Some Trends in Analysis of Two-Way Solid Slabs

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Abstract : This paper presents the results of analytical and comparative study among software programs' outputs in analysis of some two way solid slabs; flat plate, flat slab with beams and flat slab with drop panels problems that already been analyzed using Classical Equivalent Frame Method (CEFM) by several reinforced concrete book authors. The primary objective of this research is to determine the moment results using various software programs. Then, a summary of the results and differences percentages were obtained to show how analysis procedure effects the outputs of calculations that vary from software program to another when comparing them with the results of CEFM. Moment values were obtained using either the Equivalent Frame Method (EFM) or Finite Element Method (FEM) that's used among many software programs. The results of the analyses demonstrate that software programs vary markedly in terms of the information they provide to the structural designer regarding values of the model insertion, stiffness, effective moment of inertia used and specially the moment values.

Keywords : two-way solid slabs, flat plate, flat slab with beams, flat slab with drop panels, analysis, modeling, EFM, CEFM, FEM

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