

Preface

A pavement is a complex structure composed of several layers made up of different types of heterogeneous materials. This multilayer system rests on a semi-infinite soil and is subjected to severe climate variations and heavy traffic loads. In their lifetime, pavements undergo degradation due to different mechanisms, of which cracking is among the most important. To appraise this type of degradation in mechanical analyses, boundary conditions applied to the pavement structure must be known. Moreover, the damage and the fracture behavior of all the material layers as well as interfaces must be understood.

Prior to 2000 and at the initiative of the Rilem Technical Committee (TC) 97-GCR (application of Geotextiles to Crack prevention in Roads) led by Louis Francken, a series of four international RILEM conferences on “Reflective Cracking” was held in Liege (RC1989) (RC1993), Maastricht (RC1996) and Ottawa (RC2000). The objective was to present up-to-date information on the rehabilitation of cracked roads with bituminous overlays which was the solution adopted worldwide to delay the cracking propagation in pavements (see the TC 157-PRC document).

To approach cracking problems in pavements in a more general sense, the scope of the conference was extended to other modes of cracking modes such as fatigue, aging, or top-down cracking. Then, a successful series of three conferences on “Cracking in Pavement” was held in Limoges (CP2004), Chicago (CP2008) and Delft (CP2012).

The purpose of the 8th Rilem international conference is to coordinate with the activities of the Rilem TC 241-MCD (2011–2016), which aims at developing a deeper fundamental understanding of the mechanisms responsible for cracking and debonding in asphalt concrete and composite (e.g., asphalt overlays placed on PCC or thin cement concrete overlay placed on asphalt layer) pavement systems. The objective of this event is to present the results of TC 241-MCD as well as the latest advances in research to analyze mechanical damage and its detection in multilayer systems. This will favor discussions between different research communities to help

apply these advances to pavement structures. Eventually, the aim is to be able to better detect the initiation and the propagation of cracks in pavement and also to have tools that make possible the search for technical solutions able to prevent (or to limit) cracking in usual and emerging structures.

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8th RILEM International Conference on Mechanisms of
Cracking and Debonding in Pavements

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G. (Eds.)

2016, XXI, 774 p. 347 illus., 1 illus. in color., Hardcover

ISBN: 978-94-024-0866-9