

CHARACTERIZATION OF THE STONE FROM THE JOŠANICA QUARRY AND THE POSSIBILITY FOR ITS APPLICATION

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Abstract

Stone samples were sampled from three fields: Field A, Field B, and Field C. In this work, chemical and mineralogical analysis of the stone was performed. The chemical analysis of the stone was done by volumetric, complexometric, spectrophotometric, gravimetric and X-ray fluorescence analysis (XRF). Mineralogical analysis was done by XRD analysis. Analyzes show that calcite is the dominant mineral in most samples, while dolomite is significantly present in some samples. Chemical analysis shows that calcium dominates in samples 2 (Field B) and 3a and 3b (Field C), with only negligible amounts of magnesium. In contrast, samples 1a, 1b, and 1c (Field A) contain a significant amount of magnesium. According to the $MgCO_3$ content, the presence of dolomite in the stone was calculated. The content of $CaCO_3$ bound in dolomite is lower than that present in the stone sample, which confirms that it is present in some other form. According to the dolomite content, samples 1a, 1b, and 1c (Field A) are classified as limestone-dolomite, while samples 2 (Field B) and 3a and 3b (Field C) are classified as limestone due to their high calcium carbonate content. Mineralogical analysis confirms the chemical analysis.

Keywords: Carbonate rocks; Calcium carbonate; Calcite; Dolomite; Magnesium carbonate.