عنوان مقاله:

Influence of Internal and External (FRP) Confinement on Response of Concrete Compressive Members

محل انتشار:

دومین کنفرانس بین المللی مقاوم سازی لرزه ای (سال: 1388)

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خلاصه مقاله:

In this study, using an experimental study, it is desired to investigate the direct effect of external confinement (FRP) in presence of internal confinement and to determine some criteria in retrofitting and seismic strengthening design of existing structures and new constructions. Limited related report is presented in the literature so far. In thisresearch, 12×40 cm cylindrical concrete specimens are tested under compression by universal testing machine with capability of strain controlled loading. Test Variables include compressive strength of concrete (30 50 MPa), type of FRP (CFRP GFRP) and number of FRP layers (1 and 2), and spiral bar spacing in internal confinement (3 and cm). Some specimens are used as control with no FRP jacketing and spiral confinement, some are strengthened with CFRP or GFRP, some have just spiral confinement, and finally some have both FRP strengthening and spiral confinements. Complete curves are obtained from extensive test parameters indicate an increase in the strength and ductility in the confined case with either internal or external confinement. For high level of external confinement, the level of internal confinement has limited influence. Finally based on experimental data new model is proposed to predict the .performance of confined concrete

کلمات کلیدی:

Strengthening, FRP, Spiral bars, Confined concrete, Model