WAYS TO INCREASE THE CORROSION RESISTANCE OF CONCRETE

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Abstract: In modern construction, the issue of corrosion resistance of concrete is far from important. This article describes some methods of protection of freshly laid concrete under the condition of natural hardening of concrete from corrosion under the influence of non-traditional aggressive factors. The effect of some chemically active additives-reagents against concrete corrosion has been experimentally proved.

Keywords: Concrete products, reinforced concrete products, local minerals, atmosphere, temperature, road clothing, accelerant, chemical additives.

This issue is an industrial necessity for modern builders and engineers. Since concrete and reinforced concrete products are often affected by aggressive environment. In this regard, scientists and engineers of the world are looking for cheap and decent ways to protect concrete from corrosion using local minerals available in nature.

In our Republic of Uzbekistan, there is a huge supply of basalt birthplace, which is not yet used on a large scale.

This article describes how to use a basalt-complex chemical additive (BKCD) as an increase in the corrosion resistance of road concretes that are used in urban conditions. In addition to corrosion resistance, this BKCD, as a filler for binders, also increases the chemical, atmospheric, temperature and light resistance of concrete products and structures. This not only results in savings in energy consumption, but this technology does not require large financial performance [1].

The table shows the results of testing some modifiers of hardening accelerators with BKCD additives for conventional heavy concretes in the construction of urban concrete roadways.

Tests have established that all used mineral additives, regardless of the chemical composition, come into chemical interaction with solutions that mimic the environment of hardening concrete on Portland cement.

Table 1

Physical and mechanical parameters of the tested concrete composition

No. SOS of Tawau	Additives	BM	BM	RSJ. MPa h / W day	RSJ. MPa h / W day	RSJ. MPa h / W 28-day	RSJ. MPa h / W 28-day
1.	Without additives	-	0.4	16.9	4.3	37.0	7.5
2.	Without additives	-	0.4	13.0	5.1	35.0	8.8
3.	The hardening accelerator (RSTN)	-	0.4	19.4	6.6	30.8	10.6
4.	Emblem 8-100	-	0.4	16.6	6.0	37.3	12.0
5.	BKHD	-	0.4	25.0	6.7	44.2	22.0

According to the indicators (the number of absorbed Cao, dissolved SiO2, related alkalis to changes in strength), minerals can be ranked:

- Brushless;
- Alkaline;
- Quartz;
- Basaltic:

It is clear from the results that the least persistent minerals are alkaline, and the most persistent are alkaline.

Research using basalt mineral was performed by many foreign organizations in the laboratory, such as the Institute of materials science of the Academy of Sciences of Ukraine, NIIZHB Russia, Central research Institute of industrial Sciences of Moscow, etc [2]

Although the available data on the study of the corrosion resistance of basalt mineral in cement solutions are partial and contradictory, which in turn creates difficulties for the widespread use of cement-basalt composites in road construction.

Studying foreign research experiments in the field of fibroblast concrete, preparation is underway in mzhbk in Tashkent, work is underway to create cement composites using basalt mineral on the basis of laboratory studies.

Especially the use of basalt-complex chemical additives (BKHD) in road concrete, which are operated in aggressive open air, as well as under the influence of non-perevivnyh indicative friction of the concrete surface with the tires of the wheels of vehicles, which in turn require appropriate strength, makes it possible not only to save in materials, but also in the manufacture of a durable

product from such concrete (3).In the course of experimental work, the following production issues were studied:

1. The effect of moving modes of mixtures and the sequence of introduction of components of the mixture, mixing water, heat and humidity treatment(MSW), the introduction of modifiers and accelerators of concrete hardening;

2. Influence of the percentage of BKHD on the physical and mechanical characteristics ;

3. Optimal solution for moving concrete mixes.

Based on the results of determining the physical and mechanical characteristics and the uniformity of the distribution of BKCD, two schemes for preparing basalt-fibrobeton were selected.

The results obtained confirm the possibility of obtaining high strength of the composite immediately after TVO, which makes it possible to accelerate their use in operation.

Also an important factor is the increased crack resistance that forms, due to the clogging of open areas in the concrete, components of BKHD.

The durability assessment is based on the method of A. A. Patsenko (4), which improved the numerical calculation for the rate of interaction of basalt mineral components with cement mortar components over time. This allows you to most reliably predict the durability of the composite up to 100 years.

Literature:

1. Magazine "technology of concrete ". Moscow no.: 2007
2. Collection of scientific articles of NIIZHB; M. 1989.
3. Pardaev O. N. " fine-Grained concrete on sand dunes for hydro-reclamation construction»,
4. Patsenko A. A., Reinforcement of inorganic binders, mineral fibers. "science - construction production: M. p. ed. 1988 »