

Modification of clay excavated from Klyuchishchenskii deposit of the Republic of Tatarstan

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Abstract

The paper presents the results of comparative analysis for chemical and mineral composition of clay from Klyuchishchenskii deposit of the Republic of Tatarstan and diatomites from Inzenskii and Irbitskii deposits. The results show a good agreement between them and their applicability for the production of construction wall materials. Physical and mechanical properties of clay samples with diatomite additives were defined. The dependence of particle size, mixture ratio and burning temperature on physical and mechanical properties was given. Sample microstructure was studied using laser microscope. The phase composition analysis was conducted. The authors propose the optimal conditions for the production of ceramic materials with high thermal and physical properties.