

CODE

1.4.6 For one- and two-family dwellings, multiple single-family dwellings, townhouses, and accessory structures to these types of dwellings, the design and construction of cast-in-place footings, foundation walls, and slabs-on-ground in accordance with **ACI 332M** shall be permitted.

1.4.7 This Code does not apply to the design and installation of concrete piles, drilled piers, and caissons embedded in ground, except as provided in (a) through (c):

- (a) For portions of deep foundation members in air or water, or in soil incapable of providing adequate lateral restraint to prevent buckling throughout their length
- (b) For precast concrete piles supporting structures assigned to Seismic Design Categories A and B (**13.4**)
- (c) For deep foundation elements supporting structures assigned to Seismic Design Categories C, D, E, and F (**Ch. 13, 18.13**)

1.4.8 This Code does not apply to design and construction of slabs-on-ground, unless the slab transmits vertical loads or lateral forces from other portions of the structure to the soil.

1.4.9 This Code does not apply to the design and construction of tanks and reservoirs.

1.4.10 This Code does not apply to composite design slabs cast on stay-in-place composite steel deck. Concrete used in the construction of such slabs shall be governed by this Code, where applicable. Portions of such slabs designed as reinforced concrete are governed by this Code.

COMMENTARY

(SDI NC). The SDI standard refers to this Code for the design and construction of the structural concrete slab.

R1.4.6 **ACI 332M** addresses only the design and construction of cast-in-place footings, foundation walls supported on continuous footings, and slabs-on-ground for limited residential construction applications.

The **2015 IBC** requires design and construction of residential post-tensioned slabs on expansive soils to be in accordance with **PTI DC10.5-12**, which provides requirements for slab-on-ground foundations, including soil investigation, design, and analysis. Guidance for the design and construction of post-tensioned slabs-on-ground that are not on expansive soils can be found in **ACI 360R**. Refer to R1.4.8.

R1.4.7 The design and installation of concrete piles fully embedded in the ground is regulated by the general building code. The 2019 edition of the Code contains some provisions that previously were only available in the general building code. In addition to the provisions in this Code, recommendations for concrete piles are given in **ACI 543R**, recommendations for drilled piers are given in **ACI 336.3R**, and recommendations for precast prestressed concrete piles are given in “Recommended Practice for Design, Manufacture, and Installation of Prestressed Concrete Piling” (**PCI 1993**). Requirements for the design and construction of micropiles are not specifically addressed by this Code.

R1.4.8 Detailed recommendations for design and construction of slabs-on-ground and floors that do not transmit vertical loads or lateral forces from other portions of the structure to the soil are given in **ACI 360R**. This guide presents information on the design of slabs-on-ground, primarily industrial floors and the slabs adjacent to them. The guide addresses the planning, design, and detailing of the slabs. Background information on the design theories is followed by discussion of the soil support system, loadings, and types of slabs. Design methods are given for structural plain concrete, reinforced concrete, shrinkage-compensating concrete, and post-tensioned concrete slabs.

R1.4.9 Requirements and recommendations for the design and construction of tanks and reservoirs are given in **ACI 350M**, **ACI 334.1R**, and **ACI 372R**.

R1.4.10 In this type of construction, the steel deck serves as the positive moment reinforcement. The design and construction of concrete-steel deck slabs is described in “Standard for Composite Steel Floor Deck-Slabs” (**SDI C**). The standard refers to the appropriate portions of this Code for the design and construction of the concrete portion of the composite assembly. SDI C also provides guidance for design of composite-concrete-steel deck slabs. The design of negative moment reinforcement to create continuity at