CHAPTER 7—ONE-WAY SLABS

CODE

7.1—Scope

7.1.1 This chapter shall apply to the design of nonprestressed and prestressed slabs reinforced for flexure in one direction, including:

(a) Solid slabs
(b) Slabs cast on stay-in-place, noncomposite steel deck
(c) Composite slabs of concrete elements constructed in separate placements but connected so that all elements resist loads as a unit
(d) Precast, prestressed hollow-core slabs

7.2—General

7.2.1 The effects of concentrated loads, slab openings, and voids within the slab shall be considered in design.

7.2.2 *Materials*

7.2.2.1 Design properties for concrete shall be selected to be in accordance with Chapter 19.

7.2.2.2 Design properties for steel reinforcement shall be selected to be in accordance with Chapter 20.

7.2.2.3 Materials, design, and detailing requirements for embedments in concrete shall be in accordance with 20.6.

7.2.3 *Connection to other members*

7.2.3.1 For cast-in-place construction, beam-column and slab-column joints shall satisfy Chapter 15.

7.2.3.2 For precast construction, connections shall satisfy the force transfer requirements of 16.2.

7.3—Design limits

7.3.1 *Minimum slab thickness*

7.3.1.1 For solid nonprestressed slabs not supporting or attached to partitions or other construction likely to be damaged by large deflections, overall slab thickness ***h*** shall not be less than the limits in Table 7.3.1.1, unless the calculated deflection limits of 7.3.2 are satisfied.

COMMENTARY

R7.1—Scope

R7.1.1 The design and construction of composite slabs on steel deck is described in "Standard for Composite Steel Floor Deck – Slabs" (SDI C).

Provisions for one-way joist systems are provided in Chapter 9.

R7.2—General

R7.2.1 Concentrated loads and slab openings create local moments and shears and may cause regions of one-way slabs to have two-way behavior. The influence of openings through the slab and voids within the slab (for example ducts) on flexural and shear strength as well as deflections is to be considered, including evaluating the potential for critical sections created by the openings and voids.

R7.3—Design limits

R7.3.1 *Minimum slab thickness*

The basis for minimum thickness for one-way slabs is the same as that for beams. Refer to R9.3.1 for additional information.