INTERNATIONAL STANDARD

ISO 22476-2

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AMENDMENT 1
2011-11-15

Geotechnical investigation and testing — Field testing —

Part 2: Dynamic probing

AMENDMENT 1

Reconnaissance et essais géotechniques — Essais en place —

Partie 2: Essais de pénétration dynamique

AMENDEMENT 1

Reference number
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Foreword

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Amendment 1 to ISO 22476-2:2005 was prepared by the European Committee for Standardization (CEN) Technical Committee CEN/TC 341, *Geotechnical Investigation and Testing*, in collaboration with Technical Committee ISO/TC 182, *Geotechnics*, Subcommittee SC 1, *Geotechnical investigation and testing*, in accordance with the Agreement on technical cooperation between ISO and CEN (Vienna Agreement).

Geotechnical investigation and testing — Field testing —

Part 2:
Dynamic probing

AMENDMENT 1

Page 1, Scope

Replace the first paragraph with the following:

> This part of ISO 22476 deals with the equipment requirements for, execution of and reporting on dynamic probing.
>
> NOTE This part of ISO 22476 fulfils the requirements for dynamic probing as part of geotechnical investigation and testing according to EN 1997-1 and EN 1997-2.

In the first sentence of the last paragraph, replace prEN ISO 22475-1 with ISO 22475-1.

Page 1, Normative references

Replace the second reference with the following:

> ISO 22475-1, *Geotechnical investigation and testing — Sampling methods and groundwater measurements — Part 1: Technical principles for execution*

Page 3, 4.3

Add the following paragraph after the first paragraph:

> The optional injection hole should be placed a sufficient distance above the tip of the cone so that the mud flushing does not influence the soil material at the tip.

Page 4, 4.3, Figure 1

Replace item 2 of the Key with the following:

> 2 Injection hole, e.g. of 5 mm diameter (optional)

Page 4, 4.4

In the third sentence of the first paragraph, replace “at the mid point” with “at any point”.

Page 5, 4.6.2

In the second sentence, replace “measure” with “measured”.

Page 5, 4.6.3

Before NOTE 1, add the following paragraph:

> When conducting injections at contaminated sites, injections should always be carried out during the whole driving operation, even when pulling the driving rods.

Page 6, 4.6.5, Table 1

In row 3, column 7, replace "$50 < d < 0{,}5\ D_h$" with "$50 < d < 0{,}5\ D_h$[a]".

In row 5, column 1, delete "rod deviation[d]:"

In row 5, columns 1, 3, 4, 5, 6, 7 and 8, delete the following:

lowermost 5 m	%	0,1	0,1	0,1	0,1	0,1

In row 5, columns 1, 3, 4, 5, 6, 7 and 8, delete the following:

remainder	%	0,2	0,2	0,2	0,2	0,2

In row 6, columns 4, 5, 6, 7 and 8, replace the numbers with the following:

49	98	164	195	234

In row 7, delete the last footnote ("[d] rod deviation from the vertical").

Page 6, 5.1

After the second sentence of the first paragraph, add the following:

> The straightness shall be checked by applying one of the following procedures.
>
> — Holding the rod vertically and rotating it. If the rod appears to wobble, the straightness is not acceptable.
>
> — Rolling the rod on a plane surface. If the rod appears to wobble, the straightness is not acceptable.
>
> — Sliding a straight hollow tube which is slightly longer than the rod over the rod. If the rod can pass through the tube without jamming, the straightness is acceptable.

After the fourth paragraph, add the following paragraph:

> For free-fall penetrometers, the energy losses should be determined annually. The actual energy transmitted to the drive rods should be known by calibration when the test results are used for quantitative evaluation.

Page 7, 5.2

In the second paragraph, replace the second, third and fourth sentences with the following:

> The inclination of the driving system and the driving rod projecting from the ground shall not deviate more than 5 % from the vertical. If this is the case, the dynamic probing test shall be stopped. Deviations by more than 2 % shall be reported.

Page 7, 5.3

In the second paragraph, add the word “dynamic” before “load”.

In paragraph 7, add “(N_{10})” after “100 mm penetration” and after “every 100 mm”. Add “(N_{20})” after “200 mm penetration”.

Page 8, Clause 6

At the end of the first paragraph, add the following:

> The test results shall be reported as blow counts without any correction or adjustment. Adjustments including for energy losses may be considered in further interpretation.

Add the following as the last paragraph:

> For identification and classification of the ground, the results of sampling (according to ISO 22475-1) from at least one borehole, trial pit or heading shall be available for the evaluation of the results. In addition, identification and classification results (see ISO 14688 and ISO 14689) shall be available from every separate ground layer within the desired investigation depth [see EN 1997-2:2007, 2.4.1.4(2) P, 4.1(1) P and 4.2.3(2) P].

Page 9, 7.1.2

Add the following to 7.1.2 c):

> 6) type of rod (hollow or solid material);

Insert the following as item 7) in 7.1.2 d):

> any deviation of the driving equipment from the vertical greater than 2 %;

Renumber the subsequent items in 7.1.2 d) accordingly.

Page 12, Annex B

In row 4 of the table, add “Hollow rods/solid rods *)” after “Fixed/loose anvil *)”

Page 19, D.3

In Figure D.5, replace “N_{10L}” with “N_{10H}” on the X-axis.

Page 20, D.3

After the fourth paragraph, before Figure D.7, add the following:

> NOTE Further information on the correction procedure is given in Reference [10].

Page 24, D.6, Figure D.14

In the second column in the table, replace “U_C” with “C_U”.

Page 30, Bibliography

In Reference [8], replace “EN 1997-2” with “EN 1997-2:2007 + AC:2010”.

Add the following references:

[1] ISO 14688 (all parts), *Geotechnical investigation and testing — Identification and classification of soil*

[2] ISO 14689 (all parts), *Geotechnical investigation and testing — Identification and classification of rock*

[3] BUTCHER, A.P., MCELMEEL, K. and POWELL, J.J.M.: *Dynamic probing and its use in clay soils.* Proc. Int. Conf. on Advances in Site Investigation Practice. ICE London 1995, pp. 383-395