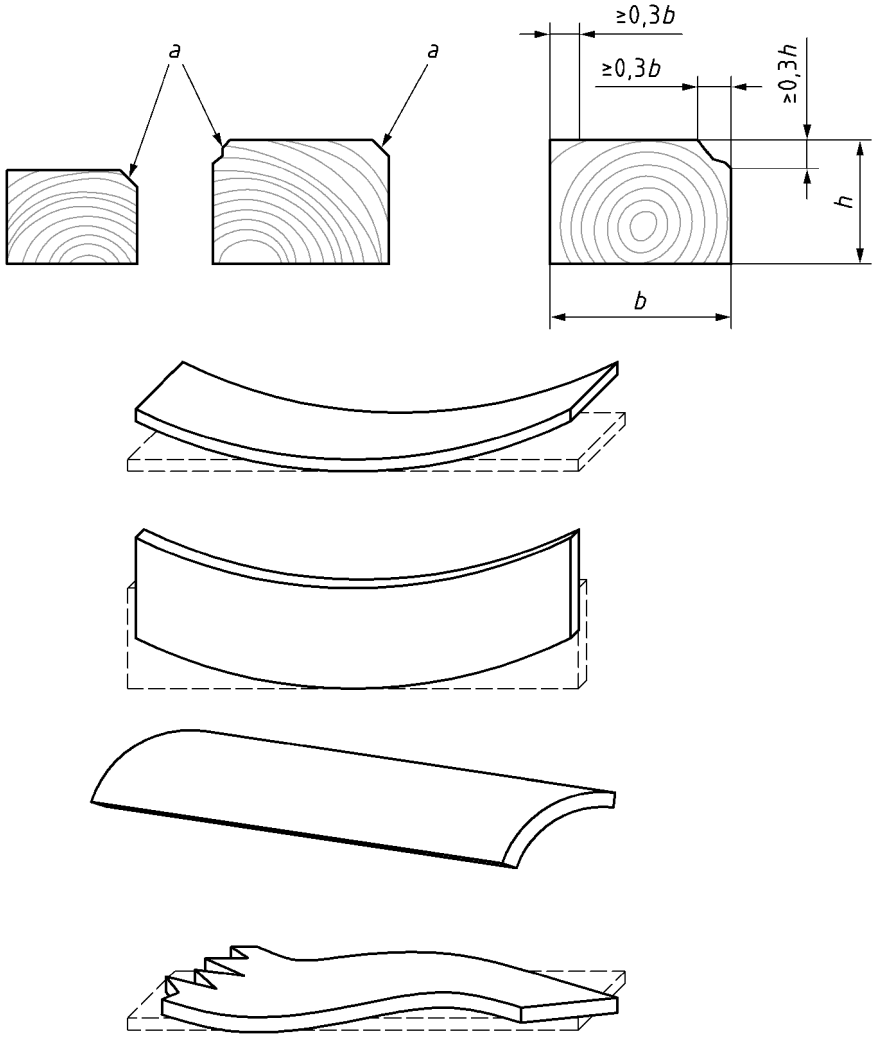

Legende
a Baumkante
b Breite der Gurte
h Höhe der Gurte
(1) Längskrümmung der Breitseite
(2) Längskrümmung der Schmalseite
(3) Querkrümmung
(4) Verdrehung

Bild F.4 — Definition der verschiedenen Verformungen

Tabelle F.2 — Maximal zulässige Differenz zwischen den tatsächlichen Abmessungen und den Nennwerten in mm

	Spundbohlen		Gurtungen	
	einzeln	im Durchschnitt	≤ 105[a]	> 105[a]
Länge	±100	≥ 0	+50 −25	+50 −25
Breite	--	--	±2	+2 −3
Dicke	±2	±0,5	±2	±2

[a] Dicke der Gurtung im 90°-Winkel zur Spundwand.

Tabelle F.3 — Federabmessungen bei Spundbohlen

Länge der Feder (mm)								
		Nadelholz	**Länge der Spundbohle aus Tropenholz** (m)					
Dicke der Spundbohle (mm)	**Dicke der Feder** (mm)		**< 3,5**	**3,6 bis 4,5**	**4,6 bis 5,5**	**5,6 bis 6,5**	**6,6 bis 7,5**	**7,6 bis 8,5**
30 40 50 60 70 80 90 100 110 120	10 13 16 19 23 26 29 33 36 39	11 13 17 18 22 24 24 24 24 24	11	1313	151515	- 18 18 18	- - 22 22 22	- - - 24 24 24 24 24 24 24

Literaturhinweise

[1] EN 335:2013, *Dauerhaftigkeit von Holz und Holzprodukten — Gebrauchsklassen: Definitionen, Anwendung bei Vollholz und Holzprodukten*

[2] EN 335-1:1992, *Dauerhaftigkeit von Holz und Holzprodukten — Definition der Gefährdungsklassen für einen biologischen Befall — Teil 1: Allgemeines*

[3] EN 335-2:1992, *Dauerhaftigkeit von Holz und Holzprodukten — Definition der Gefährdungsklassen für einen biologischen Befall — Teil 2: Anwendung bei Vollholz*

[4] EN 844-1:1995, *Rund- und Schnittholz — Terminologie — Teil 1: Gemeinsame allgemeine Begriffe über Rundholz und Schnittholz*

[5] EN 844-3:1995, *Rund- und Schnittholz — Terminologie — Teil 3: Allgemeine Begriffe über Schnittholz*

[6] EN 844-7:1997, *Rund- und Schnittholz — Terminologie — Teil 7: Begriffe zum anatomischen Aufbau von Holz*

[7] EN 844-9:1997, *Rund- und Schnittholz — Terminologie — Teil 9: Begriffe zu Merkmalen von Schnittholz*

[8] EN ISO 15614-1:2017, *Anforderung und Qualifizierung von Schweißverfahren für metallische Werkstoffe — Schweißverfahrensprüfung — Teil 1: Lichtbogen- und Gasschweißen von Stählen und Lichtbogenschweißen von Nickel und Nickellegierungen*

[9] EN 1990:2002, *Eurocode: Grundlagen der Tragwerksplanung*

[10] EN 1991-1-1:2002, *Eurocode 1: Einwirkungen auf Tragwerke — Teil 1-1: Allgemeine Einwirkungen auf Tragwerke — Wichten, Eigengewicht und Nutzlasten im Hochbau*

[11] EN 1992-1-1:2004, *Eurocode 2: Bemessung und Konstruktion von Stahlbeton- und Spannbetontragwerken — Teil 1-1: Allgemeine Bemessungsregeln und Regeln für den Hochbau*

[12] EN 1993-1-1:2005, *Eurocode 3: Bemessung und Konstruktion von Stahlbauten — Teil 1-1: Allgemeine Bemessungsregeln und Regeln für den Hochbau*

[13] EN 1993-5:2007, *Eurocode 3 — Bemessung und Konstruktion von Stahlbauten — Teil 5: Pfähle und Spundwände*

[14] EN ISO 14171:2016, *Schweißzusätze — Massivdrahtelektroden, Fülldrahtelektroden und Draht-Pulver-Kombinationen zum Unterpulverschweißen von unlegierten Stählen und Feinkornstählen — Einteilung*

[15] EN ISO 22477-1:2018, *Geotechnische Erkundung und Untersuchung — Prüfung von geotechnischen Bauwerken und Bauwerksteilen — Teil 1: Statische axiale Pfahlprobebelastungen auf Druck*

[16] EN ISO 22477-10:2016, *Geotechnische Erkundung und Untersuchung — Prüfung von geotechnischen Bauwerken und Bauwerksteilen — Teil 10: Pfahlprüfungen: Schnellprüfung mit axialer Druckbelastung*

[17] EN ISO 12944, *Beschichtungsstoffe — Korrosionsschutz von Stahlbauten durch Beschichtungssysteme*

[18] EN 1994-1-1, *Eurocode 4 — Bemessung und Konstruktion von Verbundtragwerken aus Stahl und Beton — Teil 1-1: Allgemeine Bemessungsregeln und Anwendungsregeln für den Hochbau*

[19] EN ISO 14341:2011, *Schweißzusätze — Drahtelektroden und Schweißgut zum Metall-Schutzgasschweißen von unlegierten Stählen und Feinkornstählen — Einteilung (ISO 14341:2010)*

– Entwurf –

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DRAFT
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ICS 93.020

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English Version

Execution of special geotechnical work - Sheet pile walls, combined pile walls, high modulus walls

Exécution des travaux géotechniques spéciaux - Rideaux de palplanches

Ausführung spezieller geotechnischer Arbeiten - Spundwandkonstruktionen

This draft European Standard is submitted to CEN members for enquiry. It has been drawn up by the Technical Committee CEN/TC 288.

If this draft becomes a European Standard, 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.

This draft European Standard was established by CEN 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.

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Recipients of this draft are invited to submit, with their comments, notification of any relevant patent rights of which they are aware and to provide supporting documentation.

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

CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels

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European foreword

This document (prEN 12063:2020) has been prepared by Technical Committee CEN/TC 288 “Execution of special geotechnical work”, the secretariat of which is held by AFNOR.

This document is currently submitted to the CEN Enquiry.

This document will supersede EN 12063:1999.

The general scope of TC 288 is the standardization of the execution procedures for geotechnical works (including testing and control methods) and of the required material properties. WG 19 has been charged to revise EN 12063:1999, with the subject area of sheet pile walls.

In comparison with the previous edition, the following technical modifications have been made:

— The document has been technically revised,

— Normative references have been updated,

— All figures have been revised,

— Combined pile walls, high modulus walls structures, synthetic sheet pile walls, precast and timber sheet pile walls have been added in the scope.

1 Scope

This document specifies requirements, recommendations and information concerning the execution of permanent or temporary sheet pile wall, combined pile walls, high modulus walls structures and the handling of equipment and materials.

It does not give requirements and recommendations for the installation of specific parts of the structure such as ground anchorages and piles which are covered by other documents.

It applies only to steel sheet pile walls, combined walls, high modulus walls, synthetic sheet pile walls (composite), precast concrete and timber sheet pile walls. Tubular piles included in combined walls and high modulus walls can be filled with concrete.

Composite structures such as Berliner walls and sheet pile walls in combination with shotcrete, are not covered by this document.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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.

EN 1090-2:2018, *Execution of steel structures and aluminium structures - Part 2: Technical requirements for steel structures*

EN 1537, *Execution of special geotechnical works - Ground anchors*

EN 1997-1:2004, *Eurocode 7: Geotechnical design - Part 1: General rules*

EN 1997-2:2007, *Eurocode 7: Geotechnical design - Part 2: Ground investigation and testing*

EN 10020:2000, *Definition and classification of grades of steel*

EN 10079, *Definition of steel products*

EN 10219-1:2006, *Cold formed welded structural hollow sections of non-alloy and fine grain steels - Part 1: Technical delivery conditions*

EN 10219-2, *Cold formed welded steel structural hollow sections - Part 2: Tolerances, dimensions and sectional properties*

EN 10248-1:1995, *Hot rolled sheet piling of non alloy steels - Part 1: Technical delivery conditions*

EN 10248-2:1995, *Hot rolled sheet piling of non alloy steels - Part 2: Tolerances on shape and dimensions*

EN 10249-1:1995, *Cold formed sheet piling of non alloy steels - Part 1: Technical delivery conditions*

EN 10249-2, *Cold formed sheet piling of non alloy steels - Part 2: Tolerances on shape and dimensions*

EN 15804, *Sustainability of construction works - Environmental product declarations - Core rules for the product category of construction products*

EN 16228-1, *Drilling and foundation equipment - Safety - Part 1: Common requirements*

EN 16228-2, *Drilling and foundation equipment - Safety - Part 2: Mobile drill rigs for civil and geotechnical engineering, quarrying and mining*

EN 16228-3, *Drilling and foundation equipment - Safety - Part 3: Horizontal directional drilling equipment (HDD)*

EN 16228-4, *Drilling and foundation equipment - Safety - Part 4: Foundation equipment*

EN 16228-5, *Drilling and foundation equipment - Safety - Part 5: Diaphragm walling equipment*

EN 16228-6, *Drilling and foundation equipment - Safety - Part 6: Jetting, grouting and injection equipment*

EN 16228-7, *Drilling and foundation equipment - Safety - Part 7: Interchangeable auxiliary equipment*

EN ISO 2560, *Welding consumables - Covered electrodes for manual metal arc welding of non-alloy and fine grain steels - Classification (ISO 2560)*

EN ISO 4063:2010, *Welding and allied processes - Nomenclature of processes and reference numbers (ISO 4063:2009, Corrected version 2010-03-01)*

EN ISO 5817:2014, *Welding - Fusion-welded joints in steel, nickel, titanium and their alloys (beam welding excluded) - Quality levels for imperfections (ISO 5817:2014)*

EN ISO 9606-1, *Qualification testing of welders - Fusion welding - Part 1: Steels (ISO 9606-1)*

EN ISO 9692-1:2013, *Welding and allied processes - Types of joint preparation - Part 1: Manual metal arc welding, gas-shielded metal arc welding, gas welding, TIG welding and beam welding of steels (ISO 9692-1:2013)*

EN ISO 17636-1, *Non-destructive testing of welds - Radiographic testing - Part 1: X- and gamma-ray techniques with film (ISO 17636-1)*

EN ISO 22477-5, *Geotechnical investigation and testing - Testing of geotechnical structures - Part 5: Testing of grouted anchors (ISO 22477-5)*

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

- IEC Electropedia: available at http://www.electropedia.org/
- ISO Online browsing platform: available at https://www.iso.org/obp

3.1
anchorage
anchoring system for the sheet pile wall, for example anchor plates or anchor walls including the connecting rods (tie rods), screw anchors, ground and rock anchors, and drilled anchors with grouted or expanded bodies

Note 1 to entry: Anchors can be pre-stressed (active) or not (passive).

3.2
auxiliary structures
all structures necessary for the proper and safe execution of the sheet piling works such as guiding system

3.3
bracing
system of waling and struts to support the structure

3.4
combined wall
retaining walls composed of primary and secondary elements

Note 1 to entry: The primary elements are normally steel tubular piles, I-sections or built up box types, spaced uniformly along the length of the wall. The secondary elements are generally steel sheet piles of various types installed in the spaces between the primary elements and connected to them by interlocks (see Figure 1 a)).

3.5
comparable experience
documented, or other clearly established information related to the ground and installation conditions, involving similar types of soil and rock and for which similar behaviour is expected

Note 1 to entry: Information gained locally is considered to be particularly relevant.

3.6
cushion
material, fitted into a recess in the driving cap, which smoothes the impact force of the falling hammer on the driving cap and on the head of the sheet pile

Note 1 to entry: See Figure 2.

3.7
de-clutching
disconnection of the interlock connection during pile driving

3.8
de-clutching detector
instrument for determining the integrity of the interlock connection, that is whether adjacent pile interlocks are fully engaged during and/or after installation

3.9
driving cap
device, placed on the top of the sheet pile which transmits the blow of the hammer evenly, thereby preventing damage of the sheet pile head

Note 1 to entry: See Figure 2.

3.10
driving
any method of installing the sheet piles to the required depth