

Yuttana Boonsinchai 2013: Engineering Properties of Porous Concrete for Soil Erosion Protection in Geotechnical Engineering. Master of Engineering (Civil Engineering), Major Field: Civil Engineering, Department of Civil Engineering. Thesis Advisor: Associate Professor Supakij Nontananandh, D.Eng. 118 pages.

This research aims to study the flexural strength and failure behavior of porous concrete in the laboratory with geosynthetics reinforcement using fiberglass and geogrid. Also the study includes using geotextile with porous concrete to increase its efficiency of filtration

The results indicate that the flexural strength of porous concrete tends to increase with curing time. Aggregate size improves the flexural strength of porous concrete. In addition, it is also found that the geosynthetics markedly improve the ductility behavior of porous concretes when compared with the porous concretes with no reinforcement. In addition, it was found that the porous concrete can be used as a filter and drainage in the soil cover. Yet, the difference of using with geotextile and without geotextile are relatively small. However, the porous concrete reinforced with geotextile allowed less turbid discharge and percent particle loss than without geotextile. The larger aggregate size tends to increase percent particle loss when compared with the smaller aggregate size. Based on these findings, the porous concrete provides a good opportunity for soil erosion protection in geotechnical engineering

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Thesis Advisor's signature