

Welding Handbook

Ninth Edition

Volume 5

MATERIALS AND APPLICATIONS, PART 2

Prepared under the direction of
the Welding Handbook
Committee

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American Welding Society

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DEDICATION

The Welding Handbook Committee dedicates this book jointly to Bernhard J. (Bernie) Bastian, long-term member of the Welding Handbook Committee, and Annette O'Brien, Senior Editor, in recognition of their contributions to the five volumes of the 9th edition of the *Welding Handbook* for the American Welding Society.

B. J. Bastian

B. J. Bastian, M.S., P.E., welding consultant, teacher, writer, mentor, and contributor to the technology of automotive welding, has generously shared the expertise acquired during his 50-year career in the welding industry by serving on the Welding Handbook Committee. He has provided valuable guidance to the Committee on the organization and technical content of the *Welding Handbook*, and was responsible for oversight and final reviews of various chapters of each of the five volumes of the 9th edition.

Bernie's career includes work with Ford Motor Company and Chrysler Corporation, not only in welding engineering and management, but also as an instructor and coach for welders and technicians. He has a Bachelor of Science degree in mechanical engineering and a Master's degree in metallurgical engineering from Rensselaer Polytechnic Institute. He added postgraduate studies at the University of Michigan. He taught welding and related courses at Henry Ford Community College for 17 years, and has written instructive articles for a number of technical publications.

He is a Fellow of the American Welding Society and was also honored as a Life Member in recognition of his work as a volunteer with AWS. He is a past member of the AWS Board of Directors.

Annette O'Brien

Annette O'Brien served as Editor for all five volumes of the Ninth Edition of the *Welding Handbook*. For more than 15 years she diligently and patiently guided the volumes, each containing over 700 pages, through many stages of editing, proofing, review, and final approval necessary to produce one of the finest series of reference books in the welding industry.

Annette also served as Secretary to the Welding Handbook Committee, organizing meetings, preparing minutes, expediting and distributing chapters for peer reviews, and communicating the information necessary to keep the committee informed and on schedule. Her many years of commitment to the *Welding Handbook* have been invaluable to the American Welding Society.