

Forces/Moments Applied to Vessel (Combined w/Wind Loads)

From	To	X and Z Dir Force Res. N	X,Z Moment and For Res N-mm
10	20	...	...
20	30	...	...
30	40	...	...
40	50	...	...
50	60	...	...
60	70	...	...
70	80	...	...
80	90	...	...
90	100	197985	2030165376
100	110	...	...

Forces/Moments Applied to Vessel (Combined w/Seismic Loads)

From	To	X and Z Dir Force Res. N	X,Z Moment and For Res N-mm
10	20	...	...
20	30	...	...
30	40	...	...
40	50	...	...
50	60	...	...
60	70	...	...
70	80	...	...
80	90	...	...
90	100	197985	2030165376
100	110	...	...

User Input Forces and Moments:

From Node	Distance From	----- Fx	Forces Fy	----- Fz	----- Mx	Moments My	----- Mz
30							
90	32000.00		-279986.				
90	17500.00	69998.		69998.			
90	3000.00	69998.		69998.			

Wind Deflection Calculations:

The following table is for the Applied Forces Case.

Wind Deflection:

From	To	Cumulative Wind Shear N	Centroid Deflection mm	Elem. End Deflection mm	Elem. Ang. Rotation
10	20	197985	0.35237	1.37981	0.00030003
20	30	197985	1.53481	1.69972	0.0003397
30	40	197985	1.70823	1.71676	0.00034192
40	50	197985	3.91318	7.04649	0.00071856
50	60	197985	9.97854	13.3625	0.00095955
60	70	197985	21.4268	31.0238	0.0013682
70	80	197985	41.9113	53.8249	0.0016419
80	90	197985	57.9817	62.2305	0.0017156
90	100	197985	95.0278	129.938	0.001989
100	110	...	129.988	130.037	0.001989

Allowable deflection at the Tower Top (For) (6.000"/100ft. Criteria)

Allowable deflection : 489.000 Actual Deflection : 130.037 mm

The following table is for the Operating Case.

Wind Deflection:

From	To	Cumulative Wind Shear N	Centroid Deflection mm	Elem. End Deflection mm	Elem. Ang. Rotation
10	20	1153535	1.48693	5.77724	0.0012462
20	30	1082779	6.42053	7.10386	0.0014064
30	40	1074354	7.13908	7.17441	0.0014153
40	50	1074009	16.1908	28.8731	0.0028898
50	60	970161	40.6063	54.0217	0.0037874
60	70	884144	85.5545	122.493	0.005232
70	80	713108	163.88	208.82	0.006183
80	90	529215	224.473	240.488	0.0064721
90	100	465033	361.031	487.183	0.0071847
100	110	22171.1	487.362	487.542	0.0071847

Critical Wind Velocity for Tower Vibration:

From	To	1st Crit. Wind Speed km/hr	2nd Crit. Wind Speed km/hr

10	20	30.81	192.562
20	30	30.5725	191.078
30	40	30.5132	190.707
40	50	30.5725	191.078
50	60	30.5725	191.078
60	70	30.4983	190.614
70	80	30.4241	190.151
80	90	30.2163	188.852
90	100	30.157	188.481
100	110	30.0679	187.924

Allowable deflection at the Tower Top (Ope)(6.000"/100ft. Criteria)

Allowable deflection : 489.000 Actual Deflection : 487.542 mm