Nondestructive and Automated Testing for *Soil and Rock Properties*

W. Allen Marr and
Charles E. Fairhurst
editors

ASTM

STP 1350

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ASTM Stock #: STP1350

ASTM
100 Barr Harbor Drive
West Conshohocken, PA 19428-2959

Printed in the U.S.A.

Library of Congress Cataloging-in-Publication Data

Nondestructive and automated testing for soil and rock properties /
W.A. Marr and C.E. Fairhurst, editors.
p. cm.
"ASTM stock #:STP1350."
Papers prepared for the ASTM Symposium on Nondestructive and Automated Testing for Soil and Rock Properties held January 15-16, 1998, San Diego, California.
ISBN 0-8031-2493-7
1. Soils--Testing. 2. Rocks--Testing. 3. Non-destructive testing. 4. Automatic checkout equipment. I. Marr, W. Allen. II. Fairhurst, Charles. III. ASTM Symposium on Nondestructive and Automated Testing for Soil and Rock Properties (1998 : San Diego, Calif.)
TA710.5.N66 1999
624.1'513--dc21 99-23150
CIP

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Printed in Ann Arbor, MI
May 1999

Foreword

The Symposium on Nondestructive and Automated Testing for Soil and Rock Properties was held in San Diego, CA on January 15 and 16, 1998. The event was sponsored by ASTM Committee D18 on Soil and Rock.

The symposium highlighted recent developments in nondestructive and automated testing for soil and rock properties. Its objective was to present results of recent research in the areas that have practical applications for the rapid and economical testing of soil and rock. The symposium chairman was W. Allen Marr, GEOCOMP Corp., Boxborough, MA and symposium cochairman was Charles E. Fairhurst, MTS Systems Corporation, Eden Prairie, MN. These men also served as editors for this publication.

Contents

AUTOMATED TESTING

Overview

This publication contains papers prepared for the ASTM Symposium on Nondestructive and Automated Testing for Soil and Rock Properties held in San Diego, CA, on January 15–16, 1998. The purpose of the symposium was to highlight recent developments in nondestructive and automated testing for soil and rock properties. We hoped to have speakers present results of recent research in these areas that have practical application for the rapid and economical testing of soil and rock. Authors were encouraged to identify which testing equipment and methods have sufficient practical application to warrant standards development.

Twenty papers have resulted from those presentations. These papers have been reviewed by at least two independent authorities in the subject matter and the papers revised to reflect the comments provided by the reviewers. As editors of this publication, we express our sincere thanks and gratitude to those who provided reviews.

This publication contains eight papers on laboratory methods and four papers on field methods for nondestructive testing to measure properties of soils and rocks. It contains eight papers on automated testing methods to measure soil and rock properties in a laboratory. Rather than trying to summarize the authors' work, we encourage the reader to peruse each paper and consider how the subject matter might affect his or her own work.

As some general observations, we note that most of the laboratory methods for nondestructive testing of soils and rock are still very much in the development stage and require expensive, specialized equipment. On the other hand, nondestructive testing in the field has taken significant steps towards obtaining economical and portable equipment that gives an in situ measurement of a material property. Automated testing methods appear to focus on laboratory tests and have developed to the point that they are seeing considerable commercial use. We have no doubt that the ongoing revolution in electronics, computations, and communications will lead to further developments in methods for nondestructive and automated testing of soils and rocks.

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ISBN 0-8031-2493-7