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Article 1

Poznyak A. I., Levitskiy I. A., Barantseva S. E.
On increasing the mechanical strength of ceramic tiles at the stages of pressing and drying

Key words: ceramic tiles, aluminoborosilikate fiberglass**,** wollastonite concentrate, shrinkage, density, water absorption, mechanical strength

Abstract

The results of researches on increase strength of the samples of ceramic tiles for interior wall facing at the stages of pressing and drying are presented. Confirmed the effectiveness of the introduction of glass fibers and wollastonite concentrate to the composition of the raw material, which ensures a high mechanical strength at the expense of the reinforsing supplements.

Article 2

Shchegoleva N. E., Grashchenkov D. V., Vaganova M. L., Solntsev S. St.
The perspective glass-ceramic composite material

Key worlds: composite material, glass-ceramic matrix, anorthite, sol-gel method

Abstract

The new ceramic composite material based on glass-ceramic matrix of $CaO–Al_2O_3–SiO_2$ system with main crystal phase of anorthite is developed. The sol-gel method is used for ceramic material obtaining, advantages of this method are shown. Proceeding in the course of glass-ceramic powder obtaining processes of phase creating are investigated by synchronous thermal analysis. Complex of glass-ceramic anorthite based composite material properties is investigated.

Article 3

Afanasyev D. A., Sarkisov Yu. S., Abzaev Yu. A., Klopotov A. A., Tsyro L. V., Unger F. G., Kouznetsova T. V.
Quantitative characterization of the paramagnetic centers and amorphous phase in the process hardening of system "clinker mineral – water"

Key words: cement, monocalcium aluminate, paramagnetic centers, amorphous phase, EPR, XRD

Abstract

The results of the study by the electron paramagnetic resonance changes in the concentration of paramagnetic centers in the process of hardening of the clinker mineral – monocalcium aluminate are presented. The correlation between the quantity paramagnetic centers and the content of amorphous phase of the mineral is shown.

Article 4

Sandulyak A. A., Sandulyak A. V., Ershova V. A., Snedkov A. B., Sandulyak D. A.
Features of mass-operational characteristic of magnetic control of ferroimpurities in feldspar

Key words: polyoperational magnetic control, mass of ferroimpurities, fracture of mass-operational characteristics

Abstract

An appropriateness of experimental-calculative method of magnetic control of ferroimpurities in feldspar is confirmed. It was shown that sectionally-linear is stipulated by ferroimpurities of different sizes. Such method of determination of real quantity of ferroimpurities is mostly useful in order to estimate the

certain efficiency of the magnetic separators operation: de facto (by operation of separator) and expected (by decision about possibility of its application).

Article 5

Seytzhanov S. S., Taimasov B. T., Seytzhanov B. S., Nekipelov S. A., Suleymbek G. A.
Development of raw mixture compositions for oil well cement and investigation of its quality

Key words: clinker, oil well cement, electrothermophosphoric slag, consistency, thickening time, strength, energy saving

Abstract

The based on natural raw materials and waste compositions of raw mixtures allowing to receive a oil-well portland cements are developed. Oilwell technical properties of cements correspond to the requirements of state standards by consistency, thickening time, water separation, strength and other parameters. Replacement of quartz sand on electrothermophosphoric slag allows to improve clinker burning process and to reduce specific fuel consumption.