RUBBERCRETE INTERLOCKING BRICKS

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Bashar S. Mohammed
Mohd Shahir Liew
Nursyuhada Mahamood

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Rubbercrete Interlocking Bricks

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PREFACE

Scrap tires number is increasing dramatically yearly due to the significant increases in the automotive industry. Scrap tires are bulky with 75% of the volume is void which leads to depletion of landfills. In addition, theses scrap tires are non-biodegradable and provide a good breeding area for mosquitos and other harmful insects and rodents. On the other hand, there are very limited opportunities for recycling of these scrap tires for useful products. To ease the negative impact of the accumulation of the scrap tires on the environments, it is essential to recycling them in mass production, especially in construction industry. For the past decades, researchers have extensively investigated the properties of concrete containing crumb rubber (from scrap tires) as partial replacement to fine aggregates. The newly developed concrete is well known as rubbercrete and advantages of the rubbercrete is well-documented such as, in comparison to conventional concrete, lower thermal conductivity, higher sound absorption, higher noise reduction, higher electrical resistivity, lower density and higher ductility. These advantages make the rubbercrete very suitable in making bricks for buildings to improve indoor life quality. In this book, the development of interlocking rubbercrete bricks has been introduced discussed in details such as physical and chemical properties of the raw materials (cement, fly ash, sand and crumb rubber), trail dry mixes, development of dry mix design using the response surface methodology (RSM), and the process of producing the interlocking rubbercrete bricks. In addition, test procedures and results of the interlocking rubbercrete bricks have been presented in this book to the extent required for its uses in the construction industry. These tests include physical

and mechanical properties of the interlocking rubbercrete bricks (such as: dimension tolerance, water absorption, density, initial rate of suction, thermal conductivity, effflorescence, elevated temperature test, mercury intrusion porosimetry, compressive strength and modulus of rupture), and the structural behaviour of prisms and walls made of the interlocking rubbercrete bricks.

Bashar S. Mohamed
Mohd Sharir Liew
Nursyuhada Mohamood

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