SUMMARY

Use of greisen – a rock mined primarily for (Sn-W) ore components – in sculpture and construction industry is typical for the Slavkovský les area and its surroundings. Material mined in the greisenized granite stock near Prameny for construction purposes was the source of stone used for a valuable Baroque sight – the Holy Trinity column in a nearby town of Teplá.

Samples collected in the abandoned construction stone quarry were analysed for the study of properties of the original material mined in the locality Prameny. These samples were compared with the material collected from the monument in the pre-restoration research to prove the source locality of the original material. Provenance of the original material was determined on the basis of qualitative and quantitative petrographic and micro-structural characteristics. Micro-structural petrographic parameters of the studied samples were determined by the microscopic study using the Petrographic Image Analysis (PIA). Distribution of accessories and micro-structural characteristics were observed using the cathode-luminescence. Conventional index and mechanical parameters with respect to the use of the material in construction industry and sculpture were determined for the material collected in the abandoned quarry.

Studied material collected in the abandoned quarry SW of the village was determined as greisenized granite on the basis of qualitative and quantitative petrographic and micro-structural characteristics obtained by the microscopic study using the Petrographic Image Analysis (PIA). The same results were obtained for the material of the historical column. On the contrary, material collected from the balustrade does not contain abundant feldspar and so it is classified as quartz-mica greisen.

Measured conventional index and mechanical parameters of the material from the quarry show changes in these properties caused by postmagmatic alteration processes. For example, the rock has a significantly higher porosity (~6 vol. %) compared to granites, from which it originated, which contributed to the possibility of stone-sculpturing processing.

Appearance and decorative properties of the greisenized granite and greisen are not extraordinary, that is why we expect that this material was only used in the areas of Sn ores mining from greisen, where the use of the material in sculpture and construction was efficient due to the local source of material.