Influence of Confined Steel on Flexural response of Reinforced Masonry Shear Walls

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Abstract:

The effectiveness of the ring, comb, and spiral-cage types of confinement in improving the flexural response of reinforced masonry shear walls is investigated. Based on prism test data, formulas have been developed and calibrated to account for the influence of confining steel on the compressive stress-strain relation of masonry. These formulas have been incorporated into an analysis model to evaluate the flexural response of confined and unconfined masonry wall sections. It has been shown that the aforementioned confinement schemes have a beneficial influence on flexural ductility. Both the experimental and numerical results indicate that the comb confinement is most effective among the three confinement schemes considered.

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