

Characterizations of waste soil of open dumping area

ABSTRACT

The heterogeneous content of waste soil from dumping area are complicated to characterize and classified. The total number of dumping area has been increase with the increase of population in Malaysia. The content of waste dumped at the dumping area is important to analyze because the degradation process change with time. Three categories have been proposed in this paper namely Category I: Soil like and non-soil like, Category II: Waste types and Category III: Waste or Soil. The waste soil are analyzed based on its geotechnical properties such as particle size distribution, specific gravity, shear strength, settlement displacement, compaction curve and triaxial strength and mineral compositions. Two types of representatives samples were collected, one from dumping area at Sri Hartamas and one from non-dumping area located at Bukit Chuping area. The dumping area samples were named as waste soil. It can be concluded that the waste soil consists of high friction angle which range from 11 degrees to 38 degrees, settlement displacement of 0.5 mm/min to 3.5 mm/min for loading of 3 kg, 5kg and 7 kg of applied normal loads. The compaction curve of waste soil has the maximum dry density of 1489 kg/m³ to 1600 kg/m³ and the optimum moisture content of between 27% to 30%. These parameters are important in determining the long-term settlement of the open dumping area.

Keyword: Waste soil; Heterogeneous content; Classification and characterization; Open dumping area; Soil like and non soil like