



Principles of Welding: Processes, Physics, Chemistry, and Metallurgy

By Robert W. Messler Jr.

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An advanced yet accessible treatment of the welding process and its underlying science.

Despite the critically important role welding plays in nearly every type of human endeavor, most books on this process either focus on basic technical issues and leave the science out, or vice versa. In *Principles of Welding*, industry expert and prolific technical speaker Robert W. Messler, Jr. takes an integrated approach--presenting a comprehensive, self-contained treatment of the welding process along with the underlying physics, chemistry, and metallurgy of weld formation.

Promising to become the standard text and reference in the field, this book provides an unprecedented broad coverage of the underlying physics and the mechanics of solidification--including peritectic and eutectic reactions--and emphasizes material continuity and bonding as a way to create a joint between materials of the same general class. The author supplements the book with hundreds of tables and illustrations, and correlates the science to welding practices in the real world.

Principles of Welding departs from existing books with its clear, unambiguous presentation, which is easily grasped even by undergraduate students, yet given at the advanced level required by experienced engineers.

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- Rank: #892116 in Books
- Published on: 1999-03-24
- Original language: English
- Number of items: 1
- Dimensions: 9.65" h x 1.59" w x 7.05" l, 2.55 pounds
- Binding: Hardcover
- 662 pages

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Editorial Review

From the Back Cover

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About the Author

ROBERT W. MESSLER, JR., PhD, FASM, FAWS, is Associate Professor and Director of the Warren F. Savage Materials Joining Laboratory at Rensselaer Polytechnic Institute in Troy, New York. With over three decades in diverse areas of advanced materials and processes in industry and academia, Professor Messler has published numerous papers on welding, brazing, soldering, and innovative integral fastening as well as the book *Joining of Advanced Materials*.

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