

Confined Masonry Shear Walls: Experimental Testing and Analysis

Lan Nguyen¹, Ross B. Corotis², Michael P. Schuller³ and Guido Camata⁴

Abstract:

This paper describes results of a testing program to study behavior of confined masonry wall panels subjected to earthquake loading including observations regarding their shear strength, ductility, and failure mechanism when subjected to in-plane loading. Often in construction practice, confined masonry is built with either toothed reinforced concrete frame elements or smooth reinforced concrete elements cast around the masonry wall panel. Through experimental tests, this study found that the structural integrity of a confined masonry system is especially sensitive to the compression forces confining the wall from the surrounding frame. In addition, the failure mechanism for this type of composite masonry shear wall is similar to one of the behavior modes of reinforced concrete masonry infill walls.

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¹ Ph.D., P.E, Civil Engineer, Member of The Masonry Society, U.S Department of The Interior, Bureau of Reclamation, Denver, CO Lan.T.Nguyen@colorado.edu

² Ph.D., P.E, Professor, Department of Civil, Environmental and Architectural Engineering, University of Colorado, Boulder, CO ross.corotis@colorado.edu

³P.E, President of Atkinson Noland & Associates, Fellow of The Masonry Society, Fellow of the Association for Preservation Technology, Boulder, CO mschuller@anausa.com

⁴ Ph.D., Associate Professor, Department of Civil and Architectural Engineering, University of Chieti, Pescara, Italy guidocamata@gmail.com