APPLICATION OF CARBOXYMETHYL CELLULOSE (CMC) IN THE PRODUCTION OF DRY MIXTURES

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Annotation

The use of special additives (modifiers) in the creation of formulations for modified dry mixtures is due to the need to obtain certain technical and technological characteristics of these materials and, first of all, to the need to retain water in the mixed solution after its application. Water is absorbed into the base and evaporates from the surface of the solution, which leads to a reduction in the residence time of the cement in the gel phase, a decrease in the degree of hydration and, as a consequence, to a decrease in strength.

Key words

Cement, sand, modifier, dry mortars, water-soluble polymers, carboxymethyl cellulose, cellulose, cellulose ethers, degree of polymerization, degree of substitution, ash content, temperature, humidity, mercerization

In the composition of modified dry mixes, four main groups of components can be distinguished: mineral binders, inert fillers, additives for obtaining special properties, including water-retaining ones, as well as polymer binders that work in the same direction as mineral binders, but have a completely different mechanism actions. As a manufacturer of carboxymethyl cellulose (CMC), we are primarily interested in modifying additives that affect the properties of dry building mixtures. [1]

Modern dry mixes are not just cement with sand, but a product of science-intensive technologies, the use of which allows not only to significantly increase labor productivity, but also to obtain completely different qualitative results that are unattainable in the case of using traditional cement-sand mixes.

Currently, there is an acute issue of using water-soluble polymers for building mixtures in order to improve the quality of materials based on them.

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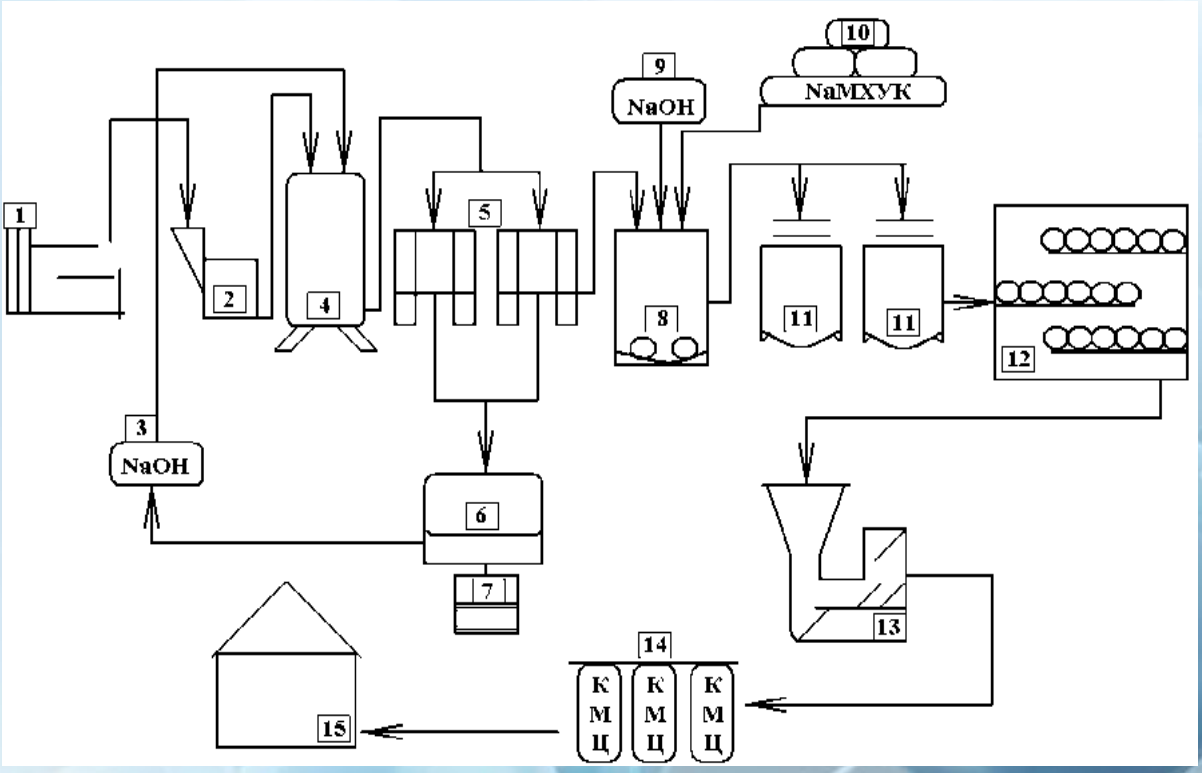
smaller the thickness of the mortar layer, the more these disadvantages affect the quality of the resulting cement stone. [2]

Carboxymethyl cellulose (CMC) is actively used in the production of wallpaper glue. To create wallpaper glue, manufacturers use the CMC 75/400 brand. The concentration of the main adhesive is of great importance for wallpaper glue. For light wallpaper, the ratio of CMC to water is considered normal as a 5% solution. For heavier wallpapers, this ratio increases accordingly. Wallpaper glue based on carboxymethyl cellulose is much cheaper than glue based on methyl cellulose, while being slightly inferior in characteristics.

We obtained cellulose from secondary raw materials of poplar wood, which was chemically processed at Na-CMC. We know that several types of equipment are used in the Namangan chemical enterprise for the production of CMC. Na-CMC is widely used mainly as a stabilizer in oil well drilling, in finishing spinning yarns in the textile industry, in improving

the quality of paper products, in the industry of varnish and paint and building materials, pharmaceuticals, in the production of food and perfumery products.

Method "Monoapparat" is a universal method, making it possible to obtain several Na-CMC from local raw materials, ie from cellulose of various plants and cellulose-containing fibrous waste of textile enterprises.



At this time, a small enterprise LLC “INNOVATIVE CHEMIKAL TEHNOLOGIES” with a Na-CMC production capacity of 1200 tons per year is working with the Monoapparat methods. Today we produce 18 types (75/300, 75/400, 85/500, 85/600, 85/700, 85/1100 ...) Na-CMC with various brands.

Now in our Republic at various industrial enterprises, work is being carried out to replace existing technologies with new ones. These include the industry for the production of cellulose and products of its chemical processing.

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