Élite Cementos

ENVIRONMENTAL PRODUCT DECLARATION
CEM II / A-P 52,5 R Cement

DAPcons®.NTe.205

DECLARACIÓN AMBIENTAL DE PRODUCTO
ENVIRONMENTAL PRODUCT DECLARATION

According to the standards:
ISO 14025 and UNE-EN 15804:2012+A2:2020/AC:2021

cateb Arquitectura Tècnica Barcelona

ECO PLATFORM EPD VERIFIED

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DECLARACIÓN AMBIENTAL DE PRODUCTO
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DAPcons®.NTe.205

According to the standards:

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GENERAL INFORMATION

Product

CEM II/A-P 52,5 R cement

Company

Product description

The CEM II/A-P 52.5 R product is a Portland cement with pozzolan of resistance class 52.5 MPa and high initial strength.

Reference RCP

UNE EN 16908:2019+A1:2022 Construction cements and limes. Environmental product declarations. Product category rules complementary to EN 15804.

Production plant

Elite Cements, S. L.
South Dock, Port of Castellón
12100 Grao de Castellón (Castellón) Spain

Validity

From: 28/10/2024 Until: 28/10/2029

The validity of DAPcons®.NTe.205 is subject to the conditions of the regulation DAPcons®. The current edition of this DAPcons® is the one that appears in the registry maintained by Cateb; for informational purposes, it is included on the Program website www.csostenible.net

EXECUTIVE SUMMARY

CEM II/A-P 52,5 R cement

	DAPconstruction® Programme Operator Environmental Product Declarations in the Construction sector www.csostenible.net
	Programme Manager Colegio de la Arquitectura Técnica de Barcelona (Cateb) Bon Pastor, 5 · 08021 Barcelona www.apabcn.cat
	Owner of the declaration ELITE CEMENTS SL Darsena Sur, s/n, Grao de Castellon 12100 - CASTELLON DE LA PLANA (España) www.elitecementos.com
	Author of the Life cycle assessment: ReMa-INGENIERÍA, S.L. Calle Crevillente, 1, entlo., 12005 - CASTELLON, España

Declared product

CEM II/A-P 52,5 R cement

Geographic representation

This declaration has been prepared with production data from the Élite Cementos plant located in Grao de Castellón – Castellón (Spain).

Variability between different products

The results of each of the products are declared individually in this document.

Declaration number

DAPcons®.NTe.205

Issue date

24/09/2024

Validity

This verified declaration authorizes its holder to carry the logo of the operator of the ecolabelling program DAPconstruction®. The declaration is applicable exclusively to the mentioned product and for five years from the date of registration. The information contained in this statement was provided under the responsibility of: **ELITE CEMENTS SL**

Programme Administrator Signature

Celestí Ventura Cisternas. President of Cateb

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Verifier Signature

Ferran Pérez Ibáñez. Institut de Tecnologia de la Construcció de Catalunya - ITeC. Verifier accredited by the administrator of the DAPcons® Programme

FERNANDO PÉREZ IBÁÑEZ
FERNANDO PÉREZ IBÁÑEZ 20.01.2025 18:02:20 +0100

ENVIRONMENTAL PRODUCT DECLARATION

1. PRODUCT DESCRIPTION AND USE

Portland cement with pozzolan of 52.5 MPa strength class and high initial strength.

Cement appropriately dosed and mixed with aggregates and water is primarily used to produce concrete or mortar with suitable characteristics. This CEM II type cement is a (low carbon) alternative to CEM I 52.5R and can be used for the applications established in the Cement Reception Instruction (RC16) and in the Structural Code approved on June 29, 2021, in accordance with the specifications of the UNE-EN 197-1 standard.

1.1 Content information

Product components

CLINKER 82.00%

NATURAL POZZOLANA 8.00%

GYPSUM 6.00%

FERROUS SULPHATE 0.30%

LIMESTONE 3.70%

Packaging materials

The product is served in bulk.

CHEMICAL CHARACTERISTICS	
	Specifications according to UNE-EN 197-1
Sulfate content (%)	≤ 4%
Chloride content (%)	≤ 0.1%
Cr VI content (%)	≤ 0.0002%

PHYSICAL CHARACTERISTICS	
	Specifications according to UNE-EN 197-1
Start of setting (min)	≥ 45 min
End of setting (min)	≤ 12 h
Volume stability (mm)	≤ 10 mm

MECHANICAL CHARACTERISTICS	
	Specifications according to UNE-EN 197-1
Compressive strength at 2 days (MPa)	≥ 30 MPa
Compressive strength at 28 days (MPa)	≥ 52.5 Mpa

CEMENT COMPOSITION	
	Specifications according to UNE-EN 197-1
Clinker (5)	80 - 94 %
Natural puzzolana(5)	6 - 20 %
Minor components (%)	≤ 5%

2. DESCRIPTION OF THE STAGES OF THE LIFE CYCLE

2.1. Manufacturing (A1, A2 y A3)

Raw Materials and transport (A1 y A2)

The raw materials used in the production process for this cement are clinker, pozzolan, gypsum and minor components.

The clinker is received directly from the factory of origin by ship and is unloaded in the southern dock of the port of Castellón, where the Élite Cementos factory is located. From there it is unloaded first into hoppers and finally into two closed storage bins (Domo silos). The gypsum and pozzolan are received in tanker trucks fitted with a top cover and are stored separately in covered and closed storage bins. The ferrous sulphate is received in tanker trucks and unloaded into two silos prepared for this purpose.

Manufacturing (A3)

The cement is manufactured using a double-chamber ball mill in a closed circuit. The raw material dosed to the mill is ground and kept within the closed circuit made up of the mill, the dynamic separator and the main filter. The extraction of the production is carried out by means of the depression generated by the main filter, forcing the material to pass through the dynamic separator, which gives it the particle size that the cement quality standards set. The production circuit is subject at all times to the vacuum generated by a series of filters that guarantee the non-emission of dust to the outside.
ELITE CEMENTS has five cement storage silos (two double-chamber silos with a total capacity of up to 20,000 tons and a 500-ton metal silo), which allows it to perfectly manage its cement stock.
The production process is completed with the dispatch of bulk cement. The cement manufacturing and dispatch process is controlled by a sophisticated PLC system that manages the entire installation in a fully automated manner.

2.2. Construction process stage (A4 y A5)

Transport to the building site (A4)

Undeclared

Product installation process and construction (A5)

Undeclared

2.3. Product use (B1-B7)

Use (B1)

Undeclared

Maintenance (B2)

Undeclared

Repair (B3)

Undeclared

Replacement (B4)

Undeclared

Refurbishment (B5)

Undeclared

Operational energy use (B6)

Undeclared

Operational water use (B7)

Undeclared

2.4. End of life (C1-C4)

Deconstruction and demolition (C1)

Undeclared

Transport to waste processing (C2)

Undeclared

Waste processing for reuse, recovery and/or recycling (C3)

Undeclared

Disposal (C4)

Undeclared

2.5. Reuse/recovery/recycling potential (D)

Undeclared

3. LIFE CYCLE ASSESSMENT

The life cycle assessment on which this declaration is based has been carried out following the ISO 14040, ISO 14044 and UNE-EN 15804 standards and the document UNE-EN 16908:2019 “Cement and building lime - Environmental product declarations - Product category rules complementary to EN 15804”. This study has been carried out using the SimaPro 9.5.0.2 LCA tool, whose development is based on the UNE-EN ISO 14040-14044 standards, and the Ecoinvent v3.9.1 database (2022). This LCA is of the “cradle-to-gate” type, that is, it covers the manufacturing stage of the product, leaving out the construction, use and end-of-life stages. Specific data from the ELITE CEMENTS plant (Grao de Castellón) for the year 2021 have been used to inventory the manufacturing stage.

In accordance with the polluter pays principle, the system that generates the waste is responsible for declaring the impacts of waste processing until the end of the waste stage is reached. Therefore, the results reported below do not include emissions from the incineration of waste used as secondary fuels (net value).

3.1. Declared Unit

The declared unit is “1 tonne of CEM II/A-P 52.5 R cement”

Additional comments

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3.2. Scope and modules that are declared

Table 2. Declared modules

Product stage			Construction Process Stage		Use stage							End of life stage				Benefits and loads beyond the system boundaries
Raw materials supply	Transport	Manufacturing	Transport	Construction - Installation process	Use	Maintenance	Repair	Replacement	Refurbishment	Operational energy use	Operational water use	De-construction	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	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND

X = Declared module **MND** = Undeclared module

3.3. LCA results of potential environmental impact referred to the declared unit (ACV)

Table 3. Parameters of environmental impact

Parameter	Unit	Life cycle stage														Module D
		Product stage	Construction Process Stage		Use stage							End of life stage				
		A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	
Climate change - total (GWP-total)	kg CO2 eq	6,94E+02	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND
Climate change - fossil (GWP-fossil)	kg CO2 eq	6,91E+02	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND
Climate change - biogenic (GWP-biogenic)	kg CO2 eq	2,03E+00	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND
Climate change - land use and changes in land use (GWP-luluc)	kg CO2 eq	2,82E-01	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND
Ozone layer depletion (ODP)	kg CFC 11 eq	2,77E-06	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND
Acidification (AP)	mol H+ eq	1,99E+00	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND
Eutrophication of fresh water (EP-freshwater)	kg P eq	8,35E-03	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND
Eutrophication of sea water (EP-marine)	kg N eq.	5,47E-01	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND
Terrestrial eutrophication (EP-terrestrial)	mol N eq.	6,33E+00	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND
Photochemical ozone formation (POCP)	kg NMVOC eq	1,76E+00	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND
Depletion of abiotic resources - minerals and metals (ADP-minerals&metals)	kg Sb eq	3,18E-04	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND
Depletion of abiotic resources - fossil fuels (ADP-fossil)	MJ, net calorific value	3,28E+03	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND
Water consumption (WDP)	m3 worldwide eq. private	5,75E+01	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND
The Indicador includes all greenhouse gases included in GWP-total but excludes biogenic carbon dioxide uptake and emissions and biogenic carbon stored in the product. This Indicador is thus equal to the GWP Indicador originally defined in EN 15804:2012+A1:2013. Can be obtained from IPCC characterization factors.																
Global Warming Potential (GHG)	kg CO2 eq	6,91E+02	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND

A1 Supply of raw materials. **A2** Transport to waste processing. **A3** Manufacturing. **A4** Transport to waste processing. **A5** Installation and construction processes. **B1** Use. **B2** Maintenance. **B3** Repair. **B4** Replacement. **B5** Refurbishment. **B6** Operational energy use. **B7** Operational water use. **C1** Deconstruction and demolition. **C2** Transport to waste processing. **C3** Waste management for reuse, recovery and recycling. **C4** Fine removal. **D** Environmental benefits and burdens beyond the system boundary. **MND** Undeclared module.

Table 4. Parameters for the use of resources, waste and output material flows

Parameter	Unit	Life cycle stage														Module D
		Product stage	Construction Process Stage		Use stage							End of life stage				
		A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	
Use of renewable primary energy excluding renewable primary energy resources used as feedstock	MJ, net calorific value	1,91E+02	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND
Use of renewable primary energy used as raw material	MJ, net calorific value	0,00E+00	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND
Total use of renewable primary energy (primary energy and renewable primary energy resources used as feedstock)	MJ, net calorific value	1,91E+02	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND
Non-renewable primary energy use, excluding non-renewable primary energy resources used as feedstock	MJ, net calorific value	3,47E+03	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND
Use of non-renewable primary energy used as raw material	MJ, net calorific value	0,00E+00	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND
Total use of non-renewable primary energy (primary energy and renewable primary energy resources used as feedstock)	MJ, net calorific value	3,47E+03	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND
Use of secondary materials	kg	9,65€+1	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND
Use of renewable secondary fuels	MJ, net calorific value	1,45E+02	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND
Use of non-renewable secondary fuels	MJ, net calorific value	1,18E+03	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND
Net use of freshwater resources	m3	1,61E+00	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND
Hazardous waste removed	kg	1,13E-02	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND
Non-hazardous waste eliminated	kg	9,07E+00	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND
Radioactive waste disposed of	kg	6,55E-03	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND
Components for reuse	kg	0,00E+00	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND
Materials for recycling	kg	1,26E-04	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND
Materials for energy recovery (energy recovery)	kg	1,26E-04	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND
Exported energy	MJ by energy vector	1,81E-03	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND

A1 Supply of raw materials. **A2** Transport to waste processing. **A3** Manufacturing. **A4** Transport to waste processing. **A5** Installation and construction processes. **B1** Use. **B2** Maintenance. **B3** Repair. **B4** Replacement. **B5** Refurbishment. **B6** Operational energy use. **B7** Operational water use. **C1** Deconstruction and demolition. **C2** Transport to waste processing. **C3** Waste management for reuse, recovery and recycling. **C4** Fine removal. **D** Environmental benefits and burdens beyond the system boundary. **MND** Undeclared module.

Table 5. Kg of biogenic carbon

Carbon content (biogenic) - packaging	0,00E+00
Carbon content (biogenic) - product	0,00E+00

3.4. Recommendations of this EPD

The comparison of construction products must be made by applying the same functional unit and at building level, i.e. including the performance of the product throughout its entire life cycle.
The environmental product declarations of different Type III Ecolabelling Programmes are not directly comparable, since the calculation rules may be different.
This declaration represents the performance of the product Cement CEM II/A-P 52.5 R manufactured by ELITE CEMENTS.

3.5. Cut-off rules

More than 95% of all mass and energy inputs and outputs of the system have been included, excluding, among others, diffuse emissions in factories and the production of machinery and industrial equipment.

3.6. Additional environmental information

Cement is a product classified as irritating and harmful. Once set, cement is not dangerous for the environment, becoming an inert product that does not release hazardous substances.

3.7. Other data

ELITE CEMENTS cement industry waste is included as non-hazardous waste in the European waste list with code LoW 10 13 06 “Particles and dust”.

4. ADDITIONAL TECHNICAL INFORMATION AND SCENARIOS

4.1. Transport to the building site (A4)

Undeclared

4.2. Installation processes (A5)

Undeclared

4.3. Reference life (B1)

Undeclared

4.4. Maintenance (B2), Repair (B3), Replacement (B4), or Refurbishment (B5)

Maintenance (B2)

Undeclared

Repair (B3)

Undeclared

Replacement (B4)

Undeclared

Refurbishment (B5)

Undeclared

4.6. Operational energy use (B6) and operational water use (B7)

Undeclared

4.7. End of life (C1-C4)

Undeclared

5. ADDITIONAL INFORMATION

- Certificate of Proof of Performance (Certificate 1170/CPR/CT.04981)
- Declaration of Product Performance (DP 1170/CPR/CT.04981)
- Quality Management System Certificate UNE-EN ISO 9001:2015 (Cert No. 00639)
- Environmental Management System Certification UNE-EN ISO 14001:2015 (Cert No. 01562)
- Energy Management System Certification ISO 50001:2018 GE-2021/0045
- Occupational Health and Safety Certification ISO 45001:2018 ES132994-I-1
- Social Responsibility Management System Certification IQNet SR:2015 SR-0112-ES

6. PCR AND VERIFICATION

This statement is based on Document

UNE EN 16908:2019+A1:2022 Construction cements and limes. Environmental product declarations. Product category rules complementary to EN 15804. Cement

Independent verification of the declaration and data, in accordance with ISO 14025 and IN UNE EN 16908:2019+A1:2022

☑ External

Third party Verifier

Ferran Pérez Ibáñez
Accredited by the administrator of the DAPcons® Programme

Verification date:

20/01/2025

References

- LIFE CYCLE ASSESSMENT: CEM II/A-P 52.5 R PRODUCT by ELITE CEMENTOS, S.L. ReMa-INGENIERÍA, S.L. 2024 (unpublished)
- HBEFA. Handbook of Emission Factors for Road Transport, version 4.2 published in 2022. http://www.hbefa.net/
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- GHG Inventories Report 1990-2020. Annex 7. Spain. 2021.

Programme Manager

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