

Behavior of unbounded post- tensioned masonry walls

Hassanli, Reza, author

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Abstrak

This book reports on a comprehensive analytical, experimental and numerical study on the flexural response of post-tensioned masonry walls under in-plane loads. It explores an important mechanism in this new generation of structural walls, called “Self-centering”. This mechanism can reduce residual drifts and structural damage during earthquake ground motion, and is particularly favorable for structures which are designed for immediate occupancy performance levels. The book reports on the development and verification of a finite element model of post-tensioned masonry walls. It describes a detailed parametric study to predict the strength of post-tensioned masonry walls. New design methodologies and expressions are developed to predict the flexural strength and force-displacement response of post-tensioned masonry. Experimental study is carried out to better understand the behavior of post-tensioned masonry walls and also to evaluate the accuracy of the proposed design procedure and expressions. The book also includes an introduction to current research on unbounded post-tensioned masonry walls, together with an extensive analysis of previously published test results.