stresses are permitted to be determined using an allowable stress increase of 1.2. This increase shall not be combined with increases in allowable stresses or load combination reductions otherwise permitted by this standard or the material reference document except that combination with the duration of load increases permitted in AF&PA NDS is permitted.

12.14.4 Seismic Force-Resisting System

12.14.4.1 Selection and Limitations

The basic lateral and vertical seismic force-resisting system shall conform to one of the types indicated in Table 12.14-1 and shall conform to all of the detailing requirements referenced in the table. The appropriate response modification coefficient, *R*, indicated in Table 12.14-1 shall be used in determining the base shear and element design forces as set forth in the seismic requirements of this standard.

Special framing and detailing requirements are indicated in Section 12.14.7 and in Sections 14.1, 14.2, 14.3, 14.4, and 14.5 for structures assigned to the various seismic design categories.

12.14.4.2 Combinations of Framing Systems

12.14.4.2.1 Horizontal Combinations Different seismic force-resisting systems are permitted to be used in each of the two principal orthogonal building directions. Where a combination of different structural systems is utilized to resist lateral forces in the same direction, the value of *R* used for design in that direction shall not be greater than the least value of *R* for any of the systems utilized in that direction.

EXCEPTION: For buildings of light-frame construction or having flexible diaphragms and that are two stories or less above grade plane, resisting elements are permitted to be designed using the least value of *R* of the different seismic force-resisting systems found in each independent line of framing. The value of *R* used for design of diaphragms in such structures shall not be greater than the least value for any of the systems utilized in that same direction.

12.14.4.2.2 Vertical Combinations Different seismic force-resisting systems are permitted to be used in different stories. The value of *R* used in a given direction shall not be greater than the least value of any of the systems used in that direction.

12.14.4.2.3 Combination Framing Detailing Requirements The detailing requirements of Section 12.14.7 required by the higher response modification coefficient, *R*, shall be used for structural members common to systems having different response modification coefficients.

12.14.5 Diaphragm Flexibility

Diaphragms constructed of steel decking (untopped), wood structural panels, or similar panelized construction are permitted to be considered flexible.

12.14.6 Application of Loading

The effects of the combination of loads shall be considered as prescribed in Section 12.14.3. The design seismic forces are permitted to be applied separately in each orthogonal direction and the combination of effects from the two directions need not be considered. Reversal of load shall be considered.

12.14.7 Design and Detailing Requirements

The design and detailing of the members of the seismic force-resisting system shall comply with the requirements of this section. The foundation shall be designed to resist the forces developed and accommodate the movements imparted to the structure by the design ground motions. The dynamic nature of the forces, the expected ground motion, the design basis for strength and energy dissipation capacity of the structure, and the dynamic properties of the soil shall be included in the determination of the foundation design criteria. The design and construction of foundations shall comply with Section 12.13. Structural elements including foundation elements shall conform to the material design and detailing requirements set forth in Chapter 14.

12.14.7.1 Connections

All parts of the structure between separation joints shall be interconnected, and the connection shall be capable of transmitting the seismic force, F_p, induced by the parts being connected. Any smaller portion of the structure shall be tied to the remainder of the structure with elements having a strength of 0.20 times the short period design spectral response acceleration coefficient, S_{DS}, times the weight of the smaller portion or 5 percent of the portion's weight, whichever is greater.

A positive connection for resisting a horizontal force acting parallel to the member shall be provided for each beam, girder, or truss either directly to its supporting elements, or to slabs designed to act as diaphragms. Where the connection is through a diaphragm, then the member's supporting element