

ABSTRACT

Recycled pavement requires rejuvenator as a return to the properties lost from RAP asphalt. One of the rejuvenator is WCO. The purpose of this study was to determine the effect of WCO as a rejuvenator on the characteristics of the RAP- new Material mixture with superpave gradations through Marshall, IRS, ITS, Cantabro and Permeability testing methods.

The study started by examining the properties of 60/70 pen asphalt, asphalt of RAP and aggregate, then determining the composition of the mixture between RAP and new materials to fit the superpave gradation, then determining the KAO value for each variation of rejuvenator that is 0%, 2,69%, 5,37%, 8,06% and 10,74% followed by testing of Marshall, ITS, IRS, Cantabro and Permeability, The standard that used for this research refered to Bina Marga (2010),

The results obtained from the tests showed the decrease of the value of stability following the increase of rejuvenator levels, in the content mixture 0% gave the best value of stability (2064.49 kg) and 10,74% content gave the smallest stability (1143.22 kg), whereas flow values increase with increasing levels of rejuvenator, the smallest flow values is 2,13 mm and the largest is 3,53 mm respectively on 0% and 10,74% content, this values suitable with Bina Marga standard, the MQ value become decrease while the increase of rejuvenator level. The IRS values have increase from 0% content level until 3% content level of rejuvenator and then decrease, on 0%, 8,06% and 10,74% rejuvenator level wasn't qualifyng >90%, while 2,69% and 5,37% rejuvenator content level qualifyng with 94,28% and 95% values. The ITS values decreased on 0%-2,69% rejuvenator in the amount of 16,25% and descrease on 5,37%-8,06% rejuvenator level with 19,14%. Cantabro values decrease for 0%, 2,69%, 5,37% with the amount of 5,94%, 3,61%, 3,29% and increase on 8,06% with amount of 3,96% and the decrease for 10,74% with 3,74%, all cantabro values qualifyng with spesification of <20%. The permeability of the mixture become to the poor - moderate-poor drainage category.

Key Word : Waste Cooking Oil, Reclaimed Asphalt Pavement (RAP), Superpave.