Summary of Decisions of the Structural Engineering Committee
SEC Meeting 3/2025 held on 7.5.2025

Case HD 2/2025

Issue: Proposed Founding Criteria for Large Diameter Bored Piles on Meta-Sedimentary Rock or Interbedded Meta-Sedimentary and Marble Rocks with Site-Specific Allowable Vertical Bearing Pressure of 5000 kPa

Recommendation: (1) To accept the site-specific design parameters and founding criteria for Large Diameter Bored Pile founded on and/or socketed into Category 2 bedrock with Grade III or better Meta-Sedimentary rock, which has (i) not less than 90% Total Core Recovery (TCR); (ii) minimum length-weighted average of Rock Mass Rating (RMR) of 50; (iii) Uniaxial Compressive Strength (UCS) of rock material not less than 25 MPa (or equivalent Point Load Index Strength (PLI_{50}) not less than 1 MPa); and (iv) rock quality designation (RQD) not less than 25%, within 1-pile base diameter or 5 m, whichever is deeper, below pile founding level.

Decision: Having considered the precedent cases, members had no objections to endorsing the paper on a case-by-case basis subject to the following conditions:

(a) The founding rock materials should satisfy the following Tests and Acceptance Criteria:

		Value
Proposed Design Parameters	Site-Specific Allowable Vertical Bearing Pressure	5 000 kPa
	Allowable Bond or Friction between Meta-sedimentary rock and Concrete	300 kPa* (compression or transient tension)
		150 kPa* (permanent tension)
Proposed Acceptance Criteria	**Within 1-pile base diameter depth, or 5m, whichever is lower, beneath founding level**	
	UCS or PLI_{50}#	Min. 25 MPa (UCS) or Min. 1 MPa (PLI_{50})
	TCR of designated grade or better rock	Min. 90%
	RQD	Not less than 25%
	Length-weighted Average of RMR^	Not less than 50

Remarks:
(*) follow Table 2.2 of the Code of Practice for Foundations 2017 (2024 edition).

(@) For piles founded on Marble or Interbedded Meta-Sedimentary and Marble rocks, the Marble bedrock shall follow Clause 2.8.2.4(4) in the Code of Practice for Foundations 2017 (2024 edition) (i.e. Marble Class I or II with not less than 85% TCR of the designated grade, which has a minimum UCS of rock material not less than 25 MPa (or an equivalent point load index strength PLI50 not less than 1 MPa)).

(#) UCS test shall be carried out for samples within 1-pile base diameter depth, or 5 m, whichever is lower, beneath the founding level of proposed LDBPs for all predrill holes. If UCS test is impractical to carry out due to rock joints, Point Load Test (PLT) shall be adopted.

(^) According to Clause 6.5.3.2 in the GEO Publication No. 1/2006, the RMR system is applicable to sedimentary and metamorphic rocks, except for those rock masses affected by dissolution features. For piles founded on Interbedded Meta-Sedimentary and Marble rocks, RMR assessment is only carried out at Meta-Sedimentary rock portion.

(b) Consent to the commencement of working piles would not be granted until the proof test results on the trial piles and the RMR values review report based on predrill records are found satisfactory.