

Sliding Susceptibility of Solid Waste Fills Indicated by Physical Parameters On-site

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A method to assess the slope stability of municipal solid waste (MSW) fills due to identified physical parameters is proposed in this research. The physical parameters that influence were identified through a literature review. Based on the evidence from earlier studies on slope stability, each parameter was assumed to be directly proportional to risk of sliding, and a qualitative function was constructed. Porosity of MSW was introduced as an on-site condition which causes increased entrapment of rainwater and gasses, which increases the instability of MSW slopes. The stability of the collapsed MSW slope of Meethotamulla dump site is evaluated using this qualitative model and is compared to that of Karadiyana. When most researches have applied average shear strength and common slope failure techniques to explain how MSW slides occur, in this research, measurable physical indicators on site are considered with special focus on porosity of unevenly deposited varying material content to indicate risk.

Keywords: Porosity, Meethotamulla, Karadiyana, Risk, Indicators, Measurable