

Finite Element Analysis of Plate Bending Problems Using Transition Plate Elements

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Abstract. In this work, four different transition plate elements are derived and used for the finite element analysing of plate bending problems. The Mindlin plate theory is used in the element formulations. So the transverse shear is also included in the solutions. The coefficients of trial functions are selected from the Pascal triangle using a practical rule. An existing finite element program is improved by adding new type transition plate elements. All Fortran IV codes are changed to Fortran 95 codes in the existing program. To verify the developed elements, a cantilever plate and plate bending problems are solved. Their results are compared with ANSYS results.