

CODE

COMMENTARY

Table 22.2.2.4.3—Values of β_1 for equivalent rectangular concrete stress distribution

f'_c , MPa	β_1	
$17 \leq f'_c \leq 28$	0.85	(a)
$28 < f'_c < 55$	$0.85 - \frac{0.05(f'_c - 28)}{7}$	(b)
$f'_c \geq 55$	0.65	(c)

22.2.3 Design assumptions for nonprestressed reinforcement

22.2.3.1 Deformed reinforcement used to resist tensile or compressive forces shall conform to 20.2.1.

22.2.3.2 Stress-strain relationship and modulus of elasticity for deformed reinforcement shall be idealized in accordance with 20.2.2.1 and 20.2.2.2.

22.2.4 Design assumptions for prestressed reinforcement

22.2.4.1 For members with bonded prestressed reinforcement conforming to 20.3.1, stress at nominal flexural strength, f_{ps} , shall be calculated in accordance with 20.3.2.3.

22.2.4.2 For members with unbonded prestressed reinforcement conforming to 20.3.1, f_{ps} shall be calculated in accordance with 20.3.2.4.

22.2.4.3 If the embedded length of the prestressed strand is less than ℓ_d , the design stress of the prestressed strand shall not exceed the value given in 25.4.8.3, as modified by 25.4.8.1(b).

22.3—Flexural strength**22.3.1 General**

22.3.1.1 Nominal flexural strength M_n shall be calculated in accordance with the assumptions of 22.2.

22.3.2 Prestressed concrete members

22.3.2.1 Deformed reinforcement conforming to 20.2.1, provided in conjunction with prestressed reinforcement, shall be permitted to be considered to contribute to the tensile force and be included in flexural strength calculations at a stress equal to f_y .

22.3.2.2 Other nonprestressed reinforcement shall be permitted to be considered to contribute to the flexural strength if a strain compatibility analysis is performed to calculate stresses in such reinforcement.

22.3.3 Composite concrete members**R22.3—Flexural strength****R22.3.2 Prestressed concrete members**

R22.3.2.2 Bond length for nontensioned prestressing strand (Salmons and McCrate 1977; PCA 1980) should be sufficient to develop the stress consistent with strain compatibility analysis at the critical section.

R22.3.3 Composite concrete members