**HALAMAN PENGESAHAN SKRIPSI**

**PERBANDINGAN PENGGUNAAN BATU PECAH SIRTU DAN KERIKIL SEBAGAI MATERIAL PERKERASAN PADA CAMPURAN ASPAL BETON**

**Oleh**

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## HALAMAN PERSETUJUAN PEMBIMBING SKRIPSI

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**Oleh**

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# INTISARI

Ibrahim Guni, 2018. Perbandingan Penggunaan Batu Pecah Sirtu Dan Kerikil Sebagai Material Perkerasan Pada Campuran Aspal Beton. Skripsi, Program Studi S1 Teknik Sipil, Jurusan Teknik Sipil, Fakultas Teknik, Universitas Negeri Gorontalo. Pembimbing I Ir. Fakih Husnan, M.M., M.T. Pembimbing II Fadly Achmad, S.T., M.Eng.

Penelitian ini bertujuan untuk mengetahui perbandingan karakteristik Marshall dengan menggunakan material alami (sirtu, kerikil) dan material buatan (batu pecah), ditinjau dari nilai Stabilitas Marshall, Kepadatan (*Density*), *Flow* (kelelehan), VIM (*Void In Mix*), VMA (*Void In Mineral Agregate*), VFA (*Void Filled Asphalt*) dan *Mashall Quotient* (MQ).

Metode penelitian ini berbasis eksperimen di Laboratorium Jalan Raya Jurusan Teknik Sipil, Fakultas Teknik, Universitas Negeri Gorontalo. Komponen pengujian utama adalah pengujian karakteristik campuran aspal beton dengan menggunakan material perkerasan berupa agregat alami dan agregat buatan. Jenis pengujian laboratorium yang dilakukan adalah pemeriksaan properti material, pemeriksaan aspal AC 60/70, pembuatan benda uji campuran beton aspal dan dilanjutkan dengan pengujian Marshall.

Berdasarkan hasil pengujian kinerja Marshall, dari tiga jenis material yang digunakan, campuran aspal beton menggunakan material batu pecah memberikan sifat Marshall yang memenuhi spesifikasi dibandingkan menggunakan material alami. Dari hasil pengujian Marshall diperoleh nilai kepadatan batu pecah 2,36 gr/cm³, sirtu 2,30 gr/cm³, kerikil 2,26 gr/cm³. Nilai stabilitas batu pecah 1962,98 kg, sirtu 703,05 kg, kerikil 583,68 kg. Nilai *Flow* batu pecah 3,30 mm, sirtu 2,34 mm, kerikil 1,48 mm. Nilai VIM batu pecah 4,54%, sirtu 5,62%, kerikil 8,10%. Nilai VMA batu pecah 15,28%, sirtu 16,17%, kerikil 18,48%. Nilai VFA batu pecah 70,31%, sirtu 65,23%, kerikil 56,16%. Nilai MQ batu pecah 594,85 kg, sirtu 300,54 kg, kerikil 394,38 kg.

Kata kunci: Batu Pecah, Sirtu, Kerikil

## *ABSTRACT*

*Ibrahim Guni, 2018. Comparison between the Using of Crushed Stone, Pitrun and Gravel as Pavement Material in Concrete Asphalt Mixture. Skripsi, Bachelor Study Program of Civil Engineering, Department of Civil Engineering, State University of Gorontalo. The principal supervisor is Fakih Husnan and the Co-supervisor is Fadly Achmad.*

*The study is aimed at investigating the difference between Marshall characteristics using materials crushed stone, pitrun and gravel which is observed from Marshall stability value such as density, flow, Void In Mix, Void In Mineral Agregate, Void Filled Asphalt and Marshall Quotient.*

*It applies the experimental the method. The experiment is conducted at Laboratorium Jalan Raya (Jalan Raya Laboratory) of the Department of Civil Engineering, Faculty of Engineering, State University of Gorontalo. The tested component is the characteristics test of concrete asphalt mixture using pavement materials that consist of crushed stone, pitrun and gravel. The types of laboratory tests carried out were checking material properties, checking AC 60/70 asphalt, making asphalt concrete mix test specimens and continued with Marshall testing.*

*Based on Marshall test, out of the there types of material used, the crushed stone has provided the Marshall characteristics that meets the fitted on specification. The Marshall test reveals that the density of crushed stone is 2,36 gr/cm³, the pitrun is 2,30 gr/cm³, and gravel is 2,26 gr/cm³. The stability value of the crushed stone is 1962,98 kg, the pitrun is 703,05 kg, and gravel is 583,68 kg. The Flow value of the crushed stone is 3,30 mm, the pitrun is 2,34 mm, and gravel is 1,48 mm. VIM value of the crusher stone is 4,54%, pitrun is 5,64%, and gravel is 8,10%. VMA value of crushed stone is 15,28%, pitrun is 16,17%, and gravel is 18,48%. VFA value of the crushed stone is 70,31%, pitrun is 65,23%, and gravel is 56,16%. Finally, the MQ value of the crushed stone is 594,85 kg, pitrun is 300,54 kg, and gravel is 394,38 kg.*



*Keywords: Crushed Stone, Pitrun and Gravel*