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IMPROVEMENT OF THE EXPANSIVE QUALITY OF GROUND (CONCENTRATING, CONSOLIDATION, CBR, DIAMETRICAL FORCE) WITH THE HELP OF WARP KNITTED STRUCTURE

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According to technical and economic characteristics it's possible to replicate geosynthetics in house building and road repairing. Geosynthetic layers strengthen slopes and protect them from erosion; geosynthetic layers improve grass plot, minimize ground deformation and many other scientific works about the road and house building we come to the conclusion that it's necessary to develop such materials as geosynthetics with warp knitted structure.

Some experimental research in special laboratories for every case to test synthetic fiber for climatic and mechanical influences had been done.

Geotextiles with warp knitted structure were tested for strengthening, compressibility, elasticity. The materials are tested for tear-stability. Stability is tested by the method of cylindrical cliche which helps to value stability of joints, press-and-hit-stability. Temperature, ultraviolet, acid and alkaloid influences test fiber in its chemical and physical qualities. All experiments done led to, that vc geotextiles with warp knitted structure can be applied to improving expansive ground qualities (concentrating, consolidating, CBR, diametrical force) because they have all necessary qualities required to such materials.

Keywords: knitted structure, expansive quality of ground, geotextile.

Application experience

Warp knitted structure is a part of varied road building materials because it has good characteristics: it's flexible, can be used at different temperatures outdoors, it doesn't depend on environment's changers such as rain, snow and its application is very easy. The examples of warp knitted structure application are armature pivots and armature frameworks in monolithic constructions. They have got the same characteristics as the hot-made armature. But warp knitted structure is lighter than the hot-made armature and its installation are very easy [1, p. 69].

The VII International Conference 2007 in Nyssa gave the information that the production of warp knitted structures and geosynthetics has reached around the world about 1.2–1.5 milliard m^2. The Northern America and Europe produce at 300 million m^2 each, 80 % of Europe production volume are not weaved linen and the manufactured articles with warp knitted structures in them.

In general the application experience of geotextile materials with warp knitted structures isn't wide spread in Asia and in the middle east our country. This fact has objective and subjective causes:

- Manufacturing market is very small. The European production of geotextile materials with warp knitted structures is represented badly on our market. That's why we haven't enough information about warp knitted structure, about its quality technical peculiarities and about its production technology.
- The main reason of application geotextile materials with warp knitted structures is that the ground swelling around the building foundation is less and its deformation is smaller. This is actually for house and road building. But our builders don't show interest to new technologies because they don't have prolonged obligations for houses and roads they've built.
- All facts mentioned before prevent from the wide application of geotextile materials with warp knitted structure. Table 1 shows the most important qualities of synthetic fiber [2].

In Russia (which is considered as a greatest country) for example, they have only one producer of warp knitted structure. Its Steklo-Progress Company GmbH. The fiber mark quality "Armdor" is comparable with "HUESKER *Synthetic* GmbH&Co". The company products geo-nets from NMBAF-threads' mark "HaTelit". The characteristic you can see in Table 2.

Processing of the results of measurements of maximum load is performed as follows, except for those materials, which include the geogrid and geogrid: material tensile strength of the samples T N / m. It is calculated for each sample according to the formula:

$$T = \frac{F_{\max}}{B}$$

where $F_{\max}$ – maximum load at break of the sample, N;
B – specimen width, m.