

318-14: Building Code Requirements for Structural Concrete and Commentary-provides minimum requirements for the materials, design, and detailing of structural concrete buildings and, where applicable, nonbuilding structures. This Code addresses structural systems, members, and connections, including cast-in-place, precast, plain, nonprestressed, prestressed, and composite construction. Among the subjects covered are: design and construction for strength, serviceability, and durability; load combinations, load factors, and strength reduction factors; structural analysis methods; deflection limits; mechanical and adhesive anchoring to concrete; development and splicing of reinforcement; construction document information; field inspection and testing; and methods to evaluate the strength of existing structures.

### Strength Reduction Factors, $\Phi$ , of the ACI Code (ACI Section 9.3 of ACI 318)

Kind of Strength		Strength Reduction Factor $\Phi$
9.3.2.1.	Tension controlled sections as defined in 10.3.4	0.9
9.3.2.2.	Compression controlled sections as defined in 10.9.3	
(a)	Members with spiral reinforcement	0.75
(b)	Other members	0.65
<p>For sections in which the net tensile strain in the extreme tension steel is between the limits for compression controlled and tension controlled sections, <math>\Phi</math> may be increased in from that for compression controlled section to 0.90 as the net tensile strain in the extreme tension steel at nominal strength increases from the compression-controlled strain limit 0.005.</p> <p>Alternatively, when Appendix B is used, for members in which <math>f_y</math> does not exceed 60,000 psi, with symmetrical reinforcement, and with <math>(h-d'-d_s)/h</math> not less than 0.7, <math>\Phi</math> may be increased linearly to 0.90 as <math>\Phi P_n</math> decreases from <math>0.1 f'_c A_g</math> to zero.</p> <p>For other reinforced members, <math>\Phi</math> may be increased linearly to 0.90 as <math>\Phi P_n</math> decreases from <math>0.1 f'_c A_g</math> to <math>\Phi P_n</math>, whichever is smaller, to zero</p>		
9.3.2.3.	Shear and torsion	0.75
9.3.2.4.	Bearing on Concrete	0.65
9.3.2.7.	Flexure sections without axial load in pretensioned members where strand embedment is less than development length as provided in 12.9.1.1	0.75
9.3.5.	Plain Concrete	0.55