Welding Metallurgy And Weldability Of Stainless Steels

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John C. Lippold and Damian J. Kotecki

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Synopsis

Welding Metallurgy and Weldability of Stainless Steels, the first book in over twenty years to address welding metallurgy and weldability issues associated with stainless steel, offers the most up-to-date and comprehensive treatment of these topics currently available. The authors emphasize fundamental metallurgical principles governing microstructure evolution and property development of stainless steels, including martensistic, ferric, austenitic, duplex, and precipitation hardening grades. They present a logical and well-organized look at the history, evolution, and primary uses of each stainless steel, including detailed descriptions of the associated weldability issues.

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Customer Reviews

"Ã¢â¬â€œoffers a solid and detailed coverage of welding with stainless steels." (E-STREAMS, August 2006) "Ã¢â¬â€œan exciting metallurgy bookÃ¢â¬â€œthat is difficult to put downÃ¢â¬â€œthe authors have performed an excellent piece of work in developing this book." (Materials and Manufacturing Processes, February 2006) "...a delight to read...has a wealth of information and written in a concise, informative mannerÃ¢â¬â€œ" (MRS Bulletin, January 2006) "...an authoritative resource for both students and professionals that serves as a handy reference...essential." (CHOICE, December 2005) "Ã¢â¬â€œinformation is not something that can be easily found in most metallurgical reference booksÃ¢â¬â€œextremely useful for the selection or application of stainless steels." (Journal of Metals Online, July 21, 2005) "...an up-to-date textbook that will surely become a
The definitive resource for understanding the welding metallurgy of stainless steels Welding Metallurgy and Weldability of Stainless Steels, the first book in over twenty years to address welding metallurgy and weldability issues associated with stainless steel, offers engineers, scientists, and students the most up-to-date and comprehensive treatment of these topics currently available. The authors emphasize fundamental metallurgical principles governing microstructure evolution and property development of stainless steels, including martensitic, ferritic, austenitic, duplex, and precipitation-hardening grades. They present a logical and well-organized look at the history, evolution, and primary uses of each stainless steel, including detailed descriptions of the associated weldability issues. Coverage includes the latest information on: Common stainless steel alloys and their composition Physical and welding metallurgy of different alloy systems Mechanical properties of welded stainless steels The technology and uses of “super” stainless steel alloys Dissimilar metal joints and weldability issues Methods for evaluating weldability Real-world solutions to weldability challenges In addition to describing the applications and limitations of stainless steels for welded construction, the text also addresses common failures in welded stainless steels associated with fabrication and service exposure, and how such failures may be avoided.

This is an excellent text and sourcebook for practicing engineers. While not a handbook, this book contains a lot of useful data, however, its primary value is as text that gives general guidance and explains why the alloys behave as they do. The authors of this book are world leaders in the subject matter, and as expected, they have produced a first-rate book. The book begins with three chapters, which concisely describe the metallurgy of stainless steels, followed by five chapters that discuss the welding of the different types of stainless steels (i.e., Austenitic, Ferritic, Martensitic, Duplex and Precipitation Hardened stainless steels). The final two chapters discuss the welding of dissimilar steels and weldability testing.

For me, this is the best up to date review book on stainless steels and especially about their welding metallurgy and weldability. The metallurgical mechanisms and the effects on weldability are very well explained. A wide range of technical people including students can use and understand the book easily. I have been reading Dr. Kotecki's Q&A part and Lippold's articles in Welding Journal for more than ten years, so have gathered some data from these parts of them also made me appreciate them. I guess there couldn't have been a better book nowadays about weldability of SSs
also.

While the book is required reading for Dr. Lippold's class at Ohio State, I have continued to find use for it as a practicing Welding Engineer in industry. There is no better book available for stainless steel welding metallurgy.

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