ENVIRONMENTAL PRODUCT DECLARATION

In accordance with: ISO 14025:2006, EN 15804:2012+A2:2019/ AC:2021

Super White (Eskişehir)

ÇİMSA Çimento San. ve Tic. A.Ş.

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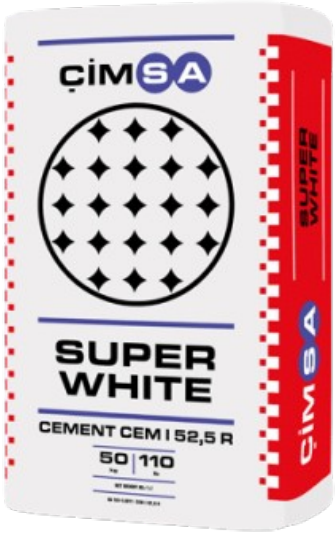

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ÇİMSA Çimento San. ve Tic. A.Ş.

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TÜRKİYE EPD
INTERNATIONAL EPD SYSTEM

EPD
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ECO PLATFORM EPD VERIFIED

Programme Information

Programme:	International EPD System	**Licensee:**	EPD Türkiye
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CEN standard EN 15804 serves as the Core Product Category Rules (PCR)

Product Category Rules (PCR):	PCR 2019:14 Construction products (EN 15804+A2) (2.0.1)
PCR review was conducted by:	The Technical Committee of the International EPD System. See www.environdec.com for a list of members. Review chair: Rob Rouwette (chair), Noa Meron (co-chair). The review panel may be contacted via the Secretariat www.environdec.com/support.
(c-PCR):	2019:14-c-PCR-001 Cement and building lime (EN 16908) (c-PCR to PCR 2019:14)
c-PCR review was conducted by:	The Technical Committee of the International EPD System
UN CPC Code:	37440 - Portland cement, aluminous cement, slag cement, and similar hydraulic cements, except in the form of clinkers

Independent third-party verification of the declaration and data, according to ISO 14025:2006, via:

☑ Individual EPD verification without a pre-verified LCA/EPD tool

Third-party verifier:	Stephen Forson, ViridisPride Ltd.
Approved by	International EPD System

Procedure for follow-up of data during EPD validity involves third party verifier:

Yes ☐ No ☑

The EPD owner has the sole ownership, liability, and responsibility for the EPD.

EPDs within the same product category but published in different EPD programmes, may not be comparable. For two EPDs to be comparable, they shall be based on the same PCR (including the same first-digit version number) or be based on fully aligned PCRs or versions of PCRs; cover products with identical functions, technical performances and use (e.g. identical declared/functional units); have identical scope in terms of included life-cycle stages (unless the excluded life-cycle stage is demonstrated to be insignificant); apply identical impact assessment methods (including the same version of characterisation factors); and be valid at the time of comparison.

For further information about comparability, see EN 15804 and ISO 14025.

About ÇİMSA

Çimsa, a subsidiary of Sabancı Holding, was founded in Mersin in 1972. Today, the company operates four integrated production plants in Türkiye, located in Mersin, Eskişehir, and Afyonkarahisar. In addition to producing grey cement, Çimsa leads the Turkish cement and building materials sector in innovation, offering specialized products such as white cement and CAC (calcium aluminate cement). Committed to delivering profitable growth and creating value for all stakeholders, Çimsa remains focused on sustaining this trajectory into the future.

Çimsa, one of the world's foremost brands in white cement and one of the world's top three producers of CAC with the latest investment completed in Mersin, manages its international operations through its Netherlands based subsidiary, Cimsa Building Solutions BV.

Çimsa, which develops new technologies that shed light on the future of the building materials industry in Türkiye through its first R&D Center, Formula Center—approved by the Ministry of Industry and Technology—operates at the Mersin Plant. This is the only integrated facility in the world capable of producing grey cement, white cement, and CAC and has at the same time extended its innovation power to Europe through the Sabancı Technology Center located on the campus of the Technical University of Munich in Germany.

Çimsa ensures the complete and timely fulfillment of its customers' product and service needs through its market-focused approach and extensive distribution network. As a trusted partner to its stakeholders, the company delivers essential materials for living spaces and infrastructures designed to endure for generations to come.

About Sabancı Building Solutions

In line with the goal to become a leading global player in the white cement industry and to create a more efficient and stronger platform, Sabancı Holding and Çimsa integrated their operational and financial strengths and founded Çimsa Building Solutions BV in Holland in November 2020. While Sabancı holds 49% of the total equity shares of the company, the remaining 51% belongs to Çimsa.

Çimsa Building Solutions BV has emerged as a key player in the international white cement market, with a white cement production plant in Valencia, Spain, a grinding plant in Houston, USA, and terminals in Hamburg, Germany, Trieste, Italy, and Seville, Spain. Most recently, with the acquisition completed in October 2024, Ireland-based Mannok Holdings, which specializes in the production and sale of cement, cement-based products (such as tiles, precast materials, and concrete), insulation materials, and recycled plastic packaging, has been included in the Cimsa Building Solutions BV portfolio.

About the Product

Çimsa Super White Cement (CEM I 52.5R) is preferred in more than 70 countries in the world with its stability and high strength.

The advantages offered by Çimsa Super White Cement to the Applications;

- High early and final strength,
- Fast production possibility
- High whiteness
- Low alkali content

Stability is the focal point of the Çimsa production plants and the variability in the product parameters is minimized by the controls at each stage during the process from raw material to delivery. Production processes are certified according to EN ISO 9001, EN ISO 45001, EN ISO 14001,EN ISO 50001 and ISO 10002 standards.

Çimsa Super White Cement is subject to quality control conforming to EN 197-1 standards. It is presented to foreign markets with CE certificate.

Highlights

- High strength
- High whiteness
- Fast production possibility

Some application areas of Super white;

- Construction chemical productions,
- Precast productions,
- Terrazzo tile productions,
- Pumice productuctions
- Autoclaved aerated concrete productions,

Product Composition

*Product components	Weight, %	Post-consumer recycled material, weight-%	Biogenic material, weight of % of product
White clinker	91 - 92	0	0
Gypsum	4 - 6	0	0
Limestone	4 - 5	0	0
SUM	**100**	**0**	**0**

Packaging Composition

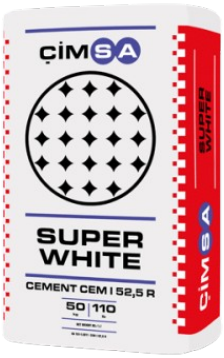
Packaging materials	Weight, kg	Weight-% (versus the product)	Biogenic material, kg C/declared unit
Paper bag	2.29	0.23	0.91
Big bag	1.26	0.13	0
SUM	**3.55**	**0.36**	**0.91**

*Product composition is presented as percentages rather than specific weights to maintain confidentiality while transparently communicating the relative proportions of each component.

About the Product

The declared product, specially designed by Çimsa Formülhane to meet the requirements of the construction chemicals and architectural applications. White cements are widely used across various fields in the construction sector, including decorative concrete, precast elements, tile adhesives, grouts, and dry-mix mortars.

These cements are particularly valued for their high brightness, consistent color, and excellent mechanical properties, making them a preferred choice in aesthetic and high-performance construction applications.



Physical and Mechanical Properties

Specific gravity (g/cm^3)	3.06	EN 197-1
Blaine (cm^2/g)	4250	EN 197-1
Whiteness (Y) (%)	85.2	EN 197-1
Vicat Initial set (minutes)	95 - 105	EN 197-1
Vicat Final set (minutes)	115 - 140	EN 197-1
Stability (Le Chatelier) (mm)	1 - 10	EN 197-1
28-Day compressive strength (Mpa)	59.0 - 61.0	EN 197-1

Çimsa Super White Cement is subject to quality control conforming to EN 197-1 standards. It is presented to foreign markets with CE certificate.

LCA Information

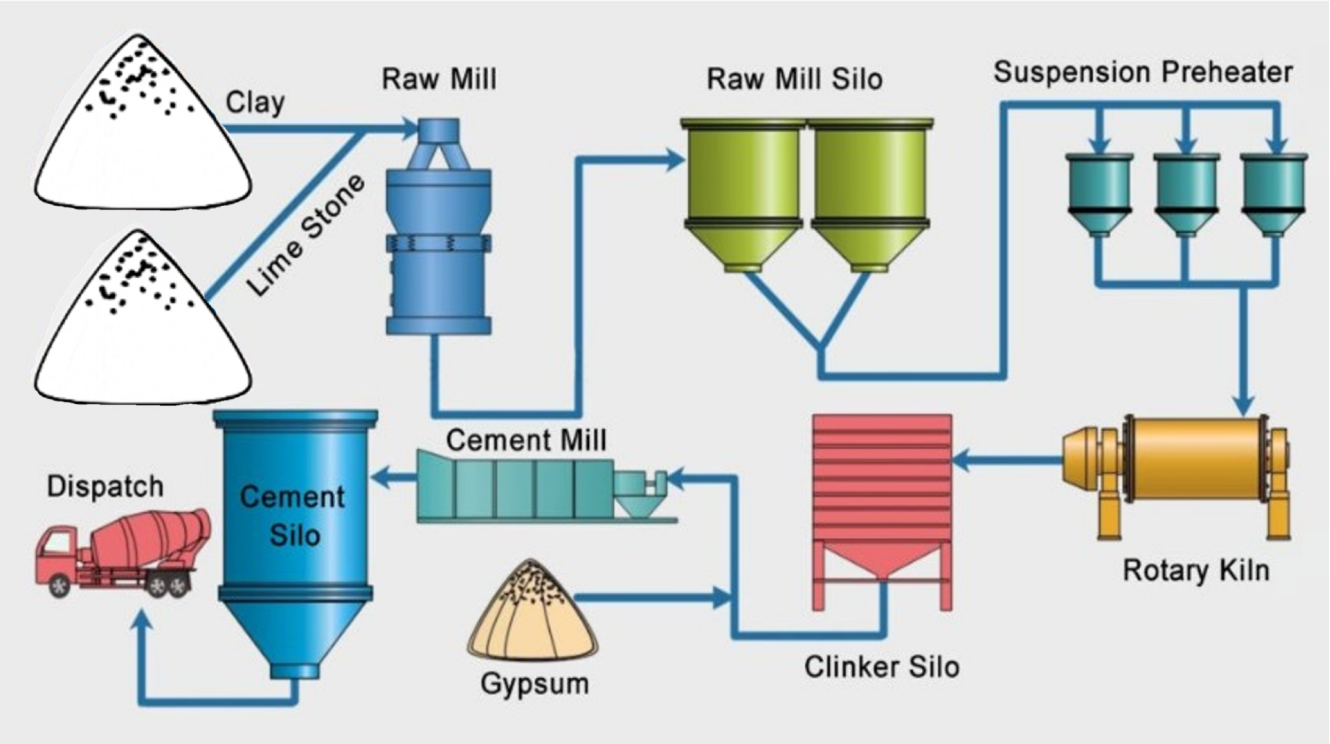
Declared Unit:	1 tonnes of Super White
Data Period:	2024 (Full calendar year)
System Boundary:	Cradle to gate with optional modules (A4 & A5)
Database(s) and LCA Software Used	Ecoinvent 3.11 & SimaPro Craft 10.2

The inventory for the LCA study is based on the 2024 production figures for Super White cement by Çimsa produced in Eskişehir, Türkiye. End-of-life stages have not been included in this study due to the following four conditions highlighted in the relevenat PCR are met:

• The product or material is physically integrated with other products during installation and cannot be physically separated from them at the end of life,
• The product or material is no longer identifiable at the end of life due to a physical or chemical transformation process,
• The product or material does not contain biogenic carbon
• The EPD is not intended to be used for business-to-consumer communication.

	Product stage			Construction process stage		Use stage							End of life stage				Beyond product life cycle
	Raw material supply	Transport	Manufacturing	Transport to site	Construction installation	Use	Maintenance	Repair	Replacement	Refurbishment	Operational energy use	Operational water use	De-construction demolition	Transport	Waste processing	Disposal	Reuse- Recovery- Recycling-potential
Module	A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Modules declared	X	X	X	X	X	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Geography	GLO		TR	GLO		-											
Share of specific data	89.7%			-	-	-	-	-	-	-	-	-	-	-	-	-	-
Variation - products	0%			-	-	-	-	-	-	-	-	-	-	-	-	-	-
Variation - sites	0%			-	-	-	-	-	-	-	-	-	-	-	-	-	-

(X = Module declared, ND = Not declared, TR = Türkiye, GLO = Global)



Process Flow Diagram

A1: Raw Material Supply

This stage covers the extraction, processing, and supply of all raw materials required for the manufacture of the product. It includes upstream processes such as the mining and pre-treatment of natural resources. The assessed product is a calcium aluminate cement, produced entirely from calcium aluminate clinker. The clinker is obtained using raw materials such as limestone and bauxite. All environmental impacts associated with the extraction, processing, and transportation of these raw materials are accounted for within this stage.

A2: Raw Material Transport

This stage covers the transportation of all raw materials from their extraction or processing sites to the clinker and cement production facilities. The environmental impacts associated with fuel consumption and emissions from the transportation processes are included. Both road and maritime transport modes are utilized in this stage. Transport routes, modes, and distances are supplier-specific and have been provided by the manufacturer.

Transport Mode	Type
Road	Vehicle: Lorry, Size class: >32 metric ton, Emission standard: Euro6, Fuel Type: Diesel

System Boundaries

A3: Manufacturing

White cement is produced from carefully selected raw materials with very low levels of iron and manganese oxides to ensure high whiteness. The primary raw materials, including pure limestone and kaolin or other low-iron clays, are finely ground and homogeneously blended. The raw mix is processed in specially designed rotary kilns operating at temperatures of around 1,450 °C, under conditions optimized to minimize coloring impurities. After clinker formation, the material is rapidly cooled to preserve its whiteness and ground with high-purity gypsum to achieve the desired fineness and performance characteristics.

A4: Transport to Customer

This stage is relevant for the delivery of final product to the intended markets and customers. Highway and seaway transportation are involved in this stage. The transport routes and distances are supplier-specific and provided by the manufacturer.

Transport Mode	Type
Road	Vehicle: Lorry, Size class: >32 metric ton, Emission standard: Euro6, Fuel Type: Diesel
Sea	Vehicle: Bulk carrier, DWT (Load capacity): 51,000 tonnes, Fuel Type: Heavy fuel oil

A5: Installation

This stage accounts for the end-of-life treatment of the packaging materials used during product delivery and installation. In the absence of specific information from the manufacturer or customers, it is conservatively assumed that all packaging waste is disposed of in landfill.

Cut-Off Rules
The criteria for exclusion were set so that individual input flows of less than 1% of the total, with a cumulative limit of less than 5%, could be omitted. This was contingent upon confirming that these excluded flows did not significantly alter the reported data, with "significant" defined as affecting the total by less than 5%.

REACH Regulation
No substances included in the Candidate List of Substances of Very High Concern for authorization under the REACH regulations are present in this product either above the threshold for registration with the European Chemicals Agency or above 0.1% (wt/wt).

LCA Modelling, Calculation and Data Quality
The results of the LCA with the indicators as per EPD requirements are given in the LCA result tables. There are no co-product allocations within the LCA study underlying this EPD. The regional energy datasets were used for all energy calculations.

Characterization factors of EN 15804 reference package based on EF 3.1 are utilized. Impact of infrastructure and capital goods are excluded from the analysis.

Source of Electricity
Çimsa holds renewable energy certificates (I-REC) equivalent to 45% of the electricity consumed at its Eskişehir plant. Therefore, 45% of the electricity is considered to be supplied from renewable sources whereas the rest is suplied through the grid. The renewable energy source is 100% geothermal and considering the use percanteges, the energy source distribution is shown below with an average carbon density of 0.53 kg CO_2 eq. / kWh. The overall electricity mix is composed of 45.0% geothermal, 22.3% imported coal 19.3% natural gas, 12.2% lignite, 1.0% hard coal and 0.3% asphaltite.

Allocations
Energy consumption and raw material transportation were weighted according to 2024 production figures. In addition, hazardous and non-hazardous waste amounts were also allocated from the total waste generation in 2024.

Assumptions
Upstream and downstream road transportation are assumed to be carried out with Euro6 motor vehicles with a size class of > 32 metric tonnes where distances acquired through Google Maps.

Data Quality Assessment

Process name	Source type	Source	Reference year	Data category	Share of primary data, of GWP-GHG results for A1- A3
Clinker Production (Calcination + Combustion emissions)	Calculated Data	EPD Owner	2024	Primary	84.9%
Electricity use during production	Calculated Data	EPD Owner	2024	Primary	4.2%
Upstream Transport	Calculated Data	EPD Owner	2024	Primary	0.6%
Other Process	Databases	Ecoinvent 3.11	2024	Secondary	0%
Total share of primary data, of GWP-GHG results for A1-A3					**89.7%**
Note	The share of primary data is calculated based on GWP GHG results. It is a simplified indicator for data quality that supports the use of more primary data to increase the representativeness of and comparability between EPDs. Note that the indicator does not capture all relevant aspects of data quality and is not comparable across product categories.				

Environmental Performance

The estimated impact results are only relative statements, which do not indicate the endpoints of the impact categories, exceeding threshold values, safety margins and/or risks.

Mandatory environmental performance indicators according to EN 15804

Module	Indicator	Unit	A1-A3	A4	A5
Climate change - total	GWP-total	kg CO_2 eq.	1.05E+03	6.15E+01	5.25E+00
Climate change - fossil	GWP-fossil	kg CO_2 eq.	1.05E+03	6.15E+01	1.94E+00
Climate change - biogenic	GWP-biogenic	kg CO_2 eq.	-3.11E+00	2.28E-03	3.31E+00
Climate change - land use and land-use change	GWP-luluc	kg CO_2 eq.	3.50E-01	1.22E-03	2.30E-05
Ozone depletion	ODP	kg CFC-11 eq.	6.37E-06	1.34E-06	1.11E-09
Acidification	AP	mol H+ eq.	2.11E+00	3.94E-01	7.58E-04
Eutrophication aquatic freshwater	EP-freshwater	kg P eq.	1.01E-02	4.13E-05	8.21E-07
Eutrophication aquatic marine	EP-marine	kg N eq.	5.25E-01	8.96E-02	3.51E-04
Eutrophication terrestrial	EP-terrestrial	mol N eq.	6.13E+00	9.95E-01	3.61E-03
Photochemical ozone formation	POCP	kg NMVOC eq.	2.04E+00	3.53E-01	9.05E-04
Depletion of abiotic resources - minerals and metals	ADP- minerals & metals[1]	kg Sb eq.	1.07E-04	1.44E-06	1.06E-07
Depletion of abiotic resources - fossil fuels	ADP-fossil[1]	MJ, net calorific value	6.26E+03	8.29E+02	5.89E-01
Water use	WDP[1]	m^3 world eq. deprived	6.90E+01	6.53E-01	1.53E-01
Acronyms	GWP-fossil = Global Warming Potential fossil fuels; GWP-biogenic = Global Warming Potential biogenic; GWP-luluc = Global Warming Potential land use and land use change; ODP = Depletion potential of the stratospheric ozone layer; AP = Acidification potential, Accumulated Exceedance; EP-freshwater = Eutrophication potential, fraction of nutrients reaching freshwater end compartment; EP-marine = Eutrophication potential, fraction of nutrients reaching marine end compartment; EP-terrestrial = Eutrophication potential, Accumulated Exceedance; POCP = Formation potential of tropospheric ozone; ADP-minerals&metals = Abiotic depletion potential for non-fossil resources; ADP-fossil = Abiotic depletion for fossil resources potential; WDP = Water (user) deprivation potential, deprivation-weighted water consumption				
General disclaimer	It is discouraged to use the results of modules A1-A3 without considering the results of module C.				
Disclaimer 1	The results of this environmental impact indicator shall be used with care as the uncertainties of these results are high or as there is limited experience with the indicator				

Environmental Performance

Additional environmental performance indicators according to EN 15804 (optional)

Module	Indicator	Unit	A1-A3	A4	A5
Particulate Matter	PM	disease inc.	1.25E-05	4.16E-06	4.60E-09
Ionising Radiation	IR	kBq U-235 eq.	3.13E+00	7.66E-02	3.88E-04
Freshwater Eutrophication Potential	ETP-FW	CTUe	6.24E+02	3.22E+01	5.92E+00
Human Toxicity, Cancer	HTP-C	CTUh	9.59E-08	5.06E-09	2.61E-10
Human Toxicity, Non-Cancer	HTP-NC	CTUh	4.88E-06	4.53E-07	9.77E-09
Soil Quality Potential	SQP	Pt	6.67E+02	1.06E+00	1.33E-01

Additional mandatory environmental performance indicators

Module	Indicator	Unit	A1-A3	A4	A5
Climate change - GWP-GHG	GWP-GHG[1]	kg CO_2 eq.	1.05E+03	6.15E+01	5.25E+00
Acronyms	GWP-GHG = Global warming potential greenhouse gas.				
General disclaimer	It is discouraged to use the results of modules A1-A3 without considering the results of module C.				
Disclaimer 1	The GWP-GHG indicator is termed GWP-IOBC/GHG in the ILCD+EPD+ data format. The indicator accounts for all greenhouse gases except biogenic carbon dioxide uptake and emissions and biogenic carbon stored in the product. As such, the indicator is identical to GWP-total except that the CF for biogenic CO_2 is set to zero.				

Resource use indicators according to EN 15804

Module	Unit	A1-A3	A4	A5
PERE	MJ, net calorific value	1.03E+03	1.98E+00	3.23E+01
PERM	MJ, net calorific value	3.23E+01	0.00E+00	-3.23E+01
PERT	MJ, net calorific value	1.06E+03	1.98E+00	2.28E-02
PENRE	MJ, net calorific value	6.21E+03	8.29E+02	4.19E+01
PENRM	MJ, net calorific value	4.13E+01	0.00E+00	-4.13E+01
PENRT	MJ, net calorific value	6.26E+03	8.29E+02	5.89E-01
SM	kg	6.66E-02	4.55E-04	3.46E-04
RSF	MJ, net calorific value	5.12E-02	3.17E-05	1.73E-05
NRSF	MJ, net calorific value	0.00E+00	0.00E+00	0.00E+00
FW	m3	1.69E+00	1.59E-02	3.56E-03
Acronyms	PERE = Use of renewable primary energy excluding renewable primary energy resources used as raw materials; PERM = Use of renewable primary energy resources used as raw materials; PERT = Total use of renewable primary energy resources; PENRE = Use of non-renewable primary energy excluding non-renewable primary energy resources used as raw materials; PENRM = Use of non-renewable primary energy resources used as raw materials; PENRT = Total use of non-renewable primary energy re-sources; SM = Use of secondary material; RSF = Use of renewable secondary fuels; NRSF = Use of non-renewable secondary fuels; FW = Use of net fresh water.			
General disclaimer	It is discouraged to use the results of modules A1-A3 without considering the results of module C.			

Environmental Performance

Waste indicators according to EN 15804

Module	Unit	A1-A3	A4	A5
HWD	kg	1.16E+01	3.99E-02	5.25E-02
NHWD	kg	4.63E+02	2.67E+00	3.55E+00
RWD	kg	2.44E-03	4.72E-05	2.57E-07
Acronyms	HWD = Hazardous waste disposed; NHWD = Non-hazardous waste disposed; RWD = Radioactive waste disposed.			
General disclaimer	It is discouraged to use the results of modules A1-A3 without considering the results of module C.			

Output flow indicators according to EN 15804

Module	Unit	A1-A3	A4	A5
CRU	kg	0.00E+00	0.00E+00	0.00E+00
MFR	kg	0.00E+00	0.00E+00	0.00E+00
MER	kg	0.00E+00	0.00E+00	0.00E+00
EEE	MJ, net calorific value	0.00E+00	0.00E+00	0.00E+00
EET	MJ, net calorific value	0.00E+00	0.00E+00	0.00E+00
Acronyms	CRU = Components for re-use; MFR = Materials for recycling; MER = Materials for energy recovery; EEE = Exported electrical energy; EET = Exported thermal energy.			
General disclaimer	It is discouraged to use the results of modules A1-A3 without considering the results of module C.			

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EN 15804:2012+A2:2019+AC:2021 Sustainability of construction works - Environmental product declarations - Core rules for the product category of construction products

PCR 2019:14 (ver. 2.0.1) Construction products (EN 15804:A2)

Ecoinvent database (v3.11) - www.ecoinvent.org

SimaPro LCA Software, Pré Consultants, the Netherlands, www.pre-sustainability.com

Çimsa www.cimsa.com.tr

Metsims www.metsims.com

Abbreviations

Abbreviation	Definition
EN	European Norm (Standard)
EPD	Environmental Product Declaration
EF	Environmental Footprint
GPI	General Programme Instructions
ISO	International Organization for Standardization
CEN	European Committee for Standardization
CPC	Central product classification

Version History

Original version of the EPD, 2025-10-30

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