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COMPARATIVE STUDY OF DESIGN METHODS OF
FLEXIBLE PAVEMENT AROUND SHAH ALAM

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Synopsis

The thickness of flexible pavement depends mainly upon the strength of the subgrade soil, the strength of the pavement material and the amount of traffic (and its axial load distribution) that will use the road. Taking into account of both these factors, the most economical combination of pavement materials layer thickness that will be sufficient to provide satisfactory service over the design life of 20 years. In this project the strength of the road subgrades is assessed in terms of the California Bearing Ratio (CBR) and the pressure sustained per unit deformation of the subgrade soil and these are dependent on the type of soil, its density and its moisture content.

Samples of subgrade soil, sub-base and base course from the site selected in Shah Alam area were brought, and particle size analysis and CBR tests under soaked and unsoaked conditions were conducted. Plate bearing tests were also conducted on compacted subgrade and base course material on construction site.

There are many methods of pavement design. These can be broadly divided into their groups viz empirical, semi-empirical and theoretical. Pavement thickness have been designed by several empirical methods and these methods are the most commonly used in countries such as Malaysia, United Kingdom and the United States and compared with the two layer theory design method falling under the theoretical group.

The results obtained by the various methods, shows that the total pavement thickness by the empirical methods is approximately the same and the theoretical thickness is much smaller than the empirical one.

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