

ABSTRAK

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KAJIAN NILAI *CALIFORNIA BEARING RATIO (CBR)* PADA TANAH LEMPUNG DENGAN STABILISASI ABU MARMER

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(xiv + 101 halaman; 33 gambar; 20 tabel; 33 lampiran)

Stabilisasi tanah dasar sangat penting dalam konstruksi jalan karena tanah menentukan ketebalan perkerasan dan ketahanan jalan. Oleh karena itu, tanah harus dalam kondisi baik, sehingga konstruksi jalan di atasnya tetap dalam keadaan baik pada periode waktu selama mungkin. Hasil stabilisasi tanah dapat dilihat dari peningkatan nilai *California Bearing Ratio (CBR)* tanah. Sebelum melakukan stabilisasi tanah, sifat dan jenis tanah perlu diperhatikan agar dapat memutuskan stabilisasi apa yang dibutuhkan. Jenis tanah dapat ditentukan melalui pengujian laboratorium, seperti uji saringan dan batas Atterberg. Tahapan berikutnya adalah uji kompaksi untuk mendapatkan kepadatan tanah dan kadar air optimum yang diperlukan pada saat pengujian CBR. Berdasarkan hasil pengujian awal yang telah dilakukan, diperoleh jenis tanah uji berupa tanah lempung dengan nilai CBR lapangan yang rendah, sehingga memerlukan perbaikan dengan bahan tambah dari abu marmer. Kadar abu marmer yang ditambahkan dalam penelitian adalah sebesar 3%, 6%, 9%, dan 12% dari berat kering tanah. Penambahan abu marmer memberikan pengaruh yang cukup baik dalam memperbaiki sifat-sifat tanah, diantaranya batas cair, indeks plastisitas, dan pengembangan tanah menurun. Selain itu, penambahan abu marmer menunjukkan perbaikan dilihat dari kepadatan tanah dan nilai CBR tanah lempung. Peningkatan nilai CBR dan juga serta menurunkan volume pengembangan yang signifikan didapatkan pada penambahan 6% abu marmer.

Kata Kunci : Stabilisasi tanah, Abu Marmer, *California Bearing Ratio*

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ABSTRACT

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STUDY OF CALIFORNIA BEARING RATIO (CBR) VALUE IN CLAY SOIL WITH MARBLE ASH STABILIZATION

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Subgrade stabilization holds a very important for road construction because the soil determines the thickness and the strength of the pavement. Therefore, the soil must be in good condition, so that the road construction on it remains intact for as long as possible. The results of soil stabilization can be seen from the increase in the California Bearing Ratio (CBR) value of the soil. Before carrying out soil stabilization, the nature and type of soil need to be considered in order to decide what stabilization is needed. Soil type can be determined through laboratory tests, such as sieving tests and Atterberg limits. The next stage is the compaction test to obtain the optimum soil density and moisture content required during the CBR test. Based on the results of the initial tests that have been carried out, the test soil type is obtained in the form of clay with a low field CBR value, so it requires improvement with added materials from marble ash. The ash content of the marble added in the study was 3%, 6%, 9% and 12% from dry weight of the mass. The addition of marble ash had a fairly good effect on improving soil properties, including the liquid limit, plasticity index, and decreased soil expansion. In addition, the addition of marble ash showed improvement in terms of soil density and the CBR value of clay soil. A significant increase also a reduction of volume expansion was obtained by adding 6% marble ash.

Keywords : Soil stabilization, Marble Ash, California Bearing Ratio

Reference : 16 (1992-2018)