

ABSTRACT

Dusun Kwagon, Desa Sidorejo, Kecamatan Godean, Kabupaten Sleman, Provinsi Daerah Istimewa Yogyakarta is a region with most of its people working as roof tiles and bricks maker. The existence of traditional roof tiles and bricks which is handmade are as good as those from the factory with modern technology. According to Yogyakarta Regional Geology Map, the region has tons of claystones which are the main material for making roof tiles, bricks and other industry that uses clay stones.

Along with the need and high demand from the market regarding the material for making roof tiles and bricks, therefore leads to mining operation in the area. This will contribute economically with more income and improve welfare for the miner, the company, as well the craftsmen. This research will try to give recommendation regarding the geometry design of the mining slope that cover: height, width, and angle of slope in a safe and stable condition. Through probability method approach by using Monte Carlo Method, input parameters are required such as average value, deviation standard, maximum and minimum relatives along with software slide 5.0 for data analysis. It will obtained Probability of Failure (PoF) value or trust value on a planned slope geometry design. PoF will represents with percentage value (%).

According to the research's result, there are three recommendations for altitude 105 m and the first single slope the height is 5 m, 31° for the slope's tilt, with 3 m for width, 24° overall slope, and possibility of the slope for avalanche is 17,2%. The second of single slope the height is 5 m, 35° for the slope's tilt, with 4 m for width, 25° overall slope, and possibility of the slope for avalanche is 18,6%. The last single slope the height is 5 m, 28° for the slope's tilt, with 5 m for width, 24° overall slope, and possibility of the slope for avalanche is 16,8%. The result is based on a threshold value from % PK on SRK Table (2010) and can be seen on Table 3.2.