

Sensitivity study of criteria governing collapse of centrally loaded R/C slabs

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Engineering computations

Vol. 10, Issue.2, 1993

Abstract: This paper presents the full range sensitivity study of various components of material model on the response of reinforced concrete slabs subjected to central patch loads using non-linear finite element analysis. A layered degenerate quadratic plate element with five degrees of freedom was employed. Smearred crack model was used with orthogonal cracking. The components considered in this work are: perfectly plastic models versus hardening models, role of crushing condition on collapse load, influence of dowel effect on punching capacity, parametric variation of tension stiffening parameter, parametric variation of degraded shear modulus and the role of yield criterion.