

The Effect Of A Mixture Of Gravel And Sand On The Construction Of The Main Part Of The Road.

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Annotation: In this article, the difference between gravel, desert sand, crushed sand, gravel, sieved sand and impermeable sand and the role of gravel and sand-gravel mixture in the construction of highways and the construction of the base layer aspects to be considered. At the same time, it is described what kind of gravel and sand mixtures are needed for the base layer of cement-paved roads, which are in demand today.

Keywords: GOST, liter, cement concrete, coating, sieve, moisture, mass, brand, class, fraction, temperature, stone, density, preparation technology, improvement.

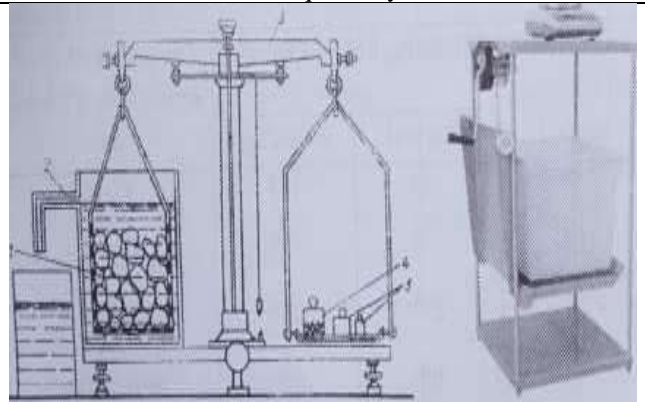
I. Introduction

Today, our country is undergoing reforms on highways. Also, on October 2, 2019, President Sh. M. Mirziyoyev held a meeting on the development of road infrastructure and attracting investments in this area. assignments on the need for teeth have been identified. [1]

II. The main part

Gravel and gravel-sand mixture can be used as a large aggregate for cement concrete mixes. The strength and durability of gravel-based cement concrete is related to the strength and durability of gravel-based cement concrete. Therefore, gravel is not currently used in the preparation of cement concrete mixes. When preparing a cement-concrete mixture, the strength of the concrete is higher if all the raw materials are added separately. The elasticity of the coating, cracking is reduced.

Crushed stone is a material obtained by crushing large pieces of hard rock. Pebbles are passed through special sieves and separated by size. Because of the sharp corners and roughness of the gravel, it bites well with sandy mixtures. Samples are taken for testing in accordance with GOST 8269 by the method of quartovanie to the amount required for laboratory testing of crushed stone. To do this, the sample is cleaned and ground to a size of no more than 5 mm, as required by the standard.



Technical scales used for hydrostatic weighing of gravel:



Pebble.

The capacity of large aggregates for heavy concrete is determined in accordance with GOST 8269.0-97, and the quality of small aggregates is determined by the methods specified in GOST 8735-88. [2]

The mass of the sample is reduced to 150 g, then the grains are crushed again to a size not exceeding 1.25 mm and the mass is reduced to 30 g. This sample is ground in a porcelain mortar and pulverized and dried. Take 10 g of the dried sample, place it in 2 pycnometers and pour distilled water over it. The duration of the test is the same as the sequence for determining the true density of the sand. The average density of crushed stone grains is determined by hydrostatic measurements. To do this, the sample is selected according to the requirements of the standard, depending on the size of the grains. Preparation of concrete mixes in

connection with the transition of roads to cement-concrete paved roads today: When using automatic control dispensers, all operations are performed according to the given program; semi-automatic dispensers are automatically charged and unloaded at the command of the operator from the central control panel. Cement and aggregate dispensers are installed under the flow of discharge hoppers, and for water and admixtures above the mixers. Dosers are checked by construction laboratory staff once a month. The difference from the actual weight given on the basis of data obtained after weighing 10 times for cement and powdered additives - not more than 20% for large and small aggregates - 2, 5%; The sample is dried on a drying rack until the mass does not change, then passed through a sieve. The size of the sieve holes should correspond to the size of the smallest grains of the crushed stone sample being tested, twice the 1000 g of residue in the sieve. The sample is then soaked in room temperature water for 2 hours. The water level in the container should be 20 mm above the surface of the pebble. The difference between the mass of a water-saturated sample measured in the open air and the mass of a water-saturated sample is the volume of the sample. Density (ρ_m) to the nearest 0.01 g / cm³ is found as follows:

$$\rho_m = m\rho_c / (m_1 - m_2) \quad (1);$$

The mass density of crushed stone is measured using cylinders. The size of the cylinder depends on the size of the gravel grains, if the size does not exceed 10 mm - 5 liters, when the grain size is 20 mm - 10 liters, when the grain size is 40 mm - 30 liters, and for gravel larger than 40 mm, a 50-liter cylinder is obtained.[4]

Sand is composed of fine-grained flakes of hard minerals, mainly quartz. Most of the cement concrete mix is sand, which fills the gap between the gravel or the skeletal part of the sand-cement concrete. This allows for the perfect formation of the cement-concrete structure during the compaction process, and it is possible to use sands of different groups in accordance with Oz RST 8736. Depending on the conditions under which the sands are formed, they are divided into mountain sand, river sand, sea sand, sand from the sand dunes (desert sand) and crushed sand formed from granite, dense limestone and other rocks.

Crushed sand is crushed sand from rocks. The particles are sharp, like mountain sand, and the surface is rough. For this reason, they bite firmly with gravel in cement concrete and serve to increase its strength. Sorted (fractionated) sand - sand divided into two or more fractions using special equipment. Crushed sand is an inorganic scattering material with a grain size of up to 5 mm, which is obtained by crushing rocks, ferrous and non-ferrous metal ore processing wastes, and mirror wastes mined in other industries.

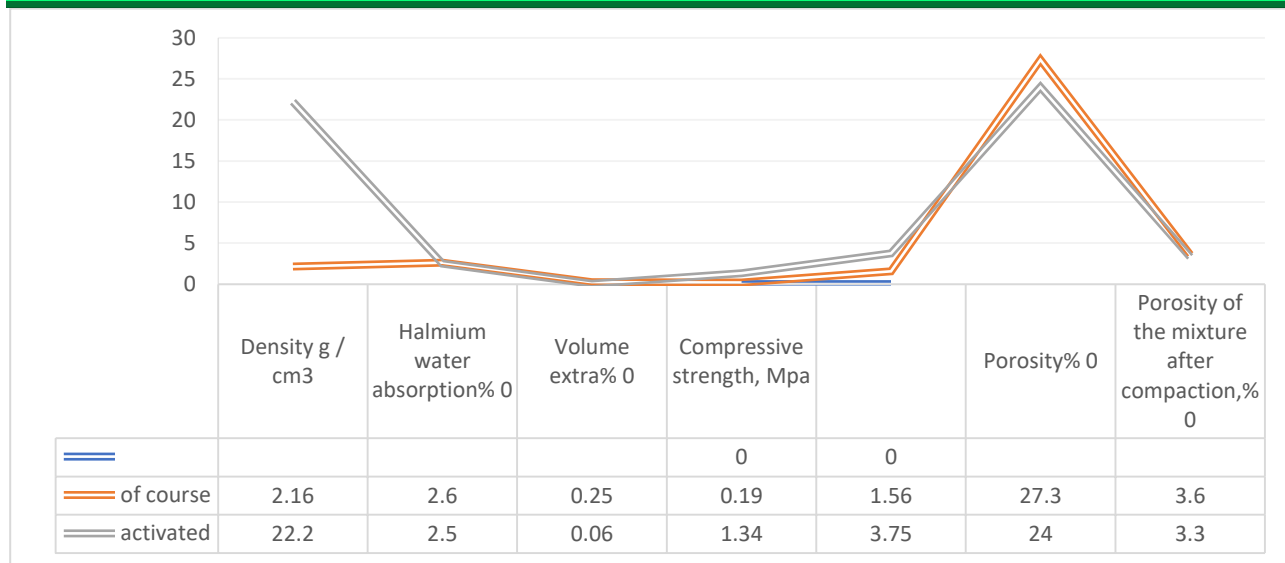
To assess the quality of sand for construction work, test laboratories determine its actual density, bulk density, gaps between particles, moisture content of sand, dust and clay particles, amount of organic compounds and particle size modulus. Samples were taken from 10-15 locations in the sandbox to be tested in sand testing laboratories. The samples obtained were mixed together and reduced as needed in a method called quartovaniye. The actual density of the sand was determined on a pycnometer with a volume of 100 ml. 30-40 g of sand was weighed and sifted through a 5 mm sieve. It was then dried on a drying rack until the mass changed. 10 g of dried sand were weighed 2 times and placed in separate pycnometers. The water in the pycnometer was boiled to expel air bubbles from the sand particles. After cooling to room temperature, additional distilled water was added to the pycnometers and weighed. Water and sand were then removed from the pycnometer, the pycnometer was rinsed thoroughly, and distilled water was poured to the neckline. And again weighed. The actual density of the sand was calculated to an accuracy of 0.01 g / cm³;

$$q = [(m-m_1) c] / (m-m_1 + m_2-m_3) \quad (2);$$

Sands are divided into two classes depending on the granular composition and the amount of dust in them. Each group of sand is characterized by the value of the modulus of magnitude shown in Table 1.

Granular composition of sands

Type of sand	Density g / cm ³	Halmium water absorption% 0	Volume extra% 0	Compressive strength, Mpa		Porosity % 0	Porosity of the mixture after compaction% 0
				R ₅₀	R ₂₀		
of course	2,16	2,6	0,25	0,19	1,56	27,3	3,6
activated	22,2	2,5	0,06	1,34	3,75	24,0	3,3



III. Summary section

We all know that in our country, as in developed countries today, our highways are being paved with cement-concrete roads. Unlike asphalt concrete pavement, if our cement concrete pavements are added to the mix in the order specified in the shnq, then the durability and shelf life of our concrete mix will be doubled and it will be economically cheaper.

VI. References

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