Along Wind Response – Example

Table C26.9-3

Floor	z_j	ϕ_j	$X_{max\ j}$	RMS Acc.* (ft/sec^2)	RMS Acc.* (milli-g)	Max. Acc.* (ft/sec^2)	Max. Acc.* (milli-g)
0	0	0.00	0.00	0.00	0.00	0.00	0.00
5	60	0.10	0.10	0.01	0.41	0.05	1.6
10	120	0.20	0.21	0.03	0.83	0.10	3.1
15	180	0.30	0.31	0.04	1.24	0.15	4.7
20	240	0.40	0.41	0.058	1.66	0.20	6.3
25	300	0.50	0.51	0.07	2.07	0.25	7.8
30	360	0.60	0.61	0.08	2.49	0.30	9.4
35	420	0.70	0.72	0.09	2.90	0.35	11.0
40	480	0.80	0.82	0.11	3.32	0.40	12.6
45	540	0.80	0.93	0.12	3.73	0.45	14.1
50	600	1.00	1.03	0.13	4.14	0.50	15.7

*- This table presents $X_{max\ j}$ for 50-year mean recurrence wind; however, the acceleration values in subsequent columns are based on the 10-year mean recurrence wind of 75.6 mph (Table C6-3). The 10-year recurrence interval is more consistent with serviceability requirements as they relate to human comfort consideration and typical design practice. The metric equivalent of this table is presented below.

Metric Equivalent

Floor	z_j (m)	ϕ_j	$X_{max\ j}$ (m)	RMS Acc.* (m/sec^2)	RMS Acc.* (milli-g)	Max. Acc.* (m/sec^2)	Max. Acc.* (milli-g)
0	0	0	0	0	0	0	0
5	18.29	0.10	0.03	0.00	0.41	0.02	1.6
10	36.58	0.20	0.06	0.01	0.83	0.03	3.1
15	54.86	0.30	0.09	0.01	1.24	0.05	4.7
20	73.15	0.40	0.13	0.02	1.66	0.06	6.3
25	91.44	0.50	0.16	0.02	2.07	0.08	7.8
30	109.73	0.60	0.19	0.02	2.49	0.09	9.4
35	128.02	0.70	0.22	0.03	2.90	0.11	11.0
40	146.3	0.80	0.25	0.03	3.32	0.12	12.6
45	164.59	0.80	0.28	0.04	3.73	0.14	14.1
50	182.88	1.00	0.31	0.04	4.14	0.15	15.7