

ABSTRACT

PT. Aneka Tambang, Tbk Pongkor Gold Mining Unit applies the sublevel stope and cut and fill method in its mining activities. Currently mining activities have reached the final process. To achieve production achievement, locations that have economic value will be carried out production activities. These locations are sill pillars that are located between sublevels.

The study was conducted at one of the sill pillar locations that would be carried out in production (exavation) activities, namely Cross Cut 10 Central in the Ciurug veins. The purpose of this study was to obtain predictions of stope stability based on strength factor parameters, safety factors and deformation (displacement), as well as to propose the use of a buffer based on the 1989 Bieniawski rock mass classification.

Stope stability analysis conducted in this study uses numerical modeling methods by applying the finite element method with the help of roclab and phase 2 software from rocscience. Modeling and analysis will be carried out in 4 stages: the first stage is the initial conditions, the second stage is the condition when excavated, the third stage is the condition when installing rock reinforcement in the form of rock bolts and stope support in the form of wiremesh, and the fourth stage is the condition when installing rock reinforcement in the form shotcrete.

The results of this modeling and analysis are the stability value of the stope for the strength factor parameter (Hoek-Brown Criteria) is still at a value < 1.5 . For the parameter deformation (displacement) is at a value far enough below the threshold 5 times the elastic displacement (Cording, 1974). The safety factor parameter (Mohr-Coulomb Criteria) is > 2 shotcrete installation. The reinforcement of rocks and support provided is in the form of 4 meter long rock bolts with 1 meter spacing and shotcrete with a thickness of 3 centimeters on the wall and 10 centimeters on the roof.