

ABSTRAK

Salah satu jenis perkerasan yang cocok dengan daerah tropis seperti di Indonesia yaitu HRS karena mempunyai daya tahan yang baik terhadap keretakan akibat kelelahan dan tahan terhadap perubahan cuaca. Perkerasan HRS menjadi fleksibel sehingga menghasilkan jalan dengan kelenturan dan keawetan yang cukup baik serta tahan terhadap retak. Tetapi bisa mengakibatkan kerusakan berupa perubahan bentuk timbulnya alur plastis yang tidak dapat dihindari. Oleh karena itu perlu penambahan bahan *additive* yang diharapkan dapat menutupi kekurangan dari campuran HRS tersebut. Tujuan penelitian ini adalah mengetahui pengaruh serat PP terhadap karakteristik campuran HRS-WC dengan metode *Marshall*, ITS serta *Cantabro*.

Penelitian dimulai dari pemeriksaan sifat fisik material, kemudian menentukan nilai KAO dan dilanjutkan dengan pengujian *Marshall*, ITS dan *Cantabro*. Standar yang digunakan dalam penelitian yaitu mengacu pada spesifikasi Bina Marga 2010 Revisi 3.

Hasil penelitian menunjukkan bahwa terjadi peningkatan nilai stabilitas pada kadar serat PP 0,4%, kemudian turun untuk kadar serat PP 0,8% sebesar 18,538%. Nilai *flow* mengalami peningkatan seiring bertambahnya serat PP. Nilai MQ cenderung seperti stabilitas, meningkat pada kadar serat PP 0,4% dan turun pada kadar serat PP 0,8%. Nilai ITS mengalami peningkatan seiring bertambahnya kadar serat PP. Nilai *Cantabro Loss* mengalami penurunan seiring bertambahnya kadar serat PP. Campuran dengan kadar serat PP 0%, 0,4%, 0,8%, 1,2% dan 1,6% didapat persentase nilai kehilangan berat berturut-turut sebesar 20,441%, 9,992%, 7,669%, 8,861% dan 6,171% dimana spesifikasi Bina Marga 2010 mengenai syarat kehilangan berat yaitu $\leq 20\%$ sehingga semua variasi campuran memenuhi persyaratan.

Kata kunci: Serat *Polypropylene*, Bahan Tambah, *Hot Rolled Sheet-Wearing Course*

ABSTRACT

One type of pavement that is suitable for tropical regions such as Indonesia is HRS because it has good resistance to cracks due to fatigue and resistance to weather changes. HRS Pavement is flexible so it can produce a road with good flexibility and durability and cracking resistant. But it can cause damage in the form of changes in the appearance of plastic grooves that cannot be avoided. Therefore, it is necessary to add additive material which are expected to cover the lack of the HRS mixture. The purpose of this study was to determine the influence of PP fibers on the characteristics of HRS-WC mixtures using Marshall, ITS and Cantabro methods.

This research starts from examining the physical properties of the material, then determining KAO value and continued by testing Marshall, ITS and Cantabro. The standard used in the study refers to Bina Marga 2010 Revision 3 specification.

The results showed that there was an increase in the value of stability in PP fiber content of 0.4%, then decreased to 0.8% PP fiber content of 18.538%. The value of flow has increased with increasing PP fiber. MQ values tend to be like stability, increase in PP fiber content by 0.4% and decrease in PP fiber content by 0.8%. The value of ITS has increased along with the increase in PP fiber content. Cantabro Loss value decreases with increasing PP fiber content. Mixtures with PP fiber content of 0%, 0.4%, 0.8%, 1.2% and 1.6% obtained percentages of weight loss values of 20,441%, 9,992%, 7,669%, 8,861% and 6,171% respectively. where Bina Marga 2010 specification about the weight loss requirement is $\leq 20\%$ so that all variations of the mixture comply the requirements.

Keywords: *Polypropylene Fibers, Additive material, Hot Rolled Sheet-Wearing Course*