



# Engineering Design with Polymers and Composites, Second Edition

By James C. Gerdeen PhD PE, Ronald A.L. Rorrer PhD PE

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James C. Gerdeen PhD PE, Ronald A.L. Rorrer PhD PE

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continues to provide one of the only textbooks on the analysis and design of  
mechanical components made from polymer materials. It explains how to create  
polymer materials to meet design specifications.

After tracing the history of polymers and composites, the text describes modern  
design concepts, such as weight-to-strength ratio and cost-to-strength ratio, for  
selecting polymers and composites for design applications. It also presents  
computer methods for choosing polymer materials from a database, for optimal  
design, and for laminated plate design.

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This edition rearranges many chapters and adds a significant  
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chapters, instead of one. This edition also includes entirely new  
chapters on polymer fusing and other assembly techniques, rapid  
prototyping, and piezoelectric polymers.

Suitable for mechanical and civil engineering students as well as practicing  
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understanding phenomena that they will encounter in real-life applications or  
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## **Editorial Review**

### **About the Author**

**James C. Gerdeen**, Ph.D., P.E., is a professor emeritus at the University of Colorado at Denver and Health Science Center and a distinguished professor at Michigan Technological University. He has published over 65 papers and over 100 research reports. His research interests include pressure vessel design, structural analysis, metal working manufacturing, and mechanical design.

**Ronald A.L. Rorrer**, Ph.D., P.E., is an associate professor at the University of Colorado at Denver and Health Sciences Center. He has published over 30 papers and holds one patent. His research areas include tribology, polymers, composites, and bioengineering.

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