

Evaluation of the Seismic Performance of Brick Walls Retrofitted and Repaired by Expansive Epoxy

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Abstract:

An engineering technique to repair unreinforced brick walls cracked during past seismic events, or to retrofit existing brick walls to meet the current code requirements is subjected to experimental investigation. Such walls are very common in historical buildings. The walls are injected by expansive epoxy. After the material is put into walls, it expands, bonds and hardens. This injection technique does not affect the appearance of these historical walls and consequently it preserves their historical value. The investigation consists of testing the seismic performance and ductility of plain brick walls first. Then, those broken walls are repaired using the expansive epoxy and tested. In addition, another set of walls that has not been broken first are strengthened with expansive epoxy and tested. Performance of all walls is studied and compared to prove the effectiveness of the expansive epoxy material in the retrofitting and repairing of brick walls.

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