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Evaluation of Deflections for Post-tensioned Flat Plates with Two-way Tendon Layout

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***Abstract*— Post-tensioned concrete flat plate structures has many advantages such as reduction of overall member thickness and deflections. Several authors have discussed the influence of the tendon layout on deflections of flat plates. However, few information is available on the deflections of post-tensioned flat plate considering tendon layout types. In this study, flexural tests on a concrete flat plate specimen was performed in order to evaluate the deflection according to the two-way tendon layout. The test results were analyzed to propose the nonlinear finite element model taking into account the nonlinearity of concrete. This proposed model is capable of prediction of the deflections considering tendon layout.**

***Keywords*— post-tensioned concrete, flat plate, deflection, tendon layout, finite element analysis**

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