

## The Effect of Masonry Infills on the Seismic Response of Reinforced Concrete Structures

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**Abstract :** The performance of masonry infilled frames during the past earthquakes shows that the infill panels play a major role as earthquake-resistant elements. The present study examines the influence of infill panels on seismic behavior of RC frame structures. For this purpose, several low- and mid-rise RC frames (two-, four-, seven-, and ten story) were numerically investigated. Reinforced masonry infill panels were then placed within the frames and the models were subjected to several nonlinear incremental static and dynamic analyses. The results of analyses showed that the use of reinforced masonry infill panels in RC frame structures can have beneficial effects on structural performance. It was confirmed that the use of masonry infill panels results in an increment in strength and stiffness of the framed buildings, followed by a reduction in displacement demand for the structural systems.

**Keywords :** reinforced masonry infill panels, nonlinear static analysis, incremental dynamic analysis, low-rise reinforced concrete frames, mid-rise reinforced concrete frames

**Conference Title :** ICACE 2014 : International Conference on Advances in Civil Engineering

**Conference Location :** Berlin, Germany

**Conference Dates :** September 15-16, 2014