

17.2.6.1 Components at or above the Isolation Interface

Elements of seismically isolated structures and nonstructural components, or portions thereof, that are at or above the isolation interface shall be designed to resist a total lateral seismic force equal to the maximum dynamic response of the element or component under consideration.

EXCEPTION: Elements of seismically isolated structures and nonstructural components or portions designed to resist seismic forces and displacements as prescribed in Chapter 12 or 13 as appropriate.

17.2.6.2 Components Crossing the Isolation Interface

Elements of seismically isolated structures and nonstructural components, or portions thereof, that cross the isolation interface shall be designed to withstand the total maximum displacement.

17.2.6.3 Components below the Isolation Interface

Elements of seismically isolated structures and nonstructural components, or portions thereof, that are below the isolation interface shall be designed and constructed in accordance with the requirements of Section 12.1 and Chapter 13.

17.3 GROUND MOTION FOR ISOLATED SYSTEMS

17.3.1 Design Spectra

The site-specific ground motion procedures set forth in Chapter 21 are permitted to be used to determine ground motions for any structure. For structures on Site Class F sites, site response analysis shall be performed in accordance with Section 21.1. For seismically isolated structures on sites with S_1 greater than or equal to 0.6, a ground motion hazard analysis shall be performed in accordance with Section 21.2. Structures that do not require or use site-specific ground motion procedures shall be analyzed using the design spectrum for the design earthquake developed in accordance with Section 11.4.5.

A spectrum shall be constructed for the MCE_R ground motion. The spectrum for MCE_R ground motions shall not be taken as less than 1.5 times the spectrum for the design earthquake ground motions.

17.3.2 Ground Motion Histories

Where response-history procedures are used, ground motions shall consist of pairs of appropriate

horizontal ground motion acceleration components developed per Section 16.1.3.2 except that $0.2T$ and $1.5T$ shall be replaced by $0.5T_D$ and $1.25T_M$, respectively, where T_D and T_M are defined in Section 17.5.3.

17.4 ANALYSIS PROCEDURE SELECTION

Seismically isolated structures except those defined in Section 17.4.1 shall be designed using the dynamic procedures of Section 17.6.

17.4.1 Equivalent Lateral Force Procedure

The equivalent lateral force procedure of Section 17.5 is permitted to be used for design of a seismically isolated structure provided that

1. The structure is located at a site with S_1 less than $0.60g$.
2. The structure is located on a Site Class A, B, C, or D.
3. The structure above the isolation interface is less than or equal to four stories or 65 ft (19.8 m) in structural height, h_n , measured from the base as defined in Section 11.2.
4. The effective period of the isolated structure at the maximum displacement, T_M , is less than or equal to 3.0 s.
5. The effective period of the isolated structure at the design displacement, T_D , is greater than three times the elastic, fixed-base period of the structure above the isolation system as determined by Eq. 12.8-7 or 12.8-8.
6. The structure above the isolation system is of regular configuration.
7. The isolation system meets all of the following criteria:
 - a. The effective stiffness of the isolation system at the design displacement is greater than one-third of the effective stiffness at 20 percent of the design displacement.
 - b. The isolation system is capable of producing a restoring force as specified in Section 17.2.4.4.
 - c. The isolation system does not limit maximum considered earthquake displacement to less than the total maximum displacement.

17.4.2 Dynamic Procedures

The dynamic procedures of Section 17.6 are permitted to be used as specified in this section.

17.4.2.1 Response-Spectrum Procedure

Response-spectrum analysis shall not be used for design of a seismically isolated structure unless: