

TANAH MERAH DAN TANAH SIRTU PADA *GEOFORCE SEGMENTAL
RETAINING WALL (GSRW)* PROYEK PEMBANGUNAN *FLYOVER TOL
DEPOK-ANTASARI*

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INTISARI

Proyek pembangunan jalan tol Depok – Antasari yang terdiri dari beberapa lokasi *overpass* memerlukan konstruksi dinding penahan tanah *Geoforce Segmental Retaining Wall (GSRW)* untuk sambungan opritnya. Dinding penahan tanah vertikal ini menggunakan bahan *geosynthetics* sebagai perkuatannya.

Evaluasi perencanaan dilakukan dengan pengecekan terhadap gaya eksternal, yaitu stabilitas terhadap bahaya guling dan geser dan stabilitas terhadap gaya internal mengandalkan pada kemampuan tarik dari bahan geosintetis yang berupa kegagalan *pullout* dan *breaking*.

Evaluasi perencanaan kapasitas *friction tie* didapat hasil perkuatan strip 50 kN untuk timbunan tanah merah (*laterit*) dan tanah sirtu dengan *safety factor* $\geq 1,1$ masih mampu menahan adanya kegagalan *pullout*, *breaking*, *sliding*, dan *overturning*. Adapun nilai *safety factor pull out* tanah merah 1,34 dan tanah sirtu 2,44, *safety factor breaking* tanah merah 9,46 dan tanah sirtu 11,11, *safety factor overturning* tanah merah 229,69 dan tanah sirtu 357,38 *safety factor sliding* tanah merah 7,98 dan tanah sirtu 13,25, dengan *safety factor* yang disyaratkan $\geq 1,1$. Metode pelaksanaan pekerjaan pemasangan *Geoforce Segmental Retaining Wall (GSRW)* sesuai dengan pekerjaan di lapangan.

Kata Kunci : *retaining wall*, evaluasi perencanaan, *friction tie*, geosintetis, tanah merah, tanah sirtu

**DESIGN EVALUATION OF FRICTION TIE TO SETTLEMENT OF
LATERIT SOIL AND GRANULAR SOIL AT GEOFORCE SEGMENTAL
RETAINING WALL (GSRW) IN FLYOVER CONSTRUCTION PROJECT
DEPOK - ANTASARI HIGHWAYS**

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ABSTRACT

Construction project Depok – Antasari highways that consist of some overpass location need the retaining wall construction of Geoforce Segmental Retaining Wall (GSRW) driveway connection. Vertical retaining wall was reinforced using geosynthesis.

Evaluation design was done by checking external forces, stability of overturning and sliding and by checking internal forces, which relies on friction of geosynthetics material which are pullout and breaking failure.

Evaluation design of friction tie capacity obtained from strip 50 kN to settlement of laterit soil and granular soil with safety factor $\geq 1,1$ still able to withstand any pull out, breaking, sliding, and overturning failures. Meanwhile, safety factor value of pull out laterit soil is 1,34 and granular soil is 2,44. Safety factor value of breaking laterit soil is 9,46 and granular soil is 11,11. Safety factor of overturning laterit soil is 229,69 and granular soil is 357,38. Safety factor of sliding laterit soil 7,98 and granular soil is 12,25 with the required safety factor $\geq 1,1$. Installation Geoforce Segmental Retaining Wall (GSRW) method is suitable with what has been done in the work field.

Keyword : retaining wall, design evaluation, friction tie, geosynthetics, laterit soil, sirtu soil.