

Adhesive Bonding Techniques and Applications. C. V. Cagle, McGraw-Hill, New York, 1968. IX + 351 pp., \$16.00.

For the adhesives engineer and technologist, this book outlines the best practical approaches for obtaining the optimum in adhesive bonding. In line with this premise established by the author, no attempt is made to include any of the theoretical aspects of adhesion. Since the aircraft industry contributed so much to adhesive fabrication methods, it is only natural that this book discusses, in detail, the many bonding and tooling techniques used in the aerospace industry.

This volume covers properties of adhesives, designing for optimum bonding, surface preparation of the substrate, methods for applying the adhesive, and evaluation of the adhesive bond. Also included are brief discussions of adhesive applications in various industries (e.g., building, electrical, automotive, aircraft, and aerospace). Of special interest to the adhesives technologist is the list of military, federal, and ASTM specifications applicable to adhesive bonding. This extensive list includes the number, title, and a brief description of the scope of the specification. The list of adhesives suppliers for the aerospace industry and adhesives trade names represents a ready reference guide for product selection. The jargon of adhesives technology is clarified in an extensive glossary of terms associated with adhesive bonding. Although general references are listed at the end of each chapter, the presence of specific references appropriately designated in the text would be of greater value to the reader of this book. The procedures for establishing information files for adhesives literature is an approach to cataloging and, as such, does not significantly add any knowledge to the subject of adhesive bonding.

The chapter on surface preparation stresses the importance of selecting the best cleaning procedure for the specific substrate as a designed part which is to be subjected to environmental service conditions. In addition to mechanical surface preparation such as abrading, filing, and sandblasting, experimental procedures, including chemical formulations, are given for the surface preparation of most metallic, nonmetallic, and polymeric surfaces.

The discussions on design criteria and joint design are of particular significance in that the author explains the various types of adhesive joints, reasons for selecting the proper design geometry, and the nature of stress concentrations in adhesive bonding. The well-drawn figures and industrial photographs covering adhesive-joining techniques and applications complement the text.

Adhesives Bonding Techniques and Applications is recommended as a procedural guide to the adhesives technologist, chemist, and engineer.

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