

A black and white photograph showing the lower legs and feet of several people walking up a set of stone stairs. The focus is on the movement and the texture of the stone steps.

STP 1486

Pavement Surface Condition/ Performance Assessment:

**Reliability and Relevancy
of Procedures and Technologies**

Bouzid Choubane
editor

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Foreword

This publication, *Pavement Surface Condition/Performance Assessment: Reliability and Relevancy of Procedures and Technologies*, contains papers presented at the Symposium of the same title which was held in Washington, DC, on 7-8 December, 2004.

The Symposium was sponsored by ASTM Committee E17 on Vehicle – Pavement Systems. The chairman was Dr. Bouzid Choubane, Florida Department of Trans, Gainesville, FL.

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Overview

Pavement distress assessment and friction characteristics measurements have become important tools in the performance evaluation and management of roadway systems. They are being used to identify potentially hazardous conditions, monitor the surface characteristics of the various in-service pavements, and assess the need for rehabilitation and maintenance. This need to quantify pavement surface condition has resulted in a number of techniques and equipment. Also, advances in testing, sensor and inertial navigation technologies have enhanced the functionality of pavement evaluation equipment, allowing highway engineers and practitioners to capitalize on the large amount of information offered by the state of the art equipment. However, with the ever evolving technologies and increasing needs for faster, more accurate and harmonized pavement performance monitoring technique/procedures, and data interpretation, more venues for sharing, documenting, and disseminating information are needed.

On December 7, 2004, an ASTM International symposium on pavement condition assessment (in terms of friction, texture, and roughness characteristics) was held in Washington, DC. The presentations at that symposium represented an international effort in both the practical as well as the developmental aspects of pavement surface evaluation procedures and technologies including their reliability and relevancy. They covered a broad range of topics that included the following:

- Pavement surface characteristics measurement procedures and equipment as well as their reliability and appropriateness;
- Approaches to enhance the reliability and accuracy of pavement surface evaluation systems;
- Approaches to harmonization between different measurement devices for specific pavement surface condition indicators;
- Assessment of current pavement condition indicators and their relevancy level for use in asset management;
- Assessment of factors influencing the interaction of tire/pavement surface characteristics;
- Assessment of automated distress survey systems; and
- Evaluation of new/promising technologies for pavement condition surveys.

The symposium provided a forum for participants and attendees to gain insight regarding the needs, methodologies, and trends in pavement performance monitoring, and data collection/interpretation. The presentations and subsequent discussions indicated that, although height sensor-based or non-contact technology for pavement surface condition assessment continues to gain wider acceptance, it still has not fully matured. A considerable amount of research has been conducted to gain further understanding on the factors affecting pavement condition evaluation from both the analytical and experimental points of view. Still some problems have not fully been resolved, particularly in the interpretation of the measured data and selection/design of adequate sensing technology.

The technical papers published here provide additional reference material for those concerned with pavement surface performance evaluation and characterization. They cover topics that will be of interest to practitioners as well as to researchers.

viii OVERVIEW

The editor wish to acknowledge all those who participated in the Symposium, those who contributed to this Special Technical Publication (STP), and the many reviewers who provided important feedback to the authors. The editor also wish to acknowledge the ASTM International Committee E17 on Vehicle-Pavement Systems for sponsoring the symposium and the ASTM International staff for their assistance with the organization of the symposium and publication of this volume. The editor is grateful for their diligent efforts and contributing knowledge.

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