

ABSTRAK

Pertumbuhan infrastruktur jalan di Indonesia sangatlah pesat dan khususnya infrastruktur jalan tol. Beberapa infrastruktur jalan tol juga dijadikan sebagai Proyek Strategis Nasional. Proyek Strategis Nasional (PSN) adalah proyek-proyek infrastruktur Indonesia pada masa pemerintahan Presiden Joko Widodo yang dianggap strategis dalam meningkatkan pertumbuhan ekonomi, pemerataan pembangunan, kesejahteraan masyarakat, dan pembangunan di daerah. PSN diatur melalui Peraturan Presiden, sementara pelaksanaan proyeknya dilakukan secara langsung oleh pemerintah pusat, pemerintah daerah, dan/atau badan usaha serta Kerjasama Pemerintah Badan Usaha (KPBU), dengan mengutamakan penggunaan komponen dalam negeri.

Pada proyek jalan tol Cisumdawu didapati jenis-jenis tanah yang mempunyai daya dukung yang rendah sehingga diperlukan tindakan perbaikan tanah atau stabilisasi tanah sehingga dapat meningkatkan daya dukungnya. Dalam penelitian ini dilakukan penelitian untuk mengetahui besarnya pengaruh campuran kapur 0%, 5%, 7,5%, dan 10% pada pekerjaan stabilisasi tanah dengan pengujian kuat tekan bebas.

Untuk tanah asli kondisi *undisturbed* didapat nilai $q_u = 0,387 \text{ kg/cm}^2$ dan $c_u = 0,193 \text{ kg/cm}^2$, sedangkan untuk tanah asli kondisi *remolded* didapat nilai $q_u = 0,331 \text{ kg/cm}^2$ dan $c_u = 0,166 \text{ kg/cm}^2$. Dengan nilai *Sensitivity* (S_T) = 1,167.

Stabilisasi dengan kapur terjadi peningkatan nilai q_u dan c_u untuk kondisi tanah tidak terganggu sebesar 175,00% (5%), 232,14% (7,5%), dan 267,86% (10%). Untuk kondisi tanah terganggu 187,50% (5%), 250,00% (7,5%), 291,67% (10%). Nilai *Sensitivity* (S_T) menurun menjadi 93,33% (5%), 92,86% (7,5%), dan 91,84% (10%).

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

ABSTRACT

The growth of road infrastructure in Indonesia is very rapid, especially toll road infrastructure. Several toll road infrastructures have also been designated as National Strategic Projects. National Strategic Projects (PSN) are Indonesian infrastructure projects during the reign of President Joko Widodo which are considered strategic in increasing economic growth, equitable distribution of development, community welfare, and development in the regions. PSN is regulated through a Presidential Regulation, while project implementation is carried out directly by the central government, regional governments, and/or business entities as well as Government Business Entity Cooperation (PPP), with priority to the use of domestic components.

In the Cisumdawu toll road project, soil types that have a low carrying capacity are found, so soil improvement or soil stabilization is needed to increase its carrying capacity. In this study, a study was conducted to determine the effect of a lime mixture of 0%, 5%, 7.5% and 10% on soil stabilization work by independent compressive strength testing.

For undisturbed original soil, the values for $q_u = 0.387 \text{ kg/cm}^2$ and $c_u = 0.193 \text{ kg/cm}^2$ are obtained, while for natural soil for remolded conditions, the values for $q_u = 0.331 \text{ kg/cm}^2$ and $c_u = 0.166 \text{ kg/cm}^2$ are obtained. With a Sensitivity value (S_T) = 1.167.

Stabilization with lime increased the values of q_u and c_u for undisturbed soil conditions of 175.00% (5%), 232.14% (7.5%), and 267.86% (10%). For remolded soil conditions 187.50% (5%), 250.00% (7.5%), 291.67% (10%). Sensitivity (S_T) values decreased to 93.33% (5%), 92.86% (7.5%), and 91.84% (10%).

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