

31 March 2025

To: All Authorized Persons
Registered Structural Engineers
Registered Geotechnical Engineers
Registered General Building Contractors
Registered Specialist Contractors

Dear Sir/Madam,

Further Streamlining Measures for Foundation Works

Alternative Arrangement for Witnessing Plate Load Test

For shallow foundations on soil, plate load tests are required to be carried out to verify the allowable bearing capacity and the value of Young's modulus of soils adopted in settlement calculations by following the test procedures and acceptance criteria stipulated in the Code of Practice for Foundations 2017 (2024 Edition)¹. In this connection, the authorized person (AP)/ registered structural engineer (RSE)/ registered specialist contractor (RSC) should notify the Buildings Department (BD) of the proposed date and time of the tests so that they may be witnessed by BD staff.

2. In line with the alternative arrangement for witnessing foundation proof load tests by videotelephony² as promulgated in our circular letter of 2 June 2023, BD is prepared to extend this alternative arrangement to plate load tests, so that AP/RSE/RSC may employ videotelephony to let BD officers witness the plate load tests in office without visiting the site in person.

3. To adopt this alternative arrangement, the whole loading and unloading process of the tests should be conducted under the supervision of RSE's and RSC's supervisory teams as provided in the supervision plan. The video records of the plate load tests should be submitted to BD for record. The general requirements on adopting the alternative arrangement are given in **Appendix I**.

/4. ...

¹ For shallow foundations, a sufficient number of plate load tests should be carried out when one of the conditions in clause 4.2.2(2) in the Code of Practice for Foundations 2017 (2024 Edition) applies.

² Videotelephony means two-way simultaneous communication with both audio and video in real time through telephone or computer network connections. The video should be recorded in colour with resolution of not less than 480p.

Streamlined Witnessing of Test Installation of Piles by BD Staff

4. To verify the design assumptions and control parameters for the safe installation of piles, test installation of piles is required and the process of which may be witnessed by BD staff. While the whole process of the test installation should be supervised by RSE's and RSC's supervisory teams in accordance with the supervision plan, to facilitate the site progress, except for sensitive sites³, streamlined witnessing arrangement of test installation of piles by BD staff may be applicable for socketed steel H-piles, mini-piles and driven steel H-piles as detailed in paragraph 5 below.

5. Subject to the compliance with the general requirements as set out in **Appendix II**, BD staff may, instead of witnessing the whole process of the test installation, focus their check on site on the following aspects during the bedrock drilling stage (for socketed steel H-piles and mini-piles) and the final set stage (for driven steel H-piles):

- a) For socketed steel H-piles and mini-piles:
 - (i) Presence of site supervisory personnel as specified in approval letters and supervision plan;
 - (ii) Setting out of bored holes;
 - (iii) Size and position of casings; and
 - (iv) Depth of bored holes and quality of rock fragments washed out during rock boring.
- b) For driven steel H-piles:
 - (i) Presence of site supervisory personnel as specified in approval letters and supervision plan;
 - (ii) Setting out of piles;
 - (iii) Type and size of piles;
 - (iv) Type and/or weight of drop hammer; and
 - (v) Drop height and/or blow count.

6. The above streamlined witnessing arrangement emphasises the duties and responsibilities of RSE, RSC and their supervisory teams in supervising the test installation. Any irregularities identified during the test installation should be promptly addressed with the installation works suspended as necessary. The supervisory teams should promptly report all irregularities to the RSE who should take immediate actions to follow up any remedial works, review the method of installation, and notify BD of the course of follow-up actions immediately.

/7. ...

³ Sensitive sites are sites where the works could pose adverse impact to life and/or property. These include sites where the works could affect old buildings with shallow foundations, old tunnels/caverns, major roads, railways, water mains, gas mains, slopes, retaining walls or sites with history of instability.

Further Streamlining Measures for Pile Selection for Proof Tests upon Receipt of Form BA14 Certifying the Completion of Foundation Works

7. Upon completion of the foundation works, a Form BA14 certifying the completion of the works shall be submitted according to regulation 25 of the Building (Administration) Regulations. In this connection, proof tests are required to be carried out on representative foundation units to ascertain the performance of the foundation under load as required in section 20 of the Building (Construction) Regulation.

8. To expedite the selection of large diameter bored piles for proof tests, revised Practice Note for Authorized Persons, Registered Structural Engineers and Registered Geotechnical Engineers (PNAP) APP-18 was issued in October 2024 to allow AP/RSE to (a) submit the Form BA14 to BD after completion of proof drilling at the concrete and rock interface for at least 85% of the completed large diameter bored piles; and b) defer submission of all test results for concrete cubes at 28 days if sufficient justification is available.

9. In order to facilitate early selection of piles for conducting proof tests, BD is prepared to extend the above-mentioned streamlining measures in PNAP APP-18 to cover Form BA14 submissions for other types of foundation works⁴ as appropriate.

10. In addition, upon receipt of a Form BA14 regarding completion of foundation works, BD will select representative piles for proof tests if the essential information as required in the approval of foundation plans has been submitted and found satisfactory, and the following documents (if applicable) may be submitted at a later stage:

- (a) Excavation / boring records;
- (b) Initial reading and subsequent readings on monitoring points including settlement and groundwater drawdown records;
- (c) Ultrasonic echo sounder test and ultrasonic crosshole sonic logging test results;
- (d) 28-day concrete/grout test cube results, provided that test cube results taken before 28 days are available to justify the sufficiency of concrete/grout strength;
- (e) Mill certificates of steel reinforcing bars / constituent materials used to produce the couplers / structural steel sections used / prestressing bars/ spiral wires/ steel plates for each batch of piles, if applicable; and
- (f) Post-construction proof drilling records on the condition that at least 85% of proof drilling for the completed piles are completed and the records submitted.

/11. ...

⁴ Including small diameter bored piles, socketed steel H-piles, mini-piles and other common types of pile foundations which require boring operation at the founding bedrock.

11. In case there are irregularities found thereafter, BD may require additional proof tests. The Form BA14 would only be acknowledged when the results of all proof tests and all the required documents are submitted and found satisfactory.

Yours faithfully,



(LAI Ho-cheong)

Assistant Director/New Buildings 2
for Building Authority

c.c. The Real Estate Developers Association of Hong Kong

General Requirements on Adopting Alternative Arrangement for Witnessing Plate Load Test by Videotelephony

1. At least one or 50% of the plate load tests for the project, whichever is more, should be witnessed by BD officers on-site.
2. The Technically Competent Person (TCP)-T5 under RSE's stream and the TCP-T4 under RSC's stream as provided in the supervision plan should be present on site to witness the tests while the tests are concurrently witnessed by BD officers via videotelephony. BD officers may visit the site during the tests for audit check without prior notification.
3. A trial of videotelephony and video recording should be arranged with BD officers in advance before the actual tests to ensure the quality of the video streaming and recording.
4. Within 7 days after the completion of the plate load test, RSE should submit the video records of the whole loading and unloading process in DVD-ROM disc to BD. RSE and the authorized signatory of RSC should certify on each disc (with date) with a permanent marker signifying that the videos are true records of the plate load tests without being tampered.
5. Video records taken for the plate load tests should meet the following minimum requirements:
 - (a) Video resolution should be at least 480p;
 - (b) Site features for identification should be recorded in the videos;
 - (c) Location of plate load tests should be recorded in the videos; and
 - (d) Site supervision personnel and representatives of HOKLAS accredited laboratory should be captured in the videos as a proof of attendance.

General Requirements for Streamlined Witnessing of Test Installation of Piles by BD Staff

A) For test installation of socketed steel H-piles and mini-piles:

1. The TCPs under RSE's and RSC's streams as provided in the supervision plan should conduct pre-bedrock drilling stage⁵ inspection for the test pile installation, and record the pile installation process and vibration monitoring by means of videos and photos.
2. Such records should be kept on site for BD's inspection at the bedrock drilling stage. A copy of such records appended with a statement confirming that the TCPs under RSE's and RSC's streams have conducted the inspection personally (with date) and the pile installation complied with the approved plans should be submitted to BD for record.
3. The following records should be checked by the TCPs under RSE's and RSC's streams during pre-bedrock drilling stage inspection:
 - (a) Conformity of plants used on site with the test boring proposal;
 - (b) Advancement rate of drill bit;
 - (c) Verticality of steel casing;
 - (d) Air pressure used for boring operation; and
 - (e) Amount of air supply/ flushing medium for boring operation.
4. Any irregularities identified during the test installation should be promptly addressed by the TCPs with the installation works suspended as necessary. The supervisory teams should promptly report all irregularities to the RSE who should take immediate actions to follow up any remedial works, review the method of installation, and notify BD of the course of follow-up actions immediately.

⁵ The pre-bedrock drilling stage involves the working process before drilling the steel casing above a level of 500mm from the tentative rockhead level. This includes the procedures from setting out to drilling the steel casing down to 500mm above tentative rockhead level.

5. Video records taken should meet the following minimum requirements:
 - (a) Video resolution should be at least 480p;
 - (b) Site features for identification should be recorded in the videos;
 - (c) Location of the test installation should be recorded in the videos; and
 - (d) Site supervision personnel should be captured in the videos as a proof of attendance.

B) For test driving of driven steel H-piles

6. The TCPs under RSE's and RSC's streams as provided in the supervision plan should conduct pre-final set stage⁶ inspection for the test pile installation, and record the pile installation process and vibration monitoring by means of videos and photos.
7. Such records should be kept on site for BD's inspection at the final setting stage. A copy of such records appended with a statement confirming that the TCPs under RSE's and RSC's streams have conducted the inspection personally (with date) and the pile installation complied with the approved plans should be submitted to BD for record.
8. Any irregularities identified during the test installation should be promptly addressed by the TCPs with the installation works suspended as necessary. The supervisory teams should promptly report all irregularities to the RSE who should take immediate actions to follow up any remedial works, review the method of installation, and notify BD of the course of follow-up actions immediately.
9. Video records taken should meet the following minimum requirements:
 - (a) Video resolution should be at least 480p;

⁶ The pre-final set stage involves the working process before driving the steel H-piles above a level of 500mm from the tentative founding level. This includes the procedures from setting out to driving the steel H-piles down to 500mm above tentative founding level.

- (b) Site features for identification should be recorded in the videos;
- (c) Location of the test installation should be recorded in the videos; and
- (d) Site supervision personnel should be captured in the videos as a proof of attendance.

(3/2025)