

Evaluating Lateral Strength of Existing Unreinforced Brick Piers in the Laboratory

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Abstract:

A series of five, full-story brick piers was extracted from a seventy-year old building scheduled for demolition, and transported to a laboratory for ultimate-load testing. Lateral forces were applied within the plane of the test walls while vertical compressive stress was maintained at a constant value for each pier. The purpose of this paper is to provide information on how actual unreinforced masonry walls may behave past initial cracking, and to suggest what mechanisms may comprise the ultimate limit state condition. Parameters defining behavior such as compressive strength, diagonal tension strength, modulus of rupture, modulus of elasticity and shear modulus are presented as examples of possible properties of actual masonry construction for this vintage.

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DOI: 10.70803/001c.142835

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