

CODE

25.9.4.5.3 If concrete is confined by spirals or hoops and the effect of confining reinforcement is documented by tests and analysis, it shall be permitted to use an increased value of compressive stress in concrete when calculating the nominal strength of the general zone.

25.9.4.5.4 Prestressing reinforcement shall not be stressed until compressive strength of concrete, as indicated by tests of cylinders cured in a manner consistent with curing of the member, is at least 17 MPa for single-strand or bar tendons or at least 28 MPa for multistrand tendons unless 25.9.4.5.5 is satisfied.

25.9.4.5.5 Provisions of 25.9.4.5.4 need not be satisfied if (a) or (b) is satisfied:

- (a) Oversized anchorage devices are used to compensate for a lower concrete compressive strength
- (b) Prestressing reinforcement is stressed to no more than 50 percent of the final prestressing force

25.9.5 Reinforcement detailing

25.9.5.1 Selection of reinforcement size, spacing, cover, and other details for anchorage zones shall make allowances for tolerances on fabrication and placement of reinforcement; for the size of aggregate; and for adequate placement and consolidation of the concrete.

COMMENTARY

R25.9.4.5.3 For well-confined concrete, the effective compressive strength may be increased (Breen et al. 1994). Test results given in Breen et al. (1994) indicate that the compressive stress introduced by auxiliary prestressing applied perpendicular to the axis of the main tendons can be effective in increasing anchorage zone strength.

R25.9.4.5.4 To limit early shrinkage cracking, mono-strand tendons are sometimes stressed at concrete strengths less than 17 MPa. In such cases, either oversized monostrand anchorages are used, or the strands are stressed in stages, often to levels one-third to one-half of the final prestressing force as permitted by 25.9.4.5.5.