

STUDY OF THE TECTONIC STRUCTURES INTER-BLOCK PILLARS BY SEISMIC TOMOGRAPHY IN THE JELŠAVA DEPOSIT

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Abstract: Magnesite is one of the most economically important mineral resource in Slovakia. The largest deposits of magnesite are situated in carboniferous carbonate layers in Gemericum of Western Carpathians. Chemically pure, uncontaminated magnesite $MgCO_3$ contains 47,8 % MgO a 52,2 % CO_2 . Such composition use to be rare. Magnesite often contains various impurities such as carbonates, oxides and mainly silicates of calcium, iron, manganese and aluminium. Harvested magnesite deposits in Slovakia have rather constant quality with content of MgO od 40,2 do 43,5 %, Fe_2O_3 varies between 1,5-4 %, CaO 1,5-4,8 %, SiO_2 0,7-2,5%, MnO 0,1-0,4%. Curentlly, magnesite exploitation is realised at two localities by underground minig. Jelšava-Dúbravský massif deposit is the largest and the most important deposit. Magnesite is mined from the depth more than 400 m under surface. Nowadays, the deposit is mined at horizon 220 m above see level. The deeper minig the biggest risk of unstability of mining workings and conditions of mining are getting complicated. The biggest problem is related to the stability of inter-block The tectonic fracture of these pillars has the main influence at possibility of open-pit and the safety of minig in deposit. The presented article includes the first results of measurement of the hidden fractures at inter-block pillars.

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Key words: seismic tomography, tectonic fracture, the stability of inter-block pillars

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