

# Sustainable Civil Engineering

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## Study of influence of using various types of filler on the characteristics of laboratory mixed AC-BC and AC-WC 2010 revised general specification version III

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Filler is a substance that serves as a charge cavities of an asphalt mixture. Kinds of filler that can be used are: stone dust, lime extinguished, portland cement (PC), etc. A small percentage of the filler for asphalt mixture, does not mean that does not have a great effect on the properties of Marshall. The eruption of mount Sinabung some time ago at the Tanah Karo, North Sumatra lot leaving the material shed from the eruptions. Then there are around limestone hill in Sipoholon, North Tapanuli Regency, North Sumatera Province too many underutilized by society around. This paper attempts to compare The filler test result from Authors with volcanic ash and lime ash against rock ash as filler AC-BC by researchers previously with only using volcanic ash against rock ash as filler in AC-WC. The goal from this paper is to know if the authors make a volcano ash and lime ash as a filler but this use in AC-WC, would be same with the result Marshall test requirement from researchers previously. In the step the authors collected result Marshall test from researches previously. Then Compare with the authors research result, with provision mix parameter such as compare The optimum asphalt content from each. Then compare from the result percentage Marshall test from authors which make a percentage filler from 0%-6% and previously researches from 0%-4%. The result from requirement Marshall test from percentage Marshall AC-BC from 0-6%, The Authors earn 4% while previous research AC-WC earn 3% which eligible from Marshall test requirement. It can be concluded that make differences mix formula with Volcano ash against Lime ash or without fly sand from percentage Marshall test requirement. Then The layer is same with previous researchers is AC-WC. It would be same result by previously researchers where the result is 3% from percentage Marshall test requirement from 0%-6%. It could be happen because from gradation mixing factor from specification requirement from Highway department in Indonesia.

### Biography

Muhammad Reza A Maha. He was born in DKI Jakarta, August 26 1993 then has completed his Bachelor at the age of 22 years from North Sumatera University. Now He is Continuing and still study Magister program at Highway Engineering and Development Institute Technology of Bandung. He is a graduate student in Institute of Technology Bandung. He has just now published the research to upgrade his skills in laboratory research for Highway engineering of Material, then look some experience such as make a consultation with a lecturer Dr. Ir. Harmein Rahman, MT. from Institute of Technology Bandung. Because Dr. Ir. Harmein Rahman, Mt., has good skills on Highway Engineering especially in Pavement Material. He want to completed requirement for study in Doctoral program in Indonesia or foreign University. So certainly I have some research in order to produce the best results for society.

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