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Study of Properties of Concretes Made of Local Building Materials and Containing Admixtures, and Their Further Introduction in Construction Operations and Road Building

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Abstract : Development of Georgian Economy largely depends on its effective use of its transit country potential. The value of Georgia as the part of Europe-Asia corridor has increased; this increases the interest of western and eastern countries to Georgia as to the country that laid on the transit axes that implies transit infrastructure creation and development in Georgia. It is important to use compacted concrete with the additive in modern road construction industry. Even in the 21-century, concrete remains as the main vital constructive building material, therefore innovative, economic and environmentally protected technologies are needed. Georgian construction market requires the use of concrete of new generation, adaptation of nanotechnologies to the local realities that will give the ability to create multifunctional, nano-technological high effective materials. It is highly important to research their physical and mechanical states. The study of compacted concrete with the additives is necessary to use in the road construction in the future and to increase hardness of roads in Georgia. The aim of the research is to study the physical-mechanical properties of the compacted concrete with the additives based on the local materials. Any experimental study needs large number of experiments from one side in order to achieve high accuracy and optimal number of the experiments with minimal charges and in the shortest period of time from the other side. To solve this problem in practice, it is possible to use experiments planning static and mathematical methods. For the materials properties research we will use distribution hypothesis, measurements results by normal law according to which divergence of the obtained results is caused by the error of method and inhomogeneity of the object. As the result of the study, we will get resistible compacted concrete with additives for the motor roads that will improve roads infrastructure and give us saving rate while construction of the roads and their exploitation.

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