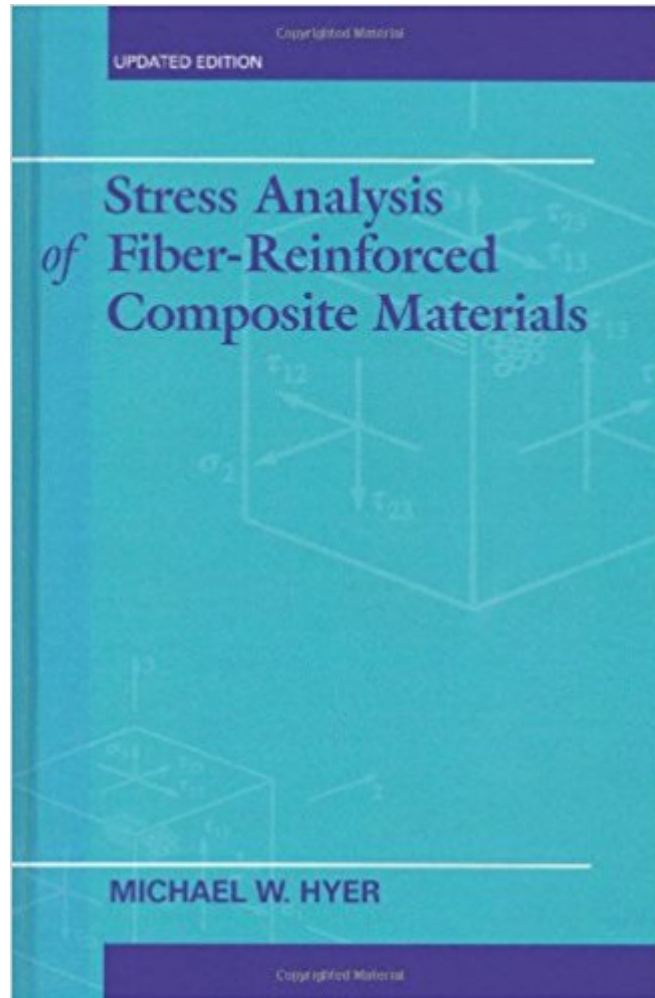


The book was found

# Stress Analysis Of Fiber-Reinforced Composite Materials



## Synopsis

Updated and improved, *Stress Analysis of Fiber-Reinforced Composite Materials*, Hyer's work remains the definitive introduction to the use of mechanics to understand stresses in composites caused by deformations, loading, and temperature changes. In contrast to a materials science approach, Hyer emphasizes the micromechanics of stress and deformation for composite material analysis. The book provides invaluable analytic tools for students and engineers seeking to understand composite properties and failure limits. A key feature is a series of analytic problems continuing throughout the text, starting from relatively simple problems, which are built up step-by-step with accompanying calculations. The problem series uses the same material properties, so the impact of the elastic and thermal expansion properties for a single-layer of FR material on the stress, strains, elastic properties, thermal expansion and failure stress of cross-ply and angle-ply symmetric and unsymmetric laminates can be evaluated. The book shows how thermally induced stresses and strains due to curing, add to or subtract from those due to applied loads. Another important element, and one unique to this book, is an emphasis on the difference between specifying the applied loads, i.e., force and moment results, often the case in practice, versus specifying strains and curvatures and determining the subsequent stresses and force and moment results. This represents a fundamental distinction in solid mechanics.

Table of Contents follows:

1. Fiber-Reinforced Composite Materials
2. Linear Elastic Stress-Strain Characteristics of Fiber-Reinforced Material
3. Prediction of Engineering Properties Using Micromechanics
4. The Plane-Stress Assumption
5. Plane-Stress Stress-Strain Relations in a Global Coordinate System
6. Classical Lamination Theory: The Kirchhoff Hypothesis and Its Implications
7. Classical Lamination Theory: Laminate Stiffness Matrix
8. Classical Lamination Theory: Additional Examples
9. Failure Theories for Fiber-Reinforced Materials: Maximum Stress Criterion
10. Failure Theories for Fiber-Reinforced Materials: The Tsai-Wu Criterion
11. Environmentally Induced Stresses in Laminates
12. Through-Thickness Laminate Strains
13. Introduction to Fiber-Reinforced Laminated Plates
14. Appendix: Manufacturing Composite Laminates

## Book Information

Hardcover: 710 pages

Publisher: Destech Pubns Inc; Updated edition (November 19, 2008)

Language: English

ISBN-10: 193207886X

ISBN-13: 978-1932078862

Product Dimensions: 9.2 x 6.3 x 1.6 inches

Shipping Weight: 2.4 pounds (View shipping rates and policies)

Average Customer Review: 5.0 out of 5 stars 2 customer reviews

Best Sellers Rank: #142,892 in Books (See Top 100 in Books) #27 in [Books > Engineering & Transportation > Engineering > Materials & Material Science > Strength of Materials](#) #135 in [Books > Engineering & Transportation > Engineering > Materials & Material Science > Materials Science](#) #39853 in [Books > Textbooks](#)

## Customer Reviews

Mike, one of the most respected authorities in the field of composite materials, introduces you to the fundamentals of composites and takes you all the way through to failure theories. Rule of mixtures, classical lamination theory, stress analysis, failure theories...it's all here and explained simply. Well written, great examples and problems, fantastic organization. It's been my main bible for over ten years.

This is indeed a good book. Subject matter is well organized, explanations are clear. For the beginning courses in the mechanics of composite materials, this may perhaps be one of the best books available today.

[Download to continue reading...](#)

High Fiber Recipes: 101 Quick and Easy High Fiber Recipes for Breakfast, Snacks, Side Dishes, Dinner and Dessert (high fiber cookbook, high fiber diet, high fiber recipes, high fiber cooking)  
Stress Analysis of Fiber-Reinforced Composite Materials Damage Mechanics of Composite Materials, Volume 9 (Composite Materials Series) Composite Materials: Materials, Manufacturing, Analysis, Design and Repair Composite Construction for Homebuilt Aircraft: The Basic Handbook of Composite Aircraft Aerodynamics, Construction, Maintenance and Repair Plus, How-To and Design Information Resistant Starch: The Resistant Starch Bible: Resistant Starch - Gut Health, Fiber, Gut Balance (Gut Balance, Glycemic, Natural Antibiotics, Dietary Fiber, SIBO, Soluble Fiber, Healthy Gut Book 1) Foods High in Fiber Cookbook: List of High Fiber Foods for a Healthy Lifestyle - Recipes for High Fiber Foods Mechanics Of Composite Materials (Materials Science & Engineering Series) Processing Techniques and Tribological Behavior of Composite Materials (Advances in Chemical and Materials Engineering) Design and Analysis of Structural Joints with Composite Materials Ceramic Matrix Composites: Fiber Reinforced Ceramics and their Applications Engineering Materials 3: Materials Failure Analysis: Case Studies and Design Implications

(International Series on Materials Science and Technology) (v. 3) Understanding Aircraft Composite Construction: Basics of Materials and Techniques for the Non-Engineer Introduction to Composite Materials Design, Second Edition Damage and Failure of Composite Materials Mechanics of Composite Materials, Second Edition (Mechanical and Aerospace Engineering Series) Engineering Mechanics of Composite Materials Friction and Wear of Polymer Composites (Composite Materials Series 1) Composite Materials for Implant Applications in the Human Body: Characterization and Testing/Pcn No. : 04-011780-54 (Astm Special Technical Publication// Stp) Structural Analysis and Design of Tall Buildings: Steel and Composite Construction

[Contact Us](#)

[DMCA](#)

[Privacy](#)

[FAQ & Help](#)