

# Stabilization of Soft Clay from Bukit Rawi using Portland Composite Cement

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**Abstract.** One method for stabilizing soft clay is to mix it with cement. Portland composite cement (PCC) is a cement produced by grinding together portland slag and gypsum with one or more inorganic materials that is suitable for stabilization of soft soils. The purpose of this study was to mix soft clay from Bukit Rawi, Central Kalimantan with PCC, which was then tested for unconfined compression strength (UCS) and the California Bearing Ratio (CBR) to see if it could be used as a road subgrade. Soft soil from Bukit Rawi was mixed with PCC with percentages of 6%, 8%, 10%, and 12% on a dry weight basis. The mixture was tested by Proctor standard compaction to obtain the optimum moisture content and maximum dry density. At these optimum conditions, UCS and CBR tests were carried out. The findings reveal that adding PCC to Bukit Rawi soil enhances UCS and CBR, which were previously 3.47% of CBR and 0.67kg/cm<sup>2</sup> of UCS. The addition of PCC with a level of 2–3% is planned for field application, because it is considered capable of fulfilling the requirements as a subgrade layer with a CBR of 15%. Furthermore, 12 percent PCC is required in the combination as a foundation (minimum 20kg/cm<sup>2</sup> of UCS).