

---

## BOOK REVIEW

---

by **R. Ravi**

Fundamentals of Welding Metallurgy by H. Granjon  
Jaico Publishing House, Mumbai,  
Pages 210, First Published in 1994

---

Those of you who are in the field of welding metallurgy would have already had a chance to glance through this excellent book. Very rarely we get exclusive welding metallurgy books and that also so small.

A glance through the foreword itself will bring out the fact that there is no better person to write on this topic other than H. Granjon. Such an eminent personality and I once again wonder whether this book requires a review or I should highlight the usefulness of the book to those who have not yet had an opportunity to go through.

There are ten chapters detailing nicely on various areas. The author begins with fundamentals of welding and its operations and details the aim of welding metallurgy and its importance. Then he moves on to the thermal and thermo mechanical studies in welding on which he discusses about heat cycles, heat distributions and their effects. How

these aspects change with respect to processes has been explained in detail. The author also discusses about distortion, residual stresses, effect of stress relieving in continuation.

There is a separate chapter for metallographic examination detailing what all can be studied through this technique. The formation of fusion zone, what happens when the material gets heated during welding, what happens during cooling of the weld have been treated elaborately through separate chapters. One has to really go through the chapter to understand how such intricate topics have been handled by the author for a clear understanding of every one.

No welding metallurgy book can be complete without a chapter on cracking mechanisms. The chapter details the crack phenomenon, influencing factors, cracking tests and precautions under various conditions.

Heat treatments for steel welds has been dealt with separately giving details and metallurgical effects, cracking during heat treatment. Apart from the general stress relieving, the author has discussed normalising, hardening, tempering inter-critical treatments also.

The book concludes with a chapter on NDT/DT which details various tests in these fields.

Though the major group dealt with is ferrous materials (steels), references are made to non-ferrous materials also. The diagrams used in the book are quite illustrative and deserve a special mention since the author has not used any photographs in the book.

To summarise, it can be said that the book presents an important topic in welding very thoroughly. The book has been written for a wide range of audience and is a must read for everyone in welding. ■