

Water Problems in Building Exterior Walls: Evaluation, Prevention, and Repair

Jon M. Boyd and
Michael J. Scheffler, editors

 **STP 1352**

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ASTM Stock#: STP1352



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

Printed in the U.S.A.

Library of Congress Cataloging-in-Publication Data

Water problems in building exterior walls: evaluation, prevention and repair/Jon M. Boyd and Michael J. Scheffler, editors.
(STP: 1352)
Papers presented at the symposium of the same name held in Atlanta, Georgia, 18 - 19 April 1998.
ASTM Stock #: STP1352
Includes bibliographical references and index.
ISBN 0-8031-2607-7
1. Dampness in buildings. 2. Exterior walls - Maintenance and repair. 3. Exterior walls Design and construction. 4. Waterproofing. I. Boyd, Jon M., 1952- . II. Scheffler, Michael J., 1958- . III. Series: ASTM special technical publication: 1352 TH9031 W377 1999
693.8'92--dc21 99-30845
CIP

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Foreword

This publication, *Water Problems in Building Exterior Walls: Evaluation, Prevention, and Repair*, contains papers presented at the symposium of the same name held in Atlanta, Georgia, 18–19 April 1998. The symposium was sponsored by ASTM Committee E-6 on Performance of Buildings. The symposium co-chairmen were: Jon M. Boyd, Boyd Associates, Inc., Chicago, Illinois, and Michael J. Scheffler, Wiss, Janney, Elstner Associates, Chicago, Illinois.

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Overview

The papers published in this special technical publication were presented during the ASTM symposium entitled *Water Problems in Building Exterior Walls: Evaluation, Prevention, and Repair*, held in Atlanta, Georgia in April 1998. This was the third in a series of symposia on the subject presented by the sponsoring Subcommittee, ASTM E06.55 on Exterior Wall Systems. The first in this series of symposia was held in Detroit, Michigan, in October of 1990, chaired by Thomas Schwartz, and the resulting publication was *Water in Exterior Building Walls, STP 1107*. The second symposium, held in Orlando, Florida, in March of 1996, was chaired by Robert J. Kudder and Jeffery L. Erdley, and the resulting publication was *Water Leakage through Building Facades, STP 1314*.

The 1998 symposium continued the task began in 1990 of bringing the diverse interests of the many participants in the design, construction, evaluation, and use of constructed buildings to a formal exchange of information on the behavior of the building envelope. As the information exchanged in these meetings indicates, the complexity of modern building wall systems continues to present challenges to design professionals, the contractors who build them, and the owners whose task is to maintain them.

These papers are presented to expand our understanding of the behavior of water in building wall systems in both liquid and vapor forms. The symposium's focus was expanded in 1998 to include condensation and vapor flow topics, as these can be significant sources of problems when not sufficiently accounted for in design and construction. The first series of papers address EIFS systems from both the theoretical, modeling, and system design perspectives, to lessons learned from past failures, new system approaches, and retrofit alternatives. Several papers address numerical modeling, moisture vapor transport, and condensation issues. A series of papers on masonry wall systems address the various subjects of mortar bond, foam insulation as water barrier, alternative water control mechanisms, prefabricated assemblies, and flashing and alternative system detailing. Several papers address test methods and climatic data models. The final group of papers provides practical and informative looks at specific case studies.

The papers represent the diverse perspectives and experiences of the authors, resulting from their varied backgrounds, professions, and geographic locations. It is our hope that this publication will further contribute to the base of knowledge available to those faced with the challenge of addressing real world problems of water in building exterior walls.

It is our hope that the findings, conclusions, and recommendations presented in these papers will serve to motivate professionals to involve themselves in developing ASTM standards that will be useful to the building industry in minimizing water-related problems in exterior walls of buildings.

We look forward to future symposia on the subject, understanding that water problems are an inherent part of building construction and that the need for such symposia and technical publications will continue to exist in the future.

Jon M. Boyd
Boyd Associates, Inc.,
Chicago, IL;
Symposium Co-chairman and Editor

Michael J. Scheffler
Wiss, Janney, Elstner Associates, Inc.,
Northbrook, IL;
Symposium Co-chairman and Editor

ISBN 0-8031-2607-7