Sustainable Construction Materials 2012

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ASCE

CONSTRUCTION INSTITUTE

SUSTAINABLE CONSTRUCTION MATERIALS 2012

PROCEEDINGS OF THE SECOND INTERNATIONAL CONFERENCE ON SUSTAINABLE CONSTRUCTION MATERIALS—DESIGN, PERFORMANCE, AND APPLICATION

October 18–22, 2012
Wuhan, China

SPONSORED BY
Wuhan University of Technology, China
Delft University of Technology, The Netherlands
Eindhoven University of Technology, The Netherlands
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Arizona State University, USA
International Society for Concrete Pavements (ISCP)
The Construction Institute of the American Society of Civil Engineers
The University of Tennessee, USA

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Published by the American Society of Civil Engineers

Cataloging-in-Publication Data on file with the Library of Congress.

American Society of Civil Engineers
1801 Alexander Bell Drive
Reston, Virginia, 20191-4400

www.pubs.asce.org

ISBN 978-0-7844-1267-1
Manufactured in the United States of America.

Preface

Sustainable Construction Materials 2012 selects 37 papers that represent the latest developments in construction materials that support sustainable development for infrastructures.

Many of the selected papers were presented at the Second International Conference on Sustainable Construction Materials: Design, Performance and Application which occurred from October 18 – 22, 2012 in Wuhan, Hubei Province of China. The conference was hosted by the Wuhan University of Technology in collaboration with the Delft University of Technology in Netherland, Eindhoven University of Technology in Netherland, Southeast University in China, Arizona State University in USA, International Society for Concrete Pavements (ISCP), the American Society of Civil Engineers (ASCE), and the University of Tennessee, Knoxville in USA.

The papers presented within the *Sustainable Construction Materials 2012* Special Technical Publication are divided into two groups. The first group contains 20 papers which examine sustainable application of cementitious materials. Within this group a global perspective is provided on sustainable construction practices in a developing country. Additionally, more fundamental research is explored through the study of rheological behavior of fresh cement mortar and the examination of the effects of small recycled aggregate fractions in concrete production. The use of recycled materials such as waste tire rubber and rubber powder is also studied. The second group of papers contains 17 papers focused on bituminous material. A focus is placed on the use of waste material in asphalt cement such as reclaimed asphalt pavement (RAP), crumb rubber, and coal tar pitch. Studies were conducted to evaluate behavior of SBS and PE modified asphalt cement during the asphalt aging process. Pavement life, an important factor of sustainability, is presented with respect to fatigue life and a study of a new maintenance solution for porous asphalt cement pavements. Furthermore a study which examines different conditions in which volatile organic compound emission is influenced in asphalt cement is provided.

Two or more reviewers along with the editors evaluated each paper published in this ASCE Special Technical Publication (STP). All published papers are eligible for discussion in the *Journal of Materials in Civil Engineering*, and are eligible for ASCE awards.

We would like to acknowledge the great support from Laura Ciampa and Marvin Oey from the ASCE Construction Institute (CI) that makes it possible for this high quality peer reviewed Special Technical Publication. Most importantly, we would like to thank the peer reviewers who spent their time and efforts in ensuring the exceptional

quality of the papers presented within this STP. Without their contributions this publication would not be possible.

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