

ABSTRACT

In this study, we learn about Square concrete columns with rectangular ties as confinement steel are tested under monotonic axial compression to failure. Load-deformation curves are presented. Contribution of concrete to load carrying capacity and the significance of cover spalling are examined. Effects of distribution of longitudinal steel around the column perimeter and the resulting tie configuration, the amount and characteristics of tie steel, tie spacing, and the amount of longitudinal steel affecting the behavior of the confined column core are examined. Concrete cores of columns confined with ties and well distributed longitudinal steel exhibit significant gain in strength and ductility. Tie spacing and the characteristics and the amount of tie steel significantly affect the strength and ductility of confined core. The amount of column steel does not appear to have significant effect on confinement.