 10,533 $P_a$ 123,999	8,777 112,120	7,523 99,540	6,583 86,768	5,851 74,263	5,266 62,407	4,787 51,657	4,388 43,406	4,051 36,985	3,761 31,890	3,511 27,780	3,291 24,416	3,097 21,628	2,925 19,291*	2,771 17,314*	2,633 15,626*	
8-5/8"	28.6	$F_a$ 20,724 $P_a$ 205,137	17,270 193,408	14,803 180,409	12,952 166,492	11,513 152,012	10,362 137,314	9,420 122,716	8,635 108,503	7,970 94,914	7,401 82,058	6,908 71,481	6,476 62,825	6,095 55,651	5,756 49,640	5,453 44,552	5,181 40,208	
Post Size	$D_p$ lbs / ft	Fence Height, H (ft)																
		5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	

Notes: ( \* ) Keep  $p_w / P_a$  and  $p_c / P_a \leq 0.2$  as  $KH / r$  exceeds 200 ( - )  $KH / r$  exceeds 400  $K = 2.1$  for cantilevered columns

### Allowable Wind Force at Mid-height, $F_a$ (lbs) & Allowable Axial Force, $P_a$ (lbs) - Schedule 80 Posts

Post Size	Weight, $D_p$ lbs / ft	Fence Height, H (ft)																
		5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	
<b>Schedule 80 / ASTM F1083 / 30 ksi</b>																		
1-5/8"	3.0	$F_a$ $P_a$	234 2,182*	195 1,515*	167 1,113*	146 852*	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
1-7/8"	3.6	$F_a$ $P_a$	328 3,523*	273 2,446*	234 1,797*	205 1,376*	182 1,087*	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
2-3/8"	5.0	$F_a$ $P_a$	574 7,793	478 5,412	410 3,976*	359 3,044*	319 2,405*	287 1,948*	261 1,610*	239 1,353*	- -	- -	- -	- -	- -	- -	- -	- -
2-7/8"	7.7	$F_a$ $P_a$	1,057 16,957	880 12,010	755 8,823	660 6,755*	587 5,337*	528 4,323*	480 3,573*	440 3,002*	406 2,558*	377 2,205*	- -	- -	- -	- -	- -	- -
3-1/2"	10.3		1,737 29,760	1,448 23,538	1,241 17,818	1,086 13,642	965 10,778	868 8,730*	789 7,215*	724 6,063*	668 5,166*	620 4,454*	579 3,880*	543 3,410*	511 3,021*	482 2,694*	- -	- -
4"	12.5	$F_a$ $P_a$	2,435 41,298	2,029 34,580	1,739 28,035	1,521 21,970	1,352 17,359	1,217 14,060	1,106 11,620*	1,014 9,764*	936 8,320*	869 7,173*	811 6,249*	760 5,492*	716 4,865*	676 4,339*	640 3,894*	608 3,515*
4-1/2"	15.0	$F_a$ $P_a$	3,295 53,980	2,746 46,971	2,353 39,851	2,059 32,965	1,830 26,538	1,647 21,496	1,497 17,765	1,373 14,927*	1,267 12,719*	1,176 10,967*	1,098 9,553*	1,029 8,396*	969 7,438*	915 6,634*	867 5,954*	823 5,374*
5-9/16"	20.8	$F_a$ $P_a$	5,679 83,618	4,733 76,431	4,056 68,729	3,549 60,802	3,155 52,917	2,839 45,308	2,581 38,083	2,366 32,000	2,184 27,266	2,028 23,510	1,893 20,480*	1,774 18,000*	1,670 15,944*	1,577 14,222*	1,494 12,764*	1,419 11,520*
6-5/8"	28.6	$F_a$ $P_a$	9,330 122,268	7,775 114,798	6,664 106,556	5,831 97,779	5,183 88,702	4,665 79,551	4,240 70,531	3,887 61,821	3,588 53,478	3,332 46,111	3,110 40,167	2,915 35,303	2,744 31,272	2,591 27,894*	2,455 25,035*	2,332 22,594*
8-5/8"	43.4	$F_a$ $P_a$	18,560 197,003	15,466 189,904	13,257 181,843	11,600 172,967	10,311 163,429	9,280 153,391	8,436 143,012	7,733 132,448	7,138 121,849	6,628 111,352	6,186 101,083	5,800 91,151	5,458 81,521	5,155 72,715	4,884 65,262	4,640 58,899
<b>Schedule 80 / ASTM F1083 / 50 ksi</b>																		
1-5/8"	3.0	$F_a$ $P_a$	391 2,182*	326 1,515*	279 1,113*	244 852*	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
1-7/8"	3.6	$F_a$ $P_a$	547 3,523*	456 2,446*	391 1,797*	342 1,376*	304 1,087*	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
2-3/8"	5.0	$F_a$ $P_a$	957 7,793	797 5,412	683 3,976*	598 3,044*	531 2,405*	478 1,948*	435 1,610*	398 1,353*	- -	- -	- -	- -	- -	- -	- -	- -
2-7/8"	7.7	$F_a$ $P_a$	1,761 17,294	1,468 12,010	1,258 8,823	1,101 6,755*	978 5,337*	880 4,323*	800 3,573*	734 3,002*	677 2,558*	629 2,205*	- -	- -	- -	- -	- -	- -
3-1/2"	10.3		2,896 34,766	2,413 24,252	2,068 17,818	1,810 13,642	1,608 10,778	1,448 8,730*	1,316 7,215*	1,206 6,063*	1,113 5,166*	1,034 4,454*	965 3,880*	905 3,410*	851 3,021*	804 2,694*	- -	- -
4"	12.5	$F_a$ $P_a$	4,058 52,596	3,382 39,058	2,898 28,695	2,536 21,970	2,254 17,359	2,029 14,060	1,844 11,620*	1,691 9,764*	1,560 8,320*	1,449 7,173*	1,352 6,249*	1,268 5,492*	1,193 4,865*	1,127 4,339*	1,068 3,894*	1,014 3,515*
4-1/2"	15.0	$F_a$ $P_a$	5,492 72,871	4,577 57,793	3,923 43,869	3,432 33,587	3,051 26,538	2,746 21,496	2,496 17,765	2,288 14,927*	2,112 12,719*	1,961 10,967*	1,830 9,553*	1,716 8,396*	1,615 7,438*	1,525 6,634*	1,445 5,954*	1,373 5,374*
5-9/16"	20.8	$F_a$ $P_a$	9,466 121,622	7,888 104,703	6,761 87,716	5,916 71,510	5,259 56,889	4,733 46,080	4,302 38,083	3,944 32,000	3,640 27,266	3,380 23,510	3,155 20,480*	2,958 18,000*	2,784 15,944*	2,629 14,222*	2,491 12,764*	2,366 11,520*
6-5/8"	28.6	$F_a$ $P_a$	15,550 185,217	12,958 166,744	11,107 147,274	9,718 127,615	8,638 108,488	7,775 90,377	7,068 74,692	6,479 62,762	5,980 53,478	5,553 46,111	5,183 40,167	4,859 35,303	4,573 31,272	4,319 27,894*	4,092 25,035*	3,887 22,594*
8-5/8"	43.4	$F_a$ $P_a$	30,933 310,579	25,778 292,151	22,095 271,777	19,333 250,028	17,185 227,476	15,466 204,669	14,060 182,111	12,889 160,248	11,897 139,450	11,047 120,202	10,311 104,710	9,666 92,030	9,098 81,521	8,592 72,715	8,140 65,262	7,733 58,899
Post Size	$D_p$ lbs / ft	Fence Height, H (ft)																
		5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	

Notes: ( \* ) Keep  $p_w / P_a$  and  $p_i / P_a \leq 0.2$  as  $KH / r$  exceeds 200 ( - )  $KH / r$  exceeds 400  $K = 2.1$  for cantilevers