ABSTRAK

Judul : Pemanfaatan Limbah Plastik PET (Poly Ethylene Terephthalate) Secagai Bahan Campuran Aspal AC-WC Menggunakan Metode Uji Marshall, Nama : Febriana Dewi Novriani, NIM : 41115210017, Dosen Pembimbing : Ir. Mumammad Isradi, MT., IPM. 2019

Pengelolaan sampah plastik di Indonesia hingga kini masih belum maksimal. Masalah kurangnya tempat pembuangan sampah hingga kesadaran masyarakat untuk membantu mengelola sampah domestik menjadi penyebab bertumpuknya sampah di tempat yang tidak semestinya.Tujuan dari penelitian ini adalah untuk mendapatkan nilai Kadar Aspal Optimum (KAO), mengetahui karakteristik aspal bila ditambahkan limbah plastik Poly Ethylene Terephthalate (PET). Pengujian dilakukan di Laboratorium Universitas Mercu Buana Kampus D. Aspal yang digunakan adalah aspal Shell dengan variasi kadar aspal yang digunakan adalah 4.5%, 5%, 5.5%, 6%, 6.5%, dan 7%. Kemudian kadar plastik yang digunakan adalah 1%, 2%, 4%, 5%, 6% dan 7%. Metode pencampuran agregat yang dilakukan menggunakan cara kering, yaitu plastik dan agregat dipanaskan sampai homogen, selanjutnya aspal dicampur dengan agregat dan plastik.

Dari pengujian Marshall, maka diperoleh nilai Kadar Aspal Optimum (KAO) sebesar 5,8 %, dengan perbandingan kadar 4.5%, 5%, 5.5%, 6%, 6.5%, dan 7%. Pada kadar 5.8 % diperoleh nilai VMA sebesar 15.45%, nilai VIM sebesar 4.57%, nilai VFA sebesar 76.90 %, nilai stabilitas sebesar 1191.000 Kg, nilai kelelehan/ flow sebesar 3.47 mm, dan nilai Kekakuan/ Marshall Quotient (MQ) sebesar 344.000 Kg/mm.

Kata kunci : *Poly Ethylene Terephthalate*, PET, Marshall, Limbah botol plastic.

ABSTRACT

Title: Utilization of PET (Poly Ethylene Terephthalate) Waste As Asphalt Mixing Materials AC-WC Using Marshall Test Method, Name: Febriana Dewi Novriani, NIM: 41115210017, Advisor: Ir. Mumammad Isradi, MT., IPM. 2019

Plastic waste management in Indonesia is still not optimal. The problem of the lack of landfills to the public's awareness to help manage domestic waste is the cause of the accumulation of waste in places that are not appropriate. The purpose of this study is to get the value of Optimum Asphalt Levels (KAO), determine the characteristics of asphalt when added Poly Ethylene Terephthalate (PET) plastic waste.The test was carried out at the Mercu Buana University Laboratory Campus D. The asphalt used was asphalt Shell with the variation of asphalt content used was 4.5%, 5%, 5.5%, 6%, 6.5%, and 7%. Then the plastic content used is 1%, 2%, 4%, 5%, 6% and 7%. Aggregate mixing method is carried out using a dry method, which is plastic and aggregate heated until homogeneous, then asphalt is mixed with aggregate and plastic

From the Marshall test, an Optimum Asphalt Level (KAO) value of 5.8% was obtained, with a ratio of 4.5%, 5%, 5.5%, 6%, 6.5%, and 7%. At 5.8%, a VMA value of 15.45% was obtained, a VIM value of 4.57%, a VFA value of 76.90%, a stability value of 1191,000 kg, a melt / flow value of 3.47 mm, and a Stiffness / Marshall Quotient (MQ) value of 344,000 kg / mm.

Keywords: Poly Ethylene Terephthalate, PET, Marshall, waste plastic bottles.