

## ABSTRAK

**Dina Wahyuni Nst : Analisis Karakteristik Aspal Modifikasi Penambahan Limbah Botol Plastik *Polyethylene Terephthalate* (PET) Dan Penambahan Abu Cangkang Kelapa Sawit Sebagai *Filler* Terhadap Karakteristik *Marshall*. Skripsi. Fakultas Teknik Universitas Negeri Medan. 2022.**

Jalan merupakan unsur paling penting dalam perekonomian dan pembangunan suatu negara maka dari itu diperlukan perencanaan dan pembangunan yang matang agar menadapatkan kualitas jalan yang baik, aman, serta murah. Penelitian ini meneliti mengenai pengaruh tambahan *filler* abu cangkang kelapa sawit dan penambahan plastik PET kedalam aspal dengan tujuan untuk mengurangi limbah dan agar dapat meningkatkan kualitas jalan. Penelitian ini menguji terhadap karakteristik *marshall* dan menggunakan metode *west* proses atau cara basah. Nilai Kadar Aspal Optimum pada penelitian ini adalah 5,47 %. Pengujian yang dilakukan dengan variasi 1 (2% PET, 0% abu cangkang sawit), Variasi 2 (2% PET, 3% abu cangkang sawit), variasi 3 (2% PET, 3% abu cangkang sawit), dan variasi 4 (2% PET, 4% abu cangkang sawit). Berdasarkan hasil pengujian didapat nilai *stabilitas* maksimum pada variasi 4 dengan sebesar 1459 kg ini menunjukkan kenaikan dari hasil *marshall* sebelumnya tanpa penambahan PET maupun abu cangkang kelapa sawit yaitu sebesar 995 kg. Berdasarkan hasil yang diperoleh menunjukkan campuran aspal dengan penambahan plastik dan abu cangkang kelapa sawit mempunyai karakteristik yang lebih baik dibandingkan dengan tanpa tambahan plastik PET dan abu cangkang kelapa sawit.

Kata kunci : Abu Cangkang Kelapa Sawit, Aspal, *Marshall*, Plastik PET

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## ABSTRACT

**Dina Wahyuni Nst : Analysis of the Characteristics of Modified Asphalt Addition of Polyethylene Terephthalate (PET) Plastic Bottle Waste And The Addition Of Palm Oil Shell Ash As A Filler To The Marshall Characteristics. Thesis. Faculty of Engineering, State University of Medan. 2022.**

Roads are the most important element in the economy and development of a country, therefore it requires careful planning and development in order to obtain good quality, safe and inexpensive roads. This study investigates the influence of the addition of palm shell ash filler and the addition of PET plastic to asphalt with the aim of reducing waste and in order to improve road quality. This research examines the Marshall characteristics and uses the western process method or the wet method. The optimum asphalt content value in this study was 5.47%. Tests were carried out with variation 1 (2% PET, 0% palm shell ash), variation 2 (2% PET, 3% palm shell ash), variation 3 (2% PET, 3% palm shell ash), and variation 4 (2% PET, 4% palm shell ash). Based on the test results, the maximum stability value was obtained in variation 4 with 1459 kg. This shows an increase in the marshall yield without the addition of PET or palm shell ash, which is 995 kg. Based on the results obtained, the asphalt mixture with the addition of plastic and palm shell ash had better characteristics than without the addition of PET plastic and palm shell ash.

Keywords: Asphalt, Marshall, Palm Oil Shell Ash, PET Plastic

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