

Case 04/2025

Issue: Shaft Grouted Frictional Mini-Piles and the use of permanent steel casing for resisting vertical load and lateral load

- Recommendation:
- (1) To accept the design principle of mini-pile (4 Nos. of T50 Grade 500B) grouted in pre-bored holes (323.9 mm diameter) with post pressurized grout in Completely Decomposed Granite (CDG) to enhance shaft friction for resisting vertical load, subject to the satisfactory verification by static compression load tests on the two trial piles (T1 and T2) for vertical load complying with the acceptance criteria, where T2 will specially adopt 63.5 mm diameter DYWIDAG threadbars and will not be re-used as working pile;
 - (2) To accept the design principle of the permanent steel casing (Grade S275, 323.9 mm diameter x 16 mm thick and 10m long) at upper portion of mini-pile for resisting lateral load, subject to the satisfactory verification by static lateral load tests on the two trial piles (TL1 and TL2) for lateral load complying with the acceptance criteria; and
 - (3) To accept no group reduction factor for all working piles.

Decision: Having noted the background information, members had no objection to endorse the paper on a case-by-case basis subject to the following conditions:

- (1) The trial piles should be designed to represent the most adverse conditions anticipated on the site to ensure the site's geological and load-bearing conditions are adequately covered;
- (2) The results of proof tests on the trial piles and performance review reports should be found satisfactory; and
- (3) The criteria of quality controls as specified in the paper are complied with.