МЕТОДЫ ОТБОРА ОБРАЗЦОВ ДЛЯ ОПРЕДЕЛЕНИЯ ФИЗИКО-МЕХАНИЧЕСКИХ СВОЙСТВ КОМПОЗИЦИОННЫХ АСФАЛЬТОБЕТОННЫХ МАТЕРИАЛОВ

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Аннотация. *Сегодня во всем мире автомагистралям уделяется большое внимание, поскольку по ним перевозится 90% народнохозяйственных грузов страны и более 95% объема пассажиров, перевозимых всеми видами транспорта. В этой связи особое значение приобретает развитие транспортных коммуникаций за счет улучшения качества дорог и технического состояния транспортных сетей, а также создание эластичных, устойчивых к деформациям, сдвигу и трещинам композиционных материалов, отвечающих современным требованиям.*

Ключевые слова. *Физико-механические свойства, состав, цилиндр, галечный камень, гидравлический пресс.*

SAMPLING METHODS FOR DETERMINING PHYSICAL AND MECHANICAL PROPERTIES OF COMPOSITE ASPHALT CONCRETE MATERIALS

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Abstract. *Nowadays, great attention is paid to automobile roads in the world, through which 90% of the national economy's cargo and more than 95% of the volume of passengers transported by all types of transport are delivered to their destinations. In this regard, the development of transport communications by improving the quality of roads and the technical condition of transport networks, as well as the creation of composite materials that are elastic, resistant to deformation, displacement and cracking, and that meet modern requirements, are of particular importance.*

Keywords. *Physico-mechanical property, composition, cylinder, pebble stone, hydraulic press.*

Introduction. After determining the physicochemical properties of asphalt concrete and aggregates, the mixtures are compacted in steel molds and samples are taken.

The molds for preparing cylindrical samples are made of steel cylinders with a diameter of 71.4 or 50.5 mm , which are made in three interconnected cylindrical molds.

To determine the physical and mechanical properties of the alloy, samples in a cylindrical mold are prepared by compacting the alloy prepared under laboratory conditions, as well as from test alloys obtained in a mixing plant or at the work site . It is not allowed to re-mold laboratory samples . The obtained samples are heated in a sand bath or using a thermostat to a temperature of 140 - 160 ^{0}C , then crushed with a spoon or spatula.

The compaction of the sample taken from the mixture containing up to 50% limestone in terms of density is carried out by compaction in a hydraulic pipe at a pressure of (40.0 ± 0.5) MPa . It is necessary to provide a double loading during compaction, and for this purpose, the pressure is transferred to the compaction layer with two input plates , which are quickly closed and compacted in the mold .

The mold is heated up to 90-100°C when making a sample from the hot melt. The mold is not pre-heated when making a sample from a hot melt.

Preparation of the test sample. The lower part is filled with the approximate amount of the mold mixture to which the insert is attached.

The mixture in the mold is leveled with a spatula or knife and placed on the upper insert. To compact the mixture, the mold is placed on the lower plate of the press together with the mixture. In this case, the lower insert should protrude from the mold by 1.5-2.0 cm. The upper plate of the press is pressed together with the upper insert. The compacted mixture is subjected to a pressure of up to 40 MPa for 5-10 seconds, after (3.0 ± 0.1) minutes it is unloaded, the sample is removed from the mold using a pressing device, and its height is measured with a caliper with an

error of 0.1 mm according to the GOST166-2009 standard. To compact a sample taken from a hot mix with a fine aggregate content of more than 50% by weight, it is first compacted by vibration and then compacted using a press.

90-100 ^{0}C, the mold is filled with a coating and placed on the vibration area and the necessary equipment (contraction equipment for fastening selected by closing the vibpo field) is fixed with. The bran should be 2-2.5 cm higher than the mold. The coating is pressed in the mold at (2900 ± 100) pressure, (0.40 ± 0.05) mm amplitude and (30 ± 5) kPa vertical load on the coating (3.0 ± 0.1) minutes.

The mold sample is removed from the vibration area and placed on a ppecc plate for densification at a pressure of (20.0 ± 0.5) MPa and held at this pressure for 3 minutes. The final load is taken and the sample is removed from the mold in the closing device.

The compression test is carried out in cylindrical molds during the preparation of the alloy to be tested.

The mold, heated to (80±2)°C, is installed on two inserts, the lower insert is inserted into the mold with an eca ctepjen. The top layer is glued to the mold in such a way that the step that is attached to the layer is firmly attached to the top layer of the layer. The mold is held and the load is placed on the top of the load, the mass of the load should be equal to (20.0 ± 0.5) kg, which ensures that the load is 0.05 MPa. The mixture is held in the loading position for (3.0 ± 0.1) minutes, then the load is removed, the mold is lifted and the sample is removed. Then the upper insert is removed from the sample, the sample is carefully removed from the container using only two hands and taken to a storage place, where it is kept for at least 4 hours at an air temperature of (20± 5) °C.

The agar sample is immediately flattened after compaction, and then stored in the mold for at least 4 hours at (20 ± 5) °C after loading the next sample.

The height of the sample should be (60±1) mm. The method for checking the amount of alloy in the sample preparation is applied .

Sampling, preparation of a composite sample, preparation of a mastic

sample or film for testing are carried out in accordance with the regulatory documents issued for specific types of mastics.

5) K (20 ±5 °C) without any other multi-layered composition .±

The time to prepare the composition or sample before testing can be increased in myopic documentation.

The size of the sample for testing should not be less than three parts, depending on the myopia document.

In order to determine the quality coefficient of the composition material for the map, the approximate value of the result of the sample survey is obtained.

To assess the quality of the packaged petroleum bitumen for packaging, a portion of 2% of the total volume is opened. Each batch is selected with a weight of about 1 kg. It is then sent to the packaging organization's laboratory for testing. In the laboratory, the sample is divided into two parts: one part is used for testing, and the second part is stored for 2 months with the possibility of re-testing .

Before determining the physicochemical properties of the composition mastics, it is necessary to dewater the petroleum bitumen. A sample of petroleum bitumen is taken and placed in a special container, the special container is placed in a sand bath in a drying drum, and solid and semi-solid bitumens are heated to a temperature of no more than 120-180 ^{0} C, depending on their viscosity.

5 to 35% goccipol cmola, 5 to 30% pezina powder, basalt fiber, slaked lime, minepal activated filler 1 to 6% are added to the epigan binder of Co'ngpa bitumlap. it is boiled until With this, the bipga hapopat is kept at 110-210 ^{o} C for 2 to 6 coats. After 4-6 coats are applied, the composite is prepared to conduct a chemical and physical examination, to determine its physical-mechanical and other characteristics.

To assess the quality of composite materials, the laboratory determines the softening and cracking properties of the material, its brittleness, viscosity, elongation, and the amount of water-soluble compounds.

Conclusion. Based on the above information, it was scientifically proven

that the purpose of this research work is to develop elastic-deformation-resistant composite asphalt concrete materials for use in paving highways in hot climates and mountainous conditions, based on physicochemically activated organomineral ingredients of local and secondary raw materials.

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