

INTISARI

Kabupaten Nunukan memiliki potensi untuk bahan galian material konstruksi yang melimpah khususnya batuan sehingga bisa digunakan sebagai bahan material konstruksi. Di daerah Kecamatan Nunukan tersebut biasanya agregat yang digunakan adalah agregat yang berasal dari Tawau, karena mutunya lebih bagus serta ketersediaan bahannya cukup banyak. Tujuan penelitian ini adalah untuk mengetahui potensi pemanfaatan agregat Desa Tanjung Batu Kabupaten Nunukan untuk digunakan sebagai bahan material penyusun perkerasan campuran aspal panas AC-BC dengan menggunakan aspal penetrasi 60/70, melalui pengujian karakteristik dan sifat teknisnya.

Pengujian bahan / material yang dilakukan antara lain: uji karakteristik agregat yang meliputi (analisis saringan, keausan agregat kasar, berat jenis dan penyerapan agregat kasar, soudness tes, partikel pipih, lonjong, kelekatan agregat kasar terhadap aspal, dan agregat halus, berat jenis agregat halus, nilai setara pasir, berat jenis Filler). Pengujian yang dilakukan dalam penelitian ini adalah uji Marshall dan *Indirect tensile strenght*.

Dari penelitian didapat kadar aspal optimum untuk campuran AC-BC asal Nunukan adalah 6,7% dan campuran AC-BC 6,10%. Untuk pengujian *Marshall Immersion* campuran AC-BC asal Nunukan rendaman 0,5 jam didapat nilai stabilitas 1567 kg, flow = 3,73mm, MQ = 429,44 kg/mm dan rendaman 24 jam sabilitas =1420 kg, flow = 4,07mm, MQ = 341,85kg/mm, sehingga didapat nilai IKS = 90,63%. Sedangkan untuk pengujian *Marshall Immersion* campuran AC-BC asal Tawau rendaman 0,5 jam nilai stabilitas 1967 kg, flow =3,75, MQ = 524,78 dan rendaman 24 jam stabilitas =1503, flow = 3,75, MQ = 395,41. Hasil pengujian ITS campuran AC-BC Nunukan *unconditioned* = 719,70 kpa dan *conditioned* = 658,28 kpa, kemudian nilai RKT = 91,47. Sedangkan campuran AC-BC Asal Tawau Nunukan *unconditioned* = 660,96 kpa dan *conditioned* = 639,58 kpa kemudian nilai RKT = 96,77. Jika megacu pada Spesifikasi Umum Bina Marga 2010 revisi 3 (2014) maka Agregat Kasar Kabupaten Nunukan dapat digunakan dalam perancangan campuran *Asphalt Concerete Binder Course* (AC-BC).

Kata Kunci : Batu split Nunukan, Batu split Tawau sifat dan Karakteristik Campuran AC-BC, Marshall Immersion, ITS.

ABSTRACT

Nunukan District has the potential for excavation materials of abundant construction materials, especially rocks that can be used as construction materials, in the District of Nunukan is usually aggregate used is aggregate from Tawau, because the quality is better and the availability of the material quite a lot. The purpose of this research is to know the potential of aggregate utilization of Tanjung Batu Village of Nunukan Regency to be used as material of pavement constituents, by testing therefore to know the characteristic and technical nature.

Testing of the material / materials carried out include: Test of aggregate characteristic including (filter analysis, rough aggregate wear, specific gravity and rough aggregate absorption, test soudness, flat particles, oval, crude aggregate viscosity to asphalt, and fine aggregate, specific gravity of fine aggregate, sand equivalent value, Filler type weight, sand equivalent value). Tests conducted this study using marshall test and Indirect tensile strenght.

Testing of materials / materials in the process are: Characteristic test (analysis Result of test, didapt of optimum asphalt content for AC-BC mixture from Nunukan is 6.7%, and AC-BC 6.10% mixture) For Marshall Immersion mixture AC-BC from Nunukan marinade of 0.5 hour got stability value 1567 kg, flow = 3.73mm, MQ = 429.44 kg / mm and 24 hours sfa = 2420 sflow, flow = 4.07mm, MQ = 341.85kg / mm, so that obtained value of IKS = 90.63% while for testing of Marshall Immersion mix AC - BC from Tawau marine 0,5 hour stability value 1967 kg, flow = 3.75, MQ = 524.78, and immersion 24 hour stability = 1503 flow = 3.75 MQ = 395.41 The result of ITS test of mixture of AC-BC Nunukan unconditioned = 719,70 Kpa and Conditioned = 658.28 Kpa, then RKT = 91.47 While mix AC-BC Origin Tawau Nunukan unconditioned = 660.96 Kpa and Conditioned = 639.58 Kpa, then RKT value = 96.77 If directed to General Specification of Bina Marga 2010 revision 3 (2014) mak a Rough Aggregate of Nunukan Regency can be used in the design of the Asphalt Concerete Binder Course (AC-BC) mixture.

Keywords: Nunukan split stone, Tawau split stone, properties and mixed characteristics AC-BC, Marshall Immersion, Indirect Tensile Strenght (ITS)