

Development of Expert System for Flexible Pavement Design in Sabah

ABSTRACT

Flexible pavement covers three quarters of the total local roads including Sabah. An ideal flexible pavement should have sufficient thickness to distribute the load to subgrade but not overdesign which cause extra cost. This research paper is conducted to develop an expert system for flexible pavement design in Sabah. It is aimed to reduce the human error during the design phase in order to ensure the road quality. Sabah is selected as the location as Sabah is developing state that involve many on-going highway and flyover construction. Besides, expert system is important in this modern era to replace manual calculation that waste time and energy. Information about flexible pavement is collected through literature review from previous research papers and from human experts who have years of experiences in road construction. The information obtained is analysed and coded using Visual Basic Net. programming language on Microsoft Visual Studio. An expert system for flexible pavement design in Sabah is developed with a given name, ES-FPD. For validation test, comparison is made between results obtained from ES-FPD and manual calculation by expert evaluator. The results show ES-FPD passed both evaluation test and validation test. ES-FPD is considered to be verified and can be used.