

In order to achieve optimal efficiency it is necessary to adhere to the loading regime from the loading chamber, i.e., the same quantity of ore should be loaded from all the loading chambers from which ore is loaded

Mining method structure ensures high recovery with quality deterioration of 10 to 15% as shown by test models. The paper by Vitomir Milic, Igor Svrkota and Dejan Petrovic, from the Technical Faculty of Bor published in the Mining and Metallurgy Engineering Bor No.

3/2013 discusses the new structure of the block caving method involving ore caving.

Borska Reka copper deposits awaiting future underground mining are located at depths of 500 to 1200 m. The ore body contains ore reserves of over 600 million tons of ore with a copper content of about 0.6%. For mining experts coming from underground mining this poses a big challenge, and a continuation of a long-standing mining tradition of 110 years.

Investigation of parameters of the sublevel induced caving method with a single-sided lateral ore loading was carried out in laboratory conditions on a physically similar model.

The following parameters were recorded during this activity: dimensions of sublevel galleries, drilling gallery dimensions, their spacing, loading chamber dimensions, intermediate level height, grain size distribution of ore and waste, bulk volume of ore and waste with appropriate loosening factor, tilting angle of the blasting plane, angle of end boreholes. Further experimental investigations were conducted in three series.

Based on the measured amount of pure ore and waste during unloading for each test, ore recovery and deterioration levels in the dose and total levels were calculated. The results clearly indicate that the change in the axial distance between the loading chambers results in different amounts of pure ore.

For the considered variant of the sublevel caving method, best results were obtained for the following mining block parameters: width - 12m, height - 80 m, axial distance between the lateral loading chambers - 12m, while the best mining method indicators are $K_{ir}=0,90$ and $K_{or}=0,10$.

To achieve such recovery levels, it is necessary to adhere to the loading regime from loading chambers, i.e. the same or approximately the same amount of ore from all the loading chambers should be loaded.

Throughout the investigations of the method in question, ore was unloaded from two and three loading chambers. Results indicate that more loading points need to be in place. In this way, better effects and higher recovery levels are achieved.