ABSTRACT

In surface mining system, the success of mining activities is strongly supported by the stability of slope. To determine a stable slope required an understanding of the rock strength in this case is the rock mass strength. Rock strength differentiate into two, namely intact rock strength and rock mass strength. The intact rock strength can be obtain by testing the physical properties and mechanical properties of rocks in the laboratory and the rock mass strength can be known through the rock mass characterization.

This research was conducted in two types of rocks from different locations , tuff in Sleman and andesite in Kulonprogo. In laboratory test obtained values of physical properties of rocks , uniaxial compressive strength and shear strength of rock

To obtain slope stability curve is by connecting test result parameter, rock mass characterization and large block shear tests using dimension analysis method. The results are non-dimension product parameter of cohesion (c), height of slope(h), density (γ), angle of internal friction (ϕ), rock mass rating(RMR), uniaxial compressive strength(σ_c) which then are developed, and the result is the curve for determining rock mass cohesion based on RMR and (σ_c), curve for determining internal friction angle in rock mass based on RMR, and curve for determining individual slope stability based on RMR.

RMR values obtained from the five RMR parameters on tuff is 37. Cohesion value (c) and internal friction angle (ϕ) in the rock mass at the study site used chart slope stability Saptono (2012) are $tuff_1$ = 0,195MPa , $tuff_2$ = 0,200MPa, $tuff_3$ = 0.210 and angle of internal friction tuff is 37º. Having obtained the values of cohesion and internal friction angle in the safety factor can be determined using Saptono stability graph (2012) . The $SF_{Saptono}$ value $tuff_1$ is 4,86, $tuff_2$ is 4,92 and $tuff_3$ is 5,05. Every single slope are in stable condition.