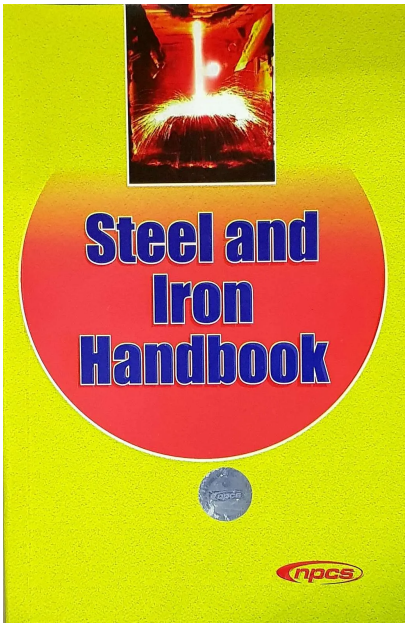
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Steel and Iron Handbook

Code	NI259
Format	paperback
Indian Price	₹1775
US Price	$150
Pages	472
ISBN	9789381039304
Publisher	NIIR PROJECT CONSULTANCY SERVICES

Description

Modern civilization as people know it would not be possible without Iron and Steel. Iron has been a vital material in technology for well over three thousand years. However, since ancient times, steel is made by alloying iron with carbon to produce a harder, stronger metal that will take a much keener edge. Owing to its intense connections with core infrastructural segments of the economy, steel industry is of high priority and importance. Steel has probably the widest range of applications of any material. The wide range of alloy compositions, mechanical properties and product forms available make it a versatile material that is used in components and products that may be small or large, high-tech or low-tech, everyday or specialist.
In an introduction to modern steel making, an attempt has been made to cover, as the space would permit, the entire field of steel making with equal emphasis on the general practices and the underlying principles. This book is intended as a resource and as an introduction to the layman about our most important metal system. This book provides basic information covering every aspect of iron and steel production as well as a practical aid for workers engaged in the field. After an introduction that deals with the history and production of iron and steel, the rest of the book examines their physical properties and metallurgy.
Beginning with a brief introduction to the ferrous alloys and metals, types and production of cast iron, production of compacted Graphite Irons, Ductile Iron, Malleable Cast Iron and current status of steel making together with the reasons for obsolescence of Bessemer converter and open hearth processes, the book moves on to: elaborate the physiochemical principles involved in steel making; explain the operational principles and practices of the modern processes of primary steel making (LD converter, Q-BOP process, and electric arc furnace process); provide a summary of the developments in secondary refining of steels; discuss principles and practices of ingot casting and continuous casting of steels; discusses the defects in the steel produced and also the remedies for their removal. This book provides considerable information in an easily assimilable form and makes an ideal introduction to the complex subject of steel technology.

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About Niir

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