

Punching capacity of deck slabs in girder-slab bridges

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ACI Structural Journal

Vol. 91, Issue.6, 1994

Abstract: Static tests were conducted on a series of simulated deck panels of girder-slab bridges to determine the punching resistance of the reinforced slabs, with the aim to generate reliable test data from representative large-size models. Variables included in this test were the different load areas and the amount of the reinforcement in the slab. A comparative study of the relative accuracy of three analytical methods for computation of punching resistance of slabs under a patch load has been presented by comparing results with the experimental values. Based on the observed failure modes, a modification to the often-used ACI formula for two-way shear resistance has been proposed.