عنوان مقاله:

Evaluation of Existing Axial Compressive Strength Models of FRP-Confined Circular Concrete Columns

محل انتشار:

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خلاصه مقاله:

In this paper, the precision of some existing models for axial compressive strength of circular concrete columns confined by fiber reinforced polymer (FRP) composites isinvestigated. To achieve this goal, a database of experimentally tested FRP-confined circular cross-section concrete columns is gathered. The database includes columns withvarious diameters, heights and concrete compressive strength, as well as different FRP wraps with various thickness and tensile strengths. Considering these geometrical andmechanical properties as inputs, the precision of existing compressive strength models is evaluated by calculating common errors and performance criteria such as correlationcoefficient (R), and mean absolute percentage error (MAPE). The results show that among the existing axial compressive strength of FRP-confined circular concrete columnsmodels, the Bisby model outperforms others with R and MAPE values of ۰.۸۳۲۵ and ۲۶.۵۰%, respectively.

کلمات کلیدی:

fiber reinforced polymer (FRP), confinement, concrete columns, compressive strength