

INTISARI

Ketersediaan agregat yang memenuhi spesifikasi sering menjadi kendala yang dialami oleh para pelaksana konstruksi dilapangan. Penelitian ini dilakukan untuk menganalisis pengaruh penggunaan agregat lokal Kabupaten Fakfak pada perancangan campuran lapis permukaan perkerasan AC-WC berdasarkan metode *Marshall*. Analisa dilakukan dengan menggunakan agregat kasar lokal Kabupaten Fakfak yang dikombinasi dengan agregat Clereng pada campuran beton aspal. Jenis campuran dibagi menjadi lima variasi berdasarkan prosentasi agregat Fakfak yaitu 0%, 25%, 50%, 75% dan 100% terhadap berat komposisi agregat kasar dalam campuran. Perancangan campuran didasarkan pada metode *Marshall*. Hasil perancangan menunjukkan bahwa kadar aspal optimum (KAO) pada masing-masing variasi secara berurutan adalah 6,1%, 6,6%, 6,3 %, 6,0% dan 6,2%. Selanjutnya dilakukan analisis terhadap karakteristik campuran pada kondisi kadar aspal optimum (KAO). Hasil penelitian menunjukkan bahwa proses pencampuran kedua jenis agregat menghasilkan jenis campuran yang lebih stabil yaitu variasi campuran III (50% AF : 50% AC) dinilai dari karakteristik *Marshall*, *Marshall Immersion*, dan juga *Indirect Tensile Stregth*. Campuran Variasi III memiliki nilai Stabilitas 1271 kg pada perendaman standar; setelah proses perendaman selama ± 24 jam pada suhu 60⁰C, nilai stabilitas mengalami penurunan sebesar 30 kg dan menghasilkan nilai Indeks Kekuatan Sisa tertinggi yaitu 98%. Campuran ini juga mengasilkan nilai ITS Tertinggi yaitu sebesar 1284 kPa.

Kata kunci : Kabupaten Fakfak, Agregat lokal, AC-WC, Pengujian *Marshall*, *ITS*

Abstract

The availability of aggregates that meet specifications is often an obstacle experienced by construction implementers in the field. This study was conducted to analyze the effect of the use of local aggregate of Fakfak Regency to the mixture design of the AC-WC pavement surface layer based on the Marshall method. The analysis was carried out by utilizing the local aggregate of Fakfak Regency combined with the Clereng aggregate in the asphalt concrete mixture. The type of the mixture is divided into five variations, based on the Fakfak aggregate content, i.e. 0%, 25%, 50%, 75% and 100% by weight of coarse aggregate content in the mixtures. Mixture design was conducted based on the Marshall method. Results of mixture design of each variation show that the optimum asphalt content are 6.1%, 6.6%, 6.3%, 6% and 6.2% respectively of the mixture variation. Further characterization of the mixture at the optimum asphalt content (OAC) was then carried out. The results shows that the mixing process of the two types of aggregates resulted in a more stable type of mixture, namely variation III (50% AF: 50% AC) judged by the characteristics of Marshall, Marshall Immersion, and also Indirect Tensile Strength. Mixed Variation III has a stability value of 1271 kg in standard immersion; After the immersion process for ± 24 hours at temperature 60 °C, the stability value decreased by 30 kg and still shows the highest Retained Marshall Stability is 98%. This mixture also shows the highest ITS value, which is 1284kPa.

Keywords: *Fakfak Regency, Local aggregates, AC-WC, Marshall Test, ITS*