INTISARI

PENGARUH PEMANFAATAN PLASTIK LLDPE (*LINEAR LOW DENSITY POLY ETHYLENE)* SEBAGAI BAHAN TAMBAH PADA LAPISAN ASPAL BETON (AC-WC) TERHADAP KARAKTERISTIK *MARSHALL*

ARIF NURROCHMAD

15/384706/SV/09063

Pemanfaatan biji plastik murni dengan jenis LLDPE (*Linear Low Density Poly Ethylene*) sebagai bahan tambah pada campuran Laston AC-WC, diharapkan dapat meningkatkan nilai stabilitas, *density*, *flow*, VIM, VMA, VFA, dan MQ (*Marshall Quotient*).

Penelitian ini menggunakan aspal dari PT Pertamina Pen 60/70 dengan tambahan LLDPE (*Linear Low Density Poly Ethylene*) dengan kadar 0,5%, 1%, 1,5%, 2%, dan 2,5%. Berdasarkan persyaratan Bina Marga Divisi IV Tahun 2010, pada pengujian penetrasi, pengujian daktilitas, pengujian kehilangan berat, pengujian berat jenis, pengujian titik lembek, dan pengujian titik nyala dan titik bakar, hanya variasi 0,5%, 1%, 1,5%, dan 2% yang memenuhi persyaratan spesifikasi, dan digunakan kadar optimum 2% sebagai bahan campuran Laston AC Modifikasi. Hasil pengujian *Marshall* untuk mendapatkan nilai KAO, didapatkan hasil sebesar 5%. Sehingga pada campuran Laston AC Modifikasi yang digunakan adalah kadar aspal 5% dari berat campuran, dengan penambahan LLDPE (*Linear Low Density Poly Ethylene*) optimum sebesar 2%.

Hasil pengujian *Marshall* Laston AC Modifikasi KAO 5% dengan tambahan LLDPE 2% pada 3 buah benda uji, berdasarkan spesifikasi Bina Marga Divisi IV Tahun 2010, nilai stabilitas memenuhi spesifikasi minimal 1.000 kg dengan hasil nilai rata-rata 1.921,6 kg, nilai *flow* memenuhi spesifikasi maksimal 4 mm dengan hasil nilai rata-rata 3,9 mm, nilai VMA memenuhi spesifikasi minimal 15% dengan hasil nilai rata-rata 27,5%, dan nilai MQ (*Marshall Quotient*) memenuhi spesifikasi minimal 250 kg/mm dengan hasil nilai rata-rata 496,38 kg/mm, sedangkan untuk nilai VFA didapatkan nilai rata-rata 17,28% dari nilai minimal 65% dan nilai VIM didapatkan nilai rata-rata 22,69% dari nilai maksimal 5%, sehingga keduanya tidak memenuhi persyaratan.

Kata Kunci : LLDPE (*Linear Low Density Poly Ethylene*), Laston AC-WC, Laston AC Modifikasi, *Marshall*

ABSTRACT

EFFECT OF UTILIZATION LLDPE (LINEAR LOW DENSITY POLY ETHYLENE) PLASTIC AS ADDITIONAL MATERIALS ON CONCRETE ASPHALT LAYER (AC-WC) AGAINST MARSHALL CHARACTERISTICS

ARIF NURROCHMAD

15/384706/SV/09063

Utilization of pure plastic seeds with LLDPE (Linear Low Density Poly Ethylene) types as an additive to the mixture of Laston AC-WC, expected to increase the value of stability, density, flow, VIM, VMA, VFA, and MQ (Marshall Quotient).

This research uses asphalt from PT Pertamina Pen 60/70 with an additional LLDPE (Linear Low Density Poly Ethylene) with levels of variation 0,5%, 1%, 1,5%, 2%, dan 2,5%. Based on the requirements of Bina Marga Division IV Year 2010 , in penetration testing, ductility testing, weight loss testing, specific gravity testing, soft point testing, and flash point testing and burn point, only the level of variation 0,5%, 1%, 1,5%, and 2% are meets the requirements, and used a optimum level of 2% as a mixture of Laston AC Modification. The results of the Marshall test to get the KAO value, get a value of 5%. Thus the mixture of Laston AC Modification used was asphalt content of 5% by weight of the mixture, with the addition of LLDPE optimum of 2%.

The results of the Marshall test, Laston AC Modification of KAO 5% with additions LLDPE 2% on the 3 test pieces, based on specification of Bina Marga Division IV Year 2010, stability values meet the minimum specifications of 1.000 kg with the results of an average value of 1.921,6 kg, flow values meet the maximum specifications of 4 mm with an average value of 3,9 mm, VMA values meet the minimum specifications of 15% with an average value of 27,5%, and MQ (Marshall Quotient) meet the minimum specifications of 250 kg/mm with an average value of 496,38 kg/mm, while the VFA value obtained an average value of 17,28% of the minimum value of 65% and the VIM value obtained an average value of 22,69% of the maximum value of 5%, so that both don't meet the requirements.

Keyword : LLDPE (Linear Low Density Poly Ethylene), Laston AC-WC, Laston AC Modification, Marshall