

## BOOK REVIEW

### JOINING OF PLASTICS

*Joining of Plastics* authored by Jordan Rotheiser and published by Hanser Gardner Publications, is an outstanding handbook covering everything from Adhesive joining to Welding of plastic components. (Note that there are no joining techniques starting with letter Z!) The author draws upon more than thirty-five years of plastics product design experience to present this encyclopedic coverage of joining techniques most commonly used in the plastics industry. This book not only offers a detailed guide to a novice reader in easy-to-read format, but also a complete reference manual for the experienced designer who occasionally encounters a new or unusual problem.

The author's unique approach to presenting the information is very refreshing and it fulfills its stated purpose of providing a handy desk reference and a design guide. Case in point, chapter one covers rapid guidelines for joining of plastic and efficient use of the handbook. This gives reader a quick overview of all available assembly methods in terms of description of the method, advantages, limitations, applications, and processing considerations. The general guidelines provide the direction for further reference and in-depth exploration of the particular subject. The importance of properly designing the parts to avoid assembly problems, improve efficiency, and reduce assembly time cannot be over emphasized. The chapter on designing for efficient assembly deals with this subject and provides the guidelines for the proper design along with an invaluable product design for assembly check list. A separate chapter for designing parts for disassembly and recycling covers increasing problem of solid waste management and makes important recommendations.

The relationship between the assembly methods, the Materials, and the plastics manufacturing processes is generally neglected in the available references. This book, in two separate chapters *Assembly method selection by material* and *Assembly method selection by process*, addresses this important but often overlooked relationship. Some of the individual topics discussed in detail are, adhesive and solvent joining, fasteners and inserts, hinges, variety of welding techniques including hot plate welding, gas welding, and induction/electromagnetic welding. Also, there are separate chapters on press fit, snap fits, spin welding, stacking, and cold forming. One of the most useful features of this book is the discussion of the advantages and disadvantages of each assembly method, making the selection process fast and easy. For example, the author succinctly points out that if high levels of molded-in stresses are a huge concern, one may want to avoid insert molding altogether. Chapter 13 on Insert and multi part molding discusses one of the fastest growing injection molding techniques to reduce assembly cost and components, often referred to as multi-component molding. Over forty pages have been devoted to the detailed discussion of Ultrasonic welding, a very popular and widely accepted joining methods.

In order to increase the versatility of the book and meet the goal of providing a ready reference and “how to” on the subject, numerous illustrations, charts, and tables have been depicted through out the book, names, addresses, and phone numbers of suppliers and equipment manufacturers are given along with adequate reference section. In the humble opinion of the reviewer, the readers would benefit even more, if additional actual photographs showing applications, equipment, and case studies were included. Whenever possible, inclusion of the supplier’s website and e-mail address, should prove very valuable. Perhaps, the author would accept the suggestions for the future revision.

In the end, this handbook is the original work and no tired revision of an old text. The author has worked very hard to put into one volume much data that some of us have collected from various sources over a period of years and so often is buried in the files. ***Joining of Plastics*** is a very useful addition to any plastics engineer’s library; however, it is a must for all plastic part designers.

Available from SPE Book store [www.4spe.org](http://www.4spe.org)

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