

Summary of Decisions of the Structural Engineering Committee
 SEC Meeting 4/2024 held on 21.5.2024

Case 3/2024

Issue: Socketed Steel H-piles socketed into Meta-sedimentary rock

Recommendation: To accept the design parameters for Socketed Steel H-piles (305 x 305 x 223kg/m UBP) founded on grade III or better Meta-sedimentary rock, which has a minimum UCS of rock material not less than 25MPa (or PLI_{50} not less than 1.25MPa) and a minimum Total Core Recovery (TCR) of 85%.

Decision: Having noted the background information, members endorsed the recommendations on a case-by-case basis subject to the following conditions:

- (a) The founding rock materials should satisfy the acceptance criteria as below:

		Value
Design Parameters	Allowable Bond or Friction between Meta-sedimentary Rock and Grout (Under compression and transient tension)	300kPa
	Allowable Bond or Friction between Meta-sedimentary Rock and Grout (Under permanent tension)	150kPa
Acceptance Criteria	Uniaxial Compressive Strength (UCS) (or an equivalent point load index strength PLI_{50})	UCS not less than 25MPa (or PLI_{50} not less than 1.25MPa)
	Total Core Recovery (TCR)	min. 85%

Remarks:

- (1) At least 3 UCS tests shall be performed on meta-sedimentary rock specimens taken from a predrill hole within 5m of every proposed pile. However, if a joint failure result is obtained in the UCS test, an additional PLI_{50} test will be performed to verify the founding material of the piles. The rock specimens shall be taken from the top, middle and bottom within the effective rock socket length. The testing shall be carried out by a laboratory accredited under the Hong Kong Laboratory Accreditation Scheme (HOKLAS). All tests within the proposed socketed length should satisfy the requirements. The predrilling along with rock-related laboratory tests within 5m of the trial pile shall be completed before the commencement of the trial pile with a proof test.

- (b) The results of the proof tests on the trial piles, the performance review report of the trial piles, and the assessment report for the results of all pre-drilling holes should also be found satisfactory.