عنوان مقاله:

Strength of Squat Reinforced High Strength Concrete Shear Walls

محل انتشار:

اولین کنفرانس ملی مهندسی و مدیریت زیرساختها (سال: 1388)

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خلاصه مقاله:

Squat reinforced concrete shear walls (ratio of height to length less than 2) are important structural components in conventional buildings. The response of such walls is often strongly governed by the shear effects leading to shear induced failure. Because a shear failure is significantly less ductile compared with flexural failure it should not be permitted to occur. To achieve this, the shear capacity of a wall must be known and be larger than the shear corresponding to its moment capacity. Building codes provide a number of relationships to predict the ultimate strength of walls. These relationships are often empirical and based on the tests carried out on normal strength concrete shear walls and cannot be confidently used to the design of high strength concrete shear walls. In this study, using data from tests available in the literature, the utility and accuracy of the requirements of the American Building Code for Concrete Structures (ACI Committee 318, 2008) and the current Iranian Concrete Code (ICC) for predicting the ultimate strength of squat shear walls made from high strength concrete are evaluated. Both flexural and shear strengths have been considered. Main parameters included in the study are the mean and standard deviation of the ratio of the predicted to measured strengths. Key conclusion is that the predictions by the design provisions given in the both codes are considerably a conservative estimation of ultimate shear strength especially for high-strength .concrete shear walls

کلمات کلیدی:

Reinforced concrete, Squat shear walls, Shear strength, High-strength concrete