V_b shall not be taken as less than the maximum force in the isolation system at any displacement up to and including the design displacement.

17.5.4.2 Structural Elements above the Isolation System

The structure above the isolation system shall be designed and constructed to withstand a minimum shear force, V_s, using all of the appropriate requirements for a nonisolated structure and as prescribed by Eq. 17.5-8:

$$V_s = \frac{k_{D\max} D_D}{R_I} \qquad (17.5\text{-}8)$$

where

$k_{D\max}$ = maximum effective stiffness, in kips/in. (kN/mm), of the isolation system at the design displacement in the horizontal direction under consideration

D_D = design displacement, in in. (mm), at the center of rigidity of the isolation system in the direction under consideration, as prescribed by Eq. 17.5-1

R_I = numerical coefficient related to the type of seismic force-resisting system above the isolation system

The R_I factor shall be based on the type of seismic force-resisting system used for the structure above the isolation system and shall be three-eighths of the value of R given in Table 12.2-1, with a maximum value not greater than 2.0 and a minimum value not less than 1.0.

17.5.4.3 Limits on V_s

The value of V_s shall not be taken as less than the following:

1. The lateral seismic force required by Section 12.8 for a fixed-base structure of the same effective seismic weight, W, and a period equal to the isolated period, T_D.
2. The base shear corresponding to the factored design wind load.
3. The lateral seismic force required to fully activate the isolation system (e.g., the yield level of a softening system, the ultimate capacity of a sacrificial wind-restraint system, or the break-away friction level of a sliding system) multiplied by 1.5.

17.5.5 Vertical Distribution of Force

The shear force V_s shall be distributed over the height of the structure above the isolation interface using Eq. 17.5-9:

$$F_x = \frac{V_s w_x h_x}{\sum_{i=1}^{n} w_i h_i} \qquad (17.5\text{-}9)$$

where

F_x = portion of V_s that is assigned to Level x

V_s = total lateral seismic design force or shear on elements above the isolation system as prescribed by Eq. 17.5-8

w_x = portion of W that is located at or assigned to Level x

h_x = height above the base of Level x

At each level designated as x, the force, F_x, shall be applied over the area of the structure in accordance with the mass distribution at the level.

17.5.6 Drift Limits

The maximum story drift of the structure above the isolation system shall not exceed $0.015h_{sx}$. The drift shall be calculated by Eq. 12.8-15 with C_d for the isolated structure equal to R_I as defined in Section 17.5.4.2.

17.6 DYNAMIC ANALYSIS PROCEDURES

17.6.1 General

Where dynamic analysis is used to design seismically isolated structures, the requirements of this section shall apply.

17.6.2 Modeling

The mathematical models of the isolated structure including the isolation system, the seismic force-resisting system, and other structural elements shall conform to Section 12.7.3 and to the requirements of Sections 17.6.2.1 and 17.6.2.2.

17.6.2.1 Isolation System

The isolation system shall be modeled using deformational characteristics developed and verified by test in accordance with the requirements of Section 17.5.2. The isolation system shall be modeled with sufficient detail to

a. Account for the spatial distribution of isolator units.
b. Calculate translation, in both horizontal directions, and torsion of the structure above the isolation