

## Impact of Slenderness Ratios on the Seismic Behavior of Reinforced Concrete Buildings

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**Abstract :** As urban populations continue to grow, the demand for higher housing density in large cities has led to increased use of slender buildings to maximize limited land availability. However, structures with high slenderness ratios face significant challenges related to their resistance capacity and lateral stiffness, particularly in seismic conditions. This study evaluates the seismic behavior of four reinforced concrete frame buildings with varying slenderness ratios situated on soft soil in Mexico City. Utilizing step-by-step nonlinear dynamic analysis, the research compares the seismic performance of these buildings, presenting detailed results, conclusions, and recommendations for enhancing the earthquake resistance of slender structures.

**Keywords :** dynamic analysis, reinforced concrete buildings, seismic behavior, slenderness ratio

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