

Performance of Wet-Process Bored Piles Constructed with Polymer-Based Slurry in Bangkok Subsoil

Narong Thasnanipan*, Zaw Zaw Aye**, Chanchai Submanee Wong*** and Wanchai Teeparaksa, Ph.D. ****

*Managing Director, **Project Manager, ***Geotechnical Engineer, SEAFCO Co., Ltd., 26/10 Rarm Intra 109 Rd., Bangchan, Klong Sam Wah, Bangkok 10510, Thailand, Tel. (662) 9190090, Fax. (662) 9190098, seafco@seafco.co.th, www.seafco.co.th
****Professor, Department of Civil Engineering, Chulalongkorn University, Bangkok, Thailand, fcewtp@eng.chula.ac.th

Abstract

Conventionally, medium to large bored piles deep-seated in the multi-layered soils of Bangkok were constructed by rotary drilling under wet process or slurry replacement method, using bentonite slurry as support fluid in boring process. As an alternative to bentonite slurry, polymer-based slurry has been increasingly used in Bangkok recently. Polymer-based slurry having environmentally friendly properties, is found to be a good solution in minimizing the problems associated with the disposal of contaminated soils as well as the site pollution. This paper presents the performance of medium to large diameter bored piles constructed with polymer-based slurry in Bangkok. The static pile load test results of polymer-based slurry bored piles are compared with the predicted values using bentonite piles parameters. The measured frictional resistance of pile shaft from instrumented pile load tests are also reported. Shaft resistance of bored piles constructed with polymer-based slurry is found to be better than that of bored piles constructed with bentonite slurry.