Spectrum Journal of Innovation, Reforms and Development
Volume 21, November, 2023 | ISSN (E): 2751-1731
Website: www.sjird.journalspark.org

CONSTRUCTION OF FOUNDATIONS ON DRY SOILS

Bakhromov Makhmud Mamathanovich
Assoc. Ph.D. Fergana Polytechnic Institute
baxromovmahmud393@qmail.com,91 206 47 37

Abstract
the relevance of the topic, the importance of geological research, the importance of building pile foundations in such conditions, the characteristics of porous and saline soils, loose soils saturated with water, tasks in the construction of foundations in such complex conditions.

Keywords: soil, foundation, geology, pile foundations, porous soils, porous soils.

Introduction

Implementation of the targeted programs for the construction of affordable housing, development and modernization of road transport, engineering and communication and social infrastructures, as well as the innovative development strategy of the Republic of Uzbekistan in 2022-2026, as indicated in the five-priority development strategy program of the Republic of Uzbekistan, in the future, our people effective development of the economy and increase in growth will be achieved on the basis of achieving improvement of welfare, restructuring of production and acceleration of scientific and technical re-equipment. Based on this, the main part of investments should be directed to the restructuring of production and technical re-equipment.

Reconstruction and modernization are not only focused on industrial facilities, but also on the reconstruction and modernization of old infrastructure buildings along with increasing the construction of new buildings in order to solve the issue of providing separate housing for all families, building infrastructure objects, as determined in the strategy of socio-economic development of our republic. great things are being done. As a result of the reconstruction of residential and infrastructure buildings, mainly located in urban centers, it is possible to increase the standard of living of our people.

The construction of the foundation is the most labor- and material-consuming part of construction. It is 8-10% of the total cost of all construction and assembly works. Cocktail consumption in many places reaches 15-20%. Most of the consumption is in the construction of facilities in complex soil conditions. For complex soil conditions, in the construction of civil and industrial structures, which contain soils with non-structural properties

Grounds or layers include spaces filled with water, gas and ice, and ground with grooves. Also, construction in complex soil conditions includes construction in underground workings and earthquake zones.

Our Republic has a lot of experience in the construction of civil and industrial facilities in such areas. However, it is observed that the buildings and structures built in such conditions are sinking and damaged, that is, it causes additional costs and construction costs to increase. Currently, in the construction of floors and foundations, expensive design solutions are often adopted that do not justify themselves, which lead to the consumption of a lot of concrete and metal, as well as labor.

Methodology

It follows from the above that currently the main direction of construction of foundations in complex soil conditions is to clarify the methods of geological exploration and design of foundations, and to apply new technological methods of construction of artificial soils and to build cost-effective foundations.

The experience of extensive use of pile foundations for residential and industrial buildings in soils with complex conditions has shown that the use of piles in many cases leads to errors. Piled foundations are an expensive construction, requiring a lot of labor, a large amount of fuel and energy for their preparation, as well as a large amount of the rarest metal and cement. Despite the high cost of pile foundations, many structures built on piles have suffered unacceptably large subsidence and had to spend additional funds for restoration and repair work.

The analysis of pile foundations used in complex soil conditions showed that if the pile completely passes through loose soils (highly settled loess, peaty, water-saturated loose clays, etc.) and penetrates at least 1.5 m into the underlying solid soils (for rock soils, 0, 5 m), such piled foundations are reliable and significant subsidence is not observed in the foundations. However, if the piles do not reach the solid soil, if they are suspended in the layer of loose soils, then regardless of the length of the pile, it will cause the deformation of such foundations and damage to the structures. For example, an industrial facility in Riga, built on 18-meter reinforced concrete piles (thickness of the shaft is 26-30 m), sank up to 80 cm. The industrial building in Volgodonsk, built on 22-meter cast reinforced concrete piles, the layer of loose soils has sunk more than 30 cm in places of 30-32 m, and the condition of the use of the building has been violated.

Achieving a sharp reduction in the cost of construction in complex soil conditions, densification of soil with heavy screeds, use of soil sand and lime piles, use of temporarily loaded vertical sand and polymer drains, compensating sand cushions, etc. may be from the wide application of methods. Cement and metal are not required for the construction of such artificial floors, fuel and energy consumption is also drastically reduced. In the construction of civil and industrial structures on highly sedimentable loamy soils, the main attention should be focused on the direction of complete loss of ultra-slumpable properties of all layers of loamy soils on the ground of the structure. When the layer of highly sedimentable soils is not very large (up to 7 m), the most reasonable method is to use screeders weighing 7-25 t, thrown from a height of 7-14 m.

A large area of the MDX states (14%) is occupied by water-saturated loose clay soils (silt, water-saturated loess, ribbon-like clays and others with a fluid plastic and flowable

consistency). When hard compactable soils are located up to 12 m deep, pile foundations are often built. In other areas, sand cushions with a thickness of 0.5-8.5 m are used. Analysis of the use of civil and industrial structures built on large sand cushions shows that deformation of structures is not observed in them.

If clay soil saturated with loose water is located up to a depth of 16 m, sand piles can be used, the manufacturing technology of which is the same as cast piles, the lower end of which is opened when driving the inventory metal pipe. Construction experience has shown (Riga, Klaipėda, etc.) that buildings on sand piles do not have much subsidence and are well used.

An increase in soil moisture causes the destruction of many structures, which requires a lot of money to restore. The expansion of the volume of construction carried out in the areas of loose soils has led to the need to study the process of soil expansion on the construction site and to develop methods of construction in such soils.

Summary

As a result of the research, the properties of soil expansion were studied when it was moistened with a mixture ("chemical expansion"). It was found that the soils are not deformed much when wetted with water, but when wetted with a mixture, they can increase to a significant extent, which leads to the failure of the structure.

Loamy soils are common in the southern parts of MDX and are not infrequently used as ground for buildings and structures. In the last 15 years, methods have been developed that allow predicting and determining the development of suffocational subsidence of soils and changes in soil strength properties during salt alkalinization. Based on the conducted research, the methods of calculation of soils with saline soil were developed. Calculations take into account the given soil salinity and the filtration flow system under the foundation. In the new GOST 25100-98, the permissible limit of salts in soils used as natural soil has been increased, which leads to a significant reduction in labor costs and costs when using local salt and plastered soils.

REFERENCES

1. Abelev M.Yu. Construction of industrial and civil structures on weak water-saturated soils. - M.: Stroyizdat, 1983.

2. Abelev M.Yu., Ilyichev V.A., Ukhov S.B. Construction of buildings and structures in difficult soil conditions. - M.: Stroyizdat, 1986.

3. Bakhromov M.M., Umarov Sh. Determination of friction forces on the lateral surface of pile foundations. FarPI, Ilmiy-technika magazines. 2016. Vol.20, no.4, p.57-63

4. Bakhromov M.M. Rakhmonov U.Zh. Defects in the design and construction of foundations and foundations. Scientific and methodological journal “Problems of modern science and education”. 2019№3(136) Moscow city. 76-79 pages.

5. Bakhramov M. D. Khasanov. Construction of floors and foundations in bulk soils. Eurasian Journal Of Academic Research, 6.06.2022, pp 353-360.

6. Bakhramov M. D. Khasanov. Self-compaction of bulk soils from specific gravity. Scientific and technical journal of Fergana Polytechnic Institute, special issue 7, 30.06.2022, pages 42-47
7.Bakhromov M. D. Hasanov. Pressing private artificial soils form its weight by itself. Procedia of Theoretical and Applied Sciences PP 34-63
8. Махмудов, З. Б. (2023). СПОСОБ УСИЛЕНИЯ МОНОЛИТНОЙ ЖЕЛЕЗОБЕТОННОЙ РАМЫ КАРКАСА ПРОИЗВОДСТВЕННОГО ЗДАНИЯ. Ломоносовские научные чтения студентов, аспирантов и молодых ученых–2023, 435.
9. Mirzababaeva, S. M. (2022). SOLUTIONS OF WOOD STRUCTURED BUILDINGS IN THE CONSTRUCTION OF THE SMART CITY. Journal of Integrated Education and Research, 1(5), 390-395.