Finite Element Analysis of Precast Prestressed Concrete Frame Joints Using Marc (Postprint)

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Date: 2017-12-21T00:00:00+00:00

Abstract

Using the finite element software MSC.Marc, this study investigates the seismic performance of precast prestressed concrete frame joints under low-cycle reversed loading and compares the analytical results with experimental results. The results demonstrate that, through comparison of concrete cracking patterns, specimen deformation, strand forces, hysteretic curves, and skeleton curves, the MSC.Marc numerical simulation results are in good agreement with the experimental results. This validates the feasibility and reliability of using this method to simulate the mechanical behavior of joints.

Full Text

Preamble

Note: Figure translations are in progress. See original paper for figures.