

INFLUENCE OF CRYSTALLOMORPHOLOGICAL EVOLUTION OF KAOLINITES ON ELASTICO-VISCOUS-PLASTIC PROPERTIES OF CERAMIC PASTES

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Intensity of development of crystallomorphological termination of individual microcrystals and character of their appearance determines the reaction ability of the hard phase and influence the interaction of particles during the formation of coagulation structures. Different elastico-viscous-plastic properties of pastes are also associated with their morphology.

Depending on the intensity of development of crystallomorphological termination and on the perfectness of the structure there is formed a value and character of charges and there occurs their distribution that influence the interaction of the particles with a liquid phase.

Relatively big crystals of kaolinite with a complete termination in the coagulation structure form contacts mainly in the angles and edges and possess very low water-content and cause rapid development of elastic deformation in the system. With the changing worse of the termination and decrease of particles sizes the water content and stability of dispersions become higher and development of plastic deformations in the system is determined as well. Thin laminated and scaly particles determine high humidity-content and cause the growth of pastes viscosity. There exist a certain relation between the coefficient of form of the particles (K_f) and of the structural-mechanical properties of pastes. $K_f=20-40$ is most optimal. With the growth of K_f the plasticity grows as well and further growth of K_f creates conditions for fluidity whereas the decrease of K_f leads to the liquescency and unfixing.