

# Corrosion of Weldments

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# Preface

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Welding is one of the most important processes for fabricating metallic structures. The study of welding metallurgy has long been addressed by academia, industry, and organizations such as the American Welding Society and the Edison Welding Institute in the United States and The Welding Institute in the United Kingdom. Similarly, extensive research has been carried out on the fundamentals of corrosion and the various types of corrosion that can render a structure useless. *Corrosion of Weldments* explores both of these important disciplines and describes how the welding process can influence both microstructural and corrosion behavior. Hydrogen-induced cracking of steel weldments, sensitization and subsequent intergranular corrosion of stainless steel weldments, sulfide stress cracking of pipeline steel weldments, microbiologically induced corrosion of weldments, and stress-corrosion cracking of weldments are addressed in detail. Although emphasis has been placed on carbon steels and stainless steels, non-ferrous alloys such as high-nickel alloys, aluminum alloys, and titanium alloys also are covered. Weld corrosion in some important industries and environments also is reviewed as are methods for monitoring corrosion and testing of weldments.

As always I would like to acknowledge the support of the ASM editorial and production staffs during work on this project. In particular, I would like to thank Project Editor Charles Moosbrugger for his help and patience. I hope our combined efforts will result in a lasting contribution to the technical literature.

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