

CODE

4.4.6 Seismic-force-resisting system

4.4.6.1 Every structure shall be assigned to a Seismic Design Category in accordance with the general building code or as determined by the building official in areas without a legally adopted building code.

4.4.6.2 Structural systems designated as part of the seismic-force-resisting system shall be restricted to those systems designated by the general building code or as determined by the building official in areas without a legally adopted building code.

4.4.6.3 Structural systems assigned to Seismic Design Category A shall satisfy the applicable requirements of this Code. Structures assigned to Seismic Design Category A are not required to be designed in accordance with **Chapter 18**.

4.4.6.4 Structural systems assigned to Seismic Design Category B, C, D, E, or F shall satisfy the requirements of Chapter 18 in addition to applicable requirements of other chapters of this Code.

4.4.6.5 Structural members assumed not to be part of the seismic-force-resisting system shall be permitted, subject to the requirements of 4.4.6.5.1 and 4.4.6.5.2.

4.4.6.5.1 In structures assigned to Seismic Design Category B, C, D, E, or F, the effects of those structural members on the response of the system shall be considered and accommodated in the structural design.

4.4.6.5.2 In structures assigned to Seismic Design Category B, C, D, E, or F, the consequences of damage to those structural members shall be considered.

4.4.6.5.3 In structures assigned to Seismic Design Category D, E, or F, structural members not considered part of

COMMENTARY

Differential settlement or heave may be an important consideration in design. Geotechnical recommendations to allow for nominal values of differential settlement and heave are not normally included in design load combinations for ordinary building structures.

R4.4.6 Seismic-force-resisting system

R4.4.6.1 Design requirements in the Code are based on the seismic design category to which the structure is assigned. In general, the seismic design category relates to seismic risk level, soil type, occupancy, and building use. Assignment of a building to a seismic design category is under the jurisdiction of a general building code rather than this Code. In the absence of a general building code, **ASCE/SEI 7** provides the assignment of a building to a seismic design category.

R4.4.6.2 The general building code prescribes, through **ASCE/SEI 7**, the types of structural systems permitted as part of the seismic-force-resisting system based on considerations such as seismic design category and building height. The seismic design requirements for systems assigned to Seismic Design Categories B through F are prescribed in **Chapter 18**. Other systems can be used if approved by the building official.

R4.4.6.3 Structures assigned to Seismic Design Category A are subject to the lowest seismic hazard. Chapter 18 does not apply.

R4.4.6.4 Chapter 18 contains provisions that are applicable depending on the seismic design category and on the seismic-force-resisting system used. Not all structural member types have specific requirements in all seismic design categories. For example, Chapter 18 does not include requirements for structural walls in Seismic Design Categories B and C, but does include special provisions for Seismic Design Categories D, E, and F.

R4.4.6.5 In Seismic Design Categories D, E, and F, structural members not considered part of the seismic-force-resisting system are required to be designed to accommodate drifts and forces that occur as the building responds to an earthquake.