ABSTRACT

ANALYSIS OF SEMI FLEXIBLE PAVEMENT WITH ASBUTON AND TAFPACK-SUPER MODIFICATION ASPHALT

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The semi flexible pavement is a type of pavement with opened gradation based on porous asphalt, where the continuous pore in the mix composition is filled by mortar cement. The use of mortar cement can help performing a composite pavement which combines the strength of asphalt and cement as a bond material. The objective of using this composition is to increase the strength of asphalt from permanent deformation, cracks both in the wet condition and the temperature increment.

In this research, Asbuton modification asphalt and Tafpack-Super modification asphalt were applied with percentage 15% & 20% for Asbuton modification asphalt and 5% & 10% Tafpack-Super modification asphalt. This semi flexible pavement research were applied oil asphalt (A0), Asbuton modification asphalt 15% (A15), Asbuton modification asphalt 20% (A20), Tafpack-Super modification asphalt 5% (T5) and Tafpack-Super modification asphalt 10% (T10). The evaluation of the pavement performance was conducted by compression strength test, split tension test and Marshall stability test with temperature variation during test were 60°C, 70°C and 80°C.

Based on the research, the compression strength resulted from the compression strength test were fc = 15,80 kg/cm^2 for A0; fc = 21,10 kg/cm^2 for A15; fc = 21,90 kg/cm^2 for A20; fc = 16,10 kg/cm^2 for T5 and fc = 16,20 kg/cm^2 for T10; while results of split tension test were ftr = 1,16 kg/cm^2 for A0; ftr = 2,42 kg/cm^2 for A15; ftr = 1,83 kg/cm^2 for A20; ftr = 1,78 kg/cm^2 for T5 and ftr = 1,62 kg/cm^2 for T10. From the durability of mix composition point of view in Marshall stability test at temperature of 70°C and 80°C, the results showed that the Residual strength Index for Asbuton modification asphalt were more than 80% while for Tafpack-Super modification asphalt is less than 80% with a significant reduction in Marshall stability graph. From the various test results wich have been done in this research, it can be concluded that the Asbuton modification asphalt (15% & 20%)