

DIN EN 1538



ICS 93.020

Supersedes
DIN EN 1538:2010-12

**Execution of special geotechnical work –
Diaphragm walls;
English version EN 1538:2010+A1:2015,
English translation of DIN EN 1538:2015-10**

Ausführung von Arbeiten im Spezialtiefbau –
Schlitzwände;
Englische Fassung EN 1538:2010+A1:2015,
Englische Übersetzung von DIN EN 1538:2015-10

Exécution des travaux géotechniques spéciaux –
Parois moulées;
Version anglaise EN 1538:2010+A1:2015,
Traduction anglaise de DIN EN 1538:2015-10

Document comprises 49 pages

Translation by DIN-Sprachendienst.

In case of doubt, the German-language original shall be considered authoritative.

A comma is used as the decimal marker.

National foreword

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

The responsible German body involved in its preparation was the *DIN-Normenausschuss Bauwesen* (DIN Standards Committee Building and Civil Engineering), Working Committee NA 005-05-13 AA *Schlitzwände*.

Amendments

This standard differs from DIN EN 1538:2010-12 as follows:

- a) Amendment A1:2015 has been incorporated;
- b) the standard has been editorially revised;
- c) the German translation has been revised in parts.

Previous editions

DIN 4126: 1984-01, 1986-08

DIN EN 1538: 2000-07, 2010-12

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.

CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration. Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the CEN-CENELEC Management Centre or to any CEN member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the CEN-CENELEC Management Centre has the same status as the official versions.

CEN members are the national standards bodies of 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 United Kingdom.



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

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

Contents

Page

Foreword	4
1 Scope	5
2 Normative references	7
3 Terms and definitions	8
4 Information needed for the execution of the work	10
4.1 General	10
4.2 Special features	10
5 Geotechnical investigation	11
5.1 General	11
5.2 Specific requirements	12
6 Materials and products	13
6.1 Constituents	13
6.1.1 General	13
6.1.2 Bentonite	13
6.1.3 Polymers	13
6.1.4 Cement	13
6.1.5 Aggregates	14
6.1.6 Water	14
6.1.7 Additions	14
6.1.8 Admixtures	14
6.2 Support fluids	14
6.2.1 Bentonite suspensions	14
6.2.2 Polymer solutions	15
6.2.3 Fresh hardening slurries	16
6.3 Concrete	16
6.3.1 General	16
6.3.2 Aggregates	16
6.3.3 Cement contents	16
6.3.4 Water/cement ratio	16
6.3.5 Admixtures	16
6.3.6 Fresh concrete	17
6.3.7 Sampling and testing on site	17
6.4 Plastic concrete	17
6.5 Hardening slurry	18
6.6 Reinforcement	18
6.7 Additional inserted products	19
7 Considerations related to design	19
7.1 General	19
7.2 Panel stability	20
7.2.1 General considerations	20
7.2.2 General principle of design	20
7.2.3 Comparable experience	20
7.2.4 Stability considerations	21
7.2.5 Trial excavation(s)	21
7.3 Socketing into rock	21
7.4 Precast concrete panels	22
7.5 Reinforcement cages	22
7.5.1 General considerations	22
7.5.2 Design principles	22
7.5.3 Vertical reinforcement	23
7.5.4 Horizontal reinforcement	23
7.5.5 Multiple cages and joints	23

7.6	Recesses and perforations	24
7.7	Minimum and nominal cover	24
8	Execution	24
8.1	Construction phases	24
8.2	Construction tolerances	25
8.2.1	Panel.....	25
8.2.2	Retaining walls	25
8.2.3	Cut-off walls	26
8.2.4	Reinforcement cage.....	26
8.3	Preliminary works	26
8.3.1	Working platform	26
8.3.2	Guide-walls	26
8.4	Excavation	27
8.4.1	Supporting the walls of the excavation	27
8.4.2	Excavation sequence	28
8.4.3	Loss of support fluid	28
8.5	Cleaning the excavation.....	28
8.6	Forming the joints.....	28
8.7	Placing the reinforcement or other elements	29
8.8	Concreting and trimming	29
8.8.1	General.....	29
8.8.2	Concreting in dry conditions.....	30
8.8.3	Concreting under support fluid.....	30
8.8.4	Loss of immersion of tremie pipe	31
8.8.5	Trimming.....	31
9	Supervision, testing and monitoring	31
10	Records.....	32
11	Special requirements.....	32
Annex A	(informative) Glossary	34
Annex B	(informative) Control schedules during the execution	36
Annex C	(informative) Sample concreting record forms for diaphragm walls	42
Annex D	(informative) Degree of obligation of the provisions	43
Bibliography		47