

CODE

6.7.1.2 Slenderness effects along the length of a column shall be considered. It shall be permitted to calculate these effects using 6.6.4.5.

6.7.1.3 The cross-sectional dimensions of each member used in an analysis to calculate slenderness effects shall be within 10 percent of the specified member dimensions in construction documents or the analysis shall be repeated.

6.7.1.4 Redistribution of moments calculated by an elastic second-order analysis shall be permitted in accordance with 6.6.5.

6.7.2 Section properties**6.7.2.1 Factored load analysis**

6.7.2.1.1 It shall be permitted to use section properties calculated in accordance with 6.6.3.1.

6.7.2.2 Service load analysis

6.7.2.2.1 Immediate and time-dependent deflections due to gravity loads shall be calculated in accordance with 24.2.

6.7.2.2.2 Alternatively, it shall be permitted to calculate immediate deflections using a moment of inertia of 1.4 times I given in 6.6.3.1, or calculated using a more detailed analysis, but the value shall not exceed I_g .

6.8—Inelastic analysis**6.8.1 General**

6.8.1.1 An inelastic analysis shall consider material nonlinearity. An inelastic first-order analysis shall satisfy equilibrium in the undeformed configuration. An inelastic second-order analysis shall satisfy equilibrium in the deformed configuration.

6.8.1.2 An inelastic analysis procedure shall have been shown to result in calculation of strength and deformations that are in substantial agreement with results of physical tests of reinforced concrete components, subassemblages, or structural systems exhibiting response mechanisms consistent with those expected in the structure being designed.

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are a function of the average concrete strength, which is typically higher.

R6.7.1.2 The maximum moment in a compression member may occur between its ends. In computer analysis programs, columns may be subdivided using nodes along their length to evaluate slenderness effects between the ends. If the column is not subdivided along its length, slenderness effects may be evaluated using the nonsway moment magnifier method specified in 6.6.4.5 with member-end moments from the second-order elastic analysis as input. Second-order analysis already accounts for the relative displacement of member ends.

R6.7.2 Section properties**R6.7.2.2 Service load analysis**

R6.7.2.2.2 Refer to R6.6.3.2.2.

R6.8—Inelastic analysis**R6.8.1 General**

R6.8.1.1 Material nonlinearity may be affected by multiple factors including duration of loads, shrinkage, and creep.

R6.8.1.2 Substantial agreement should be demonstrated at characteristic points on the reported response. The characteristic points selected should depend on the purpose of the analysis, the applied loads, and the response phenomena exhibited by the component, subassemblage, or structural system. For nonlinear analysis to support design under