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Title

RESEARCH RHEOLOGICAL PROPERTIES OF CERAMIC WEIGHTS FROM KOSKUDYK KAOLIN

Body

Natural silicates are one of principal views of the mineral raw materials applied in various branches of a national economy. Research of clay minerals has the important practical value as they can be considered as the basic raw materials for reception of pottery, chisel solutions, in a kind of adsorbents, etc. However research in the form of pottery from Koskudyk kaolin clay in the literature was not found out. In this connection considerable interest represents research of suspension in the field of the physical and chemical mechanics, allowing to change structurally-mechanical properties. With reference to clay minerals the most widespread method of hardening of structure is addition in clay suspension of some connecting substances as natural minerals which could change contact of particles.

It seems, that the structure, available phase contacts in spatial disperse structures, is stronger. And consequently for reception of such structures before end of phase transitions in system it is necessary to find a combination of coherent minerals or connections with object of research.

As objects of research the Kokudyk каолинит (Almaty obl, Kazakhstan), having natural terracotta colour that is the important peculiar advantage were use. For definition of a chemical compound and structure the structural analysis of kaolin clay have made. Then, a number of structurally-mechanical properties and characteristics of Koskudyksky clay have revealed. These sizes are criteria of quality of the processed ceramic weight. For improvement of interpackage communications of structure have added before roasting in suspension of clay coal mark K, natural tengiz sulphur type 127.1-93 and slag waste from thermal power station. The choice of slag, coal and sulphur is based that in the course of roasting can connect the added minerals (connections) of clay particles bridgeview in the image, i.e. connecting not only van-der-vaals forces, but also short-range valency forces of an attraction. As a result of experience, the structure formed of disperse phases - slag-clay-water is the strongest and has the highest density have found out. It shows quality of a ceramic tile. A ceramic tile with sulphur and coal have a number of lacks as decrease in durability and density in comparison with system slag-clay-water that shows poor quality of ceramic plates have found out.

Thus, it was established, that the slag-clay-water system is more optimum variant, than clay-water, coal-clay-water, sulphur-clay-water systems.

Keywords