SLOVENSKI STANDARD
oSIST prEN 206-3:2024

01-oktober-2024

Beton - Specifikacija, lastnosti, proizvodnja in skladnost - 3. del: Dodatne zahteve za specifikacijo in skladnost betona za posebna geotehnična dela

Concrete - Specification, performance, production and conformity - Part 3: Additional requirements for specification and conformity of concrete for special geotechnical works

Beton - Festlegung, Eigenschaften, Herstellung und Konformität - Teil 3: Zusätzliche Anforderungen an die Festlegung und Konformität von Beton für spezielle geotechnische Arbeiten

Béton - Spécification, performances, production et conformité - Partie 3 : Exigences complémentaires relatives à la spécification et à la conformité du béton destiné aux travaux géotechniques spéciaux

Ta slovenski standard je istoveten z: **prEN 206-3**

ICS:

91.100.30	Beton in betonski izdelki	Concrete and concrete products
93.020	Zemeljska dela. Izkopavanja. Gradnja temeljev. Dela pod zemljo	Earthworks. Excavations. Foundation construction. Underground works

oSIST prEN 206-3:2024 **en,fr,de**

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

DRAFT
prEN 206-3

August 2024

ICS 91.100.30

Will supersede EN 206:2013+A2:2021

English Version

Concrete - Specification, performance, production and conformity - Part 3: Additional requirements for specification and conformity of concrete for special geotechnical works

Béton - Spécification, performances, production et conformité - Partie 3 : Exigences supplémentaires pour la définition et la conformité du béton destiné à des travaux géotechniques spécifiques

Beton - Festlegung, Eigenschaften, Herstellung und Konformität - Teil 3: Zusätzliche Anforderungen an die Festlegung und Konformität von Beton für spezielle geotechnische Arbeiten

This draft European Standard is submitted to CEN members for enquiry. It has been drawn up by the Technical Committee CEN/TC 104.

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.

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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

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European foreword

This document (prEN 206-3:2024) has been prepared by Technical Committee CEN/TC 104 “Concrete and related products”, the secretariat of which is held by SN.

This document is currently submitted to the CEN Enquiry.

This document will partially supersede EN 206:2013+A2:2021.

EN 206-3 was based on the contents of Annex D (Additional requirements for the specification and conformity of concrete for special geotechnical works [foundation engineering]) from the previous EN 206:2013+A2:2021. Annex D has been completely incorporated into EN 206-3. In particular, the following new key points were included in the development of EN 206-3:

a) testing standards on fresh concrete properties as an addition to the EN 12350-series;

b) reference to non-specified material like cementitious compound, clay minerals or “special admixtures”;

c) reference to temporary works;

d) reference to non-structural members.

This document forms part of three European Standards, written by CEN/TC 104 and covering specification, performance, production and conformity of concrete.

— Concrete — Specification, performance, production and conformity — Part 1: Performance, requirements, factory production control and assessment criteria for individual values.

— Concrete — Specification, performance, production and conformity — Part 2: Conformity assessment and certification.

— Concrete — Concrete — Specification, performance, production and conformity — Part 3: Additional requirements for specification and conformity of concrete for special geotechnical works

0 Introduction

0.1 Introduction to prEN 206-3

(1) This document defines tasks for the specifier, producer and user.

(2) If the concrete is in conformity with this document or provisions in prEN 206-1 and prEN 206-2, the concrete in the structure is deemed to satisfy the durability requirements for the intended use in the specific environmental condition, provided:

— the appropriate exposure classes were selected;

— the concrete has the minimum cover to reinforcement in accordance with the relevant design standard required for the specific environmental condition, e.g. EN 1992-1-1;

— the concrete is properly placed, compacted and cured, e.g. in accordance with EN 13670 or other relevant standards;

— the appropriate maintenance is applied during the working life.

(3) This document deals with parts of the interface between prEN 206 and standards for the execution of special geotechnical works, see Figure 1.

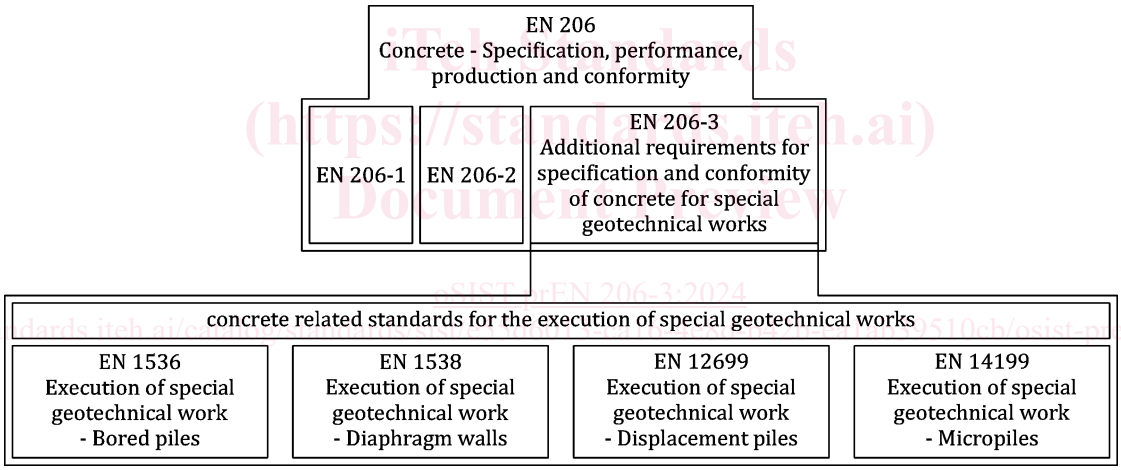

Figure 1 — Relationship between prEN 206-3 and the standards for the execution of special geotechnical works – concrete related standards

0.2 Provisions valid in the place of use for prEN 206-3

(1) This document will be applied under different climatic and geographical conditions, different levels of protection and under different, well established, regional traditions and experience. Classes for concrete properties have been introduced to cover these situations. Where such general solutions were not possible, the relevant clauses contain permission for the application of provisions valid in the place of use of the concrete.

(2) National choice is allowed in this document where explicitly stated that provisions valid in the place of use may be given.

(3) The national standard implementing prEN 206-3 can have a National Annex or complementary standard containing all national choices to be used in the relevant country.

(4) National choice is allowed in prEN 206-3 in the following:

4.1 (1)	4.1 (2)	4.2 (1)	4.3 (4)
4.6 (1)	4.6 (2)	5.1 (1)	5.4.1 (3)

NOTE The National Annex can contain, directly or by reference, non-contradictory complementary information for ease of implementation, provided it does not alter any provisions of this document.

1 Scope

(1) This document specifies additional requirements to prEN 206-1 for the constituents, specification and conformity control of concrete used in:

— bored piles constructed in accordance with EN 1536;

— diaphragm walls constructed in accordance with EN 1538;

— cast-in-place displacement piles constructed in accordance with EN 12699;

— micropiles constructed in accordance with EN 14199.

(2) The requirements provided in this document are specified in accordance with prEN 206-1:2024, 7.2 Specifications for designed concrete.

(3) This document can also apply to applications in special geotechnical works other than those listed above.

NOTE 1 For special geotechnical works provisions on cement, minimum cement content, minimum fines content, maximum water/binder ratio, target values of fresh concrete properties and maximum tolerances for target values can deviate from the provisions for other works in prEN 206-1.

(4) This document is based on the assumption that the specification is based on considerations including the site conditions and the conditions for execution of concrete used in special geotechnical works.

NOTE 2 Guidance for the specification of concrete used in special geotechnical works can be found in the informative Annex A.

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 206:2013+A2:2021, *Concrete - Specification, performance, production and conformity*

prEN 206-1, *Concrete — Specification, performance, production and conformity — Part 1: Performance, requirements, factory production control and assessment criteria for individual values*

prEN 206-2, *Concrete - Specification, performance, production and conformity - Part 2: Conformity assessment and certification*

EN 12350-1, *Testing fresh concrete - Part 1: Sampling and common apparatus*

EN 12350-2, *Testing fresh concrete - Part 2: Slump test*

EN 12350-5, *Testing fresh concrete - Part 5: Flow table test*

EN 12350-8, *Testing fresh concrete - Part 8: Self-compacting concrete - Slump-flow test*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in prEN 206-1 and prEN 206-2 and the following apply.

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

— ISO Online browsing platform: available at https://www.iso.org/obp/

— IEC Electropedia: available at https://www.electropedia.org/

3.1
cementitious compound
fr ...
de ...
mixture of inorganic materials, often containing cement, additions and clay minerals, which, when mixed with water, form a paste that sets and hardens by hydration or other chemical reactions and processes which, after hardening, retains its strength and stability even under water

3.2
clay minerals
fr ...
de ...
fine-grained minerals generally built of silicate and hydroxide sheets, often in form of bentonite (mainly containing montmorillonite), used to stabilize fresh non-structural concrete or plastic concrete with a high water-cement ratio

3.3
plastic concrete
fr beton plastique
de Plastic Concrete
special geotechnical concrete with high deformation capacity under imposed deformations; typically a non-structural, non-reinforced, low-strength, low-stiffness, and low-permeability concrete

3.4
workability
fr ...
de ...
property of freshly mixed concrete defined by its rheology which determines a set of fresh concrete characteristics such as flowing, passing and filling ability

3.5
stability
fr ...
de ...
resistance of a concrete to segregation, bleeding and filtration

3.6
workability retention
fr ...
de ...
retention of specified properties of fresh concrete, such as consistence, for a specified duration of time

3.7
consistence
fr ...
de ...
relative mobility, or ability of freshly mixed concrete to flow i.e. an indication of workability, measured in accordance with EN 12350-2, EN 12350-5 or EN 12350-8

3.8
bleeding
fr ...
de ...
form of segregation in which some of the mixing water in the concrete mix tends to rise to the surface of freshly placed concrete, caused by the settlement of the solid constituents

3.9
filtration
fr ...
de ...
process of separating water from a concrete which has not yet set, where the surrounding, permeable ground under hydrostatic pressure is acting as a filter

3.10
slump-flow velocity
fr ...
de ...
measure of the workability which can be directly related to the viscosity, hereby determined as the travel distance at the final slump-flow diameter in slump-flow testing divided by the required time to obtain said diameter

3.11
Visual Stability Index
VSI
fr ...
de ...
result of a visual assessment which classifies the segregation resistance performed by visual inspection of the concrete spread obtained after the slump-flow test

Note 1 to entry: Slump-flow test according to EN 12350-8 (in accordance with ASTM C1611, or EFFC/DFI Tremie Guide, ed 2).

4 Constituents and composition

4.1 Cement and cementitious compounds

(1) The cement shall conform to the provisions valid in the place of use for the specified exposure classes and shall have established suitability for use in the geotechnical applications covered in this standard.

NOTE The competence for defining the criteria for an established suitability of cements is given to national implementation because there is not sufficient data for standardization on a European basis.

(2) Cementitious compounds may be used, or cement may be substituted by additions, where the suitability for the use in the geotechnical applications covered by this standard is established in provisions valid in the place of use of the concrete.

NOTE Cementitious compounds are typically used for non-structural and unreinforced concrete.

4.2 Water/binder ratio

(1) The specified maximum water-binder ratio may be greater than that required by the exposure classes, provided the suitability for the use in the geotechnical applications covered by this standard is established in provisions valid in the place of use of the concrete.