Standard 7-22
Minimum Design Loads and Associated Criteria
for Buildings and Other Structures

SUPPLEMENT 3

Chapter 11: Seismic Design Criteria

11.4.5.1 Multi-Period Design Response Spectrum

The multi-period design response spectrum shall be developed as follows:

1. At discrete values of period, T, equal to 0.0 s, 0.01 s, 0.02 s, 0.03 s, 0.05 s, 0.075 s, 0.1 s, 0.15 s, 0.2 s, 0.25 s, 0.3 s, 0.4 s, 0.5 s, 0.75 s, 1.0 s, 1.5 s, 2.0 s, 3.0 s, 4.0 s, 5.0 s, 7.5 s, and 10 s, the 5%-damped design spectral response acceleration parameter, S_a, shall be taken as 2/3 of the multi-period 5%-damped MCE_R response spectrum from the USGS Seismic Design Geodatabase for the applicable site class.

2. At each response period, T, less than 10 s and not equal to one of the discrete values of period, T, listed in Item 1 above, S_a, shall be determined by linear interpolation between values of S_a, of Item 1 above.

3. If $T_L \geq 10$ s, then at each response period, T, greater than 10 s, S_a, shall be taken as the value of S_a at the period of 10 s of Item 1 above, and multiplied by:

a. $10/T$, where the value of T is less than or equal to that of the long-period transition period, T_L, or

b. $10T_L/T^2$, where the value of T is greater than that of the long-period transition period, T_L.

4. If $T_L < 10$ s, then at each response period, T, greater than 10 s, S_a, shall be taken as the value of S_a at the period of 10 s of Item 1 above, and multiplied by $(10/T)^2$.

Chapter 23: Seismic Design Reference Documents

23.1 CONSENSUS STANDARDS AND OTHER REFERENCE DOCUMENTS

NFPA 13, *Standard for the Installation of Sprinkler Systems*, National Fire Protection Association, ~~2019~~, 2022.

Cited in: Sections 13.4.6, 13.6.4.1, 13.6.7.2

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