

Improving the quality of materials for highway construction

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Abstract

© Medwell Journals, 2016. The study is devoted to studying the possibility of improving the quality of asphalt concrete and cement concrete for road surfaces. We have shown the interaction which occurs between the components of mixed thermoplastic elastomer and matrix of petroleum bitumen for road building. We have proved a presence of a chemical reaction between mixed thermoplastic elastomer and a bitumen matrix on unsaturated C = C bonds with formation of a lightly crosslinked polymer within polymeric-bitumen binder. We have established that an introduction of polycarboxylate superplasticizers in cement concrete composition reduces chemical shrinkage and thereby increase its physical-mechanical characteristics.

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Keywords

Asphalt concrete, Contraction, Fine-grained concrete, IR spectroscopy, Polymeric-bitumen binder, Strength, Thermoplastic elastomer