

REASONS FOR THE ORIGIN OF CRACKS IN THE ASPHALT CONCRETE COATING AND TECHNOLOGIES FOR THEIR REPAIR.

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Annotation: Examination of cracks in asphalt concrete coatings and elimination of cracks using repair technologies.

Keywords: Cracks, defect, coating, material, small, asphalt, bitumen, concrete, technological, bitumen-mineral, non-compliance, modifying, modification, optimization.

ПРИЧИНЫ ВОЗНИКНОВЕНИЯ ТРЕЩИН В АСФАЛЬТОБЕТОННОМ ПОКРЫТИИ И ТЕХНОЛОГИИ ИХ РЕМОНТА.

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Аннотация: Исследование трещин в асфальтобетонных покрытиях и устранение трещин с использованием технологий ремонта.

Ключевые слова: трещины, дефект, покрытие, материал, мелкие, асфальт, битум, бетон, технологический, битумно-минеральный, несоответствие, модификация, доработка, оптимизация.

Introduction. Cracks are one of the defects in the asphalt concrete coating. While they do not initially have a significant effect on the coating, they later lead to a

loss of fluidity on the surface of the coating, and over time to a malfunction of the coatings and the formation of pits. The main reasons for the appearance of these defects are the correct composition of materials, improper conduct of technological processes, inconvenience of the weather, heavy loads. Cracks in the coating are noticeable at a width of 0.2-1 mm and a length of at least 10 cm, -a large part of the cracks on the coating by road movement is the result of the loss of elasticity of the road layer. Due to the elasticity of the coating material, the compressions can differ significantly from the average value. Cracks in old coatings appear after 1-2 years, and after 5-7 years, they are completely repeated in the new coating. Cracks develop most rapidly in spring and autumn in summer, when most small cracks close as a result of the movement of the cars due to the softening of the bitumen and the expansion of the material in the coating. Reasons for the origin of cracks on the surface of highways with asphalt concrete coating:

a) Internal

b) is external. Internal causes:

1) improper selection of Asphalt Concrete Construction;

2) The fact that the composition of Asphalt Concrete does not comply with regulatory rules;

3) the result of a multiple of the base or road foot grunt.

These arise mainly from non-compliance with the given regulatory rules. Asphalt concrete is not a proper choice of construction. This is a sign that a construction is not chosen worthy of the norms of construction[1].

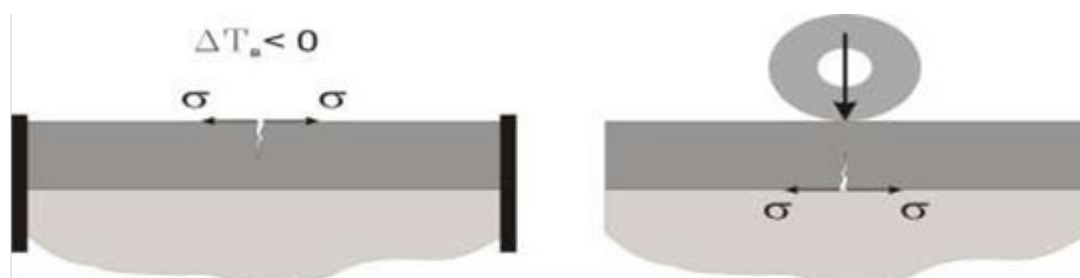


Figure 1. The resulting cracks in the temperature result.

Methodology: Scientific research aimed at creating new building materials, optimizing the composition and properties of modified bitumen-mineral materials, improving their production technologies is carried out in leading research centers and higher educational institutions of the world, including the Institute of asphalt (USA), European Asphalt Pavement Association (Belgium), University of Tokyo (Japan), Baoli bitumina Construction (Singapore), Closed Joint-Stock Company "Union Road Research Institute", St. Petersburg State Technological Institute, (Russia), Extensive R & D work is being carried out at Kharkiv National Highway University (Ukraine), Tashkent Institute of architecture and construction (Uzbekistan). A number of scientific results on the creation of new building materials and optimization of their operational properties and improvement of production processes have been obtained in the world, including the following: development of the optimal composition of the Superior Performance Pavements system for paving bitumen and asphalt concrete coatings (Institute of Asphalt, USA); new temperature-stable, high-viscosity types have been created by modifying bitumen-based composite materials with polymer additives (University of Tokyo, Japan); nanotechnology has been created to ensure long-term service of roadbop bitumen-mineral materials (Baoli bitumina Construction, Singapore); methods have been developed to increase the degree of tolerance of asphalt-polymerbeton coatings to deformation effects (Kharkiv National Highway University, Ukraine; technological methods of activating mineral materials of the asphalt concrete mixture have been created (Closed Joint-Stock Company "Union Road Scientific Research Institute", Russia); for highways, solid asphalt concrete coatings have been created for displacement in dry-hot climates (Scientific Research Institute of highways, Uzbekistan). In the world, a number of studies are being carried out on the optimization of the structure, properties and improvement of production technology of bitumen and bitumen-mineral materials developed using modifiers and polymer additives, including in the following priority areas: development of new methods of modification of yawbop and tombop bitumen taking into account the effects of surfactants and polymers; improvement of; creation of new

compositions of bitumen-mineral materials resistant to dry-hot climates; development of an automated method of mathematical planning of experiments on optimizing the physical and mechanical, physical and chemical properties of asphalt concrete and roof tiles; improvement of methods aimed at predicting and increasing the reliability of the operational properties of asphalt concrete and roof tiles, as well as long-term service.

Discussions: Depending on the density, there are light (up to 2500 kg / m³), medium (2500 to 4000 kg / m³), heavy (4000 to 8000 kg / m³) and very heavy (over 8000 kg / m³) minerals. The density of a mineral depends on the mass of the atoms or ions in the crystal structure and their location, the addition of additional anions and water. Abu Rayhan al-Biruni also paid great attention to the physical properties of the mineral, and determined the specific gravity of the minerals and gems known at that time, and based on this classification of minerals. The information provided by Beruni is almost identical to the current one. Mechanical properties include hardness, brittleness, elongation, plane of bonding, fracture surface appearance, flexibility, and elasticity. When minerals are first studied, their relative hardness is usually determined according to the Moss scale. The plane of connection is perfect, perfect, average, and imperfect. This occurs on the surface of the mineral in a certain direction. Optical properties. The color, luster, transparency, refraction, reflection, pleochroism, and other properties of a mineral can be studied in the ultraviolet and infrared rays of the spectrum with the help of an optical microscope in some parts of the mineral grains (see Crystalloptics) [3].

Conclusion. Coating and base construction include:

- other depending on the size of the black flint stones-other transportation, laying on the surface of the prepared layer of 20(25)-40 mm black Flint, filling the gaps between the large Flint, dispersing the initial density, particles 10/15-20/25 mm;
- compaction of the second-largest black stingray; spread 3/5-10/15 mm black stingrays and, after filling and compacting the gaps in the intervals,

final compaction of black stingsrays filled with each other, processing on the surface.

When the bases are built of Blackish stones, work can be stopped by spraying 10/15-20/25 mm Flint, if it is indicated in the project. In hot black jackals, bases and coatings are built in dry weather, in summer and spring with temperatures from 50c, in autumn with a wind speed of no less than 100C and a wind speed of no less than 3 M/d, and in havoningharorati 50C with a wind speed of no more than 5 M/D.

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