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STN	**Vykonávanie špeciálnych geotechnických prác. Podzemné steny.**	**STN EN 1538:2010+A1** 73 1003

Execution of special geotechnical work - Diaphragm walls

Táto norma obsahuje anglickú verziu európskej normy.
This standard includes the English version of the European Standard.

Táto norma bola oznámená vo Vestníku ÚNMS SR č. 10/15

Obsahuje: EN 1538:2010+A1:2015

Oznámením tejto normy sa ruší
STN EN 1538 (73 1003) z apríla 2011

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EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN 1538:2010+A1

June 2015

ICS 93.020

Supersedes EN 1538:2010

English Version

Execution of special geotechnical work - Diaphragm walls

Exécution des travaux géotechniques spéciaux - Parois moulées

Ausführung von Arbeiten im Spezialtiefbau - Schlitzwände

This European Standard was approved by CEN on 2 July 2010 and includes Amendment 1 approved by CEN on 17 April 2015.

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

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Ref. No. EN 1538:2010+A1:2015 E

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Foreword

This document (EN 1538:2010+A1:2015) has been prepared by Technical Committee CEN/TC 288 “Execution of special geotechnical works”, the secretariat of which is held by AFNOR.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by December 2015, and conflicting national standards shall be withdrawn at the latest by December 2015.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN [and/or CENELEC] shall not be held responsible for identifying any or all such patent rights.

This document supersedes ▌A1⟩ EN 1538:2010 ⟨A1▌.

This document includes Amendment 1 approved by CEN on 2015-04-17.

The start and finish of text introduced or altered by amendment is indicated in the text by tags ▌A1⟩ ⟨A1▌.

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. WG15 has been charged to revise EN 1538:2000, with the subject area of both retaining and cut-off diaphragm walls. This standard does not address the execution of barrettes, which is covered by EN 1536, *Execution of special geotechnical work — Bored piles*.

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

The document has been prepared to stand alongside 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 standard expands on design only where necessary (e.g. the detailing of reinforcement) and provides full coverage of the construction and supervision requirements.

▌A2⟩ The amendment became necessary to accord the Standard EN 1538:2010 with EN 206:2013, Concrete – Specification, performance, production and conformity. EN 206:2013 has been revised to contain also the specific requirements for concrete for applications for special geotechnical works, making redundant respective provisions in EN 1538 (e.g. 6.1, 6.3 and 8.8).

Full according with EN 13670, Execution of concrete structures is however still pending. EN 1538:2010+A1:2015 therefore still contains specific requirements for bored piles as a concrete structure, such as the detailing of the reinforcement, the concrete placement and the supervision of concreting process which are complementing the provisions of EN 13670.

In addition, some editorial corrections were made in this amended Standard. ⟨A1▌

According to the CEN-CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

1 Scope

This European Standard establishes general principles for the execution of diaphragm walls as either retaining walls or cut-off walls.

NOTE 1 This standard covers only structures constructed in a trench excavated with a support fluid or in dry conditions, where soil is removed and replaced by concrete or slurry and with wall thickness $B \geq 40$ cm.

NOTE 2 Diaphragm walls can be permanent or temporary structures.

NOTE 3 The following types of structure are considered:

a) retaining walls: usually constructed to support the sides of an excavation in the ground. They include:

   1) cast in situ concrete diaphragm walls;

   2) precast concrete diaphragm walls;

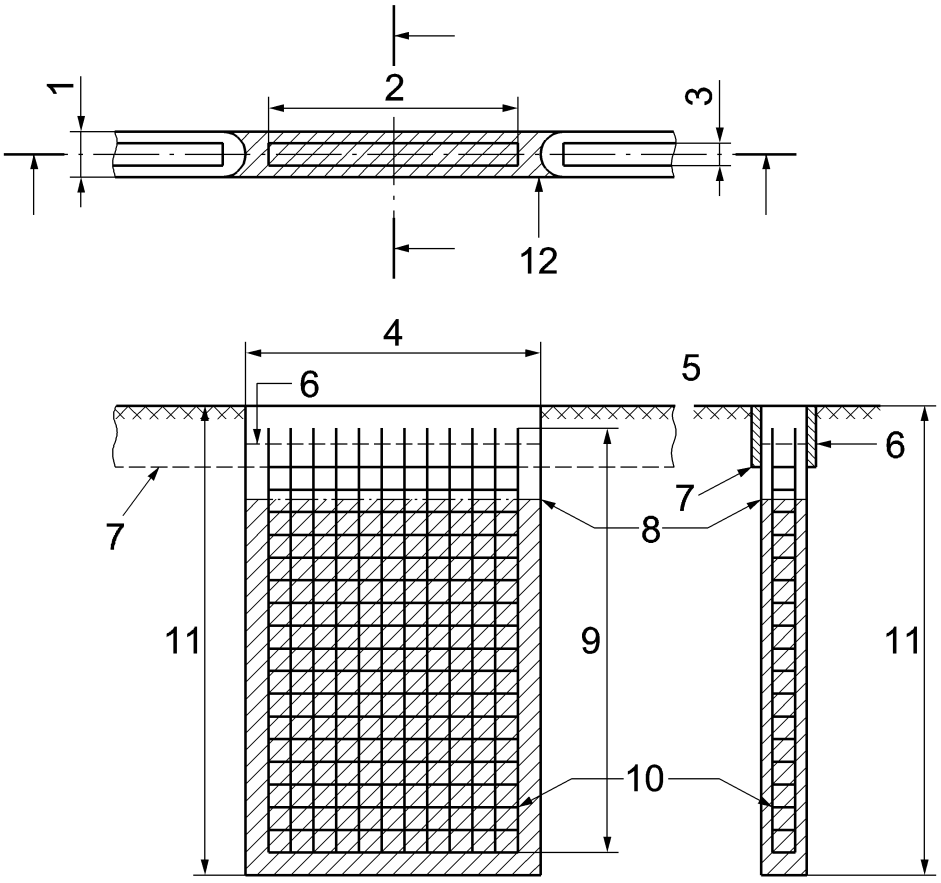
   3) reinforced slurry walls;

b) cut-off walls: usually constructed to prevent migration of groundwater, clear or polluted, or of other contaminants present in the ground. They include:

   1) slurry walls (possibly with membranes or sheet piles);

   2) plastic concrete walls.

NOTE 4 Walls formed shallow vertical trenches (typically excavations with a ratio of depth over thickness $D/B < 5$ or $D < 5$ m) are not covered by this standard.

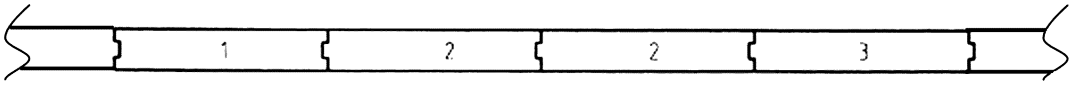


Key

1	Wall thickness (B)	7	Guide-wall
2	Horizontal length of reinforcement cage	8	Cut off level
3	Cage width	9	Vertical length of reinforcement cage
4	Length of panel	10	Reinforcement cage
5	[A1] Working platform level [A1]	11	Depth of excavation (D)
6	Casting level	12	Concave portion of curved joints

Figure 1 — Geometry of a panel

[A1]



[A1]

Key

P Primary
S Secondary
1 Starter
2 Intermediate
3 Closure

Figure 2 — Schematic examples of different types of panels and joints (plan view)

2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

[A1] *deleted text* [A1]

[A1] EN 206:2013, *Concrete — Specification, performance, production and conformity* [A1]

EN 791, *Drill rigs — Safety*

[A1] *deleted text* [A1]

EN 1990, *Eurocode — Basis of structural design*

EN 1991 (all parts), *Eurocode 1: Actions on structures*

EN 1992 (all parts), *Eurocode 2: Design of concrete structures*

EN 1997-1, *Eurocode 7: Geotechnical design — Part 1: General rules*

EN 1997-2, *Eurocode 7 — Geotechnical design — Part 2: Ground investigation and testing*

EN 1998 (all parts), *Eurocode 8: Design of structures for earthquake resistance*

EN 10025-2, *Hot rolled products of structural steels — Part 2: Technical delivery conditions for non-alloy structural steels*

EN 10080, *Steel for the reinforcement of concrete — Weldable reinforcing steel — General*

EN 10210 (all parts), *Hot finished structural hollow sections of non-alloy and fine grain steels*

EN 10219 (all parts), *Cold formed welded structural hollow sections of non-alloy and fine grain steels*

EN 10248 (all parts), *Hot rolled sheet piling of non alloy steels*

EN 10249 (all parts), *Cold formed sheet piling of non alloy steels*

〚A1〛 *deleted text* 〚A1〛

EN 13670, *Execution of concrete structures*