



SLOVENSKI STANDARD

SIST EN 16908:2017+A1:2022

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Cement in gradbeno apno - Okoljske deklaracije za proizvode - Pravila za kategorije proizvodov, ki dopolnjujejo EN 15804 (vključno z dopolnilom A1)

Cement and building lime - Environmental product declarations - Product category rules complementary to EN 15804

Zement und Baukalk - Umweltproduktdeklarationen - Produktkategorieregeln in Ergänzung zu EN 15804

Ciment et chaux de constructions - Déclaration environnementales sur les produits - Règles de catégorie de produits complémentaires de l'EN 15804

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Cement and building lime - Environmental product declarations - Product category rules complementary to EN 15804

Ciment et chaux de constructions - Déclaration environnementales sur les produits - Règles de catégorie de produits complémentaires de l'EN 15804

Zement und Baukalk - Umweltproduktdeklarationen - Produktkategorieregeln in Ergänzung zu EN 15804

This European Standard was approved by CEN on 21 November 2016 and includes Amendment 1 approved by CEN on 10 January 2022.

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EN 16908:2017+A1:2022 (E)**European foreword**

This document (EN 16908:2017+A1:2022) has been prepared by Technical Committee CEN/TC 51 “Cement and building limes”, the secretariat of which is held by NBN.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by September 2022, and conflicting national standards shall be withdrawn at the latest by September 2022.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN shall not be held responsible for identifying any or all such patent rights.

This document includes Amendment 1 approved by CEN on 10 January 2022.

This document supersedes A1 EN 16908:2017 A1.

The start and finish of text introduced or altered by amendment is indicated in the text by tags A1 A1.

This document has been prepared under a Standardization Request given to CEN by the European Commission and the European Free Trade Association.

Any feedback and questions on this document should be directed to the users' national standards body. A complete listing of these bodies can be found on the CEN website.

According to the CEN-CENELEC Internal Regulations, the national standards organisations of the following countries are bound to implement this European Standard: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Republic of North Macedonia, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

Introduction

How to use this document

This document provides product category rules (PCR) for Type III environmental declarations (EPDs) according to [EN 15804:2012+A2:2019](#) for cement and building lime, in particular to products according to the standards developed in CEN/TC 51 “Cement and building limes”.

The European Standard [EN 15804:2012+A2:2019](#), “Core rules for the product category of construction products”, is intended as the core PCR to be followed. This PCR document supplements [EN 15804:2012+A2:2019](#) by giving more detail for specific items relevant to cement and building lime. In all cases where no specific rules are given in this document, [EN 15804:2012+A2:2019](#) should be followed. Therefore, this document should be read in parallel with [EN 15804:2012+A2:2019](#). [EN 15804:2012+A2:2019](#) is normatively referenced in this document and is indispensable for its application.

The structure of this document follows that of [EN 15804:2012+A2:2019](#), with all headings and section numbers kept the same. Where a section of [EN 15804:2012+A2:2019](#) applies without modification, this is indicated. Where a section of [EN 15804:2012+A2:2019](#) is not relevant for EPDs covered by this PCR, this is also indicated.

The purpose of an EPD is given in the Introduction to [EN 15804:2012+A2:2019](#).

Definition of the covered products

Cement

Cement is defined in standards published by CEN/TC 51 as “a hydraulic binder, i.e. a finely ground inorganic material which, when mixed with water, forms a paste which sets and hardens by means of hydration reactions and processes and which, after hardening, retains its strength and stability even under water”.

Building Lime

Building lime is defined in EN 459-1 as a “group of lime products, exclusively consisting of two families: air lime and lime with hydraulic properties, used in applications or materials for construction, building and civil engineering.” Air lime refers to the product which combines and hardens with carbon dioxide present in air.

Air lime refers to the product which combines and hardens with carbon dioxide present in air. Air lime has no hydraulic properties. Air lime is divided into two sub-families, calcium lime (CL) and dolomitic lime (DL). Calcium lime is an air lime consisting mainly of calcium oxide (quicklime) and/or calcium hydroxide (hydrated lime). Dolomitic lime is an air lime consisting mainly of calcium magnesium oxide and/or calcium magnesium hydroxide.

Lime with hydraulic properties is a building lime consisting mainly of calcium hydroxide, calcium silicates and calcium aluminates. It has the property of setting and hardening when mixed with water and/or under water. Reaction with atmospheric carbon dioxide is part of the hardening process. Lime with hydraulic properties is divided into three subfamilies, natural hydraulic lime (NHL), formulated lime (FL) and hydraulic lime (HL).

EN 16908:2017+A1:2022 (E)**1 Scope**

The general scope of the core product category rules (PCR) is given in [EN 15804:2012+A2:2019](#), Clause 1.

This PCR is primarily intended for the creation of cradle-to-gate EPDs of cement and building lime.

In other respects, the scope is as in [EN 15804:2012+A2:2019](#).

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

3 Terms and definitions

For the purposes of this document, the terms and definitions given in [EN 15804:2012+A2:2019](#) apply.

4 Abbreviations

As in [EN 15804:2012+A2:2019](#).

5 General aspects**5.1 Objective of the Core PCR**

As in [EN 15804:2012+A2:2019](#).

5.2 Types of EPD with respect to life cycle stages covered

As in [EN 15804:2012+A2:2019](#).

Cement and building lime are physically integrated with other products (e.g. aggregates, chemical admixtures) into downstream products (e.g. concrete, mortar, plaster). During their hydration, cement and building lime undergo a chemical transformation. After their hydration, the original products in the un-hydrated state are not identifiable anymore and cannot be physically separated.

None of the constituents of cement and building lime contain biogenic carbon.

Cement and building lime therefore fulfil the three conditions:

- the product or material is physically integrated with other products during installation so they cannot be physically separated from them at end of life, and
- the product or material is no longer identifiable at end of life as a result of a physical or chemical transformation process, and
- the product or material does not contain biogenic carbon and are therefore exempt from the obligation to declare modules C1–C4 and D.

Cement and building lime are intermediate products with many different final uses. Cement may for example be used in ready-mix concrete, precast concrete, mortar, screed, base treatment for various types of infrastructures, etc. Building lime may for example be used in plasters, renders, masonry mortars, calcium silica bricks, autoclave aerated concrete, soil treatment, asphalt mixtures etc. Therefore, it is generally not possible to provide information about the environmental impacts of the products during the construction process, use, and end of life stages, as this will greatly depend on how the cement or building lime is used.

For this reason, this PCR is primarily intended to support the creation of cradle-to-gate EPDs, i.e. it focuses on the life cycle stages A1 – A3: raw material supply, transport, and manufacturing, although other stages may also be included.

Information on other life cycle modules may be provided in an EPD if relevant. Particularly information on carbonation of building limes in the life cycle modules A5 and B1 may be provided in EPDs.

If additional stages are included, the modularity principle shall be observed (see 6.3.4.1 of [EN 15804:2012+A2:2019](#)) in order to produce consistent EPDs.

5.3 Comparability of EPD for construction products

As in [EN 15804:2012+A2:2019](#).

As cement and building lime are intermediate products, no functional unit can be defined in EPDs for cement and building lime (see 6.3) and therefore no comparisons with other construction products can be made based on EPDs according to this PCR. As stated in [EN 15804:2012+A2:2019](#), “EPD that are not in a building context are not tools to compare construction products and construction services”.

5.4 Additional environmental information

5.4.1 General

As in EN 15804:2012+A2:2019. [SIST EN 16908:2017+A1:2022](#)

5.4.2 Additional impact indicators

As in EN 15804:2012+A2:2019.

In EPDs for cement and building lime, the impact categories “Particulate Matter emissions” and “Ionizing radiation, human health” should be declared. The indicators “Eco-toxicity (freshwater)”, “human toxicity, cancer effects”, “Human toxicity, non-cancer effects” and “Land use related impacts/Soil quality” may be declared in EPDs for cement. However, the uncertainties with respect to the results are high.

5.4.3 Additional information on carbon offset, carbon storage and delayed emissions

As in EN 15804:2012+A2:2019.

5.4.4 Additional Information not derived from LCA

As in EN 15804:2012+A2:2019.

For additional information on emissions to indoor air, soil and water during the use stage, please refer to the respective PCR/EPDs for downstream products such as ready-mix concrete, precast concrete, screed, plasters, masonry mortars, etc.

The life cycle of lime is shown in Figure 2.

5.5 Ownership, responsibility and liability for the EPD

As in [EN 15804:2012+A2:2019](#).

EN 16908:2017+A1:2022 (E)**5.6 Communication formats**

As in [EN 15804:2012+A2:2019](#).

6 Product Category Rules for LCA**6.1 Product category**

The product category for this PCR is cement and building lime, particularly those covered by the standards developed in CEN/TC 51.

6.2 Life cycle stages and their information modules to be included**6.2.1 General**

As in [EN 15804:2012+A2:2019](#).

In general, EPDs according to this PCR will be cradle-to-gate EPDs, i.e. will cover modules A1 – A3 only. However, downstream processes (including transport, use and reuse, recycling or recovery) may optionally be declared.

As an example, information on carbonation of building limes in the life cycle modules A5 and B1 may be provided in EPDs.

6.2.2 A1-A3, Product stage, information modules

As in [EN 15804:2012+A2:2019](#).

For a more detailed description of the processes in the product stage of cement and building lime see 6.3.4.2.

6.2.3 A4-A5, Construction process stage, information modules

As in [EN 15804:2012+A2:2019](#), not relevant for cradle to gate EPDs, but relevant for the information on carbonation of building limes (see 6.3.4.3).

6.2.4 B1-B5, Use stage, information modules related to the building fabric

As in [EN 15804:2012+A2:2019](#), not relevant for cradle to gate EPDs, but relevant for the information on carbonation of building limes (see 6.3.4.3).

6.2.5 B6-B7, Use stage, information modules related to the operation of the building

As in [EN 15804:2012+A2:2019](#), not relevant for cradle to gate EPDs.

6.2.6 C1-C4, End-of-life-stage, information modules

As in [EN 15804:2012+A2:2019](#), not relevant for cradle to gate EPDs.

6.2.7 D, Benefits and loads beyond the system boundary, information module

As in [EN 15804:2012+A2:2019](#), not relevant for cradle to gate EPDs.

6.3 Calculation rules for the LCA**6.3.1 Functional or declared unit**

As in [EN 15804:2012+A2:2019](#).


6.3.2 Functional unit

6.3.2.1 General



As in EN 15804:2012+A2:2019.

As cement and building lime are intermediate products, no functional unit can be defined in EPDs for cement and building lime. A declared unit is used as defined in 6.3.3.

6.3.2.2 Performance in a functional unit

As in EN 15804:2012+A2:2019. 

6.3.3 Declared unit

As in  EN 15804:2012+A2:2019 .

The declared unit is 1 000 kg of cement or building lime.


6.3.4 Reference service life (RSL)

6.3.4.1 General

As in EN 15804:2012+A2:2019.



No RSL is declared for cement or building lime as they are intermediate building products. A reference service life could be declared for downstream products such as ready-mix concrete, precast concrete, screed, plasters, masonry mortars or other building products in which cement and/or building lime are used.

6.3.4.2 Scenarios for RSL and functional unit

As in EN 15804:2012+A2:2019. 

6.3.5 System boundaries

6.3.5.1 General

As in  EN 15804:2012+A2:2019 .

Biogenic CO₂ emissions can be compensated by re-growth of biomass in the short term. Therefore, CO₂ emissions from biomass fuels (secondary fuels or waste) and the biogenic carbon content of mixed fuels (secondary fuels or waste) shall not be included in the total CO₂ emissions [10], [11].

For emissions from waste and secondary fuels see Annex D. As a conservative approach, if wastes are used for energy or material recovery and do not have the same waste status in all regions, for transparency reasons two figures may be specified in the communication of the LCA results in module A1 to A3:

- the environmental impacts caused by the emissions including processing, incineration and co-incineration of waste (gross figure); and
- the environmental impacts caused excluding the incineration of waste (net figure), see Annex D.