

INTISARI

Penelitian ini dilakukan dengan tujuan untuk mengetahui potensi pemanfaatan batu vulkanik Desa Salap sebagai bahan pengganti agregat dalam campuran *Asphalt Concrete Wearing Course* dan *Asphalt Concrete Binder Course*.

Pengujian yang dilakukan adalah dengan menggunakan metode Marshall, uji Marshall Immersion, uji kepadatan mutlak (*percentage refusal density*) dan uji kuat tarik tidak langsung (*indirect tensile strength*).

Hasil pengujian didapat KAO untuk campuran AC-WC adalah 6,13% dan campuran AC-BC adalah 5,60%. Untuk pengujian Marshall Immersion campuran AC-WC rendaman 0,5 jam didapat nilai stabilitas = 1240,50 kg, *flow* = 3,9 mm, MQ = 318,57 kg/mm dan rendaman 24 jam didapat nilai stabilitas = 1136,45%, *flow* = 4,2 mm, MQ = 270,58 kg/mm sehingga didapat nilai IKS = 91,61%. Sedangkan pada campuran AC-BC rendaman 0,5 jam didapat nilai stabilitas = 1187,60 kg, *flow* = 3,9 mm, MQ = 307,31 kg/mm dan rendaman 24 jam nilai stabilitas = 1073,10 kg, *flow* = 4,0 mm, MQ = 262,83 kg/mm dengan nilai IKS = 90,36%. Hasil pengujian PRD campuran AC-WC didapatkan nilai VITM sebesar 2,09%, 3,84% dan 2,93%. Sedangkan campuran AC-BC nilai VITM sebesar 4,93%, 4,16%, 2,42%. Hasil pengujian ITS campuran AC-WC unconditioned = 728,85 kPa dan conditioned = 676,20 kPa, sehingga nilai RKT = 92,78%. Sedangkan campuran AC-BC unconditioned = 695,89 kPa dan conditioned = 660,67 kPa, sehingga nilai RKT = 94,94%. Bila dibandingkan dengan Spesifikasi Umum Bina Marga 2010 revisi 3 (2014), maka batu dari Desa Salap Kabupaten Malinau dapat digunakan dalam perancangan campuran AC-WC dan AC-BC.

Kata kunci: AC-WC, AC-BC, Marshall Immersion, PRD, ITS

ABSTRACT

This research was conducted with the aim to know the potential utilization of volcanic stone of Desa Salap as an aggregate replacement material in Asphalt Concrete Wearing Course mix and Asphalt Concrete Binder Course.

Tests conducted are using Marshall method, Marshall Immersion test, absolute density test and indirect tensile strength test.

Based on the test, it was found for AC-WC mixture was 6.13% and the AC-BC mixture was 5.60%. For the test of Marshall Immersion, the mixture of AC-WC of 0.5 hour was obtained stability value = 1240,50 kg, flow = 3,9 mm, MQ = 318,57 kg / mm and 24 hours immersion was obtained stability value = 1136,45% Flow = 4.2 mm, MQ = 270.58 kg / mm so that the value obtained IKS = 91.61%. Whereas at AC-BC mixture, 0.5 hour immersion was obtained stability value = 1187,60 kg, flow = 3,9 mm, MQ = 307,31 kg / mm and immersion 24 hours stability value = 1073,10 kg, flow = 4, 0 mm, MQ = 262,83 kg / mm with value of IKS = 90,36%. The result of PRD test of AC-WC mixture is obtained VITM value of 2.09%, 3.84% and 2.93%. While the mixture of AC-BC VITM value of 4.93%, 4.16%, 2.42%. Result of ITS test of unconditioned AC-WC mixture = 728,85 kPa and conditioned = 676,20 kPa, so RKT value = 92,78%. While the mixture of AC-BC unconditioned = 695,89 kPa and conditioned = 660,67 kPa, so the value of RKT = 94,94%. If they are compared to the Revised 3 (2014) General Specification of Revised 3 (2014), the Malinau District Salap Stone can be used to the design of mixtures of AC-WC and AC-BC.

Keywords: AC-WC, AC-BC, Marshall Immersion, PRD, ITS.