

Cracked rock mass, as well as coal series and roof sediments, is very important for the stability of working and final slopes of surface mines.

Hydrodynamic of underground and atmospheric water on the rock mass, in the form of hydrostatic pressure anisotropy permeability in the vertical direction, does not allow dewatering of infiltrating water, thus lowering the value of physical-chemical parameters of the environment.

The paper "Stability analysis of changes in the function of the geometric parameters of the slope and position of the discontinuity in the operating slopes of OCM Gacko" was presented at the Eleventh International Conference on surface mining, held on Zlatibor nearly two years ago. Its authors are graduate engineers of geology Dragan Savic, Dejan Nikolic and Jelena Majstorovic of Mining and Geology Faculty in Belgrade. The paper itself is the result of the project "Improving of the surface lignite mining technology in order to increase energy efficiency, security and safety at work" and "Geotechnical aspects of the research and development of modern technologies of construction and rehabilitation of landfill for communal waste", which is funded by the Ministry of Education, Science and technological development of the Republic of Serbia.

Operating slopes are in the process of exploitation of mineral resources subject to changes in geometric parameters, and in the analysis of slope stability geostatic calculations need to be performed, in function of changes in the above mentioned parameters for a different distance of discontinuity from the edge of the floor and a variable degree of dewatering discontinuity. Definition of geometrical parameters of working slopes with the present discontinuities is significant from the point of view of security, because they provide a sufficient safety factor for the safe operation of machinery and manpower.

Discontinuities consider the faults and cracks zones. It is noted that in these zones of coal deposits there is washing of the crushed material, however, especially in the shallower parts of the reservoir, creating gaping cracks, that are conductive and storage zone of groundwater. In some points, degradation of drilling equipment in research or even of mechanization in exploitation, particularly in the main coal seam, is the phenomenon of washing and expansion of tectonically damaged circulation zones of groundwater.

The paper presents analysis of slope stability for two technological profiles, with the used software package Roc Plane 2.0, which is based on the problem solving of limit balance calculation of the safety factor for linear fracture criterion. For one of a profile an analysis is conducted for two cases of sub vertical discontinuity, away from the edge of the floor for 95 meters, when the hollow and when filled with water. Of course, the safety factor was lower in case of fulfillment of discontinuity with water.



MiningSEE: Slopes geometry and masses discontinuation position on open cast excavations are constantly investigated

Analyzed partial slope meets the safe operation conditions. Unfavorable geometrical parameters are marked, which do not provide sufficient security.