INTISARI

Peningkatan volume kendaraan mengakibatkan meningkatnya beban yang harus ditanggung oleh perkerasan jalan dan meningkatnya frekuensi pengulangan beban. Kondisi ini menyebabkan kerusakan jalan, terutama lapis aus (*wearing course*) semakin cepat, tidak sesuai dengan umur rencana yang ditetapkan.

Penelitian ini menggunakan *Ethylene Vinyl Acetate* (EVA) yang dicampur ke dalam aspal sebagai *binder* dalam gradasi campuran *Hot Rolled Sheet-Wearing Course* (HRS-WC) untuk dapat menanggulangi kerentanan lapis aus perkerasan terhadap kerusakan akibat beban yang meningkat. Dalam pembuatan benda uji, terdapat 5 variasi aspal yang digunakan dalam penelitian yaitu aspal Pertamina penetrasi 60/70, EVA-MA 1%, EVA-MA 2%, EVA-MA 3%, dan EVA-MA 4%. Pengujian dilakukan terhadap EVA-MA dan agregat untuk memastikan kualitasnya memenuhi spesifikasi. Pembuatan dan pengujian benda uji campuran HRS-WC dilakukan dengan menggunakan metode pengujian Marshall untuk mencari kadar aspal optimum masing-masing variasi. Setelah diperoleh kadar aspal optimum dari setiap variasi, dibuat benda uji dengan kadar aspal optimum untuk kemudian dilakukan pengujian perendaman selama 30 menit dan 24 jam.

Kadar aspal optimum untuk EVA-MA-0 hingga 5 berturut-turut adalah 6,1%; 5,7%; 5,65%; 5;35%; dan 5,35%. Berdasarkan kriteria stabilitas variasi terbaik adalah EVA-MA-4 dengan nilai stabilitas 1640,6 kg, durablitas dan fleksibilitas terbaik dimiliki oleh EVA-MA-2, dan berdasarkan kadar aspal optimum, variasi EVA optimum terdapat pada EVA-MA-3 dan EVA-MA-4. Nilai flow menjadi karakteristik yang tidak terpengaruh secara signifikan oleh penggunaan EVA-MA. Secara umum penambahan EVA dalam aspal memberikan hasil yang baik terhadap karakteristik campuran.

Kata kunci : *Hot Rolled Sheet-Wearing Course*, *Ethylene Vinyl Acetate*, Kadar Aspal Optimum, Marshall, Stabilitas, *Flow*, Marshall *Quotient*

ABSTRACT

The increasing of traffic volume increases amount of loading on the pavement also the load's repetition. This condition could lead into pavement failure, especially wearing course, faster than the service age planned.

This research used Ethylene Vinyl Acetate which was mixed into asphalt as binder in Hot Rolled Sheet-Wearing Course mix to overcome the risk of wearing course pavement failure due to increasing of traffic load. There are five types of asphalt used in this research, 60/70 penetration Pertamina asphalt and four types of modified asphalt that contains 1%, 2%, 3%, and 4% of Ethylene Vinyl Acetate. Tests were done to EVA-MA and aggregates that used in the research to make sure those materials' quality met the standards. Marshall method is used for making and testing processes of these specimens, also to determine the optimum asphalt content of the mixture. After that, more numbers of specimens were made according to the optimum asphalt content for 30 minutes and 24 hours water submersion test.

The optimum asphalt content for the first until fifth variation was 6,1%; 5,7%; 5,65%; 5,35%, and 5,35%. Based on stability, The optimum type was EVA-MA-4 with 1640,6 kg of stability value, the best durability and flexibility characteristic belonged to EVA-MA-2, and based on optimum asphalt content criteria, the optimum variation was EVA-MA-3 and EVA-MA-4. Marshall flow was the only character that not significantly affected by the EVA-MA. Generally, the addition of EVA into asphalt gave positive impact on the mixtures' characteristic.

Keywords : Hot Rolled Sheet-Wearing Course, Ethylene Vinyl Acetate, Optimum Asphalt Content, Marshall, Stability, Flow, Marshall Quotient