CHARACTERISTICS AND APPLICATION OF ADDITIVES IN CONCRETE

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COMPLEX

They combine the effects of two or more ingredients. If it is necessary to change the properties of the concrete mixture in several directions, the option is acceptable to obtain the expected result. Individual components can react incorrectly with each other, so experts recommend buying a factory-made and balanced complex. Complex additives simultaneously improve its pore structure and other properties - water resistance, frost resistance.

Combined action is carried out in the following ways:

2. Modifiers - their purpose in obtaining special concrete with improved technical characteristics. With the help of additives, waterproofing (water permeability level from W12), corrosion resistance, durability, strength not lower than B125 is provided. Concrete is prepared only with modifier additives if it is to be used for expansion, compression, shrinkage replacement, vibrocompression.

3. Fiber supplements. These are fibrous materials based on polymers, glass, and steel. They strengthen concrete (increase resistance to loads and deformations), increase heat resistance, reduce shrinkage and increase plasticity.

THE COST OF SUPPLEMENTS

It is necessary to pay attention not only to foreign brands, but also to the products of reliable local companies. To really increase frost resistance, to strengthen or slow down the setting, it is necessary to strictly follow the proportions of the solutions indicated in the instructions.

Name	The goal	Packaging size	Price, rubles
Goodhim InterPlast R	Plasticizer for wall mortars	1 l	120
Frieze	Increases frost resistance, accelerates adjustment	10 l	300
C-3	Superplasticizer	1 kg	70
SAZI TIPROM M	Modifier	5 l	1700
NTP acid	Slows down the setting	1 kg	130
FV polypropylene fiber	Micro-reinforcement of the lid	0.6 kg	240

To increase the strength of the concrete structure, it is recommended to use special materials that are added directly to the prepared cement-sand mortar. When hardened, the mixture with the addition of concrete hardener has many useful properties that help to extend its service life. In addition to strength, they can also include water resistance, corrosion resistance, and more.

App

As a rule, additives necessary to increase its strength are not always used in concrete. The use of such materials is allowed in the following cases:

5. the presence of high requirements for concrete or reinforced concrete structures for water resistance or frost resistance;

6. use in the solution of non-standard aggregates such as fine sand;

7. production of high-load concrete products (for example, paving stones made of heavy or fine-grained concrete);

8. installation of monolithic structures using mineral expansion additives.

Classification and properties of additives

Reinforcing mixtures, concrete additives are specially prepared chemical products. They are added to the design or product during the manufacturing process and are reinforced together with the base materials.

The main advantage of additives is the complete protection of the entire concrete by volume. The disadvantage is the impossibility of strengthening the

already created structure (this function is performed by reinforcing the impregnation intended for concrete).

The task of plasticizers, which are part of concrete solutions, is to increase their mobility. At the same time, it is possible to increase the strength of the resulting concrete by 120-140 percent and give it the following properties:

1. cold resistance increased by 1.5 points;
2. water resistance is higher than 3-4 marks.

Also, the use of plasticizers reduces cement consumption by up to 25%, which allows to save construction work.

Strong accelerators are characterized by an increase in the rate of hardening of concrete, as well as an increase in its grade strength. One of these substances is granular calcium chloride, which is used in the production of foam concrete, paving slabs, wall stones and polystyrene concrete.

With its help, the production process is accelerated due to less downtime of the product in a special form, and the number of manufactured products increases accordingly. At the same time, a few percent strengthening of concrete is observed. And the number of chips in products that worsen their presentation is reduced.

Beneficial qualities added to concrete hardening material with antifreeze effect include not only increased strength, but also elimination of the effect of low (up to minus 25 degrees) temperature on the hardening process.

One of the most popular substances of this type are neutralized resins used in combination with water repellants (for example, Sofexil-gel and Tiprom-S).

Another advantage of the additive is to improve the workability of the mixture.

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