

Summary of Decisions of the Structural Engineering Committee
 SEC Meeting 2/2024 held on 6.2.2024

Case 2/2024

Issue: Socketed Steel H-piles socketed into Grade III or Better Siltstone/Sandstone

Recommendation: To accept the design parameters and founding criteria for the design of socketed steel H-piles (305 x 305 x 223kg/m UBP Grade S450J0 (Class 1)) socketed into Grade III or better Siltstone/Sandstone.

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 A ⁽ⁱ⁾	Value B ⁽ⁱⁱ⁾
Design Parameters^{##}	Allowable Bond or Friction between Siltstone/Sandstone (Under compression or transient tension)	250 kPa	180 kPa
	Acceptance Criteria		
	Uniaxial Compressive Strength (UCS)(*)	Min. 15 MPa	Min. 7.5 MPa
	Point Load Index Strength (PLI ₅₀)	Min. 1.25MPa	Min. 0.625 MPa
	Total Core Recovery (TCR)	Min. 85%	Min. 85%

Remarks:

- (*) Min. 10% of the total number of pre-drilling holes to conduct UCS test evenly distributed over different parts of the site.
- (i) The design of the socketed steel H-pile will follow design parameters in column Value A except for those area with test results of pre-drilling holes not fulfilling the acceptance criteria in column Value A.
- (ii) According to the site-specific ground investigation (GI) records, it is found that some rock specimens of Grade III or better sedimentary rock could not achieve 15MPa (UCS) or 1.25MPa (PLI₅₀). The RSE proposed another set of design parameter with reduced bond friction for those socketed steel H-piles within 5m of pre-drilling hole with acceptance criteria in column Value B. If the pile is located within the overlapping zone of the 5m radius of the pre-drilling holes fulfilling both the acceptance criteria of Value A and Value B, the lowest value of the design parameters (i.e. Value B) should be adopted.
- ^{##} No permanent tension will be anticipated in the design.

- (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.