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Performance of Mud Mortar Walls Under Seismic Loading

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ABSTRACT

The inherently brittle nature of unreinforced masonry structures results in poor performance during earthquakes, presenting major hazards to communities. Many of these structures found in Nepal were severely damaged or destroyed during two earthquakes in 2015. The purpose of this project is to test the effect on seismic response of several modifications to stone and mud mortar structures. These structures are common in many areas of Nepal. Two T-shaped stone and mud mortar masonry walls are constructed. The first wall has no modifications and represents current building practices. The second wall uses steel wire mesh as external reinforcement. Each wall is subjected to simulated strong ground motions of increasing intensity until failure. The results are expected to indicate better toughness during an earthquake as a result of the steel reinforcement. Therefore, these results can be applied in regions like Nepal in an effort to avoid a repeat of the catastrophic damage seen in 2015.

KEYWORDS

Seismic loading, earthquake, mud mortar