

GEOTEXTILE FABRICS IN BUILDING

**K. Y. Kopachevskaya, student,
T. V. Skrypnik, Candidate of Engineering Sciences, Docent,
T.A. Marakhovskaya, Candidate of Philology
Automobile Highway Engineering Institute of
State Higher Educational Establishment
«Donetsk National Technical University»**

Abstract. The article is dedicated to the ways of using of geotextile fabrics, nonwoven linen, which is used in many road construction projects. This material solves a lot of tasks on the growth of efficiency with minimization of costs.

Key words: geotextile fabrics, dornit, road construction, reinforcing layer, pavement, road base.

ГЕОТЕКСТИЛЬ У БУДІВНИЦТВІ

**К.Ю. Копачевська, студент
Т.В. Скрипник, канд. тех. н., доцент,
Т.А. Мараховская, к.філол.н., доцент
Автомобільно-дорожній інститут
державного вищого навчального закладу
«Донецький національний технічний університет»**

Анотація. У цій статті приділяється велика увага використанню геотекстиля – нетканый матеріал який включають в більшість проектів дорожнього пристрою як універсальне вирішення завдань по підвищенню ефективності будівництва при мінімізації витрат на його проведення.

Ключові слова: геотекстиль, матеріал, дренажна система, дорога, спеціальна техніка.

Geotextile fabrics are multifunctional materials, widely used in different industries, such as the road construction, the hydrotechnical construction, the low-rise building and the land improvement on different soils in different nature-climatic conditions. We want to represent the basic spheres where geotextile fabrics, a nonwoven linen (dornit) produced by the company “Miacom”, are used.

So, the linen dornit is useful for the following tasks [1]:

1. road construction;
2. reinforcement of embankments;

3. hydrotechnical facilities;
4. railway construction;
5. tunnel construction;
6. drainage system construction;
7. liquid and gas pipelines construction;
8. concrete frozen protection;
9. protection of plants in winter;
10. garden paths and grounds construction;
11. artificial ponds construction;
12. a foundation for sand and crushed stone construction.

The main sphere of geotextile fabrics usage is the highway and railway construction. It is the sphere where geotextile fabrics are widely used because of the high operational properties, required for modern road construction materials. Now for this reason practically all highway projects use geotextile fabrics. As a rule highway projects include the usage of geotextile fabrics on the location on the stage of planning.

As a road construction material geotextile is a universal solution. It helps to solve a lot of multiprofile construction tasks rationally and economically without additional materials and special equipment. Particularly road geotextile fabrics perform functions of a separating, filtering, drainage and reinforcing layer in a road base and other elements of pavement.

Nonwoven materials made on the base of geotextile linens appeared in the middle of the last century. They were widely spread in Europe due to properties of high quality and excellent operational characteristics.

The nonwoven linen perfectly absorbs water and air, providing effective filtering ability with the simultaneous division of pavement materials. High durability of materials allows to bear heavy loads without deformations. Geotextile fabrics distribute loads on the base evenly, it is the reason why the

reinforced slopes and even pavements demonstrate effectiveness and reliability during many years.

Woven geotextile fabrics are laid between crushed stones and the ground for reinforcement and stabilization of the base. Geotextile fabrics hold clayey ground under the road base (gravel) as well, protecting it from its “outlet” to the upper layers, so keeping cleanness.

Some companies recommend to use nonwoven geotextile fabrics, for example Typar, for road construction, though the basic function of nonwoven geotextile fabrics is filtration, but not stabilization. It is woven geotextile fabrics that fulfill the function of stabilizer and separator. Nonwoven geotextile fabrics are more lengthened and as a result it is not very suitable for road construction.

Dornit has to be laid on the prepared surface. A roll must be rolled out carefully without bends and folds. When you lay several parallel stripes of geotextile fabrics, every new stripe must cover a previous one (overlapping) on 10-15 cm.

It is possible to sew stripes together by cramps or pins for comfort but don't fix the linen in such way on the ground. If it is necessary, the linen can be fixed on the ground by stones or other materials by angles.

Modern road construction specialists pay much attention to geotextile fabrics. The nonwoven linen is used in many construction projects, it solves a lot of tasks on the growth of efficiency with minimization of costs.

References

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