

mechanical engineering library for mathcad®

Deliver powerful mechanical engineering resources to your desktop for easy access

PRODUCT OVERVIEW

The Mechanical Engineering Library brings an extensive set of informational and reference tools to Mathcad, for immediate use at any time. This Library includes three best-selling Mathcad E-books.

THE MECHANICAL ENGINEERING LIBRARY FOR MATHCAD INCLUDES:

Roark's Formulas for Stress and Strain, 6th Edition - Receive the complete edition, with more than 1,000 separate design cases covering straight beams and bars, curved beams, plates and shells. Also included are all 37 tables of formulas in Roark's and more than 75 detailed example problems worked out in Mathcad.

Sample Topics - Column buckling and elastic stability; stress, force and deflection calculations for beams; combined stress formulas; curved beam cross-section properties; moments of inertia; torsional loading; beam analysis for a varying section; stresses and deflection of flat plates; discontinuity

analysis results at the junction of shells and plates; natural frequencies of plates; bending and membrane stresses of thin-walled pressure vessels; radial displacements; buckling of shells

Finite Element Beginnings - This book is an introduction to the principles of finite element method. Designed for those who use existing finite element packages and want a deeper theoretical understanding of the methodology, it is an ideal foundation for establishing finite associated applications. Friendly and informative, the book looks "behind the scenes," and offers many examples to help develop your understanding.

Sample Topics - Historical perspective of the finite element method; Basic concepts of linear elasticity; the principles of minimum potential energy and direct method; Using interpolation concepts in one and two dimensions; Mapped elements

Machine Design and Analysis (from Hicks's Standard Handbook of Engineering Calculations) - This interactive reference tool is based on more than 125 machine design, analysis and metalworking calculation procedures from the classic McGraw-Hill reference work. Each section has a working Mathcad calculation procedure mirroring one in the original book, supported with explanatory text, tables of data, scanned-in figures, Mathcad plots and Mathcad built-in units.

Sample Topics - Shaft, torque, horsepower and driver efficiency; shaft reactions and bending moments; solid shafts in bending and torsion; speeds of gears and gear trains; force ratio of geared drives; wear life of roller surfaces; time and power to drill, bore, countersink and ream; shock-mount deflection and spring rate; economical cutting speeds and production rates

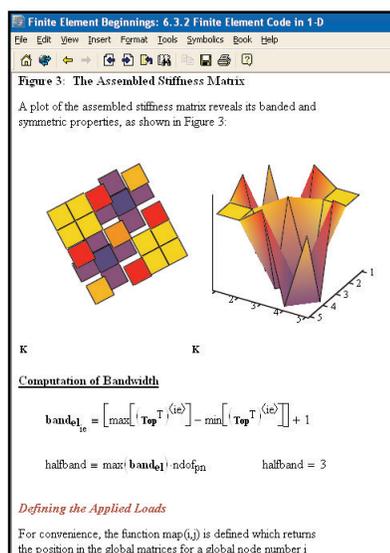


Figure 1. The Mechanical Engineering Library includes Finite Element Beginnings.

WHAT ARE MATHCAD E-BOOKS?

Mathcad E-books give you interactive “live” access to what would otherwise be hard copy reference books. Because the books are electronic, you get all the features you would expect from an electronic reference tool, such as hyperlinks, browsing and full word search. Plus, these books deliver unique benefits because you read them in Mathcad, with full access to all of Mathcad’s calculation and graphing features. As you change parameters and definitions, Mathcad recalculates. Modify the algorithms to build your own models, explore the content by working directly in the book or drag content into your own Mathcad worksheets.

SPECIFICATIONS

System Requirements

- Mathcad 12 or higher
- Windows® XP, 2000 or higher
- 140 MB of disk space (if installing to hard drive)

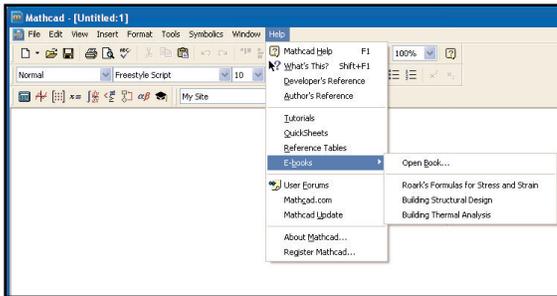


Figure 2. Mathcad E-books provide “live” access to hard copy reference books, and offer features such as hyperlinks, browsing and full word search.



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