Design and Analysis of Bitumen Mix for Wearing Course

A project report presented in partial fulfillment of the requirements for the award of Advanced Diploma In Civil Engineering of Institut Teknologi MARA.

By

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SYNOPSIS

Bitumen mix is widely used in the design and construction of road pavement for Wearing Course. It has the properties to provide a smooth running surface on which the traffic runs beside the flexibility of construction techniques available and relatively cheaper in cost.

This experimental research project attempt to determine the optimum bitumen content for Wearing Course of road pavement based on Marshall test method.

In this method, the Marshall properties, such as density, air voids, voids filled with bitumen, stability and flow, are plotted against bitumen content. The range of bitumen contents that satisfy each of the properties are computed, and subsequently the range of bitumen content that satisfy all requirement is determined. The range of bitumen content used is between 4.5% to 7.0% The sample are prepared and tested, with the bitumen contents varies at 0.5% intervals.

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ii. Mohd. Yusop Shaarani, senior laboratory technician of Civil Engineering Department.

iii. Mohd Sakdon Abd Rahman, laboratory technician of Civil Engineering Department.

Last but not least, I would like to give words of appreaction to any reader reading my research and I am willing to accept any comment from readers which will helped me in my future reasearch. Thank you.

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1.0 INTRODUCTION

Wearing course in road pavement structure is a layer of material above the compacted base course. The essential components of the bitumenous wearing surface are the surface course and the binder course. The binder course is a transitional layer between the base course and wearing course . Figure 1.0 illurates the typical structural layers of flexible road pavement.

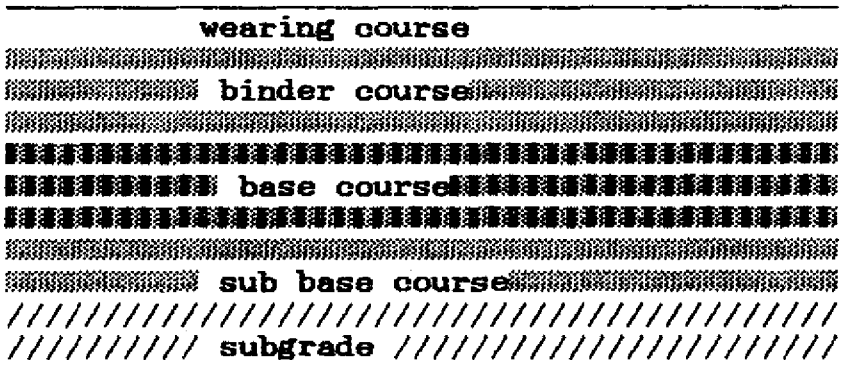

Figure 1.0 Typical cross-section of a Flexible Road Pavement Structure.