

Nonlinear Models for Shear Failure in Confined Masonry Walls

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Abstract:

Most of the observed damage in masonry buildings due to earthquakes can be characterized by shear cracks on walls. In this paper a simple analytical model to predict the shear failure of structural confined masonry walls based on experimental results is proposed. The masonry wall is represented by a flexible bar coupled with a non linear shear spring that includes different hysteretic behaviors. The effect of the aspect ratio of the wall, the vertical load, the type of unit and the amount and distribution of reinforcement are taken into account in the definition of the model parameters.

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