

RILEM Bookseries

A. Scarpas · N. Kringos  
I. Al-Qadi · A. Loizos *Editors*

# 7<sup>th</sup> RILEM International Conference on Cracking in Pavements

Mechanisms, Modeling, Testing,  
Detection and Prevention Case Histories



 Springer

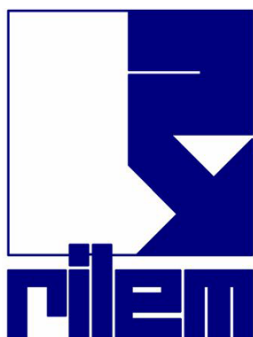
7th RILEM International Conference  
on Cracking in Pavements

# **RILEM Bookseries**

Volume 4

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Editors

# 7th RILEM International Conference on Cracking in Pavements

Mechanisms, Modeling, Testing, Detection,  
Prevention and Case Histories

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# Preface

Because of vehicular and environmental loading, pavement systems have been deteriorating at a rapid rate. A series of six earlier RILEM Conferences on Cracking in Pavements in Liege (1989) (1993), Maastricht (1996), Ottawa (2000), Limoges (2004) and Chicago (2008) have clearly demonstrated that cracking constitutes one of the most detrimental, frequent and costly pavement deterioration modes.

Unfortunately, despite intense international efforts, there is still a strong need for methodologies that enable the construction and rehabilitation of crack resisting and/or tolerant pavements which at the same time are smooth, quiet, efficient, cost effective and environmentally friendly.

In the recent past, new materials, laboratory and in-situ testing methods and construction techniques have been introduced. In addition, modern computational techniques such as the finite element method enable the utilization of sophisticated constitutive models for realistic model-based predictions of the response of pavements. The **7th RILEM International Conference on Cracking in Pavements** aims to provide an international forum for the exchange of ideas, information and knowledge amongst experts involved in computational analysis, material production, experimental characterization, design and construction of pavements.

All submitted contributions were subjected to an exhaustive refereed peer review procedure by the Scientific Committee, the Editors and a large group of international experts on the topic. On the basis of their recommendations, 129 contributions which best suited the goals and the objectives of the Conference were chosen for presentation and inclusion in the Proceedings.

The strong message that emanates from the accepted contributions is that, by accounting for the idiosyncrasies of the response of pavement engineering materials, modern sophisticated constitutive models in combination with new experimental material characterization and construction techniques provide a powerful arsenal for understanding and designing against the mechanisms and the processes causing cracking and pavement response deterioration. As such they enable the adoption of truly “mechanistic” design methodologies.

The Editors would like to thank the Scientific Committee and the pavement engineering research community who took the responsibility of reviewing the manuscripts and ensuring the excellent quality of the accepted papers and the members of the Organizing Committee for their contribution to the management of the Conference affairs.

We hope that the Conference will contribute to the establishment of a new generation of asphalt and concrete pavement engineering design methodologies based on rational mechanics principles and in which computational techniques, advanced constitutive models and material characterisation techniques shall constitute the backbone of the design process.

Delft, March 2012

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