



# **Moisture** Sensitivity of Asphalt Pavements

A NATIONAL SEMINAR

February 4–6, 2003  
San Diego, California

TRANSPORTATION RESEARCH BOARD  
OF THE NATIONAL ACADEMIES

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# Moisture Sensitivity of Asphalt Pavements

A NATIONAL SEMINAR

**February 4–6, 2003  
San Diego, California**

TRB Committee on  
Bituminous–Aggregate Combinations to Meet  
Surface Requirements

*Sponsored by*  
California Department of Transportation  
Federal Highway Administration  
National Asphalt Pavement Association  
California Asphalt Pavement Alliance  
Transportation Research Board

TRANSPORTATION RESEARCH BOARD  
*OF THE NATIONAL ACADEMIES*

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The workshop was sponsored by the California Department of Transportation, the Federal Highway Administration, the National Asphalt Pavement Association, the California Asphalt Pavement Alliance, and the Transportation Research Board.

## Preface

Moisture damage in asphalt pavements is a national concern. Correctly identifying the problem and isolating the contributing factors—materials and construction—are equally challenging. The goals of this national seminar are twofold: technology transfer on the topic from leading experts and the start of a road map to solve this problem. The topics addressed include the following:

- Identification of the problem—distinguishing between materials-induced and construction-related factors,
- Fundamental concepts—binder and aggregate considerations and failure mechanisms,
- Test methods—laboratory and field,
- Remediation—additives and construction practices,
- Field performance and case studies,
- Specifications—shortcomings and need for improvements, and
- Environmental and health issues.

The papers included in this volume document the work accomplished during the national seminar held in La Jolla, California, on February 4–6, 2003. The objectives of the papers, and the breakout sessions that followed, were to identify

- Best practices,
- Gaps in knowledge, and
- Research needs.

More than 100 people participated in the national seminar, and this document contains the proceedings of the meeting. In addition to the papers, summaries of the questions raised and answers given are included. Questioners and respondents were informed and gave permission for their inclusion. Special thanks are extended to the sponsors of the seminar, especially the California Department of Transportation, which provided the major portion of the funding. Thanks are also extended to the members of the steering committee, who planned the event:

- Mike Anderson, Director of Research, The Asphalt Institute;
- Tim Aschenbrener, Materials Engineer, Colorado Department of Transportation;
- Elissa Brainard, Director, Meeting Planning Division, Woodward Communications;
- Mike Cook, Office of Flexible Pavements Materials, California Department of Transportation;
- John D'Angelo, Materials Engineer, Federal Highway Administration HIPT;
- Jon Epps, Engineering Services Manager, Granite Construction;
- Michael Essex, Division of Research and Innovation, California Department of Transportation;
- Frederick Hejl, Engineer of Materials and Construction, Transportation Research Board;
- Steve Healow, Federal Highway Administration, California Division Office;
- R. Gary Hicks, MACTEC (formerly LAW-Crandall);

- Rita B. Leahy, MACTEC (formerly LAW-Crandall);
- David Jones, Owens Corning;
- Dallas Little, Professor of Civil Engineering, Texas A&M University;
- James Moulthrop, Fugro-BRE, Inc.;
- David Newcomb, Vice President, Research and Technology, National Asphalt

Pavement Association;

- Sundaram Logaraj, Akzo Nobel Surface Chemistry LLC;
- Dale Rand, Flexible Pavements Branch, Texas Department of Transportation;
- Larry Santucci, Pavement Research Center, University of California, Berkeley; and
- Jim St. Martin, Executive Director, Asphalt Pavement Association.

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