

EVALUATION OF SHEAR STRENGTH OF REINFORCED CONCRETE STRUCTURAL WALLS OF ACI 318-14 AND EUROCODES

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Abstract:

Reinforced concrete structural walls are very effective in resisting lateral loads due to their high strength and stiffness. While Vietnamese Standard TCVN 5574-2012 does not provide detailed provisions for design of structural walls, the shear strength of reinforced concrete structural walls according to various building codes are very different. The paper investigates the design shear strength of reinforced concrete structural walls using provisions from ACI 318-14, Eurocode 2 EN 1992-1:2004, and Eurocode 8 EN 1998-1:2004. The theory used in these building codes to determine wall shear strength is analyzed and numerical comparison is carried out to evaluate the influence of key parameters, including compressive concrete strength, axial load level, and shear span ratio, on the wall shear capacity, for both non-seismic and seismic design.

Key words: Reinforced concrete; Structural wall; Shear wall; Shear strength; Building code.