

Seismic Response of Precast Columns with Energy Dissipating Joints

Description

Meta Fields

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Primary Sponsor Contact Info : California Department of Transportation Division of Research, Innovation and System Information P.O. Box 942873 Sacramento, CA 94273-0001 USA

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Bridge design; Columns; Dissipation; Earthquake resistant design; Joints (Engineering); Precast concrete; Shaking table tests

Abstract :

The purpose of this study was to develop precast column details that are able to dissipate energy under seismic loads. Several innovative precast concrete columns were designed then studied experimentally on a shake table and analyzed. Two types of precast bridge columns were studied, including segmental columns and monolithic columns. Compared to standard precast concrete segmental columns (those with no monolithic connection between the base segment and the footing), all specimens showed superior performance with minimal residual displacement and larger energy dissipation. Testing and analysis of a 0.3-scale two-column bent incorporating two precast columns, precast footing, and a precast cap beam found that the seismic performance of both columns was satisfactory and that the pipe-pin connections performed well.

Subject : Columns

Group : Seismic

Category : Completed Projects