

Finite Element Analysis of Reinforced Structural Walls

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Abstract : Reinforced concrete structural walls are provided in structures to decrease horizontal displacements under seismic loads. The cyclic lateral load resistance capacity of a structural wall is controlled by two parameters, the strength and the ductility; it is better to have the shear strength somewhat greater than the compression to prevent shear failure, which is brittle, sudden and of serious consequence. Due to architectural and functional reasons, small openings are provided in this important structural part. The main objective of this study is to investigate the finite element of RC structural walls with small openings subjected to cyclic load using the finite element approach. The experimental results in terms of load capacity, failure mode, crack pattern, flexural strength, shear strength, and deformation capacity.

Keywords : ABAQUS, finite element method, small openings, reinforced concrete structural walls

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