ABSTRAK

Judul : Identifikasi nilai kekuatan aspal dengan modifikasi campuran *additive* karet ban dan serat serabut kelapa pada campuran grade *AC-WC*, *Nama Penulis* : Galang Purnayudha , *NIM :* 41111010019 , Pembimbing : Ir. Alizar, MT , *Tahun* : 2017

Jalan sebagai prasarana transportasi sangat dibutuhkan untuk mendukung pembangunan nasional, baik di bidang ekonomi, sosial budaya, politik, dan pertahanan. Perkerasan jalan yang berkualitas diperlukan untuk menjamin keamanan dan kenyamanan para penggunanya, sehingga kegiatan distribusi barang dan jasa yang menggerakkan roda pembangunan nasional dapat berlangsung dengan lancar. Saat ini sebagai bahan pengikat didalam perkerasan jalan digunakan aspal penetrasi AC 60/70. Dari hasil pengamatan selama ini dilapangan penggunaan AC 60/70 pada perkerasan dalam jangka panjang mengalami pengerasan maka perlu penambahan additive. Salah satu untuk meningkatkan kinerja campuran aspal adalah memodifikasi campuran aspal, sehingga didapatkan perubahan sifat campuran aspal dengan menambahkan karet ban dan serat serabut kelapa. Penelitian ini bertujuan untuk mengetahui karakteristik campuan AC - WC pada kadar aspal optimum dengan penambahan variasi karet alam dan serat serabut kelapa 0%, 2%, 5%, 7%, 10% terhadap total perekat.

Tahapan pelaksanaan penelitian meliputi persiapan alat dan material, seperti agregat, aspal pen 60/70 ,karet ban dan serat serabut kelapa. Langkah berikutnya melakukan pengujian dan proporsi agregat untuk memperoleh agregat yang memenuhi spesifikasi, untuk aspal campuran karet ban dan serat serabut kelapa dilakukan pengujian berat jenis, penetrasi, daktilitas, titik nyala dan titik bakar. Selanjutnya berdasarkan proporsi agregat dan aspal campuran dicari nilai presentase kadar aspal dalam campuran dan dibuat rancangan benda uji. Setelah benda uji terbentuk kemudian melanjutkan pengujian Marshall.

Dengan hasil analisa didapatkan: nilai stabilitas 2%=92,23; 5%=84,52; 7%=78,99; 10%=76,35. Kadar tersebut secara keseluruhan memenuhi persyaratan uji daya tahan ikatan terhadap agregat. Dari pengujian Marshall didapatkan data Kadar Aspal Optimum (KAO) dari campuran AC-WC dengan tambahan karet ban dan serat serabut kelapa didapat pada campuran aspal dengan kadar 3,5%.

Kata kunci: Karet Ban dan Serat Serbut Kelapa, AC - WC, karakteristik AC — WC dengan Karet Ban dan Serat Serbut Kelapa.

ABSTRACT

Title: Identify asphalt strength value by modification of tire rubber additive mixture and coconut fiber on AC-WC grade mixture, Author name: Galang Purnayudha, NIM: 41111010019, Mentor Lecture: Ir. Alizar, MT, Year: 2018

Roads as transportation infrastructure are needed to support national development, both in the economic, socio-cultural, political, and defense sectors. High quality road pavement is needed to ensure the safety and comfort of its users, so that the activities of distribution of goods and services that move the wheel of national development can take place smoothly. Currently as a binder in road pavement is used asphalt penetration AC 60/70. From the results of the observation during the field use 60/70 AC on the pavement in the long term experiencing hardening then need additive additions. One to improve the performance of the asphalt mixture is to modify the asphalt mixture, so that there is a change in the nature of the asphalt mixture by adding rubber tires and coconut fiber fibers. The purpose of this research is to know the characteristics of AC-WC mixture on optimum asphalt content with addition of natural rubber and coconut fiber variation 0%, 2%, 5%, 7%, 10% to total adhesive.

Stages of research implementation include the preparation of tools and materials, such as aggregate, asphalt pen 60/70, rubber tires and fiber fibers. The next step performs the test and the aggregate proportion to obtain aggregate that meets the specifications, for asphalt mixture of rubber tire and fiber of coconut fiber is carried out by testing of specific gravity, penetration, ductility, flash point and burn point. Furthermore, based on the proportion of aggregate and asphalt mixture sought the value of percentage of asphalt content in the mixture and made the design of the specimen. After the specimen is formed then continue the Marshall test.

With result of analysis got: 2% stability value = 92,23; 5% = 84,52; 7% = 78.99; 10% = 76.35. These levels as a whole meet the requirements of bond resistance test against aggregate. From the Marshall test, the optimum asphalt content (KAO) from the AC-WC mixture with the addition of rubber tires and coconut fibers was obtained on the asphalt mixture of 3.5%.

Keywords: Rubber Tires and Coconut Fiber, AC - WC, AC characteristics - WC with Rubber Ban and Coconut Fiber.