



SLOVENSKI STANDARD

oSIST prEN 197-1:2026

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Cement - 1. del: Običajni cement - Ocena in deklaracija lastnosti

Cement - Part 1: Common cement - Performance assessment and declaration

Zement - Teil 1: Zusammensetzung, Anforderungen und Konformitätskriterien von Normalzement

Ciment - Partie 1: Ciment courant - Évaluation et déclaration des performances

Ta slovenski standard je istoveten z: prEN 197-1

ICS:

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Mortar

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EUROPEAN STANDARD
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EUROPÄISCHE NORM

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July 2026

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**Cement - Part 1: Common cement - Performance
assessment and declaration**

Ciment - Partie 1: Ciment courant - Évaluation et
déclaration des performances

Zement - Teil 1: Zusammensetzung, Anforderungen
und Konformitätskriterien von Normalzement

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European foreword

This document (prEN 197-1:2026) has been prepared by Technical Committee CEN/TC 51 “Cement and building limes”, the secretariat of which is held by NBN.

This document is currently submitted to the CEN Enquiry.

This document will supersede EN 197-1:2011.

This document has been prepared under a standardization request addressed to CEN by the European Commission. The Standing Committee of the EFTA States subsequently approves these requests for its Member States.

For the relationship with EU Legislation, see informative Annex ZA, which is an integral part of this document.

The main changes with respect to the previous edition of EN 197-1 are listed below:

- the title of the document has been amended;
- the scope of common cement has been extended to include white cement;
- the scope of common cement has been extended to include specific composite cements (with designations CEM II/C-M, CEM VI/A, CEM VI/B);
- new cement constituents coal bottom ash and recycled concrete fines have been introduced;
- the requirements for some existing cement constituents (calcareous fly ash, limestone and natural activated pozzolana) have been amended;
- the content of the former Clause 4 “Cement” has been deleted;
- the Clauses 4, 5, 6 and Annex ZA have been completely revised;
- the strength classes have been defined in a new way;
- the designation code of common cement contains the formerly used notations of cement types and strength classes;
- the total alkali content and the effective alkali content have been included as new characteristics;
- the method specified in EN 196-9:2010 has been introduced as reference test method for the determination of heat of hydration;
- information on minor additional constituents, calcium sulphate and additives has been included in a new Annex A;
- cement-specific information on the implementation of assessment and verification has been included in a new Annex B;
- the statistical criteria for mechanical, physical and chemical characteristics and evaluation procedure have been incorporated in a new Annex C;

- the evaluation of the representativeness and the accuracy of the 28 days standard compressive strength test results is described in Annex D;
- information on the specimens for testing the release of dangerous substances to soil and ground water is given in Annex E;
- examples of cement designation are given in Annex F;
- all references to other European Standards have been dated.

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Introduction

The first European harmonized standard for common cement was published in 2000. The notation used for cement since then provides information about the type and quantity of cement constituents. This enables users to select the appropriate cements for their respective applications, based on practical construction experience, particularly with regard to durability. Application standards therefore use the cement notations.

To ensure that the systematics, which has proven itself over decades, can continue to be used, common cement will continue to be designated in a way that allows conclusions to be drawn about their composition. Table 1 gives an overview of the systematics of the designation code of common cement.

Table 1 — Composition of cements with different designation codes

Main type	Type name	Type notation	Clinker (main constituent)	Other main constituents		Minor additional constituents
			Content [%]	Content [%]	Type	Content [%]
CEM I	Portland cement	CEM I	95-100		–	0-5
CEM II	Portland-composite cement	CEM II/A-X ^a	80-94	6-20	Blast furnace slag, silica fume (up to 10 %), natural pozzolana, natural activated pozzolana, siliceous fly ash, calcareous fly ash, coal bottom ash, burnt shale, recycled concrete fines, limestone	0-5
		CEM II/B-X ^a	65-79	21-35		0-5
		CEM II/A-M	80-88	12-20	Combination of blast furnace slag, silica fume (up to 10 %), natural pozzolana, natural activated pozzolana, siliceous fly ash, calcareous fly ash, coal bottom ash, burnt shale, recycled concrete fines (up to 29 %), limestone	0-5
		CEM II/B-M	65-79	21-35		0-5
		CEM II/C-M	50-64	36-50		0-5
CEM III	Blast furnace cement	CEM III/A	35-64	36-65	Blast furnace slag	0-5
		CEM III/B	20-34	66-80		0-5
		CEM III/C	5-19	81-95		0-5
CEM IV	Pozzolanic cement	CEM IV/A	65-89	11-35	Natural pozzolana, natural activated pozzolana, siliceous fly ash, calcareous fly ash, coal bottom ash, silica fume (up to 10 %)	0-5
		CEM IV/B	45-64	36-55		0-5
CEM V	Slag-pozzolanic cement	CEM V/A	40-64	36-60	18 % to 30 % blast furnace slag and 18 to 30 % natural pozzolana, natural activated pozzolana, siliceous fly ash or coal bottom ash	0-5
		CEM V/B	20-38	62-80	31 % to 49 % blast furnace slag and 31 % to 49 % natural pozzolana, natural activated pozzolana, siliceous fly ash or coal bottom ash	0-5

Main type	Type name	Type notation	Clinker (main constituent)	Other main constituents		Minor additional constituents
			Content [%]	Content [%]	Type	Content [%]
CEM VI	Composite cement	CEM VI/A (S-P), (S-Q), (S-V), (S-Z), (S-F), (S-L), (S-LL)	35-49	51-65	31 % to 59 % blast furnace slag and 6 % to 20 % natural pozzolana, natural activated pozzolana, siliceous fly ash, coal bottom ash, recycled concrete fines, or limestone	0-5
		CEM VI/B (S-L), (S-LL)	21-49	51-79	21 % to 49 % blast furnace slag and 21 % to 49 % limestone	0-5
a X stands for blast furnace slag, silica fume (up to 10 %), natural pozzolana, natural activated pozzolana, siliceous fly ash, calcareous fly ash, coal bottom ash, burnt shale, recycled concrete fines, limestone.						

The previously used strength classes will no longer be used in the future, as they were partially overlapping. Instead, the following new classes have been defined in this document:

- Classes of performance minimum standard compressive strength - 28 days
- Classes of performance maximum standard compressive strength - 28 days
- Classes of performance minimum early compressive strength - 2 days
- Classes of performance minimum early compressive strength - 7 days

However, the previous strength designations are now part of the designation code for common cement. This will ensure that there is continued clarity for all stakeholders and that application rules can continue to refer to the well-known designations.

It is recognized that different common cements have different properties and performance. Those performance tests available (i.e. setting time, strength, soundness, heat of hydration) have been included in this standard. In addition, work is being carried out by CEN/TC 51 to identify any additional tests which are needed to specify further performance characteristics of common cement.

Until further performance tests are available, it is necessary that the choice of common cement (especially the type and/or strength, in relation to the requirements for durability depending on the exposure class and the type of construction in which it is incorporated) follows the appropriate standards and/or regulations for concrete, mortar, grout, etc.

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1 Scope

This document covers calcium silicate cement (common cement) intended to be used:

- for the preparation of concrete, mortar, grout, and other mixes for construction and for the manufacture of construction products including structural and non-structural products, including white cement;
- for the preparation of mortar for bricklaying, blocklaying, rendering and plastering, including white cement;
- for the preparation of adhesives for other construction products;
- for soil stabilization or improvement, road bases and sub-bases, and capping layers.

Calcium aluminate cement, supersulfated cement, very low heat cement and alkali activated binder as well as masonry cement exclusively manufactured for the preparation of mortar for bricklaying, rendering and plastering are excluded from this product definition.

NOTE 1 Calcium silicate cements with an intended use as defined in this document belong to the product category “common cement”.

The product definition of common cement covers the following combination of constituents expressed in percentage as mass, any other combination is outside the product definition:

- a) primary cement (minimum of 95 % clinker);

NOTE 2 This refers to the designation code CEM I.

- b) binary cements with clinker and a maximum of 95 % of blast furnace slag;

NOTE 3 This refers to the designation codes CEM II/A-S, CEM II/B-S, CEM III/A, CEM III/B, CEM III/C.

- c) binary cements with clinker and a maximum of 10 % of silica fume;

NOTE 4 This refers to the designation code CEM II/A-D.

- d) binary cements with clinker and a maximum of 35 % of one of the following constituents: natural pozzolana, natural activated pozzolana, fly ash, coal bottom ash, burnt shale, limestone or recycled concrete fines;

NOTE 5 This refers to the designation codes CEM II/A-P, CEM II/B-P, CEM II/A-Q, CEM II/B-Q, CEM II/A-V, CEM II/B-V, CEM II/A-W, CEM II/B-W, CEM II/A-Z, CEM II/B-Z, CEM II/A-T, CEM II/B-T, CEM II/A-F, CEM II/B-F, CEM II/A-L, CEM II/B-L, CEM II/A-LL, CEM II/B-LL.

- e) pozzolanic cements with clinker and a maximum of 55 % of a combination of silica fume, natural pozzolana, natural activated pozzolana, fly ash and coal bottom ash with a maximum of 10 % silica fume;

NOTE 6 This refers to the designation codes CEM IV/A, CEM IV/B.

- f) composite cement with a minimum of 50 % of clinker, a maximum of 29 % of recycled concrete fines and a maximum of 44 % of any combination of blast furnace slag, silica fume, natural pozzolana, natural activated pozzolana, fly ash, coal bottom ash, burnt shale and limestone with a maximum of 10 % silica fume and a maximum of 35 % of the aggregation of limestone and recycled concrete fines;

NOTE 7 This refers to the designation codes CEM II/A-M, CEM II/B-M, CEM II/C-M (containing recycled concrete fines and other allowed constituents).

- g) composite cement with a minimum of 50% of clinker and a maximum of 50% of any combination of blast furnace slag, silica fume, natural pozzolana, natural activated pozzolana, fly ash, coal bottom ash, burnt shale, limestone and recycled concrete fines with a maximum of 10% of silica fume, a maximum of 20% of recycled concrete fines, and a maximum of 35% of any combination of limestone and recycled concrete fines;

NOTE 8 This refers to the designation codes CEM II/A-M, CEM II/B-M, CEM II/C-M (containing allowed constituents).

- h) composite cements with a minimum of 20 % of clinker, a maximum of 49 % of blast furnace slag and a maximum of 49 % of a combination of natural pozzolana, natural activated pozzolana, siliceous fly ash and coal bottom ash;

NOTE 9 This refers to the designation codes CEM V/A, CEM V/B.

- i) composite cements with a minimum of 35 % clinker, a maximum of 59% of blast furnace slag and a maximum of 20 % of natural pozzolana, natural activated pozzolana, siliceous fly ash, coal bottom ash, limestone or recycled concrete fines;

NOTE 10 This refers to the designation codes CEM VI/A (S-P), CEM VI/A (S-Q), CEM VI/A (S-V), CEM VI/A (S-Z), CEM VI/A (S-F), CEM VI/A (S-L), CEM VI/A (S-LL).

- j) composite cements with a minimum of 21% clinker, a maximum of 49% of blast furnace slag and a maximum of 49% of limestone.

NOTE 11 This refers to the designation codes CEM VI/B (S-L), CEM VI/B (S-LL).

All the above combinations can contain

- up to 5 % of a minor additional constituent (A.1) as long as the same constituent is not used as a main constituent; minor constituents are specially selected, inorganic natural mineral materials and inorganic mineral materials derived from the clinker production process;
- calcium sulfate (A.2) to control setting;
- additives (A.3) up to 1,0% to improve the manufacture or the properties of the cement.

NOTE 12 The proportions indicated take into account the constituents of cement, both main and minor, and not the other permitted components. In the common cement, the other components authorized in addition to a combination of constituents are calcium sulphate to control setting and additives to improve the manufacture or the properties of the cement.

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 196-1:2026,¹ *Methods of testing cement — Part 1: Determination of strength*

EN 196-2:2025, *Methods of testing cement — Part 2: Chemical analysis of cement*

EN 196-3:2016, *Methods of testing cement — Part 3: Determination of setting times and soundness*

EN 196-5:2011, *Methods of testing cement — Part 5: Pozzolanicity test for pozzolanic cement*

EN 196-6:2018, *Methods of testing cement — Part 6: Determination of fineness*

EN 196-7:2007, *Methods of testing cement — Part 7: Methods of taking and preparing samples of cement*

EN 196-9:2010, *Methods of testing cement — Part 9: Heat of hydration — Semi-adiabatic method*

EN 196-12:2024, *Methods of testing cement — Part 12: Reactivity of cement constituents — Heat of hydration and bound water content methods*

EN 196-13:2027,² *Methods of testing cement — Part 13: Effective alkali content*

EN 196-14:2027,³ *Methods of testing cement — Part 14: Determination of tricalcium silicate (C_3S), dicalcium silicate (C_2S), tricalcium aluminate (C_3A) and tetracalcium aluminoferrite (C_4AF) of common cement and clinker*

EN 196-15:2027,⁴ *Methods of testing cement — Part 15: Sulfate resistance — Flat prism method*

EN 196-16:2027,⁵ *Methods of testing cement — Part 16: Sulfate resistance — Square prism method*

EN 196-17:2027,⁶ *Methods of testing cement — Part 17: Determination glass content of granulated blast furnace slag as constituent for common cement*

EN 196-18:2027,⁷ *Methods of testing cement — Part 18: Determination of whiteness or colour of cement and clinker*

¹ Under preparation. Current stage: prEN 196-1:2026.

² Under preparation. Current stage: prEN 196-13:2026.

³ Under preparation. Current stage: prEN 196-14:2026.

⁴ Under preparation. Current stage: prEN 196-15:2026.

⁵ Under preparation. Current stage: prEN 196-16:2026.

⁶ Under preparation. Current stage: prEN 196-17:2026.

⁷ Under preparation. Current stage: prEN 196-18:2026.

EN 206-1:2026, *Concrete — Specification, performance, production and conformity — Part 1: Performance, requirements, factory production control and assessment criteria for individual values*

EN 450-1:2012, *Fly ash for concrete — Part 1: Definition, specifications and conformity criteria*

EN 451-1:2017, *Method of testing fly ash — Part 1: Determination of free calcium oxide content*

EN 933-9:2022, *Tests for geometrical properties of aggregates — Part 9: Assessment of fines — Methylene blue test*

EN 934-1:2008, *Admixtures for concrete, mortar and grout — Part 1: Common requirements*

EN 934-2:2009+A1:2012, *Admixtures for concrete, mortar and grout — Part 2: Concrete admixtures — Definitions, requirements, conformity, marking and labelling*

EN 934-3:2009+A1:2012, *Admixtures for concrete, mortar and grout — Part 3: Admixtures for masonry mortar — Definitions, requirements, conformity and marking and labelling*

EN 934-4:2009, *Admixtures for concrete, mortar and grout — Part 4: Admixtures for grout for prestressing tendons — Definitions, requirements, conformity, marking and labelling*

EN 934-5:2007, *Admixtures for concrete, mortar and grout — Part 5: Admixtures for sprayed concrete — Definitions, requirements, conformity, marking and labelling*

EN 934-6:2019, *Admixtures for concrete, mortar and grout — Part 6: Sampling, assessment and verification of the constancy of performance*

EN 934-7:2024, *Admixtures for concrete, mortar and grout — Part 7: Shrinkage reducing admixtures — Definitions, requirements, conformity, marking and labelling*

EN 12390-2:2019, *Testing hardened concrete — Part 2: Making and curing specimens for strength tests*

EN 13639:2017, *Determination of total organic carbon in limestone*

EN 15804:2012+A2:2019,⁸ *Sustainability of construction works — Environmental product declarations — Core rules for the product category of construction products*

EN 16637-2:2023, *Construction products — Assessment of release of dangerous substances — Part 2: Horizontal dynamic surface leaching test*

EN 16908:2027,⁹ *Cement and building lime — Environmental product declarations — Product category rules complementary to EN 15804*

EN 17195:2023, *Construction products: Assessment of release of dangerous substances — Analysis of inorganic substances in eluates*

EN 17332:2023, *Construction products: Assessment of release of dangerous substances — Analysis of organic substances in eluates*

⁸ As impacted by EN 15804:2012+A2:2019/AC:2021.

⁹ Under preparation. Current stage: prEN 16908:2026.