SLOVENSKI STANDARD
oSIST prEN 206-1:2024

01-oktober-2024

Beton - Specifikacija, lastnosti, proizvodnja in skladnost - 1. del: Lastnosti, zahteve, kontrola tovarniške proizvodnje in kriteriji vrednotenja posameznih vrednosti

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

Beton - Festlegung, Eigenschaften, Herstellung und Konformität - Teil 1: Eigenschaften, Anforderungen, werkseigene Produktionskontrolle und Bewertungskriterien für einzelne Werte

Béton - Spécification, performances, production et conformité - Partie 1 : Performances, exigences, contrôle de la production en usine et critères d'évaluation des valeurs individuelles

Ta slovenski standard je istoveten z: **prEN 206-1**

ICS:

91.100.30	Beton in betonski izdelki	Concrete and concrete products

oSIST prEN 206-1:2024 **en,fr,de**

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

DRAFT
prEN 206-1

August 2024

ICS 91.100.30

Will supersede EN 206:2013+A2:2021

English Version

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

Béton - Spécification, performance, production et conformité - Partie 1 Performance, exigences, contrôle de production et- critère de conformité pour valeurs individuelles

Beton - Festlegung, Eigenschaften, Herstellung und Konformität

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.

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

Ref. No. prEN 206-1:2024 E

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European foreword

This document (prEN 206-1:2024) 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 supersede EN 206:2013+A2:2021.

In particular, the following main items had been subject to revision when preparing prEN 206-1:2024:

a) Moving all aspects concerning conformity assessment and certification into a separate part EN 206-2;

b) Annex D on concrete for geotechnical purposes has been moved to a separate part EN 206-3;

c) Opening for national provisions on exposure resistance classes;

d) Included new terminology for binder;

e) Annex M “Guidance on provisions valid in the place of use” moved to Introduction;

f) Annex L “Additional information for specific clauses” included in main text where appropriate;

g) Informative content in Clause 5.1 “Exposure classes” moved to informative Annex C;

h) New Clause 5.4 “Classes regarding CO_2 emissions”;

i) General updates to align with revised EN 1992-1-1:2023;

j) General editorial changes.

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 — 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 EN 206-1

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

(2) If the concrete is in conformity with this document, 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 service life.

(3) Concrete conforming to this document may be assumed to satisfy the basic requirements for materials to be used in all three Execution Classes as defined in EN 13670.

(4) This document also covers the necessary exchange of information between the different parties. Contractual matters are not addressed. Where responsibilities are given for parties involved, these are technical responsibilities.

(5) Further explanations and guidance on the application of this document are given in other documents, such as CEN Technical Reports.

(6) This standard is written in accordance with CEN policy based on the neutrality principle, which requires that all documents to be written in a way such that conformity with the specified requirements can be assessed by a manufacturer or supplier (first party), a user or purchaser (second party), or an independent body (third party). In particular the CEN philosophy of writing 'Product Standards' is adopted in that the standard gives normative requirements on the product, and not on any party involved in the manufacturing, testing or distribution of the product.

(7) Figure 1 illustrates the relationships between EN 206 and standards for design and execution, standards for constituents and test standards.

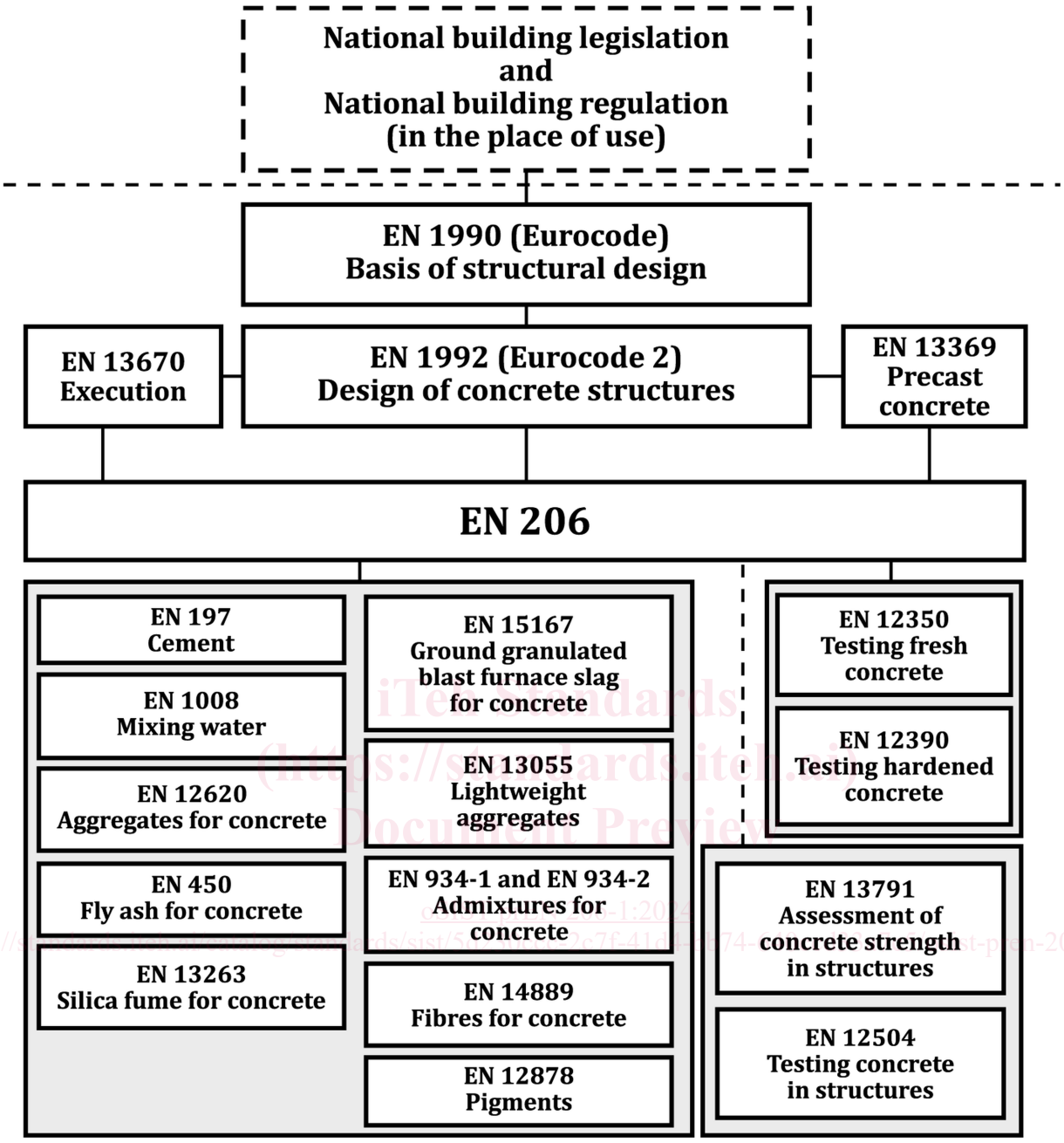

Figure 1 — Relationships between EN 206 and standards for design and execution, standards for constituents and test standards

(8) Figure 2 illustrates the procedure for assessment of concrete in EN 206.

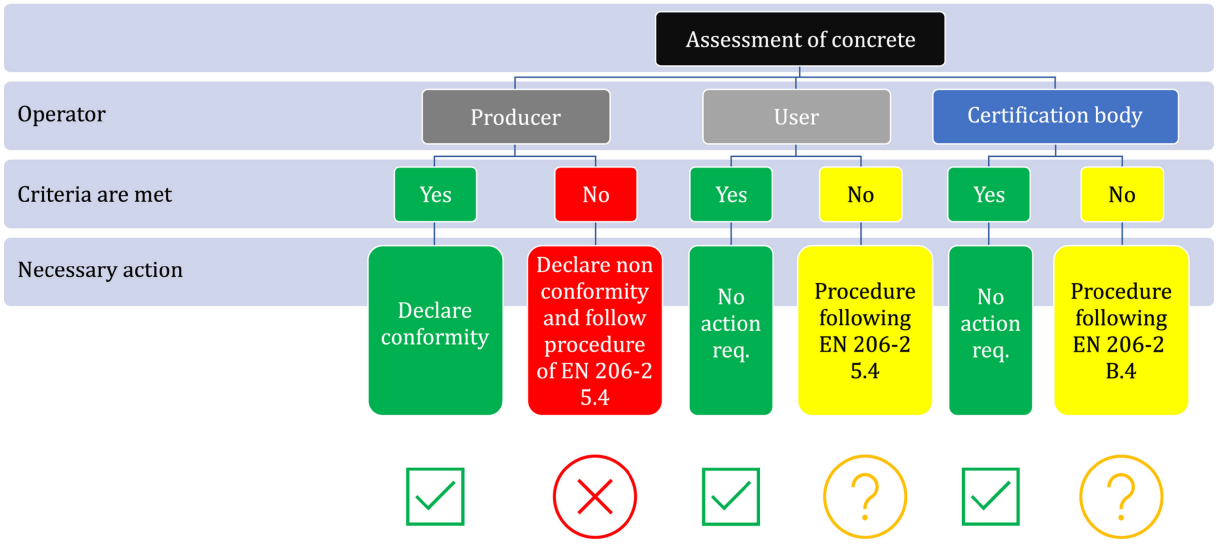

Figure 2 Assessment of concrete in EN 206

(9) Provisions for specific products e.g. precast products are given in other European standards for specific products.

(10) Provisions for specific applications are given in other European Standards, for example:

— concrete to be used in roads and other trafficked areas (e.g. concrete pavements according to EN 13877-1);

— special technologies (e.g. sprayed concrete according to EN 14487).

(11) Supplementing requirements or different testing procedures are given in some member states for specific types of concrete and applications, for example:

— concrete for massive structures (e.g. dams);

— dry mixed concrete;

— concrete with a D_{max} of 4 mm or less (mortar);

— self-compacting concretes (SCC) containing lightweight or heavy-weight aggregates or fibres;

— concrete with open structure (e.g. pervious concrete for drainage).

0.2 Provisions valid in the place of use for EN 206-1

(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 EN 206-1 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 EN 206-1 in the following:

5.3.3 (1)	5.4.1 (2)	5.4.1 (3)	5.4.1 (4)
6.1.1 (2)	6.1.2 (2)	6.1.3 (1)	6.1.3 (2)
6.1.3 (3)	6.1.5 (2)	6.2.1 (2)	6.2.1 (5)
6.2.3.4 (2)	6.2.3.5 (1)	6.2.5.1 (1)	6.2.5.1 (4)
6.2.5.1 (8)	6.2.5.2.3 (5)	6.2.5.2.4 (1)	6.2.5.3 (4)
6.2.8 Table 14 Footnote a	6.2.8 Table 14 Footnote c	6.3.1 (2)	6.3.2 (3)
6.3.3 (2)	6.4.2 (4)	6.5.1.4 (1)	7.1 (3)
7.4 (2)	8.2 (4)	9.4 (2)	9.5 (4)
9.7 (2)	9.9.2 Table 21 Note d	9.9.4 Table 22 Line 3	10.2 Table 25 Note a
A.1 (3)	A.3 (3)		

(5) National choice is allowed in EN 206-1 on the application of the following informative annexes:

Annex B	Annex E	Annex F

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 applies to concrete for structures cast *in situ*, precast structures, and structural precast products for buildings and civil engineering structures.

(2) The concrete under this document can be:

— normal-weight, heavy-weight and lightweight;

— mixed on site, ready-mixed or produced in a plant for precast concrete products;

— compacted or self-compacting to retain no appreciable amount of entrapped air other than entrained air.

(3) This document specifies requirements for:

— the constituents of concrete;

— the properties of fresh and hardened concrete;

— the limitations for concrete composition;

— the specification of concrete;

— the delivery of fresh concrete,

— the production control procedures;

— the assessment criteria for individual values.

(4) This document does not apply to:

— aerated concrete;

— foamed concrete;

— concrete with density less than 800 kg/m^3;

— refractory concrete.

(5) This document does not cover health and safety requirements for the protection of workers during production and delivery of concrete.

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 197-1, *Cement - Part 1: Composition, specifications and conformity criteria for common cements*

EN 197-5, *Cement - Part 5: Portland-composite cement CEM II/C-M and Composite cement CEM VI*

EN 934-1, *Admixtures for concrete, mortar and grout - Part 1: Common requirements*

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*

EN 1097-3, *Tests for mechanical and physical properties of aggregates - Part 3: Determination of loose bulk density and voids*

EN 1097-6:2022, *Tests for mechanical and physical properties of aggregates — Part 6: Determination of particle density and water absorption*

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

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

EN 12350-4, *Testing fresh concrete - Part 4: Degree of compactability*

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

EN 12350-6, *Testing fresh concrete - Part 6: Density*

EN 12350-7, *Testing fresh concrete - Part 7: Air content - Pressure methods*

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

EN 12350-9, *Testing fresh concrete - Part 9: Self-compacting concrete - V-funnel test*

EN 12350-10, *Testing fresh concrete - Part 10: Self-compacting concrete - L box test*

EN 12350-11, *Testing fresh concrete - Part 11: Self-compacting concrete - Sieve segregation test*

EN 12350-12, *Testing fresh concrete - Part 12: Self-compacting concrete - J-ring test*

EN 12390-1, *Testing hardened concrete - Part 1: Shape, dimensions and other requirements for specimens and moulds*

EN 12390-2, *Testing hardened concrete - Part 2: Making and curing specimens for strength tests*

EN 12390-3, *Testing hardened concrete - Part 3: Compressive strength of test specimens*

EN 12390-6, *Testing hardened concrete - Part 6: Tensile splitting strength of test specimens*

EN 12390-7, *Testing hardened concrete - Part 7: Density of hardened concrete*

EN 12620, *Aggregates for concrete*

EN 12878, *Pigments for the colouring of building materials based on cement and/or lime - Specifications and methods of test*

EN 13055,[1] *Lightweight aggregates*

EN 13263-1, *Silica fume for concrete — Part 1: Definitions, requirements and conformity criteria*

EN 14216, *Cement - Composition, specifications and conformity criteria for very low heat special cements*

[1] Note that the latest version of EN 13055:2016 is non-harmonized.

EN 14488-7, *Testing sprayed concrete - Part 7: Fibre content of fibre reinforced concrete*

EN 14721, *Test method for metallic fibre concrete — Measuring the fibre content in fresh and hardened concrete*

EN 14889-1, *Fibres for concrete - Part 1: Steel fibres - Definitions, specifications and conformity*

EN 14889-2, *Fibres for concrete - Part 2: Polymer fibres - Definitions, specifications and conformity*

EN 15167-1, *Ground granulated blast furnace slag for use in concrete, mortar and grout - Part 1: Definitions, specifications and conformity criteria*

ASTM C 173, *Standard Test Method for Air Content of Freshly Mixed Concrete by the Volumetric Method*

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 https://www.electropedia.org/

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

3.1 General

3.1.1
binder
fr:
de:
cement, or any combination of one or more cement with or without additions that can be accounted for in the calculation of equivalent binder

3.1.2
concrete
fr: béton
de: Beton
material formed by mixing cement, coarse and fine aggregate and water, with or without the incorporation of admixtures, additions or fibres, which develops its properties by hydration

3.1.3
concrete family
fr: famille de bétons
de: Betonfamilie
group of concrete compositions for which a reliable relationship between relevant properties is established and documented

3.1.4
concrete specification
fr: spécification du béton
de: Festlegung
final compilation of documented technical requirements given to the producer in terms of performance or composition

3.1.5
concrete with fibres
fr:
de:
concrete where fibres are introduced as one of the constituents to provide special characteristics, such as post-cracking strength, mitigation of restrained shrinkage-induced cracking, prevention of fire-induced spalling etc

3.1.6
delivery
fr: livraison
de: Lieferung
process of handing over the fresh concrete by the producer

3.1.7
designed concrete
fr: béton à propriétés spécifiées
de: Beton nach Eigenschaften
concrete for which the required properties and additional characteristics if any are specified to the producer who is responsible for providing a concrete conforming to the required properties and additional characteristics

3.1.8
design service life
fr: durée de vie de projet
de: Bemessungslebensdauer
assumed period for which a structure or a part of it is to be used for its intended purpose with anticipated maintenance but without major repair being necessary

3.1.9
document
fr: document
de: Dokument
information and its supporting medium, which can be paper, magnetic, electronic or optical computer disc, photograph or reference sample or a combination thereof

3.1.10
environmental actions
fr: actions dues à l'environnement
de: Umwelteinflüsse
those chemical and physical actions to which the concrete is exposed and which result in effects on the concrete or reinforcement or embedded metal that are not considered as loads in structural design

3.1.11
equivalent binder
fr:
de:
equivalent mass of binder per cubic metre of concrete calculated from the effective mass of the cement and the effective mass of addition using the k-value concept or EPCC (see 5.2.5.2 and 5.2.5.4)