

PLP  
COMPOSITE TECHNOLOGIES INC.  
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Computerized Composite FLAGPOLE Engineering and Design  
with Load Calculations Based on Standards Established by  
The National Association of Architectural Metal Manufacturers (NAAMM)  
and

The American Association of State Highway and Transportation Officials (AASHTO)  
Year 2001 and Interims, using Appendix C-Alternate Method for Wind Pressures.

TABLE 1

GIVEN INFORMATION

Flagpole name.....	25C
Height of pole.....	25 feet
Depth of bury in ground.....	3 feet
Base diameter.....	5.834 inches
Tip diameter.....	3.076 inches
Flag size, hoist x fly.....	0 feet x 0 feet (polyester fabric)
wind speed.....	125 MPH, gust factor 1.3
Material.....	PLP16, 50 inches wide
Breaking Stress.....	24000 psi
Modulus of Elasticity.....	2000000 psi
wall Th./Inside Dia. ratio....	.018

TABLE 2

25C  
FLAGPOLE

## BENDING MOMENT, STRESS, &amp; DEFLECTION

POLE HEIGHT feet	OUTSIDE DIAMETER inches	INERTIA MOMENT inch <sup>4</sup>	SECTION MODULUS inch <sup>3</sup>	BENDING MOMENT ft-lbs	STRESS psi	DEFLECTION feet
25.000	3.076	1.377	0.896	0.000	0.000	2.912
24.000	3.126	1.449	0.927	9.533	123.416	2.737
23.000	3.180	1.302	0.819	38.085	558.051	2.561
22.000	3.380	1.574	0.931	85.497	1101.723	2.387
21.000	3.630	1.963	1.082	151.472	1680.318	2.215
20.000	3.814	1.864	0.977	235.662	2893.197	2.046
19.000	4.148	4.510	2.175	337.721	1863.522	1.881
18.000	4.318	5.115	2.369	457.309	2316.299	1.718
17.000	4.488	5.771	2.572	594.162	2772.175	1.559
16.000	4.588	6.183	2.695	748.101	3330.862	1.404
15.000	4.622	5.620	2.432	919.010	4534.744	1.254
14.000	4.742	6.086	2.567	1105.126	5166.792	1.109
13.000	4.862	6.576	2.705	1304.671	5787.627	0.970
12.000	4.972	7.048	2.835	1517.546	6423.109	0.839
11.000	5.042	7.360	2.920	1743.668	7166.919	0.715
10.000	5.082	7.542	2.968	1982.980	8016.645	0.600
9.000	5.142	7.821	3.042	2235.440	8817.721	0.495
8.000	5.182	8.011	3.092	2501.010	9706.444	0.400
7.000	5.206	7.059	2.712	2779.658	12299.149	0.316
6.000	5.460	12.946	4.742	3071.321	7772.059	0.245
5.000	5.628	17.825	6.334	3375.872	6395.241	0.183
4.000	5.678	18.331	6.457	3693.200	6863.931	0.128
3.000	5.672	17.073	6.020	4023.258	8019.454	0.081
2.000	5.722	17.552	6.135	4366.033	8540.224	0.042
1.000	5.782	18.137	6.274	4721.500	9031.103	0.013
0.000	5.822	18.535	6.367	5089.622	9592.353	0.000
-1.000	5.882	19.142	6.509	3393.081	6255.900	0.000
-2.000	5.784	14.120	4.882	1696.541	4169.776	0.000
-3.000	5.834	14.503	4.972	0.000	0.000	0.000

Maximum stress is 12299.15 PSI, located at 7 FT above ground.