



SLOVENSKI STANDARD
SIST EN 1538:2011/kFprA1:2015
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Izvedba posebnih geotehničnih del - Diafragme

Execution of special geotechnical works - Diaphragm walls

Ausführung von Arbeiten im Spezialtiefbau - Schlitzwände

Exécution des travaux géotechniques spéciaux - Parois moulées

Ta slovenski standard je istoveten z: EN 1538:2010/FprA1

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Execution of special geotechnical works - Diaphragm walls

Exécution des travaux géotechniques spéciaux - Parois
moulées

Ausführung von Arbeiten im Spezialtiefbau - Schlitzwände

This draft amendment is submitted to CEN members for unique acceptance procedure. It has been drawn up by the Technical Committee CEN/TC 288.

This draft amendment A1, if approved, will modify the European Standard EN 1538:2010. If this draft becomes an amendment, CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for inclusion of this amendment into the relevant national standard without any alteration.

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EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

CEN-CENELEC Management Centre: Avenue Marnix 17, B-1000 Brussels

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Foreword

This document (EN 1538:2010/FprA1:2014) has been prepared by Technical Committee CEN/TC 288 “Execution of special geotechnical works”, the secretariat of which is held by AFNOR.

This document is currently submitted to the Unique Acceptance Procedure.

The general scope of TC 288 is the standardisation of the execution procedures for geotechnical works (including testing and control methods), and of the required material properties.

The Task Group CEN/TC 288/TG Amendments had been charged to amend EN 1538:2010, *Execution of special geotechnical work — Diaphragm walls*, and EN 1536:2010, *Execution of special geotechnical work — Bored piles*, in order to accord both standards with EN 206:2013, *Concrete — Specification, performance, production and conformity*. For this purpose, the technical provisions on fresh concrete, previously contained in 6.1, *Constituents*, and 6.3, *Concrete*, have been moved to the normative Annex D of EN 206:2013.

The design, planning and execution of retaining and cut-off diaphragm walls call for experience and knowledge in this specialized field. The execution phase requires skilled and qualified personnel and the present standard cannot replace the expertise of specialist contractors.

For design, this document is complemented by EN 1997-1, *Eurocode 7: Geotechnical design — Part 1: General rules*, and EN 1997-2, *Eurocode 7: Geotechnical design — Part 2: Ground investigation and testing*. This European Standard expands on design only where necessary (e.g. the detailing of reinforcement) and provides full coverage of the construction and supervision requirements.

Concerning the acceptance of concrete on site, the concrete placement process, the curing and the quality control measures to be taken during the execution of diaphragm walls, this Standard provides the respective requirements which complement the general rules contained in EN 13670, *Execution of concrete structures*.

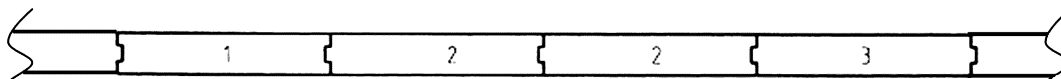
EN 1538:2010/FprA1:2014 (E)**1 Modifications to Clause 1, Scope**

In key to Figure 1, replace No. 5 with

"5 Working platform level".

Replace 3rd part of Figure 2 with

"



".

2 Modifications to Clause 2, Normative references

Replace

"EN 206-1:2000, *Concrete — Part 1: Specification, performance, production and conformity*" with "EN 206:2013, *Concrete Specification, performance, production and conformity*".

Delete

"EN 197-1:2000, *Cement — Part 1: Composition, specifications and conformity criteria for common cements*";

"EN 934-2, *Admixtures for concrete, mortar and grout — Part 2: Concrete admixtures — Definitions, requirements, conformity, marking and labelling*

EN 1008, *Mixing water for concrete — Specification for sampling, testing and assessing the suitability of water, including water recovered from processes in the concrete industry, as mixing water for concrete*" and

"EN 12620, *Aggregates for concrete*".

3 Modification to Clause 3, Terms and definitions

In 3.9, add "I Schlitzwandlamelle" to read:

"3.9

panel

fr panneau

de Schlitzwandelement / Schlitzwandlamelle

section of a diaphragm wall which is concreted as a single unit

NOTE A diaphragm panel may be linear, T-shaped, L-shaped, or of other configuration."

4 Modification to Clause 4, Information needed for the execution of the work

In 4.2.1, replace 9th bullet with the following:

"

— presence of contaminated ground;"

5 Modifications to 6.1, Constituents

Replace 6.1.4 with the following:

"

6.1.4.1 Cements for diaphragm walls are listed in EN 206:2013, Annex D.

6.1.4.2 The use of CEM II or CEM III cement or the partial replacement of CEM I cement by type II additions is recommended because they have been shown to have beneficial effects on concrete, such as:

- improved workability;
- reduced heat generation during setting;
- improved durability; and
- reduced bleeding rate.

NOTE 1 The use of CEM III cement type or the replacement of CEM I cement type by ground granulated blast furnace slag can result in reduced permeability.

NOTE 2 Bleeding is less likely to be significant with cements with fineness of grind (Blaine) of 3 800 cm²/g or more."

Replace 6.1.5 to 6.1.8 with the following:

"

6.1.5 Aggregates

Aggregates shall comply with EN 206:2013, Annex D.

6.1.6 Water

Mixing water shall comply with EN 206:2013.

6.1.7 Additions

The use of additions shall comply with EN 206:2013.

6.1.8 Admixtures

Admixtures shall comply with EN 206:2013."

EN 1538:2010/FprA1:2014 (E)**6 Modifications to 6.3, Concrete**

Replace 6.3.1 to 6.3.6 with the following:

"

6.3.1 General

6.3.1.1 Concrete shall comply with EN 206:2013.

6.3.1.2 Cast in situ concrete shall be composed to minimize segregation during placing, to flow easily around the reinforcement, and when set, to provide a dense and low permeability material.

6.3.1.3 The concrete shall comply with the requirements related to strength and durability in the hardened state as well as with the requirements related to consistency in the fresh state.

6.3.2 Aggregates

Aggregates shall comply with EN 206:2013.

6.3.3 Cement contents

The minimum cement contents shall conform with EN 206:2013, Table D.2.

6.3.4 Water/cement ratio

The water/cement ratio shall comply with EN 206:2013.

6.3.5 Admixtures

Admixtures used shall comply with EN 206:2013.

NOTE 1 The admixtures commonly used for concreting are:

- water reducing/plasticizing;
- high range water reducing/super-plasticizing; and
- set retarding.

NOTE 2 Admixtures are used:

- to give a mix of high plasticity;
- to improve concrete flow;
- to minimize bleeding and avoid honeycombing or segregation that might otherwise result from a high water content;
- to prolong the workability as required for the duration of the placement to cater for any interruptions in the placement process.

NOTE 3 Inappropriate application of admixtures can result into damages.

6.3.6 Fresh concrete

Concrete shall comply with EN 206:2013, Annex D."

Delete 6.3.7, *Production of concrete, and update numbering.*

In new 6.3.7.1, NOTE 1, replace "EN 206-1" with "EN 206:2013".

7 Modification to 6.4, Plastic concrete

Replace NOTE 4 with the following:

"NOTE 4 For plastic concrete it can be more suitable to specify the compressive strength not at 28 days but at a later age more representative of the long-term performance of the structure (see EN 206:2013, 5.5.1.2(3)). Knowledge of the long term strength and deformability can be necessary."

8 Modification to 6.5, Hardening slurry

In 6.5.1, replace NOTE 4 with the following:

"NOTE 4 For hardening slurry it can be more suitable to specify the compressive strength not at 28 days but at an earlier or later age more representative for the long-term performance of the structure and the knowledge of long term strength and deformability can be necessary."

9 Modifications to Clause 7, Considerations related to design

In 7.1.4, replace NOTE 2 with the following:

"NOTE 2 In some cases, the horizontal cross-section can be reduced below a certain depth."

In 7.2.1.3, replace subclause NOTE 2 with the following:

"NOTE 2 in cases where a loss of support fluid can occur (e.g. highly permeable, coarse soils or where there are voids in the ground), special measures can be adopted, for example:

- increasing the flow limit of the fluid by increasing the bentonite content in the suspension;
- adding a filler material to the bentonite suspension, either at the mixing plant or directly in the trench;
- in the case of voids, filling the trench to an appropriate depth with lean mix concrete or other suitable material, and re-excavating;
- grouting the layers concerned before excavating the trench."

In 7.5.3.5, replace "cable clasp" with "cable clasps".

Delete 7.4.3.

10 Modifications to Clause 8, Execution

In 8.2.2.3, replace NOTE 1 with the following:

"NOTE 1 Where boulders or other obstructions are present in the ground, increased tolerances can be necessary."

In 8.3.1.3, replace NOTE 1 with the following:

"NOTE 1 Special care can be required for excavating and backfilling trenches in case of removal of underground obstructions or disturbed soil."

In 8.3.2.1, replace NOTE 2 with the following

"In the case of cut-off walls excavated continuously, if ground conditions should permit, guide-walls might not be necessary."