

ABSTRAK

Pembangunan infrastruktur jalan khususnya konstruksi jalan tol (bebas hambatan) Cisumdawu yang merupakan Proyek Strategis Nasional (PSN) yang harus diselesaikan pada tahun 2023 diperlukan penanganan yang tepat dan cepat. Dalam hal ini infrastruktur/struktur jalan tol Cisumdawu tersebut untuk beberapa segmen dibangun atau berada di atas tanah yang bermasalah sehingga diperlukan pekerjaan perbaikan tanah.

Dalam penelitian ini dilakukan stabilisasi tanah dengan campuran kapur pada pengujian kuat tekan bebas (UCS).

Hasil pengujian UCS pada tanah asli kondisi tidak terganggu didapat nilai $q_u = 0,387 \text{ kg/cm}^2$ dan $c_u = 0,193 \text{ kg/cm}^2$, sedangkan untuk tanah asli kondisi terganggu didapat nilai $q_u = 0,331 \text{ kg/cm}^2$, $c_u = 0,166 \text{ kg/cm}^2$, $S_T = 1,167$.

Dan setelah dilakukan stabilisasi tanah dengan kapur maka hasil pengujian UCS untuk campuran tanah + kapur didapat peningkatan nilai q_u dan c_u sebesar 317,86% (tidak terganggu, 12,5% kapur), 354,17% (terganggu, 12,5% kapur), 382,14% (tidak terganggu 15% kapur), 433,33% (terganggu, 15% kapur), 435,71% (tidak terganggu, 17,5% kapur), dan 495,83% (terganggu, 17% kapur). Dan nilai sensitivity tanah terjadi penurunan sebesar 89,75 (12,5% kapur), 88,19% (15% kapur), dan 87,88% (17,5% kapur).

Kata Kunci : stabilisasi tanah, uji kuat tekan bebas, kapur, tidak terganggu, terganggu

ABSTRACT

The development of road infrastructure, especially the construction of the Cisumdawu (freeway) toll road, which is a National Strategic Project (PSN) which must be completed in 2023, requires proper and fast handling. In this case the infrastructure/structure of the Cisumdawu toll road for several segments is built or located on problematic land so that land improvement work is required.

In this study, soil stabilization with a lime mixture was carried out in the unconfined compressive strength (UCS) test.

The results of the UCS test on undisturbed undisturbed original soil obtained values of $q_u = 0.387 \text{ kg/cm}^2$ and $c_u = 0.193 \text{ kg/cm}^2$, while for original soil remolded conditions obtained values of $q_u = 0.331 \text{ kg/cm}^2$, $c_u = 0.166 \text{ kg/cm}^2$, $ST = 1.167$.

And after stabilizing the soil with lime, the results of the UCS test for soil + lime mixtures obtained an increase in q_u and c_u values of 317.86% (undisturbed, 12.5% lime), 354.17% (remolded, 12.5% lime), 382.14% (undisturbed 15% lime), 433.33% (remolded, 15% lime), 435.71% (undisturbed, 17.5% lime), and 495.83% (remolded, 17 % chalk). And the soil sensitivity value decreased by 89.75 (12.5% lime), 88.19% (15% lime), and 87.88% (17.5% lime).

Key Words : soil stabilization, unconfined compressive strength test, lime, undisturbed, remolded.