SHEAR STRENGTH CAPACITY OF WIDE REINFORCED CONCRETE BEAM WITH SHEAR STEEL PLATES

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ABSTRACT

Wide reinforced concrete beams have been used in buildings to reducereinforcement congestion and floor heights for required headroom. The beamin most of these cases is wider than that of the supporting columns.Consequently their shear capacity might be effected and differ from that ofconventional beams. This project report presents the test results of four widebeam specimens in which their shear performances were studied. Theinfluence of the support widths (100% of the beam width), the arrangement offlexural reinforcement across the beam width, and the presence of shearreinforcement in the forms of third specimens consist of concrete with steelplate and control beam conventional beam were investigated. The test setupwas made similar for all the specimens, one pointed load were on the beamwidth, the load put at distance column (300mm*300mm) from the center ofsupport, therefore, the specimen control faed in diagonal tension shear. Butother specimens failed in flexural corporation. The results showed that widebeam with plate has no effect on the shear strength of concrete and theinfluence of concentrating the flexural reinforcement within the support widthhas no significant effect on the shear strength of concrete.

KEYWORDS: Distance Column (300mm*300mm), ACI (318-11), Flexural Reinforcement