

Optimum geometry of geofoam for earth pressure reduction on Retaining Walls

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Abstract

The use of retaining walls is very frequent in many areas, including landscaping, construction and civil engineering. Discussions on sustainable development have continued recently, and enhancing the safety of retaining walls has also become a major issue. One way to improve the safety of retaining walls is to reduce the lateral earth pressure that the retaining wall receives. In this study, the method of reducing lateral earth pressure on retaining walls was sought using geofoam. Various forms of geofoam were applied to the retaining wall, and based on this, the optimal shape of the geofoam to reduce the lateral earth pressure acting on the retaining wall was sought. In addition, the developed analytical model was verified by comparing it with existing experimental data. The results of this study will provide guidelines for the design and construction of retaining walls using geofoam in the future.

Keywords: *Finite element analysis, Geofoam, Retaining wall*

References

- [1] Ozgur, L.E., Aurelian, C.T (2011). Reduction of Lateral Earth Forces Acting on Rigid Nonyielding Walls by EPS Geofoam Inclusions , ASCE, Vol. 23, No. 12, pp. 1711-1718
- [2] Vinay, B.C., Dasaka, S.M (2018). Performance of a Rigid Retaining Wall with Relief Shelves, ASCE, Vol. 32, No. 3

Biography

I graduated from Seoul National University and majored in landscape architecture. Currently, I am in the first semester of my master's degree in landscape construction and engineering laboratory at Seoul National University. I'm very interested in sustainability of site. So I am currently working on Rooftop garden, Green wall, and a way to improve the safety of the structure. I wrote a paper on how to improve the sustainability of bridges and registered it in Korea.