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## BOOK REVIEW

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### Construction and Geotechnical Engineering Using Synthetic Fabrics

*Reviewed by T. Allan Haliburton, President, Haliburton Associates, Stillwater, Okla.*

**REFERENCE:** Welch, R. M. and Welch, J. P., *Construction and Geotechnical Engineering Using Synthetic Fabrics*, John Wiley & Sons, Inc., New York, 1980.

This book deals with the relatively recent topic of geotextiles, primarily permeable synthetic fabrics used in civil and geotechnical engineering-related construction. After a short historical summary and helpful background review of the synthetic fiber and geotextile manufacturing process, the book discusses the general physical characteristics of various woven and nonwoven geotextiles and the general uses of such materials in separation, reinforcement, drainage, erosion control, and concrete formwork, as well as uses for impermeable synthetic fabrics. Following this general discussion, specific physical property requirements for the various applications are discussed and specifications and technical details of various commercially available geotextiles are presented. With this background, specific technical details, design criteria, and construction methods are presented, in order, for geotextile use in material separation, material reinforcement, drainage, erosion control, and concrete formwork. Finally, a section of the use of impermeable fabrics is presented, as are general guidelines for

fabric use and a state-of-the-art summary of current geotextile research.

Before publication of this book, information concerning geotextiles and their applications was available only (in somewhat fragmented form) in technical literature in the civil and geotechnical engineering profession. The authors have thus performed a valuable service by collecting and evaluating the technical literature and putting it in a single volume, where interested engineers can become acquainted with general geotextile properties and the various engineering applications in which such textiles may be used in a technically feasible, operationally practical, and cost-effective manner.

The book's primary deficiency is that the majority of geotextile applications presented are of a conceptual nature, and only a minimum amount of material relating to site-specific design criteria, construction procedures, and performance specifications is available. As a result, the primary function of the book will be that of providing background knowledge to the reader, so that he can understand the specific research findings and design applications given in available technical literature. However, fault for the deficiency should not be assigned to the authors, but results from a lack of current state-of-the-art design criteria, construction methods, and specification information, plus the rapidly changing status of geotextile information during the last few years. Considering this rapid development, the authors will probably bring out a second (updated) version of their text in the near future, which will (hopefully) have more meat and potatoes to go along with the salad.