

9. An Experimental Study on the Shear Performance of Reinforced Concrete Columns Using F_c150N/mm^2 Class Concrete

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An increasing number of reinforced concrete high-rise buildings have recently been constructed. Reinforced concrete columns are being developed using concrete of higher strength with a view to building higher buildings and simultaneously reducing column cross section and expanding the span. Few existing studies have, however, sufficiently examined the shear performance of reinforced concrete columns. Then, static loading tests were conducted using conventionally reinforced, steel fiber reinforced and steel plate reinforced F_c150N/mm^2 class reinforced concrete columns to identify the structural performance and evaluate shear strength.

As a result, it was verified that shear strength was higher in steel fiber and steel plate reinforced concrete columns than in conventionally reinforced columns and that the proposed equations could accurately evaluate shear strength.

Key words: reinforced concrete columns, F_c150N/mm^2 , shear performance, steel fiber reinforcement, steel plate reinforcement, loading tests