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.....	50C
Height of pole.....	50 feet
Depth of bury in ground.....	5 feet
Base diameter.....	10.002 inches
Tip diameter.....	4.228 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

50C
FLAGPOLE

BENDING MOMENT, STRESS, & DEFLECTION

POLE HEIGHT feet	OUTSIDE DIAMETER inches	INERTIA MOMENT inch^4	SECTION MODULUS inch^3	BENDING MOMENT ft-lbs	STRESS psi	DEFLECTION feet
50.000	4.228	4.789	2.265	0.000	0.000	8.922
49.000	4.506	5.844	2.594	9.463	43.777	8.646
48.000	4.815	6.381	2.650	37.669	170.547	8.371
47.000	5.136	7.793	3.035	84.255	333.157	8.096
46.000	5.359	7.718	2.880	148.896	620.316	7.821
45.000	5.598	8.827	3.153	231.333	880.292	7.547
44.000	5.807	9.879	3.402	331.346	1168.606	7.274
43.000	6.006	10.956	3.648	448.737	1475.972	7.002
42.000	6.119	9.778	3.196	583.348	2190.378	6.732
41.000	6.258	10.473	3.347	735.163	2635.833	6.464
40.000	6.377	11.093	3.479	904.414	3119.540	6.198
39.000	6.483	11.666	3.599	1091.439	3639.294	5.935
38.000	6.717	17.826	5.308	1296.630	2931.415	5.676
37.000	6.822	18.696	5.481	1520.462	3328.740	5.419
36.000	6.936	19.673	5.673	1763.324	3730.204	5.165
35.000	7.026	20.467	5.826	2025.510	4172.021	4.914
34.000	7.146	21.558	6.034	2307.308	4588.843	4.667
33.000	7.245	22.488	6.208	2609.019	5043.362	4.424
32.000	7.367	23.669	6.426	2930.948	5473.483	4.185
31.000	7.464	24.638	6.602	3273.403	5950.051	3.950
30.000	7.576	25.788	6.808	3636.682	6410.200	3.721
29.000	7.629	22.788	5.974	4020.082	8075.083	3.496
28.000	7.740	23.816	6.154	4422.858	8624.393	3.278
27.000	7.796	24.346	6.246	4845.220	9309.139	3.066
26.000	7.905	25.400	6.426	5287.378	9873.166	2.862
25.000	8.080	35.591	8.810	5749.617	7831.873	2.664
24.000	8.186	37.043	9.050	6232.295	8263.558	2.473
23.000	8.246	37.882	9.188	6735.696	8797.198	2.288
22.000	8.338	39.193	9.401	7260.021	9267.012	2.109
21.000	8.390	39.948	9.523	7805.458	9836.033	1.937
20.000	8.462	41.008	9.692	8372.174	10365.565	1.772
19.000	8.513	41.770	9.813	8960.330	10956.923	1.614
18.000	8.584	42.847	9.983	9570.079	11503.543	1.464
17.000	8.696	54.846	12.614	10201.614	9705.004	1.322
16.000	8.777	56.434	12.860	10855.175	10129.543	1.187
15.000	8.823	57.350	13.000	11530.960	10643.851	1.058
14.000	8.947	65.344	14.607	12226.911	10044.721	0.937
13.000	9.011	66.797	14.826	12940.977	10474.496	0.823
12.000	9.040	67.463	14.925	13673.295	10993.350	0.715
11.000	9.100	68.853	15.133	14423.965	11438.081	0.615
10.000	9.140	69.791	15.272	15193.085	11938.371	0.523
9.000	9.299	85.692	18.430	15980.792	10405.128	0.438
8.000	9.351	87.184	18.647	16787.307	10803.174	0.360
7.000	9.394	88.432	18.827	17612.779	11225.890	0.288
6.000	9.478	90.903	19.182	18457.326	11546.711	0.225
5.000	9.572	100.200	20.936	19321.100	11074.339	0.168
4.000	9.655	102.919	21.319	20204.273	11372.333	0.118
3.000	9.684	103.881	21.454	21107.012	11805.833	0.076
2.000	9.755	106.261	21.786	22029.406	12134.147	0.040
1.000	9.871	124.206	25.166	22971.604	10953.729	0.012
0.000	9.943	127.047	25.555	23933.795	11238.649	0.000

-1.000	9.960	127.725	25.648	19147.035	8958.537	0.000
-2.000	9.991	121.752	24.372	14360.277	7070.439	0.000
-3.000	9.980	114.041	22.854	9573.518	5026.809	0.000
-4.000	9.958	98.451	19.773	4786.759	2905.005	0.000
-5.000	10.002	99.798	19.956	0.000	0.000	0.000

Maximum stress is 12134.15 PSI, located at 2 FT above ground.