

USE OF GEOGRID TECHNOLOGY IN THE CONSTRUCTION AND OPERATION OF MODERN HIGHWAYS

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Annotation: This article covers issues such as laying fiberglass geogriding (SSNP) on asphalt concrete pavement, laying of masonry on its protective coating, elimination of irregularities in the process of laying geogrids.

Keywords: fiberglass geogrid, geogridic packaging, advantages of geogridic layer, the process of laying the geogridic.

Introduction

We know that there are a number of problems and shortcomings in the system of state management of the road sector of the Republic, which hinder the formation of a competitive environment and investment in the sector. Of course, road construction will play an important role in the development of the country. No matter how strong the cement-concrete pavement is, if the geology of the road construction site is complex, the pavement is also ineffective. In this regard, a new technology to increase the service life of asphalt concrete and cement concrete pavements, to build them even in complex climatic conditions is a geogrid. In the course of preparing this article, it was proposed to take measures to repair asphalt concrete pavement using fiberglass geogrids (SSNP), technology of road construction using geosettles (SSNP), geogrid laying process based on the geography of the region.

The main part

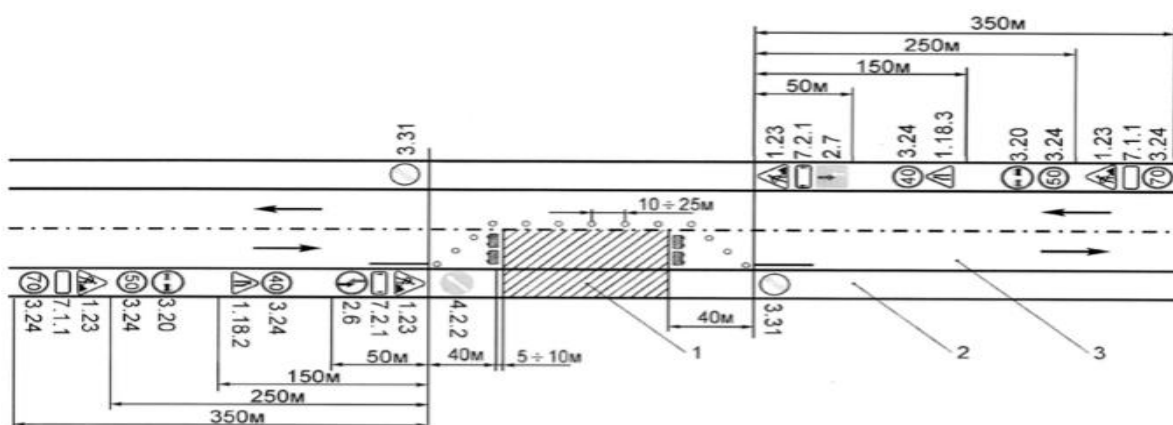
During the construction of roads, the process of repairing the asphalt concrete pavement using fiberglass geogrid is based on more calculations that are complex. Before laying the geogrid, some defects in the foundation (pits, cracks,

etc.) must be eliminated. The bottom layer should be dry and free of dust. The plane of the layer must meet the specified requirements. It is recommended to bring geogrid packages directly to the workplace before laying. Its length should be calculated in accordance with the length of the floor on which it is laid. It is advisable to keep the geogrid in its own special protective packaging before the laying process begins. A damaged geogrid cannot be left in the sun. Laying the geogrid begins with breaking its protective coating. The geogrid shall be laid at least 0.10-0.15 m from the edges of the area to be laid under the influence of small gravity. Fastening of geogrid is carried out with the help of iron washers in the range of 1.0 - 1.3 m. The distance between the geogrid in the longitudinal direction is 3.0 - 5.0 m, and in the transverse direction - 1.0 - 1.3 m. [1, p. 110].

The following measures are proposed to eliminate irregularities in the geogrid laying process:

- Asphalt concrete mix should be spread manually or mechanically (in the form of a single layer) and compacted 2-3 times using a specialized compaction machine;
- It is advisable to reduce the pitch in the longitudinal direction.

When the geogrid sticks to the car wheel, it is necessary to throw the asphalt mixture in the direction of the wheel.



1-figure geogrid laying processes: Workplace movement organization.

1-work area, 2-area adjacent to the work area, 3- traffic section.

There are several advantages to building a road using geogrids:

- Significantly reduce construction time;
- Minimum costs;
- Reduction in consumption of bulk materials (sand and gravel) (up to 40%)
- reducing the frequency of road repairs;
- Improving the transport and operational properties of the road surface;



2-figure the process of construction of the roadbed using a geogrid

Use and research of geogrid in construction works:

- Reduces the use of cast materials for the road foundation by almost 50% - reduces the cost of construction work;
- Increases the strength of the road, makes it more durable and reliable - increases the service life of the road;
- Virtually eliminates the possibility of blurring of the road surface;
- Protects sidewalks from the destructive effects of groundwater;
- Reduces and dissipates pressure on the road when the soil freezes.

The use of geogrids in road construction helps to strengthen the top layer of the road, so you forget about cracks, crevices, potholes and other defects in the asphalt and cement concrete. The geogrid prevents the collapse of dirt roads, as well as concrete pavement roads used in the laying of old asphalt and strengthens the seams during its repair. [2, p. 128-129].

Results

Tests have shown that mesh-reinforced asphalt improves quality slightly, but such a coating requires 2.80 times more energy to break down. Therefore, the appearance of cracks in the coating is slowed down several times and the cost of renting construction equipment is reduced. Asphalt roads can last up to 10-15 years, and with this geogrid it will last up to 20-25 years if the asphalt pavement is of good quality. Similarly, if cement-paved roads last up to 50 years, this geogrid will significantly extend its service life. Of course, the quality of the coating and the quality of the construction technology are also very important here. The construction and operation of roads and the use of geogrids are constantly evolving and evolving. High efficiency can be achieved as a result of automation and modulation of this process. This requires fieldwork to be performed using a GPS device or electronic taximeter, and coding in the ArcGIS program. [4, p. 4]. This system is designed for the development of projects for the construction and reconstruction of roads, as well as covers all design processes from the processing of technical survey data for other industrial and civil construction facilities to the preparation of project documentation takes [5, p. 2].

Conclusion

Highways are the key indicators that ensure the smooth and safe movement of vehicles and other key indicators. In order to maintain the required performance, the complex maintenance work during the operation is studied.

Road maintenance and factors affecting their quality will be studied. Criteria for assessing the quality of operational work will be studied. The use of innovative technologies to extend the service life of asphalt pavements, based on the criteria, is an urgent task today. To this end, preliminary recommendations have been developed for the reinforcement of asphalt pavements using new geogrid materials.

References

1. Nurxonov Davronbek magistrant, Mahkamov Dilshod Ismatillayevich, dotsent Asfaltbeton qoplamalarni ishlash muddatlarini uzaytirishda innovatsion texnologiyalarni qo‘llash "International journal of advanced technology and natural science" international journal [5, 110-page] 2020.
2. Nurxonov Davronbek, Dehqonov Abror —Avtomobil yollari xizmat muddatini uzaytirish uchun maxalliy xom ashyolar asosida —geosetka olishni takomillashtirish — “International journal of advanced technology and natural science" international journal [5, 128-page] 2020.
3. Nurxonov Davronbek, Xamdamov Davronbek “Geosetka materiallarini tayyorlash texnologiyasi”, “Innovation in the modern education system a collection scientific works of the International scientific conference” (25th February, 2021) – Washington, USA: "CESS", 2021. [Part 3 – p. 137]
4. Inamov A.N., Ergashev M.M., Nazirqulova N.B., Saydazimov N.T. “The role of geo information technologies in management and design of the state cadastre of roads” <https://saarj.com/academicia-current-issue> “ACADEMICIA (An International Multidisciplinary Research Journal)” Vol. 10 Issue 11, November 2020
5. Anvarjon Dadaxodjayev, Marufjon Mamajonov, Mukhammadyusuf Ergashev, Murodjon Mamajonov “automated drawing of roads in credo complex program”, <https://www.iupr.ru/11-78-2020> “Экономика и социум" №11(78) 2020.