

Assessment of Slope Failures Based on Soil Physical Properties in Penang, Selangor, and Kuala Lumpur

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ABSTRACT

Slopes failures are common phenomena occurring in Malaysia especially during rainy seasons. The factors causing slope failures include slope geometry, soil types and properties, infiltration, erosion, drainage system on slope, and rainfall effect. ROM Scale method is a method that can be used to determine the landslide risk based on the soil physical properties. ROM equation was invented and named after the two researchers, Roslan and Mazidah (2001). In this study, 16 slope failure locations in Penang, Selangor, and Kuala Lumpur were chosen in order to assess the slope failures using ROM Scale. The slope failures in Penang were along Jalan Gertak Sanggul in Balik Pulau, and Federal Route 6. In Selangor, six locations of slope failures were selected while in Kuala Lumpur, locations of slope failures were at Taman Tun Abdul Razak and Wangsa Maju. Sieve and hydrometer tests were conducted and then the ROM values were calculated and compared with the ROM Scale to determine the slope failure risk. From the results, soil samples taken from the failure zones and at the un-failed zones next to the failed slope, were in the critical risk category. The un-failed zones were also in the critical risk category probably due to negative suction that stabilized the slopes for time being and prevented them from failing.

Keywords: *slope failures, ROM value, ROM scale, particle size distribution*