ACADEMIC RESEARCH IN EDUCATIONAL SCIENCES VOLUME 2 | ISSUE 7 | 2021
ISSN: 2181-1385
Scientific Journal Impact Factor (SJIF) 2021: 5.723
Directory Indexing of International Research Journals-CiteFactor 2020-21: 0.89
DOI: 10.24412/2181-1385-2021-7-218-221

COMPARISON OF THE CONSTRUCTION OF EUROPE AND THE REPUBLIC OF UZBEKISTAN IN THE CONSTRUCTION OF ASPHALT PAVEMENTS AND THE DEVELOPMENT OF MEASURES TO ADDRESS SHORTCOMINGS

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ABSTRACT

This article discusses how to compare the quality of road construction in Europe and the Republic of Uzbekistan, to pay attention to the quality of roads and to test samples of asphalt pavements in the laboratory and determine their service life.

Keywords: Asphalt concrete, crushed stone, bitumen, BND, SHNQ, laboratory, compaction, testing, gravel, quality, standard, mechanism, coating, foreign, technology.

INTRODUCTION

A material made from a mixture of crushed stone (gravel), natural or crushed sand, mineral powder and bitumen in certain proportions is called asphalt. The materials that make up the asphalt concrete mix are mixed in special devices when heated. Depending on the type of stone materials used as large aggregates in asphalt concrete, they can be gravel, gravel and sand, which are divided into types depending on the viscosity of the bitumen used and the temperature at which asphalt concrete mixes are laid. Coatings made of hot and warm asphalt concrete mix are characterized by faster formation, strength and serviceability even in the compacted state. Cold asphalt concrete pavements are slippery in rainy weather, so they usually require additional surface treatment. Hot and warm asphalt concretes can be large grains up to 40 mm, medium grains up to 20 mm, and grains up to 15 (10) mm, depending on the size of the gravel, cold asphalt concrete can be only fine-grained or sandy[1].

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MATERIALS AND METHODS

As a result of the high cost of asphalt pavements, attempts are made to lay them as thin as possible. For the production of quality asphalt concrete, it is advisable to use materials that meet the requirements of QMQ 2.05.03-9[2].

Prior to laying and compacting the asphalt concrete, the surface of the foundation must be properly prepared. After patching, leveling and cleaning, the surface of the base should be dried naturally with sand heated to 200-250 ℃ or with special drying machines (heaters). Once the foundation is dry, it is treated with bitumen materials. To do this, the bitumen emulsion must be heated to working temperature or diluted with paraffin.

BND 90/130 and BND 60 / (90) viscous bitumen, as well as SG 70/130 liquid bitumen are used. Emulsion or liquid bitumen is poured 3-5 hours before laying the mixture. A thin layer of bitumen is diluted to the appropriate level (8-12% by weight) with paraffin to facilitate even distribution. Asphalt concrete mixture is laid on the built surface after processing. If it is laid on a freshly distributed bitumen emulsion, the mixture will not adhere to the base.

Asphalt mix is transported by dump trucks from the place of preparation to the place of laying. The main requirement for the organization of transportation is to ensure that hot (100-120 ℃) and warm (70-80 ℃) mixtures do not cool down. When the air temperature is above 10 ℃, the transport time of the hot mixture should not exceed 1.5 hours. The hot mixture can be transported for 2-2.5 hours.

Asphalt concrete is a building material consisting of a mixture of crushed stone, sand, mineral powder and bitumen. Before mixing, they are heated to 100-160 ℃. Hot bituminous bituminous concrete laid and compacted at a temperature of not less than 120,, compacted asphalt concrete at 40-80 va and low-viscosity hot asphalt concrete, cold bituminous cold asphalt concrete compacted at air temperature (above 10 ℃); It is divided into large, medium, fine-grained and sandy asphalt concrete. Depending on the division, they are used for roads, floors, roofs of industrial buildings and other purposes.

Depending on the quality of the road surface, the technology of road construction works will vary. For example, when laying asphalt concrete, sand is sprinkled on the bottom layer of the foundation, gravel with cement is added on the top layer, and a two-layer mixture of bitumen mineral and asphalt concrete is laid [3].

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RESULTS AND DISCUSSION

Road construction machines also play an important role in the construction of asphalt pavements. This is due to the fact that if the machines do not give quality work in the construction of coatings, the coating will not be built properly and the service life of the coating will be reduced. It is necessary and necessary to lay the coating on the basis of the established normative documents. One of these normative documents is SHNQ 2.05.02-07. Asphalt concrete pavement consists of 4 main components. They are: sand, gravel (processed), bitumen and mineral powder. The role of each of them in the preparation of the coating is invaluable. In particular, the temperature should be taken into account in the preparation of the coating on the basis of the normative document issued. Because the quality of the coating also depends on the temperature. It is also more effective to use the regeneration process to further improve the quality of asphalt pavements. To do this, first of all, road-building materials, especially organic binders, wear out quickly, that is, their physical and mechanical properties change over time. As a result, cracks, holes and other deformations are formed in the coating. The process of restoring the original properties of the asphalt pavement is called regeneration. He has different ways. Prior to the development of technology for the use of obsolete asphalt concrete, its properties are studied in the laboratory. Cylindrical specimens are cut from long-used asphalt concrete. Bitumen, fine and coarse aggregates are separated and tested [4].

Table 1. Laboratory comparison of bitumen.

№	Наименование показателей	Метод испытаний	Требования ГОСТ 22245-90	Результаты испытаний
1	Глубина проникания иглы, 0,1 мм, не менее, при температуре: - 25^0 C; - 0^0 C;	По ГОСТ 11501	 61-90 20	 80 22
2	Температура размягчения по кольцу и шару, ^{0}C , не ниже	По ГОСТ 11506	47	48
3	Растяжимость, см, не менее, при температуре: - 25^0 C; - 0^0 C;	По ГОСТ 11505	 55 3,5	 74 3,9
4	Температура хрупкости, ^{0}C, не выше	По ГОСТ 11507	-15	-16

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5	Температура вспышке, ^{0}C, не ниже	По ГОСТ 4333	230	308
6	Изменение температуры размягчения после прогрева, ^{0}C, не более	По ГОСТ 18810 По ГОСТ 11506	5	2
7	Индекс пенетрацин	По ГОСТ 22245	-1,0 до +1,0	-0,5

CONCLUSION

Today, the quality of asphalt pavement construction is becoming a topical issue. One of the biggest reasons for this is the lack of bitumen. At present, asphalt concrete mixes with the addition of bitumen-substituting secondary raw materials are being prepared at asphalt plants, and samples of these prepared asphalt concrete are being tested in the laboratory. So far, the results are not very good, and as a result of repeated attempts, I think that these attempts will yield results and the construction of quality asphalt pavements will be achieved. Foreign and Uzbek scientists are working hard to improve these results. It is also advisable to build asphalt pavements as a construction on the basis of normative documents.

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