

Engineering Properties Of Debris Flow Material at Bundu Tuhan, Ranau, Sabah, Malaysia.

ABSTRACT

Recurring events of debris flow especially during heavy rainfall have caused cut-off at one of the main road in Bundu Tuhan, Ranau namely Jalan Tamparuli-Ranau KM 83.90. In several incidents, the road was closed to public for hours due to deposition of thick sediment on the road, causing interruption to their daily activities. However, study on the properties of the debris flow material and their relationship with debris flow characteristics is quite limited. Thus, the objective of this study is to comprehend the debris flow trait based on the material property. The study of the material property pertains to the grain size distribution, Atterberg limit, and lastly the moisture content. They are interpreted based on the results in site investigation report where the soil samples were taken from nine numbers of trial pits which were excavated around the runout and deposition zones. This study found that the granular type debris flow displays high kinetic energy, shorter transportation distance towards deposition, large velocity, and more sediment flow towards deposition. Meanwhile, the low plasticity index of the soil causes a high occurrence of liquefaction process. Higher moisture content has also assisted in the mobilization of material.