

Ductility of Unconfined and Confined Concrete Masonry Shear Walls

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Abstract:

Relationships defining the ductility capacity of rectangular concrete masonry shear walls are developed. Consideration is given to both unconfined masonry, and concrete masonry confined by stainless steel mortar-bed confining plates. The limit to ductility is based on complete stress-strain curves for unconfined and confined masonry. Results are presented in the form of simple charts, suitable for design use, giving displacements ductility capacity in terms of material strengths, reinforcement ratios, axial load and aspect ratio of the wall. Options open to the designer when analysis indicates insufficient ductility is available from unconfined masonry are discussed. A method for extending the applicability of charts to non-rectangular section is suggested.

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