One-way Slabs

7

CODE

7.3.4.2 Stresses in prestressed slabs immediately after transfer and at service loads shall not exceed the permissible stresses in 24.5.3 and 24.5.4.

7.4—Required strength
7.4.1 *General*

7.4.1.1 Required strength shall be calculated in accordance with the factored load combinations in Chapter 5.

7.4.1.2 Required strength shall be calculated in accordance with the analysis procedures in Chapter 6.

7.4.1.3 For prestressed slabs, effects of reactions induced by prestressing shall be considered in accordance with 5.3.11.

7.4.2 *Factored moment*

7.4.2.1 For slabs built integrally with supports, M_u at the support shall be permitted to be calculated at the face of support.

7.4.3 *Factored shear*

7.4.3.1 For slabs built integrally with supports, V_u at the support shall be permitted to be calculated at the face of support.

7.4.3.2 Sections between the face of support and a critical section located d from the face of support for nonprestressed slabs or $h/2$ from the face of support for prestressed slabs shall be permitted to be designed for V_u at that critical section if (a) through (c) are satisfied:

(a) Support reaction, in direction of applied shear, introduces compression into the end region of the slab
(b) Loads are applied at or near the top surface of the slab
(c) No concentrated load occurs between the face of support and critical section

7.5—Design strength
7.5.1 *General*

7.5.1.1 For each applicable factored load combination, design strength at all sections shall satisfy $\phi S_n \geq U$ including (a) and (b). Interaction between load effects shall be considered.

(a) $\phi M_n \geq M_u$
(b) $\phi V_n \geq V_u$

7.5.1.2 ϕ shall be determined in accordance with 21.2.

7.5.2 *Moment*

7.5.2.1 M_n shall be calculated in accordance with 22.3.

COMMENTARY

R7.4—Required strength

R7.4.3 *Factored shear*

R7.4.3.2 The requirements for the selection of the critical section for shear in one-way slabs are the same as those for beams. Refer to R9.4.3.2 for additional information.

R7.5—Design strength
R7.5.1 *General*

R7.5.1.1 Refer to R9.5.1.1.

R7.5.2 *Moment*