

PLP
COMPOSITE TECHNOLOGIES INC.
57 Creamery Road
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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.....	25R
Height of pole.....	25 feet
Depth of bury in ground.....	2 feet
Base diameter.....	4.076 inches
Tip diameter.....	2.672 inches
Flag size, hoist x fly.....	0 feet x 0 feet (polyester fabric)
Wind speed.....	70 MPH, gust factor 1.3
Material.....	PLP16, 25 inches wide
Breaking Stress.....	24000 psi
Modulus of Elasticity.....	2000000 psi
Wall Th./Inside Dia. ratio....	.018

TABLE 2

25R
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
25.000	2.672	1.005	0.752	0.000	0.000	3.819
24.000	2.742	1.091	0.796	2.630	39.653	3.612
23.000	2.756	0.975	0.708	10.562	179.106	3.406
22.000	2.926	1.177	0.805	23.925	356.771	3.199
21.000	2.602	0.924	0.710	42.734	722.358	2.994
20.000	3.140	1.252	0.797	67.018	1008.575	2.790
19.000	3.370	1.559	0.925	97.254	1261.059	2.588
18.000	3.390	1.588	0.937	133.937	1715.239	2.389
17.000	3.480	1.723	0.990	177.242	2148.210	2.192
16.000	3.550	1.832	1.032	227.300	2642.126	2.000
15.000	3.620	1.947	1.076	284.256	3171.610	1.811
14.000	3.680	2.048	1.113	347.533	3746.333	1.628
13.000	3.700	2.083	1.126	416.516	4439.269	1.451
12.000	3.720	2.118	1.139	491.250	5177.029	1.282
11.000	3.832	3.134	1.636	571.804	4195.166	1.120
10.000	3.862	3.211	1.663	658.282	4750.186	0.965
9.000	3.882	3.263	1.681	750.761	5358.343	0.817
8.000	3.922	3.370	1.718	849.283	5930.883	0.678
7.000	3.932	3.397	1.728	953.890	6625.457	0.548
6.000	3.952	3.451	1.746	1064.614	7315.257	0.428
5.000	3.972	3.506	1.765	1181.482	8031.735	0.319
4.000	3.982	3.533	1.775	1304.521	8820.945	0.223
3.000	3.992	3.561	1.784	1433.750	9643.298	0.139
2.000	3.976	3.068	1.543	1569.175	12202.616	0.071
1.000	4.006	3.140	1.568	1710.800	13095.121	0.020
0.000	4.036	3.214	1.593	1858.651	14005.263	0.000
-1.000	4.046	3.239	1.601	929.326	6966.269	0.000
-2.000	4.076	3.314	1.626	0.000	0.000	0.000

Maximum stress is 14005.26 PSI, located at 0 FT above ground.