

Regularities of the formation and localization of the porcelain stones (illustrated by the Lesser Caucasus)

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The porcelain stones are the rocks that contain components (silica, alumina, alkalis) in the proportions close to the compositions of standard ceramic masses and favourable chemical and mineral compositions. Fine-grained structure and the other properties of the porcelain stones allow to utilize them in the manufacturing of ceramic (porcelain or faience) masses as a main or a correcting component.

The porcelain stones are products of metasomatic changes of the acid and rarely median effusive and subvolcanic formations like rhyolites, andesites, dacites, quartz porphyries (plagioporphyrries) and their tuffs, etc. This mineral raw material is concentrated in the secondary quartzites and argillized rocks.

Depending on the combination of the components the porcelain stones are subdivided into 4 main mineral types: kaolinite-quartz; sericite-quartz; pyrophyllite-quartz and field-spar-quartz. In the formation of mineral types of the porcelain stones a significant role is played by the confinedness of a concrete deposit to a facial zone of metasomatites. The main reason of difference between the mineral compositions is determined by non-uniformity of composition and structure of the substratum suffered metasomatic change.

Structural-tectonic, volcanomagmatic petrographic and stratigraphic factors are the main ones in the formation and localization of the porcelain stones fields.