

## ABSTRAK

Tanah pasir merupakan jenis tanah non kohesif (*cohesionless soil*). Tanah non kohesif mempunyai sifat antar butiran lepas (*loose*), hal ini ditunjukkan dengan butiran tanah yang akan terpisah-pisah apabila dikeringkan. Penelitian ini bertujuan untuk mengetahui sifat fisik dan sifat mekanik sampel tanah dan mengetahui pengaruh penambahan Aspal Cair dengan variasi tertentu pada sampel tanah yang berasal dari daerah Pantai Gelagah.

Pengujian yang dilakukan pada penelitian adalah serangkaian pengujian sifat fisik tanah dan pengujian sifat mekanik tanah yang berupa pengujian *California Bearing Ratio (CBR)* dan Geser Langsung pada tanah asli dan tanah asli yang telah distabilisasi menggunakan aspal MC<sub>60-70</sub> dengan variasi 1%, 3%, dan 5%. Pengujian *California Bearing Ratio (CBR)* dilakukan dengan *CBR* tanpa rendaman diperam selama 1, 3, 7 hari, sedangkan *CBR* rendaman dilakukan perendaman selama 4 hari. Pengujian kuat geser tanah dilakukan dengan diperam selama 1, 3, dan 7 hari.

Hasil pengujian *CBR* tanah asli sebesar 19,437% pada kondisi *unsoaked* dan *CBR* tanah asli kondisi *soaked* sebesar 17,453%, sedangkan hasil pengujian *CBR* dengan bahan tambah didapatkan nilai tertinggi *CBR* kondisi *unsoaked* pada penambahan Aspal Cair 1% pada pemeraman 7 hari yaitu sebesar 21,979%, sedangkan nilai tertinggi *CBR* kondisi *soaked* pada penambahan Aspal Cair 1% sebesar 18,910%. Nilai Daya Dukung Tanah (DDT) dari nilai *CBR* tertinggi yaitu 21,979% didapatkan nilai DDT yaitu 7,40 kg/cm<sup>2</sup>. Hasil pengujian geser langsung tanah asli didapatkan nilai kohesi, sudut geser dalam, dan kuat geser tanah asli sebesar 0,114 kg/cm<sup>2</sup>, 44,957°, dan 1,160 kg/cm<sup>2</sup>, sedangkan hasil pengujian geser langsung tanah dengan bahan tambah tertinggi didapatkan nilai kohesi, sudut geser dalam, dan kuat geser tanah tertinggi pada variasi sampel tanah asli dengan kadar Aspal Cair 1% pada pemeraman 7 hari yaitu sebesar 0,2288 kg/cm<sup>2</sup>, 49,418°, dan 1,467 kg/cm<sup>2</sup>.

**Kata Kunci** : Tanah Pasir, Stabilisasi, *CBR*, Aspal Cair, Kuat Geser Tanah, Daya Dukung Tanah

## **ABSTRACT**

*Soil sand is a cohesionless soil type. Non-cohesive soils have loose properties, this is indicated by soil grains which will be separated when dried. This study aims to determine the physical and mechanical properties of soil samples and determine the effect of adding Cutback Asphalt to certain variations in soil samples originating from the Gelagah Beach area.*

*Studies carried out on the research are a series of soil physical properties testing and soil mechanical properties testing in the form of testing California Bearing Ratio (CBR) and Direct Shear on native soil and stabilized native land using MC<sub>60-70</sub> asphalt with variations of 1%, 3%, and 5%. Metode of California Bearing Ratio (CBR) was carried out with CBR without immersion for 1, 3, 7 days, while immersion CBR was immersed for 4 days. Soil shear strength testing was carried out with 1, 3 and 7 days of incubation.*

*The results of CBR testing of the original soil were 19.437% in unsoaked conditions and the original CBR of the soaked conditions was 17.453%. The CBR test results obtained the highest CBR value of unsoaked conditions on the addition of 1% Cutback Asphalt at 7 days ripening that is equal to 21.979%, while the highest value of CBR soaked conditions on the addition of 1% Cutback Asphalt was 18.910%. The value of soil carrying capacity (DDT) from the highest CBR value is 21.979% and DDT value is 7.40 kg/cm<sup>2</sup>. The results of Direct Shear testing of the original soil obtained cohesion, angle of repose value, and native soil shear strength of 0.114 kg/cm<sup>2</sup>, 44.957°, and 1.160 kg/cm<sup>2</sup>. The highest direct shear stabilization test results obtained cohesion values, angle of repose value, and highest soil shear strength on variations in native soil samples with 1% Liquid Asphalt levels at 7 days ripening which were 0.2288 kg/cm<sup>2</sup>, 49.418° and 1,467 kg/cm<sup>2</sup>.*

**Keywords:** Sand, Stabilization, CBR, Cutback Asphalt, Soil Shear Strength, Soil Carrying Capacity