

INTERNATIONAL SYMPOSIUM PAPER

**MARSHALL MIXED CHARACTERISTICS AC-BC  
USING BUTON GRANULAR ASPHALT (BGA) 15/20  
AS MATERIAL COMPOSITION OF FINE AGGREGATE**

PRESENTED AT:

**The 15<sup>th</sup> International Symposium of  
Indonesian Inter University Transportation Studies Forum**

**THEME: "ENHANCING TRANSPORTATION RESEARCH  
AND TECHNOLOGY TO IMPROVE THE PERFORMANCE OF  
FREIGHT TRANSPORTATION AND LOGISTICS"**

The School of Land Transportation - Bekasi, November 24<sup>th</sup>, 2012

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ORGANIZER BY :



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**Re: Paper Acceptance for the 15<sup>th</sup> FSTPT International Symposium**

Dear Sir/Madam,

Please kindly let me inform you that the following paper:

**MARSHALL MIXED CHARACTERISTICS AC-BC USING BUTON GRANULAR ASPHALT (BGA) 15/20 AS MATERIAL COMPOSITION OF FINE AGGREGATE**

- 1) Nunung Nuring Hayati (Civil Engineering Departement, Engineering Faculty, Jember University)
- 2) Sonya Sulistyono (Civil Engineering Departement, Engineering Faculty, Jember University)
- 3) Yorika Pratidina (Civil Engineering Departement, Engineering Faculty, Jember University)

is accepted for presentation in the 15<sup>th</sup> FSTPT International Symposium to be held in School of Land Transport (STTD), Bekasi, Indonesia on November 24, 2012. Furthermore, presentation schedule will be announced in [www.fstpt.or.id](http://www.fstpt.or.id) and [www.fstpt-sttd.org](http://www.fstpt-sttd.org) on November 10, 2012.

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Thank you for your kind attention.

Yours Faithfully,

  
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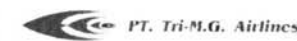
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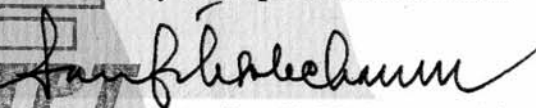
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# MARSHALL MIXED CHARACTERISTICS AC-BC USING BUTON GRANULAR ASPHALT (BGA) 15/20 AS MATERIAL COMPOSITION OF FINE AGGREGATE

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## ABSTRACT

Indonesia has developed an asbuton product that is BGA (Buton Granular Asphalt). BGA can be used in hot mix asphalt and cold mix asphalt. BGA is used as part of the asphalt material that can reduce the use of fine aggregate/sand. However, the use of BGA is still not optimal. The study was conducted to determine the use of the mixture to produce a good composition. The variation percentage of BGA is used 20%, 40%, 60%, 80% and 100% with the addition of bitumen 4.5%, 5%, 5.5%, 6%, 6.5% and 7%. The results of this study showed the addition of BGA can increase stability and decrease the value of AC-BC mixture flow. The best composition is the use of BGA by 40% with the addition of asphalt 5.5% and 6%.

*Key words: BGA (Buton Granular Asphalt), characteristic of Marshall, a mixture of AC-BC*

## INTRODUCTION

Currently in Indonesia has developed a new asbuton product that is BGA (Buton Granular Asphalt). Buton asphalt inventories achieve  $\pm$  650 million tons and still have not optimized their use in Indonesia. To reduce the use of imports asphalt, the government use Buton asphalt in the construction of national roads. Quality BGA has been implemented and tested on the hot mix, warm mix and cold mix. The results showed that the use of BGA on the hot mix has a lower quality than asphalt mix with asphalt pen 60/70, make it suitable for low traffic street. While the cool mix, BGA has the same quality with cold mix asphalt emulsion and suitable for low traffic street. The use of BGA as an adding ingredient to the mix asphalt concrete indicate that the BGA affect the characteristics of the Marshall mix asphalt concrete (Varudin, 2007). Meanwhile, according to Prawira, etc. (2008) showed that the use of BGA as a substitute ingredient for fine aggregate in the mix of HRS-WC that BGA can increase the value of the stability and durability of the mixture HRS-WC.

This research tried to investigate the use of BGA type 15/20 on a mix of AC-BC. BGA is used as a mixture of fine aggregate mix AC-BC. The results will be known behavioral characteristics of Marshall used BGA, and obtained the best mixtures to produce a quality mix. The research was done as an effort to maximize the potential of Buton asphalt that in Indonesia and can be used as input for the construction of road pavement in Indonesia.