

Reliability of Slender Reinforced Concrete Columns: Part 1

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Abstract : The main objective of structural design is to ensure safety and functional performance requirements of a structural system for its target reliability levels. In this study, the reliability index for the reinforcement concrete slender columns with rectangular cross section is studied. The variable parameters studied include the loads, the concrete compressive strength, the steel yield strength, the dimensions of concrete cross-section, the reinforcement ratio, and the location of steel placement. Risk analysis program was used to perform the analytical study. The effect of load eccentricity on the reliability index of reinforced concrete slender column was studied and presented. The results of this study indicate that the good quality control improve the performance of slender reinforced columns through increasing the reliability index β .

Keywords : reliability, reinforced concrete, safety, slender column

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