



# Boundary Integral Equation Methods and Numerical Solutions

By Christian Constanda

Springer-Verlag Gmbh Apr 2016, 2016. Buch. Book Condition: Neu. 241x159x20 mm. Neuware - This book presents and explains a general, efficient, and elegant method for solving the Dirichlet, Neumann, and Robin boundary value problems for the extensional deformation of a thin plate on an elastic foundation. The solutions of these problems are obtained both analytically-by means of direct and indirect boundary integral equation methods (BIEMs)-and numerically, through the application of a boundary element technique. The text discusses the methodology for constructing a BIEM, deriving all the attending mathematical properties with full rigor. The model investigated in the book can serve as a template for the study of any linear elliptic two-dimensional problem with constant coefficients. The representation of the solution in terms of single-layer and double-layer potentials is pivotal in the development of a BIEM, which, in turn, forms the basis for the second part of the book, where approximate solutions are computed with a high degree of accuracy. The book is intended for graduate students and researchers in the fields of boundary integral equation methods, computational mechanics and, more generally, scientists working in the areas of applied mathematics and engineering. Given its detailed presentation of the material, the book...



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