

**PENGARUH *FILLER* ABU AMPAS TEBU DENGAN LIMBAH BETON
SEBAGAI PENGGANTI AGREGAT KASAR TERHADAP
KARAKTERISTIK *MARSHALL* PADA CAMPURAN ASPAL BETON**

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ABSTRAK

Penelitian ini bertujuan untuk (1) mengetahui pengaruh penambahan *filler* abu ampas tebu dengan limbah beton sebagai pengganti agregat kasar terhadap karakteristik *Marshall* pada campuran aspal beton, ditinjau dari nilai kepadatan (density), VIM (void in mix), VMA (void in mineral aggregate), VFA (void filled with asphalt), stabilitas, *flow* (pelelehan), dan MQ (marshall quotient). (2) Serta mengetahui kesesuaian hasil pengujian *Marshall* dengan *filler* abu ampas tebu dengan persyaratan Bina Marga 2010.

Penelitian ini menggunakan metode pengujian eksperimen, yaitu metode yang dilakukan dengan membuat benda uji sesuai dengan standar dan ketentuan yang ada. Serta penggunaan abu ampas tebu sebagai bahan pengisi (*filler*) dan limbah beton sebagai pengganti agregat kasar dalam pembuatan campuran aspal. Dengan variasi persentase yang ditentukan atas pertimbangan dari referensi penelitian lainnya. Pada penelitian ini menggunakan penambahan *filler* abu ampas tebu dengan kadar 0%, 5%, 10%, dan 15%. Dengan masing-masing perlakuan dibuat 3 sampel benda uji. Tahapan pengujian dalam penelitian ini meliputi pengujian karakteristik aspal, pengujian karakteristik material (agregat kasar, agregat halus, dan *filler* abu ampas tebu), serta pengujian karakteristik *Marshall*.

Hasil pengujian campuran aspal beton dengan penambahan *filler* abu ampas tebu dan limbah aspal beton sebagai pengganti agregat kasar didapatkan (1) nilai rerata: kepadatan (density) 2,16 gr/cc, VIM (void in mix) 11,56%, VMA (void in mineral aggregate) 17,39%, VFA (void filled with asphalt) 33,91%, stabilitas 3263,92 kg, *flow* (pelelehan) 2,03 mm, MQ (marshall quotient) 2353,70 kg/mm. (2) Serta dapat disimpulkan bahwa benda uji hasil pengujian sesuai dengan persyaratan Bina Marga 2010

Kata kunci: Abu ampas tebu, Limbah beton, *Marshall*

**INFLUENCE OF BAGASSE FILLER WITH CONCRETE WASTE AS A
REPLACEMENT OF RUDE AGGREGATES ON MARSHALL CHARACTERISTICS
IN ASPHALT CONCRETE**

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ABSTRACT

This study aims to (1) determine the effect of adding bagasse ash filler with concrete waste as a coarse aggregate substitute to Marshall characteristics on asphalt concrete mixes, in terms of density, VIM (void in mix), VMA (voids in mineral aggregates), VFA (void filled with asphalt), stability, flow (melting), and MQ (Marshall quotient). (2) As well as knowing the suitability of the Marshall test results with bagasse ash filler with the requirements of Bina Marga 2010.

This study uses the experimental testing method, namely the method carried out by making test objects in accordance with existing standards and conditions. And the use of bagasse ash as filler and concrete waste as a substitute for coarse aggregate in the manufacture of asphalt mixture. With variations in the percentage determined by consideration of other research references. In this study using the addition of bagasse ash filler with levels of 0%, 5%, 10%, and 15%. With each treatment 3 samples were made. The stages of testing in this study include testing the characteristics of asphalt, testing material characteristics (coarse aggregate, fine aggregate, and bagasse ash filler), and testing Marshall characteristics.

The results of testing the concrete asphalt mixture with the addition of bagasse ash filler and concrete asphalt waste as coarse aggregate substitutes were obtained (1) average value: 2.16 gr / cc density, VIM (void in mix) 11.56%, VMA (void in mineral aggregate) 17.39%, VFA (void filled with asphalt) 33.91%, stability 3263.92 kg, flow (melting) 2.03 mm, MQ (Marshall quotient) 2353.70 kg / mm. (2) As well as it can be concluded that the test object of the test results is in accordance with the requirements of Bina Marga 2010.

Key words: Bagasse ash, Concrete waste, Marshall