# ENVIRONMENTAL PRODUCT DECLARATION

as per *ISO 14025* and *EN 15804+A2*

| | |
|---|---|
| Owner of the Declaration | Holcim Spain |
| Programme holder | Institut Bauen und Umwelt e.V. (IBU) |
| Publisher | Institut Bauen und Umwelt e.V. (IBU) |
| Declaration number | IBU-CEI-HOL-2203120-ES2025001203-ISUE002-EN |
| Issue date | 26/03/2025 |
| Valid to | 25/03/2030 |

## Production of II/A-S 42,5 N/SRC at Carboneras plant, Bulk

**Portland-slag cement**
**II/A-S 42,5 N/SRC**
**EN 197-1**

## Holcim Spain

www.ibu-epd.com | https://epd-online.com

# 1. General Information

## Holcim Spain

**Programme holder**
IBU - Institut Bauen und Umwelt e.V.
Hegelplatz 1
10117 Berlin
Germany

**Declaration number**
IBU-CEI-HOL-2203120-ES2025001203-ISUE002-EN

**This declaration is based on the product category rules:**
Cement, 07/2023
(PCR checked and approved by the SRV)

**Issue date**
26/03/2025

**Valid to**
25/03/2030

Hans Peters
(Chairman Institut Bauen und Umwelt e.V.)

Florian Pronold
(Managing Director Institut Bauen und Umwelt e.V.)

## II/A-S 42,5 N/SRC

**Owner of the declaration**
Holcim Spain
Avenida de Manoteras, 20
28050 Madrid
Spain

**Declared Product / Declared Unit**
Cement / 1000 kg

**Scope:**
This environmental product declaration shows the life cycle assessment of the production of Portland-slag cements II/A-S 42,5 N/SRC (II/A-S 42,5 N/SRC) at the Carboneras plant of Holcim Spain.

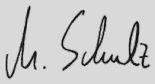
The owner of the declaration shall be liable for the underlying information and evidence; the IBU shall no be liable with respect to manufacturer information, life cycle assessment data and evidences.

The EPD was created according to the specifications of *EN 15804+A2*. In the following, the standard is simple referred to as *EN 15804.*

The EPD was calculated with the pre-verified software CarbonCLARITY™ EN 15804 EPD Generator – Cement of Climate Earth.

**Verification**

| |
|---|
| The standard *EN 15804* serves as the core PCR |
| Independent verification of the declaration and data accroding to *ISO 14025:2011* |
| ☐ intern ☒ extern |



Matthias Schulz
(Independent verifier)

# 2. Product

**2.1 Product description/Product definition**
II/A-S 42,5 N/SRC is a Portland-slag cement II/A-S 42.5 N/SRC which is produced and monitored in accordance with *EN 197-1* and *UNE 80303-1*.
This cement is a hydraulically hardening binder for the production of concrete and mortar. It consists of a mixture of finely ground, non-metallic, inorganic components. After adding water to the cement, a suspension (cement paste) is formed, which solidifies and hardens both in air and under water due to the onset of a hydration reaction and remains permanently solid. The composition of the product corresponds to the specifications of *EN 197-1*.

Regulation (EU) No. 305/2011(CPR) applies to placing the product on the market in the EU/EFTA (with the exception of Switzerland). The product requires a declaration of performance taking into account EN 197-2:2014-05, Cement - Part 2: Conformity assessment and the CE marking.
The respective national regulations apply to their use.

**2.2 Application**
II/A-S 42,5 N/SRC is used as a binder in the manufacture of concrete and mortar.

### 2.3 Technical Data

II/A-S 42,5 N/SRC has according to *EN 197-1* a standard compressive strength of class 42.5 N and the special property "sulfate resistance" (SRC).

**Constructional Data**

| Name | Value | Unit |
|---|---|---|
| Strength class acc. to EN 197-1 | 42,5 N | N/mm$^2$ |

Performance values of the product correspond to the performance declaration in relation to its essential characteristics according to EN 197-1:2011-11 Composition, requirements and conformity criteria of common cement and UNE 80303-1:2017-11 Cements with additional characteristics. Part 1: Sulfate resisting cements.

### 2.4 Delivery status

II/A-S 42,5 N/SRC is delivered in bulk.

### 2.5 Base materials/Ancilliary materials

**Portland cement clinker (ca. 80-94 %)**
Cement clinker is made from a mixture of raw materials that is heated in a kiln at a temperature of over 1400°C until it is sintered. The starting materials for the production of cement clinker must mainly contain calcium oxide (CaO) and silicon dioxide (SiO2) as well as small amounts of oxides of aluminum (Al2O3) and iron (Fe2O3). Rocks that provide these compounds are limestone, marl and clay or their naturally occurring mixture.

**Slag (ca. 6-20 %)**
Granulated blast furnace slag from steel production.

**Minor constituents (ca. 0-5 %) + Gypsum / Anhydrite**
Minor components are specially selected, inorganic, natural mineral substances, inorganic mineral substances from clinker production or main cement components, unless the latter are already contained as the main component in the cement. Secondary components can either be inert or have hydraulic, latently hydraulic or pozzolanic properties. Gypsum is also added to the binder as setting regulators.

This product contains substances listed in the candidate list (date: 07.11.2024) exceeding 0.1 percentage by mass: no

This product contains other CMR substances in categories 1A or 1B which are not on the candidate list, exceeding 0.1 percentage by mass: no

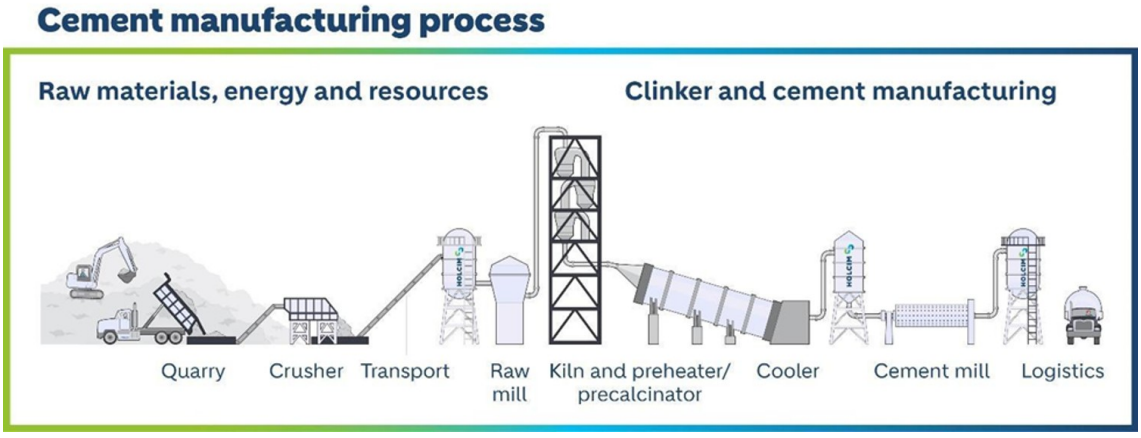
Biocide products were added to this construction product or it has been treated with biocide products (this then concerns a treated product as defined by the (EU) Ordinance on Biocide Products No. 528/2012): no

### 2.6 Manufacture

II/A-S 42,5 N/SRC is manufactured at the Carboneras plant.

**Production of Portland cement clinker**
Limestone, marl, clay or their natural mixture, are required for the production of Portland cement clinker. These starting materials are mined in quarries, pre-crushed and transported to the nearby cement works. There they are homogenized into an intermediate product, with additional natural or secondary corrective substances being added to fine-tune the chemical composition. In the subsequent heating process, the Portland cement clinker is produced from the intermediate product. The firing process takes place in a rotary kiln, where the material is thermally converted at around 1450 °C and then rapidly cooled. The finished clinker is stored in silos.

**Cement Production**
To produce the ready-to-sell cement II/A-S 42,5 N/SRC, the cement components are finely ground and combined. A sulfate carrier is added to control the setting behavior.




**Note:** dashed lines indicate production steps that do not necessarily apply to this cement

### 2.7 Environment and health during manufacturing

The operation of the Carboneras plant is subject to the provisions of the European Industrial Emission Directive that sets emission limit values for specific pollutants. In addition, exposure limits for respirable dust (RD) and respirable crystalline silica (RCS) during routine duties apply as established by the European European Social Dialogue Agreements and *Negotiation Platform on Silica*.

An environmental management system according to *ISO 14001* is installed in the plant.

### 2.8 Product processing/Installation

**General**
Mixing cement and water creates the cement paste, which encases the individual grains of the aggregate in concrete or mortar and binds them together firmly as it hardens. The cement paste, which is liquid after the addition of water, turns into the solid cement paste. Today, fresh concrete is produced almost exclusively in ready-mixed concrete plants, on large construction sites or in precast plants in medium-sized and large mixing plants.

**Environment and health during product processing**
The dust particles of the product can irritate the eyes and respiratory system.

If the product comes into contact with water or if the product gets wet, an alkaline solution will be formed which may cause skin and eye irritation.

The abrasiveness of the aggregate in concrete and mortar can also support skin irritation. Water-soluble chromate may develop allergic chromate dermatitis with prolonged contact.

Further details are available in the product's material safety data sheet.

### 2.9 Packaging
No packaging material is used as the product is delivered in bulk.

### 2.10 Condition of use
Not relevant for II/A-S 42,5 N/SRC.

### 2.11 Environment and health during use
Not relevant for II/A-S 42,5 N/SRC.

### 2.12 Reference service life
Not relevant for II/A-S 42,5 N/SRC.

### 2.13 Extraordinary Effects

**Fire**
II/A-S 42,5 N/SRC is neither flammable nor explosive. The product is classified in Class A1 according to *EN 13501-1*.

**Water**
When cement reacts with water, the so-called hydrate phases arise, which causes the cement paste to solidify and harden to form cement paste. If larger amounts of cement are accidentally released into bodies of water, the pH value in the body of water can increase.

Water hazard class: slightly hazardous to water

**Mechanical destruction**
Not relevant for II/A-S 42,5 N/SRC.

### 2.14 Re-use phase
Not relevant for II/A-S 42,5 N/SRC.

### 2.15 Disposal
If II/A-S 42,5 N/SRC has to be disposed of, it should be hardened with water and disposed off in accordance with local regulations.

Waste code according to Waste Catalogue Ordinance (*WCO*): depending on the origin 170101 (concrete) or 101314 (concrete waste and concrete slurry).

Law 7/2022, of 8 April, on waste and contaminated soil for a circular economy, which publishes waste recovery and disposal operations and the European list of waste, in which the list of LER codes for waste appears.

### 2.16 Further information
For more information: https://www.holcim.es/.

## 3. LCA: Rules of calculation

### 3.1 Declared unit
The declared unit is 1000 kg.

**Declared unit**

| Name | Value | Unit |
|---|---|---|
| Declared unit | 1000 | kg |
| Conversion factor to 1 kg | 0.001 | - |

### 3.2 System boundary
**Type of EPD:** cradle-to-factory gate

The system boundaries include the manufacture of II/A-S 42,5 N/SRC including the extraction of raw materials through to the finished product at the factory gate. The product stage includes:

**Module A1:** Extraction and processing of raw materials

**Module A2:** Transport of raw materials to the factory gate and internal transport

**Module A3:** Manufacture of final product

The construction stage, the use stage and the disposal stage are not taken into account in the life cycle assessment for the final product.

### 3.3 Estimates and assumptions
No estimates or assumptions were made that would be relevant for the interpretation of the life cycle assessment results.

### 3.4 Cut-off criteria
The flows not taken into account are less than 0.01% of the total incoming mass of each elementary process and in total for module A1-A3.

### 3.5 Background data
The data on which the life cycle assessment is based comes from data collection at the Carboneras plant. Information on the use of material and energy resources as well as transport distances was provided by Holcim Spain.

The emission data used in the life cycle assessment of clinker production are based on the legally prescribed emission measurements on rotary kilns of Holcim Spain for the period 31/12/2022 to 30/12/2023. Gaps in kiln emission reporting were filled with proxy data from generic clinker profiles of the ecoinvent database.

The CarbonCLARITY™ EN 15804 EPD Generator – Cement, version 1.2.0 dated 07/11/2022 with the configuration file dated 13/03/2025 was used for the life cycle assessment. The calculation used the Ecoinvent database v3.8.

### 3.6 Data quality
The data basis for this EPD is the continuous data acquisition in the Carboneras plant.
The data was collected for the calendar year 31/12/2022 to 30/12/2023 by Holcim Spain and checked for plausibility by Climate Earth. The data quality can be rated as very good. Any gaps in the collected data were filled in with conservative proxy data.

The background datasets are on average less than 5 years old and their quality is rated as good or very good.

### 3.7 Period under review
Data from the period 31/12/2022 to 30/12/2023 were used for the life cycle assessment of II/A-S 42,5 N/SRC.

### 3.8 Geographic Representativeness
Land or region, in which the declared product system is manufactured, used or handled at the end of the product´s lifespan: Spain.

### 3.9 Allocation
There are no co-products at the Carboneras plant and therefore all environmental impacts are allocated to the final product.

Kiln dust or bypass dust can be co-produced during clinker production. The sum of the inputs and outputs of this production process are assigned to the clinker.

The materials resulting from reuse, recycling or recovery in the context of the manufacture of cements are:

- Alternative fuels
- Alternative raw materials
- Blast furnace slag

Blast furnace slag is considered a co-product and economic allocation is used since its contribution to revenue is less than 25% of the difference in revenue generated by other co-products.

The alternative fuels used for production are classified as either secondary fuels or waste. Emissions from secondary fuels are included in the environmental impact assessment results, while emissions from the incineration of waste are reported as additional information according to the IBU Cement PCR. The waste status of the fuels concerned was verified using the waste key number. The exclusion of environmental impacts from the incineration of combustible waste was only applied to CO2 emissions, as other emissions (e.g. NOx, SOx, etc.) could not be easily distinguished from different fuel types.

### 3.10 Comparability
Basically, a comparison or an evaluation of EPD data is only possible if all the data sets to be compared were created according to *EN 15804* and the building context, respectively the product-specific characteristics of performance, are taken into account.

The Ecoinvent background database is used (version 3.8).

## 4. LCA: Scenarios and additional technical information

The development of scenarios must be based on the end product (e.g. concrete) and not on the preliminary product II/A-S 42,5 N/SRC.

**Information on describing the biogenic carbon content at factory gate**

| Name | Value | Unit |
|---|---|---|
| Biogenic carbon content in product | 0 | kg C |
| Biogenic carbon content in accompanying packaging | 0 | kg C |

Note: 1 kg of biogenic carbon is equivalent to 44/12 kg of $CO_2$.

**Module A3: Manufacturing**
The carbon intensity of the electricity used in manufacturing is 0.03 kgCO2eq./kWh.

## 5. LCA: Results

The following table contains the results of the life cycle assessment for a declared unit of 1000 kg of II/A-S 42,5 N/SRC.

The characterization factors of the "Environmental Footprint reference Package 3.1" were used to determine the impact balance.

**DESCRIPTION OF THE SYSTEM BOUNDARY (X = INCLUDED IN LCA; ND = MODULE OR INDICATOR NOT DECLARED; MNR = MODULE NOT RELEVANT)**

| Product stage | | | Construction process stage | | Use stage | | | | | | | End of life stage | | | | Benefits and loads beyond the system boundaries |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Raw material supply | Transport | Manufacturing | Transport from the gate to the site | Assembly | Use | Maintenance | Repair | Replacement | Refurbishment | Operational energy use | Operational water use | De-construction demolition | Transport | Waste processing | Disposal | Reuse-Recovery-Recycling-potential |
| **A1** | **A2** | **A3** | **A4** | **A5** | **B1** | **B2** | **B3** | **B4** | **B5** | **B6** | **B7** | **C1** | **C2** | **C3** | **C4** | **D** |
| x | x | x | ND | ND | ND | ND | MNR | MNR | MNR | ND | ND | ND | ND | ND | ND | ND |

**RESULTS OF THE LCA – ENVIRONMENTAL IMPACT according to *EN 15804+A2*: 1000 kg II/A-S 42,5 N/SRC**

| Core indicator | Core indicator | Unit | A1-A3 |
|---|---|---|---|
| GWP-total | Global warming potential - total | [kg $CO_2$-Eq.] | 563 |
| GWP-fossil | Global warming potential - fossil fuels | [kg $CO_2$-Eq.] | 562 |
| GWP-biogenic | Global warming potential - biogenic | [kg $CO_2$-Eq.] | 0.12 |
| GWP-luluc | GWP from land use and land use change | [kg $CO_2$-Eq.] | 0.56 |
| ODP | Depletion potential of the stratospheric ozone layer | [kg CFC11-Eq.] | 2.86E-5 |
| AP | Acidification potential, accumulated exceedance | [mol $H^+$-Eq.] | 1.50 |
| EP-freshwater | Eutrophication, fraction of nutrients reaching freshwater end compartment | [kg P-Eq.] | 5.64E-3 |
| EP-marine | Eutrophication, fraction of nutrients reaching marine end compartment | [kg N-Eq.] | 0.52 |
| EP-terrestrial | Eutrophication, accumulated exceedance | [mol N-Eq.] | 5.96 |
| POCP | Formation potential of tropospheric ozone photochemical oxidants | [kg NMVOC-Eq.] | 1.43 |
| ADPE | Abiotic depletion potential for non-fossil resources | [kg Sb-Eq.] | 2.12E-3 |
| ADPF | Abiotic depletion potential for fossil resources | [MJ] | 1838 |
| WDP | Water (user) deprivation potential, deprivation-weighted water consumption (WDP) | [$m^3$ world-Eq deprived] | 45.4 |

**RESULTS OF THE LCA – INDICATORS TO DESCRIBE RESOURCE USE according to *EN 15804+A2*: 1000 kg II/A-S 42,5 N/SRC**

| Indcator | Indcator | Unit | A1-A3 |
|---|---|---|---|
| PERE | Renewable primary energy as energy carrier | [MJ] | 426 |
| PERM | Renewable primary energy resources as material utilization | [MJ] | 0 |
| PERT | Total use of renewable primary energy resources | [MJ] | 426 |
| PENRE | Non-renewable primary energy as energy carrier | [MJ] | 1838 |
| PENRM | Non-renewable primary energy as material utilization | [MJ] | 0 |
| PENRT | Total use of non-renewable primary energy resources | [MJ] | 1838 |
| SM | Use of secondary material | [kg] | 11.2 |
| RSF | Use of renewable secondary fuels | [MJ] | 608 |
| NRSF | Use of non-renewable secondary fuels | [MJ] | 1176 |
| FW | Use of net fresh water | [$m^3$] | 0.83 |

**RESULTS OF THE LCA – WASTE CATEGORIES AND OUTPUT FLOWS according to *EN 15804+A2*: 1000 kg II/A-S 42,5 N/SRC**

| Indicator | Indicator | Unit | A1-A3 |
|---|---|---|---|
| HWD | Hazardous waste disposed | [kg] | 1.36 |
| NHWD | Non-hazardous waste disposed | [kg] | 16.6 |
| RWD | Radioactive waste disposed | [kg] | 0.01 |
| CRU | Components for re-use | [kg] | 0 |
| MFR | Materials for recycling | [kg] | 0.99 |
| MER | Materials for energy recovery | [kg] | 0 |
| EEE | Exported electrical energy | [MJ] | 0 |
| EET | Exported thermal energy | [MJ] | 0 |

## RESULTS OF THE LCA – additional impact categories according to *EN 15804+A2*-optional: 1000 kg II/A-S 42,5 N/SRC

| Indicator | Indicator | Unit | A1-A3 |
|---|---|---|---|
| PM | Potential incidence of disease due to PM emissions | [Disease Incidence] | 1.12E-5 |
| IRP | Potential Human exposure efficiency relative to U235 | [kBq U235-Eq.] | 9.50 |
| ETP-fw | Potential comparative toxic unit for ecosystems | [CTUe] | 567 |
| HTP-c | Potential comparative toxic unit for humans - cancerogenic | [CTUh] | 3.83E-8 |
| HTP-nc | Potential comparative toxic unit for humans - not cancerogenic | [CTUh] | 1.08E-6 |
| SQP | Potential soil quality index | [-] | 728 |


$2.51e2 = 2.51 \times 10^2 = 251$ $4.25e\text{-}3 = 4.25 \times \frac{1}{10^3} = 0.00425$

**On Global Warming Potential (GWP):**
Net values are declared for all GWP indicators in A1 – A3. The waste status of the (waste-based) fuels has been verified. Gross emissions (i.e. including CO2 from incineration of waste) are 647 kg CO2-eq. / t (GWP-total), 647 kg CO2-eq. / t (GWP fossil), 0.12 kg CO2 eq. / t (GWP-biogenic).
For wastes with biogenic carbon content, gross CO2 emissions correspond to the uptake of biogenic CO2 during the biomass growth phase.

**Disclaimer 1 -** for the indicator "potential Human exposure efficiency relative to U235". This impact category deals mainly with the eventual impact of low dose ionizing radiation on human health of the nuclear fuel cycle. It does not consider effects due to possible nuclear accidents, occupational exposure nor radioactive waste disposal in underground facilities.
Potential ionizing radiation from the soil, radon and from some construction materials is also not measured by this indicator.

**Disclaimer 2 -** for the indicators: "abiotic depletion potential for fossil resources", "abiotic depletion potential for non-fossil resources", "water (user) deprivation potential", "deprivation-weighted water consumption", "potential comparative toxic unit for ecosystems", "potential comparative toxic unit for humans - cancer effects", "potential comparative toxic unit for humans – non-cancer effects", "potential soil quality index".
The results of this environmental impact indicator shall be used with care as the uncertainties on these results are high or as there is limited experience with the indicator.

## 6. LCA: Interpretation

The following table shows the most important influencing factors on important indicators of the impact and life cycle inventory analysis.

| | $GWP_{total}$ | AP | $EP_{terrestrial}$ | POCP | PERT | PENRT | ADPE | FW | PM |
|---|---|---|---|---|---|---|---|---|---|
| Clinker production | 96.4 % | 68.5 % | 79.8 % | 78.6 % | 51.4 % | 84.3 % | 5.82 % | 55.0 % | 90.6 % |
| Blast furnace slag production | 0.14 % | 0.28 % | 0.13 % | 0.15 % | 0.56 % | 0.88 % | 0.06 % | 16.5 % | 0.26 % |
| Fly ash production | 0 % | 0 % | 0 % | 0 % | 0 % | 0 % | 0 % | 0 % | 0 % |
| Burnt oil shale production | 0 % | 0 % | 0 % | 0 % | 0 % | 0 % | 0 % | 0 % | 0 % |
| Sulfate production | 0.02 % | 0.19 % | 0.23 % | 0.20 % | 0.02 % | 0.10 % | 88.8 % | 0.07 % | 0.58 % |
| Cement production | 0.32 % | 1.04 % | 0.89 % | 0.80 % | 40.0 % | 1.20 % | 1.01 % | 19.4 % | 2.59 % |
| Dispatch | 8.02E-3 % | 0.03 % | 0.03 % | 0.02 % | 1.34 % | 0.03 % | 0.03 % | 0.57 % | 0.05 % |
| Other materials and processes | 3.10 % | 30.0 % | 19.0 % | 20.3 % | 6.63 % | 13.5 % | 4.27 % | 8.46 % | 5.90 % |
| **Total** | **100%** | **100%** | **100%** | **100%** | **100%** | **100%** | **100%** | **100%** | **100%** |
| Legend | **Clinker production**: Includes the impacts related to the production of cement clinker. **Blast furnace slag production**: Includes the upstream and processing impacts for the production of blast furnace slag. **Fly ash production**: Includes the upstream and processing impacts for the production of fly ash. **Burnt oil shale production**: Includes the impacts associated with burnt oil shale production. **Sulfate production**: Includes the impacts related to the production of primary and secondary sulfates. **Cement production**: Includes the impacts associated with the final grinding or mixing stage to produce the final product. **Dispatch**: Includes the impact related to product preparation for shipping. **Other materials and processes**: Includes the impacts of materials or production processes not covered by the above categories. | | | | | | | | | |

The contribution of clinker production to the indicators GWP (Global Warming Potential), AP (Acidification Potential of Soil and Water), EP-terrestrial (Eutrophication Potential), POCP (Tropospheric Ozone Creation Potential) and PM (Potential Occurrence of Diseases due to Particulate matter emissions) is largely determined by the exhaust air emissions from the rotary kiln, while the contribution to the PENRT indicator (non-renewable primary energy) is due to the use of fossil fuels and electrical energy.

## 7. Requisite evidence

### 7.1 Radioactivity

The radioactivity of cements is currently not routinely measured in Spain. Literature shows that the activity index for cement, is in the order of magnitude of the activity index for natural soils and rocks (*IAEA*).

### 7.2 Chromate

According to legal requirements (European Regulation (EG) 1907/2006 REACH Regulation and Chemicals Prohibition Regulation), cements or cement-containing preparations that contain more than 2 ppm water-soluble chromate based on the mass of dry cement may not be placed on the market. Exceptions to this are cements that are only used in closed and fully automated processes and where there is no risk of skin contact. This cement complies with the regulations on water-soluble chromate.

The content of water-soluble chromium(VI) is determined according to *EN 196-10*. Evidence of compliance with the limit value is provided as part of the factory production control.

# 8. References


**Norms**

**UNE 80305**
UNE 80305:2012, White cements

**UNE 80303**
UNE 80303-1:2017, Cements with additional characteristics. Part 1: Sulfate resisting cements

**RP 15.01**
Special requirements RP 15.01 (02/2023) rev33 for trademarks AENOR N and AENOR N sostenible for cements

**API 10A**
API Specification 10A:2019, Cements and materials for well cementing

**EN 196-10**
EN 196-10:2016, Methods of testing cement - Part 10: Determination of the water-soluble chromium (VI) content of cement

**ISO 14001**
EN ISO 14001:2015-11, Environmental management systems - Requirements with guidance for use

**EN 13501-1**
EN 13501-1:2018, Fire classification of construction products and building elements - Part 1: Classification using data from reaction to fire tests.

**EN 197-1**
EN 197-1:2011-11, Cement – Part 1: Composition, specifications and conformity criteria for common cements

**EN 197-2**
EN 197-2:2014-05, Cement - Part 2: Conformity of evaluation

**EN 15804**
EN 15804:2012+A2+AC:2021, Sustainability of construction works. Environmental product declarations. Core rules for the product category of construction products.

**ISO 14025**
EN ISO 14025:2011-10, Environmental labels and declarations - Type III environmental declarations - Principles and procedures.

**Other Literature**

**CarbonCLARITY™ EN 15804 EPD Generator – Cement**
Version 1.2.0 dated 07/11/2022
www.climateearth.com

**CPR**
Construction Products Regulation
Establishing harmonized conditions for the marketing of construction products, (EU) No. 305/2011, March 09, 2011.

**ECHA**
European Chemicals Agency (ECHA): Candidate list of substances of very high concern.
https://echa.europa.eu/

**IBU 2021**
Institut Bauen und Umwelt e.V.: General instructions for the EPD program of Institut Bauen und Umwelt e.V. Version 2.0, Berlin: Institut Bauen und Umwelt e.V., 2021. www.ibu-epd.com

**PCR Part A**
Product category rules for building related products and services. Part A: Calculation rules for the life cycle assessment and requirements for the project report according to EN 15804+A2:2021 (v1.3). Berlin: Institut Bauen und Umwelt e.V., 31/8/2022

**PCR Cement**
Product category rules for building related products and services. Part B: Requirements for the EPD for cement, version 5. Berlin: Institut Bauen und Umwelt e.V. (ed.), 04/07/2023.
www.ibu-epd.com

**IAEA**
International Atomic Energy Agency, Radioactivity in Building Materials: a first Overview of the European Scenario, 2008.

**Directive 2008/1/EC**
Directive 2008/1/EC of the European Parliament and of the Council of 15 January 2008 concerning integrated pollution prevention and control

**Negotiation Platform on Silica**
Negotiation Platform on Silica (NePSi) 'Agreement on workers' health protection through the good handling and use of crystalline silica and products containing it

**REACH-Regulation**
Registration, Evaluation, Authorisation and Restriction of Chemicals, EG 1907/2006:2006-12-18.

**WCO**
Waste Catalog Ordinance (WCO), December 10th 2001

**Law 7/2022**
Law 7/2022, of 8 April, on waste and contaminated soil for a circular economy, which includes the list of LER codes for waste.

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