

Thesis Title	Analysis and Design of Steep Reinforced Embankment
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### Abstract

This research investigates the amount of required reinforcement force to make the steep slope laid on level firm foundation stable by mean of employing geosynthetics materials as the reinforcement to enhance the stability of slope, by using program SLOPE/W working on Microsoft Windows environment which can show the graphical result to determine the required force provided by the reinforcement to achieve lowest factor of safety 1.0 to the slope, by “Modified Bishop Method of Slices, BMM [51]” to 10, 15, 20, 25, 30 m. slope high 60, 65, 70, 75, 80, 85, 90 degree slope angle with 15, 20, 25, 30, 35, 40 degree internal friction angle, and 2.0 tons/m<sup>3</sup> unit weight fill.

From the results of this study it was indicated that required coefficient of earth pressure ( $K_{Req}$ ) was depended on slope angle and internal friction angle of fill soil and had a few percent difference to the popular published work Jewell [41], on the other hand the reinforcement length to height ratio which was determined by combination of “BMM [51]” and “Conventional Retaining Wall Method” also depended on slope angle and internal friction angle of fill soil but was lower than the Jewell [41] maximum 24.821 percent at 70 degree slope angle and 30 degree internal friction angle only. The design charts presented herein are believed to be very useful for applications of  $K_{Req}$ , but reinforcement length is not well applicable.

Keywords : Steep Slope / Reinforced Soil / Geosynthetics / Geogrids / Geotextiles