QUALITY

MANAGEMENT

 $\mathbf{0}$ F

HOTMIX ASPHALI

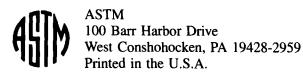
Dale S. Decker, editor

STP 1299

Quality Management of Hot Mix Asphalt

Dale S. Decker, Editor

ASTM Publication Code Number (PCN): 04-012990-08



Library of Congress Cataloging-in-Publication Data

Quality management of hot mix asphalt / Dale S. Decker, editor.

(STP; 1299)

Proceedings of the Symposium on Quality Management in Asphalt Pavement Construction, held December 5, 1995 in Norfolk, Va., sponsored by ASTM Committee D-4 on Road and Paving Materials.

ISBN 0-8031-2024-9

Asphalt--Quality control--Congresses.
 Asphalt--Congresses.
 Asphalt cement--Quality control--Congresses.
 I. Decker, Dale S., 1952 II. ASTM Committee D-4 on Road and Paving Materials.
 Symposium on Quality Management in Asphalt Pavement Construction (1995: Norfolk, Va.)
 IV. Series:

TE275.Q35 1996

625.8'5--dc21

96-37099

CIP

Copyright © 1996 AMERICAN SOCIETY FOR TESTING AND MATERIALS, West Conshohocken, PA. All rights reserved. This material may not be reproduced or copied, in whole or in part, in any printed, mechanical, electronic, film, or other distribution and storage media, without the written consent of the publisher.

Photocopy Rights

Authorization to photocopy items for internal, personal, or educational classroom use, or the internal, personal, or educational classroom use of specific clients, is granted by the American Society for Testing and Materials (ASTM) provided that the appropriate fee is paid to the Copyright Clearance Center, 222 Rosewood Drive, Danvers, MA 01923, Tel: 508-750-8400; online: http://www.copyright.com/.

Peer Review Policy

Each paper published in this volume was evaluated by two peer reviewers and at least one of the editors. The authors addressed all of the reviewers' comments to the satisfaction of both the technical editor(s) and the ASTM Committee on Publications.

To make technical information available as quickly as possible, the peer-reviewed papers in this publication were prepared "camera-ready" as submitted by the authors.

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 of time and effort on behalf of ASTM.

Printed in Philadelphia November 1996

Foreword

The Symposium on Quality Management in Asphalt Pavement Construction was held 5 December 1995 in Norfolk, Virginia. ASTM Committee D-4 on Road and Paving Materials sponsored the symposium. Dale S. Decker, National Asphalt Pavement Association, Lanham, Maryland, presided as chairman and is editor of this publication.

Contents

Overview	1
Minnesota's Quality Management Program: A Process for Continuous Improvement—D. W. WEGMAN	3
Evaluation and Modification of a Statistical Specification for Hot Mix— J. B. METCALF AND T. G. RAY	19
Field Management of Hot Mix Asphalt Volumetric Properties—P. S. KANDHAL, K. Y. FOO, AND J. D. D'ANGELO	28
Design and Implementation of a Dynamic Quality Management System for HMA: A Case Study—J. J. WEIGEL, JR., R. J. COMINSKY, AND J. S. MOULTHROP	46
QC/QA Specifications—A Texas Producer's Experiences—E. L. DUKATZ, JR.	56
The Use of Falling Weight Deflectometer in Asphalt Pavement Construction Quality Control—s. M. ZAGHLOUL AND N. A. SAEED	66
Quality Management in Asphalt Pavement Construction—R. L. DAVIS	82
Use of SHRP-Developed Testing in QC/QA Programs on Asphalt Concrete for Highway and Airfield Pavements—J. T. HARVEY, B. A. VALLERGA, AND C. L. MONISMITH	94
Performance Based Field Quality Control/Quality Assurance for Asphalt-Aggregate Mixes—J. B. SOUSA, G. WAY, M. G. BOULDIN, AND J. T. HARVEY	111
Consideration of Hot Mix Asphalt Thermal Properties During Compaction— B. A. CHADBOURN, J. A. LUOMA, D. E. NEWCOMB, AND V. R. VOLLER	127