

Summary of Decisions of the Structural Engineering Committee
SEC 15/2011 held on 03.11.2011

(a) Case 15/2011

Issue: Two trial piles (TP-H1 and TP-H2) of steel H-pile grouted in prebored holes with post-pressurized grout in CDG to take vertical and lateral load.

Recommendation: To accept the design principle of steel H-pile grouted in prebored holes (610mm diameter) with pressurized grout in CDG to enhance shaft friction for resisting vertical and lateral load, subject to satisfactory verification by static loading tests on two trial piles complying with the acceptance criteria stipulated and the following criteria/conditions:

- (a) The ultimate shaft grouted friction in CDG shall not exceed $4.8 \times N$ with a maximum limit of SPT "N" value of 40 (i.e. 192kPa);
- (b) A factor of safety of 3 will be adopted for calculating the allowable shaft friction;
- (c) A detailed quality assurance proposal on grouting works shall be submitted. It shall specify the measures adopted in controlling grout pressure, volume and time;
- (d) For each grout mix one sample of grout shall be provided from each 10 batches of grout, or every 10 m^3 from the amount of grout produced in a day, whichever is the smaller, to determine the crushing strength of the grout. Samples shall be provided not more than 1 hour after the grout has been mixed;
- (e) Working piles will be load-tested to 2 times of the working pile capacity for performance test; and
- (f) A performance review report of trial pile tests shall be submitted to the satisfaction of the Building Authority upon completion of the static loading tests.

Decision: Noting RSE's justifications and after making reference to previous cases, members endorsed the recommendations.