

CODE

9.8—Nonprestressed one-way joist systems**9.8.1** *General*

9.8.1.1 Nonprestressed one-way joist construction consists of a monolithic combination of regularly spaced ribs and a top slab designed to span in one direction.

9.8.1.2 Width of ribs shall be at least 100 mm at any location along the depth.

9.8.1.3 Overall depth of ribs shall not exceed 3.5 times the minimum width.

9.8.1.4 Clear spacing between ribs shall not exceed 750 mm.

9.8.1.5 V_c shall be permitted to be taken as 1.1 times the value calculated in 22.5.

9.8.1.6 For structural integrity, at least one bottom bar in each joist shall be continuous and shall be anchored to develop f_y at the face of supports.

9.8.1.7 Reinforcement perpendicular to the ribs shall be provided in the slab as required for flexure, considering load concentrations, and shall be at least that required for shrinkage and temperature in accordance with 24.4.

9.8.1.8 One-way joist construction not satisfying the limitations of 9.8.1.1 through 9.8.1.4 shall be designed as slabs and beams.

9.8.2 *Joist systems with structural fillers*

9.8.2.1 If permanent burned clay or concrete tile fillers of material having a unit compressive strength at least equal to f'_c in the joists are used, 9.8.2.1.1 and 9.8.2.1.2 shall apply.

9.8.2.1.1 Slab thickness over fillers shall be at least the greater of one-twelfth the clear distance between ribs and 40 mm.

9.8.2.1.2 For calculation of shear and negative moment strength, it shall be permitted to include the vertical shells of fillers in contact with the ribs. Other portions of fillers shall not be included in strength calculations.

9.8.3 *Joist systems with other fillers*

COMMENTARY

R9.8—Nonprestressed one-way joist systems**R9.8.1** *General*

The empirical limits established for nonprestressed reinforced concrete joist floors are based on successful past performance of joist construction using standard joist forming systems. For prestressed joist construction, this section may be used as guide.

R9.8.1.4 A limit on the maximum spacing of ribs is required because of the provisions permitting higher shear strengths and less concrete cover for the reinforcement for these relatively small, repetitive members.

R9.8.1.5 This increase in shear strength is justified on the basis of: 1) satisfactory performance of joist construction designed with higher calculated shear strengths specified in previous Codes which allowed comparable shear stresses; and 2) potential for redistribution of local overloads to adjacent joists.