

# **Geosynthetic Soil Reinforcement Testing Procedures**

**S. C. Jonathan Cheng, editor**



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The quality of the papers in this publication reflects not only the obvious efforts of the authors and the technical editor(s), but also the work of these peer reviewers. The ASTM Committee on Publications acknowledges with appreciation their dedication and contribution to time and effort on behalf of ASTM.

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## Foreword

This publication, *Geosynthetic Soil Reinforcement Testing Procedures*, contains papers presented at the symposium of the same name, held in San Antonio, TX on 19 Jan. 1993. The symposium was sponsored by ASTM Committee D-35 on Geosynthetics. S. C. Jonathan Cheng of Drexel University in Philadelphia, PA, presided as symposium chairman and is the editor of the resulting publication.

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# Overview

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This ASTM symposium provides a forum for presentation of state-of-the-art technologies and new developments in geosynthetic soil reinforcement testing. The topics addressed include mechanical and durability properties with respect to the reinforcement function of geosynthetics, analysis of reinforcement testing results, and evaluation of testing results in relation to design. This symposium was also a result of an ASTM Committee D-35 seminar held in June 1991, concerning the same topic of geosynthetic soil reinforcement testing.

Since the use of geosynthetics in reinforcement applications is rapidly increasing, there is a need to institute a rational technical base for an understanding of the performance of geosynthetics in reinforcement applications. The corner stone of this technical base is the timely development of standardizing test methods, that is the charter of Committee D-35 on Geosynthetics. Although much progress has been witnessed as more testing methods are made available through ASTM processes, there is a significant lag between the state-of-the-art and present standardized test methods. This symposium attempts to provide a bridge between this time gap.

The organization of this Special Technical Publication (STP) is as follows:

- (1) Papers associated with either new testing equipment/procedures, or testing procedures for new reinforcement applications are included. These papers provide direction in the development of standard testing methods (papers 1 through 5).
- (2) Papers evaluating procedures of testing methods that are standardized or widely used are also included. The discussions are focused on those factors that influence test results (papers 6 through 10).
- (3) The next section of papers are concerned with the analysis of testing results in relation to design. In terms of standard practice, this is an area of need within ASTM (papers 11 through 14).
- (4) Finally, papers associated with the durability issue of geosynthetic reinforcement applications conclude this STP (papers 15 through 17).

All of the papers in this STP went through a rigorous review process. I would like to extend my most sincere appreciation to the authors for their enthusiastic participation and to the reviewers for their professional critiques. My work as editor of this publication has been very rewarding, but the credit must go to the authors and reviewers. In addition, I would like to thank the administrative support group from ASTM, especially Mrs. Dorothy Savini, Ms. Rita Hippensteel, and Mrs. Therese Pravitz.

This symposium is a step towards fully understanding the technical performance of geosynthetics. It is my most sincere hope that it will catalyze further research work and technical advancement.

*Shi-Chieh Cheng*

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chairman and editor.

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