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REQUIREMENTS FOR CTEPENI DENSIFICATION OF LOESS SOILS DURING THE CONSTRUCTION OF THE ROADBED

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Annotation
This article presents an analysis of the features of loess soils in their completely different behavior under load with different degrees of moisture content. Loess soils with a disturbed structure are compacted quite well, and if they are properly compacted, a waterproof base or earthen structure can be created.

Introduction

Construction on subsident, weak, saline, bulk soils and in other special conditions puts before designers the need for a qualified solution to ensure the stability and reliability of highway sand structures with high technical and economic indicators, and before builders-to implement these solutions with high quality and at minimal cost. To a large extent, this applies to the construction of structures on bulk soils, on which, as a rule, the foundations for equipment are located. In addition, when building on loess-like soils, high-quality backfill is one of the main water protection measures.

On the territory of Uzbekistan loess rocks have a wide distribution. Due to the large volume of construction on such soils, they have to be used as backfills, embankments, etc. Loess soils with a disturbed structure are compacted quite well, and if they are properlyия может быть создано compacted, a waterproof foundation or earth structure can be created. However, the experience of operating a large number of structures has shown that backfill bulk soils in many cases have a low cross-section and significant compressibility, which do not ensure the normal operation of structures. Construction practice shows that poor-quality compaction of bulk soils often causes emergency situations in structures and can cause intensive soaking of the base by atmospheric waters and leaks from water-bearing communications, which leads to a decrease in the durability of the base soils and unacceptable precipitation. This is due to the fact that in hard-to-reach and cramped construction conditions, it is usually not possible to achieve the required density of bulk soil, in addition, there are no high-performance small-sized machines that effectively compact soils. Thus, there is a need to develop methods for effective fixing of loess-like soils of disturbed structure.

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In most cases, loess soils were formed as a result of wind transport of small mineral particles and their deposition in arid steppe areas. Therefore, they have a fairly uniform granulometric composition and contain mainly powdery (0.05 ... 0.005 mm) particles (more than 50% by weight) and a small amount of sand particles > 0.25 mm in size and clay fraction particles (no more than 16% by weight). In loess soils, depending on the origin, 0.7 ... 2.5% of humus can be found. According to their granulometric composition, these soils can be classified as sandy loams, loams, and clays.

The peculiarity of loess lies in their completely different behavior under load with different degrees of moisture content. In the dry state at a humidity of 6-9%, loess is characterized by high strength, but when wetting loess soils, strength and stability are sharply reduced, forming subsidence, dumps. All this plays a significant role for Uzbekistan, where irrigation lands are widespread. This task is even more urgent in connection with the reconstruction and technological re-equipment of the roadbed, as well as the need to secure large masses of bulk soil formed as a result of the operation of the roadbed.

The elevation of the surface of the road surface above the ground water level in loess soils depending on their soil moisture during compaction and the requiredoro коэффициентасompaction coefficient a should be taken according to Table.1 ShNQ 2.05.02-07 Highways (table 1).

The elevation of the surface of the coating above the ground water level in slightly and moderately saline soils should be increased by 20%. The elevation of the surface of the surface on sections of embankments designed with slopes of steepness less than 1: 1.5, as well as with berms, can be specified based on the calculation. If there¬ are different soils in the working layer, the elevation should¬ be indicated on the soil for which the required elevation is most important.

Table 1

Soil moisture during compaction, in fractions of optimalй humidity	Sandy loam Dusty sandy loam			The sandy loam is heavy and powdery, while the loam is light and powdery			Heavy powdery loam, powdery clay		
	Compaction ratio								
	0.95	0.98	1.0	0.95	0.98	1.0	0.95	0.98	1.0
0.7	2.0	1.4	1.2	2.2	1.7	1.5	2.3	1.9	1.7
0.8	1.99	1.2	1.0	2.1	1.3	1.2	2.2	1.6	1.4
0.9	1.7.7	1.0	0.8	1.9	1.2	1.0	2.0	1.4	1.2
1.0	1.5	1.0	0.8	1.7	1.2	0.9	1.9	1.4	1.0

The working layer should consist of non - swollen and non - settling soils to a depth of 1.0 and 0.8 m from the surface, respectively, of cement-concrete and asphalt-concrete coatings. The degree of compaction of the working layer soil, determined by the value of the compaction coefficient, must meet the requirements of ShNQ 2.05.02-07 Highways. For embankments in all conditions, it is allowed without restrictions to use soils and industrial waste that change little strength and stability under the influence of weather and climatic factors. Soils, as well as industrial waste that change strength and stability under the influence of these factors and loads over time, including special soils, can be used with restrictions, justifying in the project, their application is based on test results. If necessary, special design measures should be provided for protecting unstable soils from the effects of weather and climatic factors.

Literature

1. Махмудова Д. А., Икрамова Ф. Х. УКРЕПЛЕНИЕ ЗЕМЛЯНОГО ПОЛОТНА С ПОМОЩЬЮ ИННОВАЦИОННЫХ МАТЕРИАЛОВ НА ОСНОВЕ БАЗАЛЬТА //Universum: технические науки. – 2020. – №. 12-2 (81). – С. 6-9.
2. Xayrullayevna I. F. ASSESSMENT OF TRAFFIC NOISE LEVEL //Academicia Globe: Inderscience Research. – 2022. – Т. 3. – №. 01. – С. 36-38.
3. Икрамова Ф. Х. Место геоинформационных систем в проектировании автомобильных дорог //Научный журнал. – 2019. – №. 6 (40). – С. 23-24.
4. Olimov, S. S., & Mamurova, D. I. (2021). Graphic Information Processing Technology and its Importance. European Journal of Life Safety and Stability (2660-9630), 10, 1-4.
5. Islomovna M. F. et al. DESIGNING THE METHODICAL SYSTEM OF THE TEACHING PROCESS OF COMPUTER GRAPHICS FOR THE SPECIALTY OF ENGINEER-BUILDER //Journal of Contemporary Issues in Business & Government. – 2021. – Т. 27. – №. 4
6. SHNK 2.05.02-07 Highways
7. http://saitinpro.ru/glavnaya/nesushchie-konstruktsii/grunty-i-fundamenty/osnovaniya-fundamentov/lessovye-prosadochnye-grunty.