



Welding Metallurgy and Weldability

By John C. Lippold



Welding Metallurgy and Weldability By John C. Lippold

Describes the weldability aspects of structural materials used in a wide variety of engineering structures, including steels, stainless steels, Ni-base alloys, and Al-base alloys

Welding Metallurgy and Weldability describes weld failure mechanisms associated with either fabrication or service, and failure mechanisms related to microstructure of the weldment. Weldability issues are divided into fabrication and service related failures; early chapters address hot cracking, warm (solid-state) cracking, and cold cracking that occur during initial fabrication, or repair. Guidance on failure analysis is also provided, along with examples of SEM fractography that will aid in determining failure mechanisms. *Welding Metallurgy and Weldability* examines a number of weldability testing techniques that can be used to quantify susceptibility to various forms of weld cracking.

- Describes the mechanisms of weldability along with methods to improve weldability
- Includes an introduction to weldability testing and techniques, including strain-to-fracture and Varestraint tests
- Chapters are illustrated with practical examples based on 30 plus years of experience in the field

Illustrating the weldability aspects of structural materials used in a wide variety of engineering structures, *Welding Metallurgy and Weldability* provides engineers and students with the information needed to understand the basic concepts of welding metallurgy and to interpret the failures in welded components.

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Editorial Review

From the Back Cover

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John C. Lippold received his BS, MS, and PhD degrees in Materials Engineering from the Rensselaer Polytechnic Institute. Upon completion of his formal education, Dr. Lippold worked for seven years at Sandia National Laboratories as a member of the technical staff, specializing in stainless steel and high alloy weldability. From 1985 to 1995, Dr. Lippold worked for Edison Welding Institute. From 1995 to the present, he has been on the faculty of the Welding Engineering program at The Ohio State University and was recently named a College of Engineering Distinguished Faculty member.

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