

ABSTRACT

Slope stability problem in rock is interesting to learn because its nature and behavior difference. Rock slope stability is more determined by the presence of discontinuity. Discontinuity, physical properties and mechanical properties of rocks affecting the strength of the rock mass is the reference to evaluate slope stability. Currently in Parangtritis Village, Kretek Subdistrict, Bantul Regency, Yogyakarta are natural andesite rock slopes around the residential area with unknown stability level. This research will determine the influence of rock mass strength so the safety factor of the andesite rock slope can be known.

Based on the discontinuity measurement and stereographic analysis there are two general directions of discontinuity, $63/N341^{\circ}E$ and $69/N188^{\circ}E$ intersecting each other and indicating slope wedge potential. Andesite rock mass classification is determined using RMR (Rock Mass Rating) System (Bieniawski, 1989). RMR obtained from the results of weighting is 50, cohesion is 200 – 300 kPa, friction angle is 25° – 35° and rock mass is categorized as fair rock. Based on the analysis of the safety factor using *swedge v.4* software with input parameters cohesion and friction angle obtained from direct shear tests, the natural andesite slope having height of 15 meters and slope angle of 90° has safety factor of 13,96. Based on the Regulation of Ministry of Public Work No. 22/PRT/M/2007, the natural andesite slope is safe.