

Amendments to the Code of Practice for Foundations 2017 (August 2023)

Legends:

 Amended

 Deleted

(8/2023)

Amendments to the Code of Practice for Foundations 2017 (August 2023)

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2. List of Tables ²	Table 2.9 Reference Value for Redundancy Factor	Table 2.9 Reference Value for Redundancy Factor Table 2.10 Presumed Allowable Vertical Bearing Pressure under Foundations on Marble Bedrock and Presumed Allowable Bond or Friction Between Marble and Concrete or Grout for Piles
3. Table 2.1 Notes: (6) ³	Notes: (6) The bearing surface of rock on which the foundation will be rested should be of the designated category and in an intact condition for a depth not less than 600 mm.	Notes: (6) The bearing surface of rock on which the foundation will be rested should be of the designated category and no rock core within 600 mm depth from the pile base is logged as “non-intact” in accordance with GEOGUIDE 3.

¹ Revision of recognized types of pile foundations to common pile foundation types and core-drilling test to proof core-drilling test.

² Inclusion of Table 2.10.

³ Clarification on rock condition within 600 mm depth from the pile base.

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4. Table 2.1 Notes ⁴	Notes: (12) Category 2 rock should exclude marble and marble-bearing rocks.	Notes: (12) Category 2 rock should exclude marble and marble-bearing rocks. (13) Reference should be made to clause 2.8 and GEO Technical Guidance Note No. 26 (TGN 26) for foundation design in areas underlain by marble and marble-bearing rocks.
5. Table 2.2 Notes ⁴	Notes: (2) The presumed value of transient tension is for design for transient load such as wind load.	Notes: (2) The presumed value of transient tension is for design for transient load such as wind load. (3) Reference should be made to clause 2.8 and GEO TGN 26 for foundation design in areas underlain by marble and marble-bearing rocks.

⁴ Addition of a note on reference for foundation design in areas underlain by marble and marble-bearing rocks.

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6. Clause 2.8.2.4 ⁵	<p>2.8.2.4 FOUNDATIONS BEARING ON MARBLE BEDROCK</p> <p>(3) Piles Driven to Marble Bedrock</p> <p>...</p>	<p>2.8.2.4 FOUNDATIONS BEARING ON MARBLE BEDROCK</p> <p>(3) Piles Driven to Marble Bedrock</p> <p>...</p> <p>(4) Presumed Allowable Bearing Pressure and Bond or Friction</p> <p>The presumed allowable bearing pressure under foundations on marble bedrock and the presumed allowable bond or friction between marble and concrete or grout for piles as stipulated in Table 2.10 could be applicable in lieu of rational design method.</p> <p>Table 2.10 Presumed Allowable Vertical Bearing Pressure under Foundations on Marble Bedrock and Presumed Allowable Bond or Friction Between Marble and Concrete or Grout for Piles</p> <table> <tr> <td><i>Description of marble bedrock</i></td><td><i>Presumed allowable bearing pressure (kPa)</i></td><td><i>Presumed allowable bond or friction between rock and concrete or grout for piles (kPa)</i></td></tr> </table>	<i>Description of marble bedrock</i>	<i>Presumed allowable bearing pressure (kPa)</i>	<i>Presumed allowable bond or friction between rock and concrete or grout for piles (kPa)</i>
<i>Description of marble bedrock</i>	<i>Presumed allowable bearing pressure (kPa)</i>	<i>Presumed allowable bond or friction between rock and concrete or grout for piles (kPa)</i>			

⁵ Inclusion of presumed allowable bearing pressure and bond or friction for foundations bearing on marble bedrock and Table 2.10.

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		<p>Marble Class I or II and with not less than 95% TCR of the designated grade, which has a minimum UCS of rock material not less than 50 MPa (or an equivalent point load index strength PLI_{50} not less than 2 MPa)</p>	7 500	700 (under compression or transient tension)
		<p>Marble Class I or II and 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 PLI_{50} not less than 1 MPa)</p>	5 000	350 (under permanent tension)
		<p>Notes:</p> <p>(1) Notes on using presumed allowable bearing pressure and bond or friction as given in Table 2.1 and 2.2 respectively should also be applicable, where appropriate. The TCR of the designated grade shall also be proved within the zone of influence of the foundation load, whereas the minimum zone of influence should not be less than three times the diameter of the pile base.</p>		

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7. Clause 5.1 1 st paragraph ⁶	All pile foundations should be durable, of adequate load carrying capacity and of a recognized type suitable for the ground conditions. The piles should be able to withstand the expected wear and deterioration throughout the intended design working life of the superstructure that they support.	All pile foundations should be durable, of adequate load carrying capacity and suitable for the ground conditions on which the foundations rest . The piles should be able to withstand the expected wear and deterioration throughout the intended design working life of the superstructure that they support.
8. Clause 5.1.1 ⁶	<p>5.1.1 RECOGNIZED TYPES OF PILE FOUNDATIONS</p> <p>A recognized type of pile foundation is a piling system which has been proved satisfactory to the Building Authority and incorporated into a list which is available from the homepage of the Buildings Department.</p> <p>The RSE usually in conjunction with the RSC experienced in a piling system which is not a recognized type may seek recognition of the system by submitting all technical details of the system to the Building Authority, including material specification, manufacturing process, method of installation, method of assessing pile capacity, applicability relating to ground conditions and selected examples of uses of the system elsewhere, if applicable. A demonstration of</p>	<p>5.1.1 COMMON PILE FOUNDATION TYPES</p> <p>The pile foundation types that are commonly used in Hong Kong and their particular requirements are given in clause 5.4.1 to 5.4.12.</p>

⁶ Revision of recognized types of pile foundations to common pile foundation types.

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	<p>the performance of the system is usually required.</p> <p>Enquiry on any non-recognised pile system should be made to the Building Authority in advance to settle the design principles, prior to the submission of foundation plans using such pile system to the Building Authority for approval whenever possible.</p>	
9. Table 5.2 Notes ⁷	<p>Notes:</p> <p>(2) Subgrade reaction is to be reduced in the direction of loading.</p>	<p>Notes:</p> <p>(2) Subgrade reaction is to be reduced in the direction of loading.</p> <p>(3) For the ratio of pile spacing to pile diameter less than 3, alternative methods (e.g. elastic continuum method etc.) for checking the effect of lateral load on pile group should be used.</p>
10. Clause 6.5.2(c) ⁸	Load tests, core-drilling tests or any other suitable tests to confirm the load-carrying capacity, integrity and material properties of the existing foundations; and	Load tests, proof core-drilling tests or any other suitable tests to confirm the load-carrying capacity, integrity and material properties of the existing foundations; and

⁷ Clarification on the reduction factor for horizontal subgrade reaction when ratio of pile spacing to pile diameter is less than 3.

⁸ Revision of core-drilling tests to proof core-drilling tests.

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11.Clause 6.5.3(b) ⁹	Core-drilling test on each reuse pile to verify the concrete strength, founding level and founding condition. The core-drilling test should be carried out in accordance with clause 8.5.	Proof c ore-drilling test on each reuse pile to verify the concrete strength, founding level and founding condition. The proof core-drilling test should be carried out in accordance with clause 8.5.
12.Clause 6.5.6(b) ¹⁰	Core-drilling tests on each reuse footing to verify the concrete strength, founding level and founding stratum condition.	Proof c ore-drilling tests on each reuse footing to verify the concrete strength, founding level and founding stratum condition.
13.Clause 7.4.4 ¹¹	<p>7.4.4 POST CONSTRUCTION PROOF DRILLING</p> <p><i>Large Diameter Bored Piles, Barrettes and the Like</i></p> <p>To ascertain the soundness of the interface, core-drilling should be carried out at the concrete/rock interface for each of the large diameter bored piles, barrettes and the like. The core-drilling should cover at least 1 m above and below the interface.</p>	<p>7.4.4 POST CONSTRUCTION PROOF DRILLING</p> <p><i>Large Diameter Bored Piles, Barrettes and the Like</i></p> <p>To ascertain the soundness of the interface, interface proof drilling should be carried out at the concrete/rock interface for each of the large diameter bored piles, barrettes and the like. The core-drilling should cover at least 1 m above and below the interface.</p>

⁹ Revision of core-drilling test to proof core-drilling test.

¹⁰ Revision of core-drilling tests to proof core-drilling tests.

¹¹ Revision of core-drilling to interface core-drilling.

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14.Clause 7.4.5 2 nd paragraph ¹²	Alternative procedures and acceptance criteria other than test loading or core-drilling with sound justification based on recognized foundation engineering principles and relevant to a particular site and building may also be adopted, provided that the following are submitted to the Building Authority to demonstrate the suitability of the proposed method of testing:	Alternative procedures and acceptance criteria other than test loading or proof core-drilling with sound justification based on recognized foundation engineering principles and relevant to a particular site and building may also be adopted, provided that the following are submitted to the Building Authority to demonstrate the suitability of the proposed method of testing:
15.Clause 8.1 3 rd paragraph ¹³	Except standard penetration tests (see clause 8.3) and proof test by core-drilling (see clause 8.5), all tests specified in this Chapter should be carried out by a HOKLAS accredited laboratory.	Except standard penetration tests (see clause 8.3) and proof core-drilling test (see clause 8.5), all tests specified in this Chapter should be carried out by a HOKLAS accredited laboratory.
16.Clause 8.5 ¹⁴	<p>8.5 CORE-DRILLING TEST</p> <p>Proof core-drilling test is commonly used in large diameter bored piles, barrettes and the like which can reveal the soundness of the founding rock, concrete and the interface between the pile and the rock. When carrying out core-drilling tests:</p>	<p>8.5 PROOF CORE-DRILLING TEST</p> <p>Proof core-drilling test is commonly used in large diameter bored piles, barrettes and the like which can reveal the soundness of the founding rock, concrete and the interface between the pile and the rock. When carrying out proof core-drilling tests:</p>

¹² Revision of core-drilling to proof core-drilling.

¹³ Revision of proof test by core-drilling to proof core-drilling test.

¹⁴ Revision of core-drilling test/tests to proof core-drilling test/tests.