

PDS 2g: Pile foundation (I): Piled rafts, bearing capacity, and analysis

SPD 2g: Fondations sur pieux (I): Radier sur pieux, capacité portante et analyse

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Paper Presentation and Poster Discussion Session (PDS) for “2g: Pile Foundation (I): Piled Rafts, Bearing Capacity, and Analysis” was held at 16:00-19:00 on September 14 (Wednesday). The session covered wide variety of topics from static to dynamic behavior of piles subjected to vertical or horizontal loads:

- 1) Bearing capacity of piles,
- 2) Settlement & displacement behavior of piled rafts, and
- 3) Behavior of laterally loaded piles.

The approaches employed in each paper also varied, such as, pile loading tests, soil investigation technique, physical modeling (both centrifuge and 1 g models), and numerical modeling. The discussion at the PDS showed that not only the capacity of piles but also the settlement and/or displacement of piles should also be well considered for more effective use of piles. The following 32 papers were covered at the PDS.

Bearing capacity of piles

- Back analysis of O-cell pile load test using FEM - *Bui, T.Y., Li, Y., Tan, S.A., Leung, C.F.*
- Reduction of the cone resistance caused by the installation of CFA piles - *Hannink, G., van Tol, A.F.*
- Parameters controlling the capacity of axially loaded drilled shaft foundations in sand, gravel, and cobbles - *Harraz, A.M., Houston, W.N., Houston, S.L., Walsh, K.D.*
- On strength property of gassy fine sand and model tests of pile foundation - *Kong, L.-W., Guo, A.-G., Chen, J.-B., Liu, G.-S.*
- Penetration resistance and bearing capacity of small-diameter steel piles - *Vestberg, H.G., Mann, G., Holtz, R.D.*
- Bearing mechanism and pile foundation design - *Wada, A.*
- End-bearing capacity and tip settlement of piles in sandy soils - *Yang, J., Tham, L.G., Lee, P.K.K., Yu, F.*
- Estimating geotechnical capacity of bored cast-in-situ piles from penetration resistance - *Ganpule, V.T.*

Behavior of piled rafts

- On pile and piled raft footing settlement analysis - *Alexandrovich, V.F., Barvashov, V.A., Bobyr, G.A., Fedorovsky, V.G., Kurillo, S.V., Skorohodov, A.G.*

Experimental and analytical study on the behaviour of circular piled raft on sand - *Balakumar, V., Kalaiarasi, V., Ilamparuthi, K.*

Optimization concepts for the design of a piled raft foundation - *Bezerra, J.E., Cunha, R.P., Sales, M.M.*

Experimental small scale analysis of a piled embankment - *Jenck, O., Dias, D., Kastner, R.*

Combined Pile-Raft Foundation subjected to lateral loads - *Katzenbach, R., Turek, J.*

Analyses of vertical and horizontal load tests on piled raft models in dry sand - *Kitiyodom, P., Matsumoto, T., Horikoshi, K., Watanabe, T.*

Load sharing ratio of raft in piled footing on granular soil by model test - *Kwon, O., Lee, S., Oh, S., Choi, Y.*

Influence of superstructure on behaviour of model piled rafts in sand under shaking tests - *Matsumoto, T., Fukumura, K., Oki, A.*

Interaction between vertical and lateral loads on the response of piles in soft clays - *Karthigeyan, S., Ramakrishna, V.V.G.S.T., Rajagopal, K.*

Piled raft with different pile length for medium-rise buildings on very soft clay - *Tan, Y.C., Chow, C.M., Gue, S.S.*

Unified analysis considering pile groups and superstructures - *Won, J.O., Jeong, S., Lee, C.J.*

Raft and piles foundation of a silo - *Geffen, S., Birnbaum, I.*

Model tests of piled raft foundation - *Tejchman, A., Gwizdala, K., Krasiński, A., Ślabek, A.*

Behavior of laterally loaded piles

Static and dynamic bending behaviour of piles in clay - *Boominathan, A., Ayothiraman, R.*

Inertial and spreading load combinations of soil-pile-structure system during liquefaction-induced lateral spreading in centrifuge tests - *Chang, D., Boulanger, R.W., Kutter, B.L., Brandenburg, S.J.*

Analysis for forced vibration tests on a proto-type pile foundation in TSIP - *Chen, C.-H., Ko, Y.-Y., Chu, H.-C.*

Dynamic response of a single pile embedded in semi-infinite saturated poroelastic medium using hybrid elements - *Noorzad, A., Noorzad, A., Masoumi, H.*

Analysis of laterally loaded micropile groups using a hybrid method - *Perlo, S., Frank, R., Degny, E., Estephan, R.*

- Static and dynamic lateral response of a 15 pile group - Rollins, K.M., Snyder, J.L., Broderick, R.D.
- Characteristics of lateral ground force acting on piles in laterally spreading soil - *Suzuki, Y., Adachi, N.*
- Effects of pore water pressure response around pile on horizontal subgrade reaction during liquefaction and lateral spreading in large shaking table tests - *Tokimatsu, K., Suzuki, H.*
- Steel pile under lateral loading in a very soft clay deposit - *Coutinho, R.Q., Horowitz, B., Soares, F.L., Braga, J.M.*
- Analysis of P-Y curves for single piles from the prebored pressuremeter test - *Bouafia, A., Lachenani, A.*
- A pile loaded by horizontal force and moment - theoretical and field load test results - *Milovic, D., Djogo, M.*