



## Repair Methods for Newly Laid Cement Concrete Pavement, Study of the Technical and Economic Efficiency of Repair Methods

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***Annotation:** Care methods for newly laid cement concrete pavement, influence of care methods on physical and mechanical properties, study of technical and economic methods for caring for cement concrete pavement in a dry-hot climate.*

***Keywords:** Hot and dry climate, repair method, flexural elongation, concrete construction, strength properties, geotextile, cement.*

The methods of caring for the newly laid cement concrete pavement and their influence on the physical and mechanical properties of the cement concrete pavement have been studied, the effect of the repair period on the strength of cement concrete has been studied. Concrete pavement maintenance is generally difficult in hot and dry climates. In order to study the effect of the recommended repair methods on the cement concrete pavement, the physical and mechanical properties of the cement concrete pavement were studied, as well as the preparation of prototypes in the laboratory and the processing of test results based on established regulatory documents and regulatory requirements. [1]

The physical and mechanical properties of newly laid cement-concrete pavements of roads, the preparation of prototypes in laboratory conditions, the study of samples and comparison with established regulatory documents were studied.

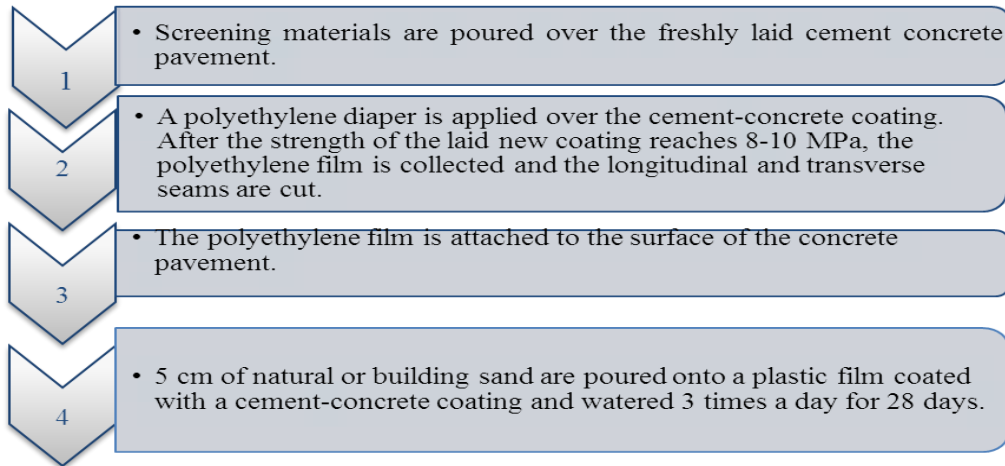
Core samples were taken from the cement concrete pavement using the recommended maintenance method and tested under laboratory conditions, and the results were compared with the results of the existing maintenance method, in which: The results obtained for compressive strength and tensile flexural strength were compared.

When comparing the results of the compressive strength of the cement concrete pavement treated by the existing method and the compressive strength of the cement concrete pavement with the recommended repair method, it was seen that the strength of the cement concrete pavement cured by the recommended method increased by an average of 14.7%.

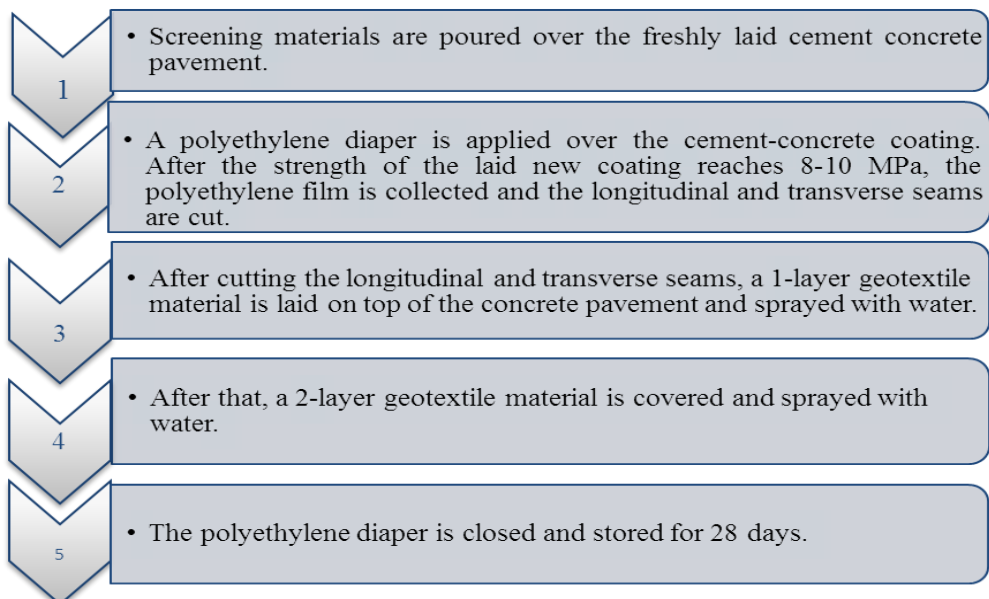
When comparing the results obtained when testing the flexural tensile strength of specimens using the existing repair method and the recommended repair methods, it was seen that the tensile flexural strength of the cement concrete pavement maintained by the recommended method increased by an average of 17.6%. [3]



### The sequence of technological processes in the existing method.



**Picture 3. Sequence of technological processes of the maintenance method Workflow sequence of the recommended maintenance method**





**Picture 4. The sequence of technological processes of care methods**

Now let's compare the existing method and the recommended method used in the maintenance of a newly laid cement concrete pavement.

The necessary material for repairs according to our recommended method is geotextiles , produced in our country by SANFA.[2]

The enterprise produces the following types of geotextiles (tables 1-2).



**Picture 5. Geotextiles**

**1.Geotextile SANFA(PP).**

**Type of raw material: Polypropylene (HUVIS Corp, Korea) 1- tables**

Types	DensityGr/ m <sup>2</sup>	Width m	Price1m <sup>2</sup>
GeotextileRR	300	6	10500
GeotextileRR	350	6	12000
GeotextileRR	400	6	13500
GeotextileRR	450	6	15000
GeotextileRR	500	6	16500

**2.Geotextile SANFA(PET).**

**Polyethylene terephthalate (Sanfa Fiber, Uzbekistan) 2-tabels**

Turlari	DensityGr/ m <sup>2</sup>	Width m	Price 1m <sup>2</sup>
GeotextileRR	300	6	6300
GeotextileRR	350	6	7350
GeotextileRR	400	6	8400
GeotextileRR	450	6	9450
GeotextileRR	500	6	10500



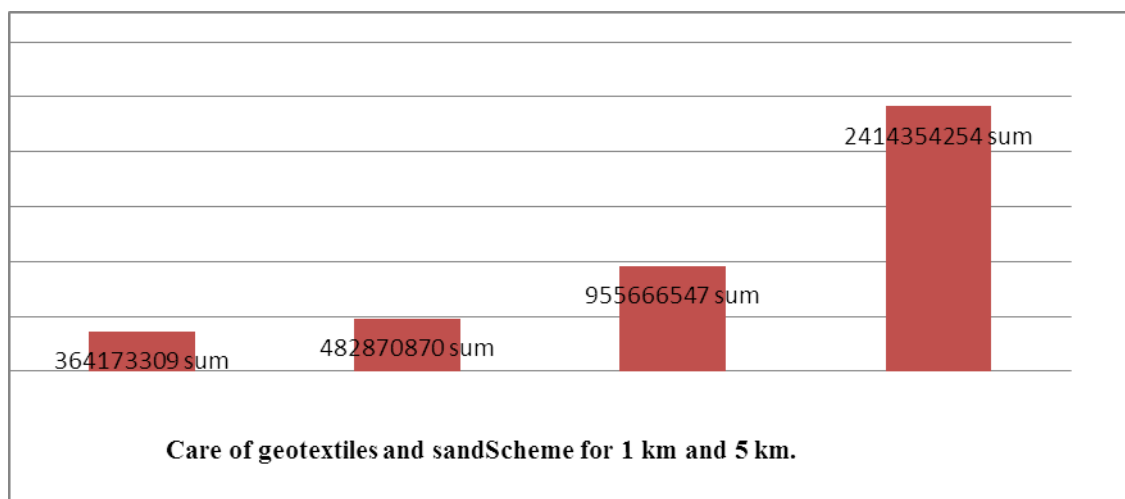
We compare the feasibility of our current wet sand maintenance method with geotextile maintenance. It is necessary to calculate that geotextile materials can be used 5 times. For both maintenance methods, we take a cover 1 km long and 9 m wide and calculate the amount of work.

482,870,870 soums were spent for sand maintenance per 1 km in 28 days.

364,173,309 soums were spent on repairs with geotextiles per 1 km in 28 days, which shows that repairs with geotextiles are more efficient.

Now let's compare a road surface 5 km long and 9 m wide in terms of the content of cement concrete pavement by two methods of maintenance, taking into account the use of geotextiles 5 times.

In sandy care; 2 414 354 354 soums were accrued. Complete with geotextiles; 955,666,547 soums were credited. If we compare both ways of care, we can see that sand care costs 1458687807 soums more than geotextile care.



Let's compare technically; When comparing the technological side of the sand maintenance method, the recommended maintenance method differs from the existing maintenance method in the following indicators. The increase in labor force, the transportation of materials for maintenance and the consumption of water are taken into account.[3]

Care types	Work force	Material consumption
Geotextile Care	18632.5 odem/soat	20000 m <sup>2</sup>
Sand care	148700.275 odem/soat	1173.6 m <sup>3</sup>

When developing the technological sequence of the recommended maintenance method, the labor force, the machine mechanism, the consumption of materials, the consumption of water, as well as the material used mainly for maintenance, are considered safe for health. Warehouse costs are taken into account.

It is taken into account that several types of geotextile materials used in repairs are produced on the territory of our republic. Mainly meets the economic and technical requirements. When comparing the recommended repair method and the existing repair method, 1458687807 soums will be saved.

**References**

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