

ENVIRONMENTAL PRODUCT DECLARATION

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

C30/37 Concrete

from
Limak Çimento Sanayi ve Ticaret A.Ş.



Programme:	International EPD System, www.environdec.com
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Licensee:	EPD Türkiye
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Programme Information

Programme: International EPD System

Licensee: EPD Türkiye

Website: www.environdec.com

Website: www.epdturkey.org

Address: EPD International AB Box 210 60
SE-100 31, Stockholm, Sweden

Address: NEF O9 B Blok No:7/15, 34415,
İstanbul, Türkiye

E-mail: support@environdec.com

E-mail: info@epdturkey.org

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):	c-PCR-003 Concrete and concrete elements (EN 16757) (2023-01-02).
c-PCR review was conducted by:	The Technical Committee of the International EPD System

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: Agnieszka Pikus, Greenwise

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.

LCA Practitioner: Yıldırım Yılmaz, Furkan Can Akalın, Metsims Sustainability Consulting

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.

Company Information

Owner of the EPD

Limak Çimento Sanayi ve Ticaret A.Ş.

Hafta Sokak No: 9 GOP 06700 Ankara / TÜRKİYE

www.limakcimento.com

Contact: Akın Yalçın

ayalcin@limakcement.com

As a subsidiary of Limak Holding, we have been operating in the cement industry since 2000. We strengthen our presence in the industry with our 11 cement factories, 28 ready-mixed concrete facilities, 8 sub-brands and nearly 2000 employees, and continue to move forward with advanced technologies and our pioneering steps in the industry by implementing “Best Available Techniques” in line with our strong decarbonization roadmap.

In our triple transformation journey, we make it our mission to break new ground in the industry, our country, and even the world on a daily basis by improving our sustainability and digitalization processes, particularly human resources.

In all our facilities, we carry out our production activities in compliance with the management system certificates we obtained in various fields. We conduct our operations in compliance with national and international legal regulations, ISO 9001 Quality Management System, ISO 14001 Environmental Management System, ISO 45001 Occupational Health and Safety Management System, ISO 50001 Energy Management System, ISO 14046 Water Footprint and ISO 14064 Greenhouse Gas and Emissions Management System standards. Furthermore, we pay attention to manage all our processes in line with the Equator Principles (EPs), the World Bank, the International Finance Corporation (IFC) Performance Criteria and the European Bank for Reconstruction and Development (EBRD) Performance Requirements.

Our slogan “Now, must say new things” emphasizes our commitment to change and innovation in the industry. We are aware that in our rapidly changing world, the most effective way to achieve success is to be agile and able to adapt quickly to changing conditions. In this context, our understanding of Triple Transformation, which we built on digitalization, sustainability and human orientation, is the most concrete example of our determination to lead this change.

As Limak Cement family, by adopting an approach focused on continuous development and innovation, we encourage transformation and flexibility in our individual and professional lives as well as in our business. With this approach, the practices we have realized in the fields of environmental, social and governance (ESG) reflect our belief in the future and the value we provide to the society.

Our motto reflects our mission to be not simply a brand that transcends traditional boundaries, but also a leading source of industry innovation. With the determination to do better every day and contribute to our environment and our industry, we develop new solutions beyond the conventional. Thus, we say “Now, must say new things” as a symbol of our determination to move forward with an innovative perspective and to respond to the needs of our world in the most effective way in every step.

Product Information

Product Name:

C30/37 Ready-Mix Concrete

Product identification	The product is identified as Ready-Mixed Concrete C30/37, conforming to the strength class C30/37 as defined in EN 206 and EN 12390 standards.
Product description	C30/37 concrete is a high-quality ready-mixed concrete designed for general structural and non-structural applications. It consists of Portland cement, natural or crushed aggregates, water, and, where required, chemical admixtures to enhance workability and performance. The concrete achieves a characteristic compressive strength of 30 MPa on cylindrical samples and 37 MPa on cubic samples after 28 days of curing.
Technical purpose of product	The product is intended for use in reinforced and unreinforced concrete structures requiring medium to high strength and durability. Typical applications include foundations, slabs, beams, columns, retaining walls, and other load-bearing elements in residential, commercial, and infrastructural projects. The mix design ensures optimal performance in terms of mechanical strength, workability, and resistance to environmental exposure classes as defined in EN 206.
Manufacturing description	The C30/37 concrete is produced in a controlled ready-mix plant environment. Production follows standardized procedures ensuring consistency and compliance with EN 206 requirements. Raw materials such as cement, aggregates, and water are proportioned by automated batching systems. Mixing is carried out in high-efficiency mixers to achieve a homogeneous composition. Continuous quality control is performed through laboratory testing of fresh and hardened concrete properties, ensuring conformity with specified strength, consistency, and durability criteria.
Material properties	Appearance: Fluid, odorless, granular sludge-like material Oder: Oderless Color: Grey pH: 12-13 Boiling Point (°C): >1000 Density (kg/m³): 2000 - 2600 Solubility: Miscible
Manufacturing site	Güvercinlik Mevki, 06562 Etimesgut / Türkiye
UN CPC code	375 - Articles of concrete, cement and plaster
Geographical scopes	A1-A2: GLO, A3: TR, A4-A5: GLO, B1: GLO, C1-C2-C3-C4,D: GLO
Hazardous and toxic substances	The product does not contain any substances from the SVHC candidate list in concentrations exceeding 0.1% of its weight.

Content Declaration

PRODUCT CONTENT

Content name	*Weight, %	Post-consumer recycled material, weight-% of product	Biogenic material, weight-% of product	Biogenic material ¹ , kg C/declared unit
CEM II/A-M (V-LL) 42,5 R Cement	13 - 14	0	0	0
Fine Aggregate	44 - 45	0	0	0
Coarse Aggregate	33 - 35	0	0	0
Additives	0 - 1	0	0	0
Tap Water	7 - 8	0	0	0
Total	100	0	0	0

Note 1 1 kg biogenic carbon is equivalent to 44/12 kg of CO₂

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

Concrete is not packaged; it is delivered in bulk using truck mixers directly to construction sites, so no packaging is used or considered in calculations.



LCA Information

EPD based on declared or functional unit	Declared unit
Declared unit and reference flow	1 m ³ C30/37 Concrete
Conversion factor to mass	0.00042
Data Period	2024 (Entire year)
Data sources used for this EPD	ecoinvent 3.11 database
LCA Software	SimaPro Craft 10.2
Version of the EN 15804 reference package	EF Reference Package 3.1
Allocation	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.
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	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).
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.
Scrap (recycled material) inputs contribution level	Less than 10% of the GWP-GHG results in modules A1-A3 come from scrap inputs
Infrastructure and capital goods	Excluded

LCA Information

DATA QUALITY ASSESSMENT

Description of data quality assessment and reference years: The Life Cycle Assessment (LCA) for this Environmental Product Declaration (EPD) is based on both primary and secondary data. Primary data were collected directly from the manufacturer's production processes and site-specific operations for the reference year 2024. The quality and representativeness of all data used for the EPD have been evaluated in terms of time, geography, and technology according to the principles outlined in EN 15804:2012+A2:2019, Annex E, and the data quality requirements specified in EN 15941:2010 for life cycle data. All relevant datasets were reviewed for completeness, consistency, and reliability, and the assessment confirmed that no data were classified as "poor" or "very poor" in quality.

Process	Source type	Source	Reference year	Data category	Share of primary data, of GWP-GHG results for A1-A3
Cement Production	Collected Data	EPD	2024	Primary	85%
Raw Material Transportation	Collected Data	EPD Owner	2024	Primary	5.5%
Manufacturing	Collected Data	EPD Owner	2024	Primary	0.7%
Other Processes	Databases	Ecoinvent 3.11	2015-2025	Secondary	0%
Total share of primary data, of GWP-GHG results for A1-A3					91.2%
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.				

Electricity used in the manufacturing process for A3

Type of electricity mix	Residual electricity mix on the market	
	Imported coal	40.5%
	Natural gas	35%
	Lignite	22.1%
	Hard coal	1.84%
	Asphaltite	0.55%
Climate impact (GWP-GHG):	0.91 kg CO ₂ eq./kWh	

Method used to calculate residual electricity mix	The market consumption data for Türkiye is modified to exclude all the renewable sources as there is no 'secondary data' on the residual market mix for Türkiye.
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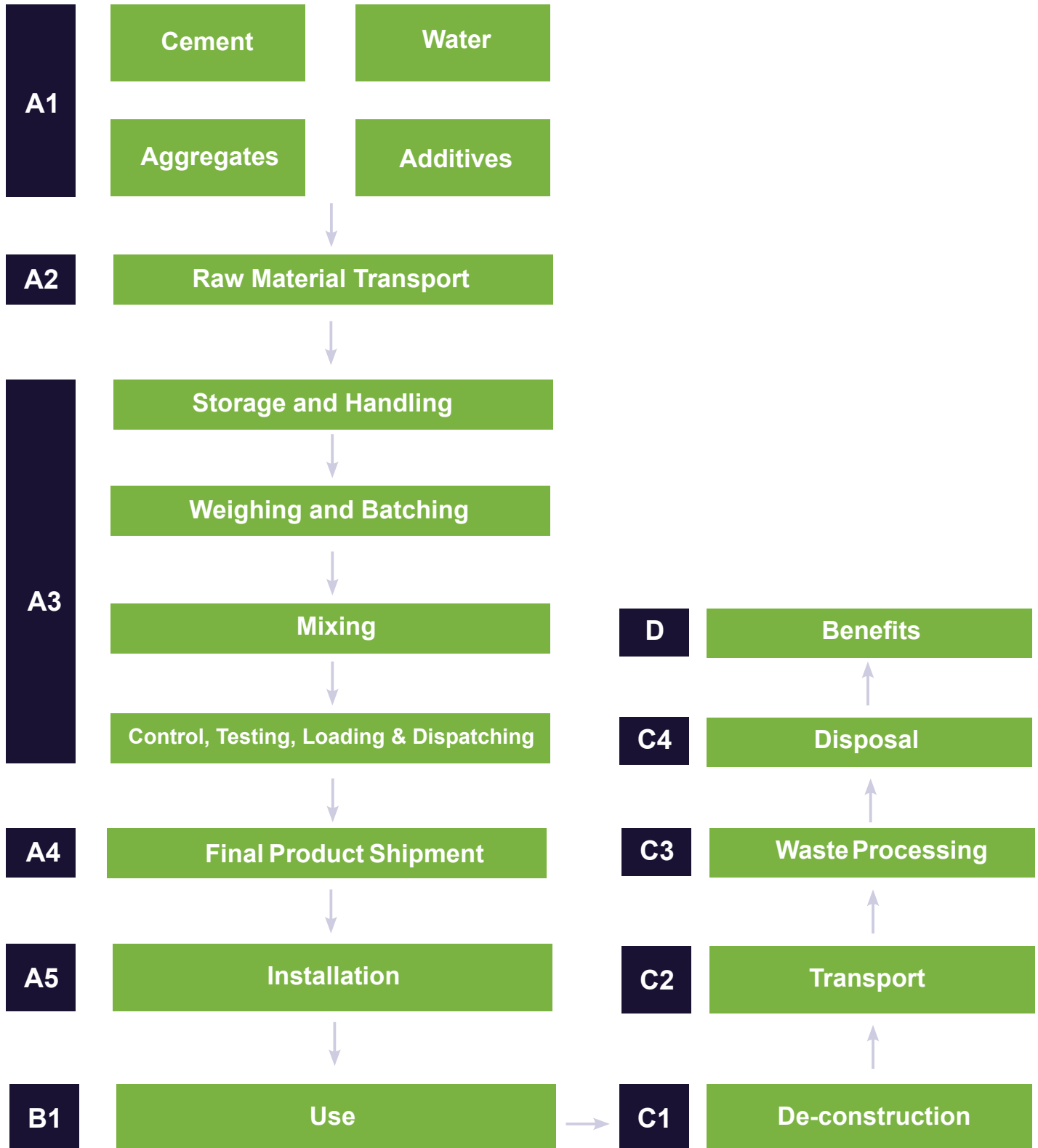
System Boundary

Description of the System boundary c) Cradle to gate with options modules C1–C4, module D, and optional modules (A4, A5, and B1).

	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	X	X	X	X	X
Geography	GLO		TR	GLO		GLO	-						GLO				
Share of specific data	91.2%			-	-	-	-	-	-	-	-	-	-	-	-	-	-
Variation - products	0%			-	-	-	-	-	-	-	-	-	-	-	-	-	-
Variation - sites	0%			-	-	-	-	-	-	-	-	-	-	-	-	-	-

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

System Diagram



System Boundary

A1 - Raw Material Supply

This stage covers the extraction and processing of raw materials required for concrete production. Raw materials such as cement, aggregates, and admixtures are extracted, processed, and prepared for concrete production. Environmental impacts from quarrying, raw material transportation, and cement production are included in this stage.

A2 - Raw Material Transport

All raw materials are transported from their extraction or production sites to the concrete batching plant. Transport is carried out primarily by truck, and the impacts from fuel consumption and emissions are included.

A3 - Manufacturing

The manufacturing stage includes all processes taking place at the ready-mix concrete batching plant. Raw materials such as cement, aggregates, water, and chemical admixtures are proportioned according to a specific mix design and combined in automated batching systems. The materials are transferred into a mixer where they are blended until a uniform and consistent concrete mix is achieved. Production is performed under controlled conditions in accordance with EN 206 and relevant quality standards.

A4 - Transport

The fresh concrete is transported in truck mixers from the batching plant to the construction sites. The environmental impacts of this stage include fuel use, vehicle emissions, and any losses during delivery.

A5 - Installation

Concrete is placed, compacted, and cured on site. Energy and water used during pouring and finishing are considered, as well as waste and emissions from formwork cleaning and concrete residues. The diesel consumption and efficiency of the concrete mixer truck and the concrete pump at the construction site are included. Water consumption is assumed to be 669 litres/m³ during this stage.

System Boundary

B1 - Use

During the use phase, concrete gradually reabsorbs a portion of CO₂ from the atmosphere as a result of the carbonation of cementitious materials. In accordance with EN 16757, the impact related to this recarbonation process is accounted for in the assessment. Since the exact end-use conditions of the product are not known, a correction factor of 0.15 has been applied, as specified by the standard. The main parameters considered in the calculation of the carbonation effect are summarized in the table below.

*U _{tcc} for CEM I	0.49
U _{tcc} adjustment factor for CEM II cement	85/95
**Correction factor	0.15
CO ₂ uptake for 1 kg of cement (kg CO ₂ eq.)	6.58E-02
CO ₂ uptake for 1 m ³ of investigated concrete (kg CO ₂ eq.)	21.4

C1 - Deconstruction

This stage includes the demolition or deconstruction of the discarded concrete from the construction sites. Based on the relevant PCR, 10 kWh diesel use per ton of product is assumed.

C2- Transport

This stage covers the transportation-related impacts of the discarded concrete. Since end of life transportation distances for the discarded concrete cannot be obtained, generic assumption from the PCR, 80 km average distance with Euro 5 lorry and 50% load factor is assumed.

C3 - Waste Processing

Any waste processing for the discarded concrete is included in this stage. Total of 3.8 kWh of diesel consumption for loading and unloading at the sorting facility and crushing of concrete is considered.

C4 - Disposal

The recycled portion of waste concrete can substitute the use of aggregates in future concrete-making processes. According to the Cement Sustainability Initiative (CSI), this substitution can range from 10% to 45%. In this study, a 30% substitution is assumed. The remaining portion is assumed to be landfilled, and its impact is calculated at this stage.

D- Reuse, Recovery, Recycling Potential

The recycled fraction of waste concrete can serve as a replacement for natural aggregates in future concrete production, and this advantage is accordingly accounted for.

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	B1	C1	C2	C3	C4	D
Climate change - total	GWP-total	kg CO ₂ eq.	2.64E+02	6.64E+00	8.02E-01	-2.14E+01	8.63E+00	7.71E+01	3.08E+00	4.84E+00	-4.37E+00
Climate change - fossil	GWP-fossil	kg CO ₂ eq.	2.61E+02	6.63E+00	7.99E-01	-2.14E+01	8.63E+00	7.71E+01	3.08E+00	4.84E+00	-4.36E+00
Climate change - biogenic	GWP-biogenic	kg CO ₂ eq.	2.97E+00	1.64E-03	1.29E-03	0.00E+00	9.49E-04	1.91E-02	3.61E-04	3.19E-03	-7.65E-03
Climate change - land use and land-use change	GWP-luluc	kg CO ₂ eq.	2.03E-01	2.97E-03	1.06E-03	0.00E+00	8.84E-04	3.46E-02	1.27E-04	2.68E-04	-6.80E-03
Ozone depletion	ODP	kg CFC-11 eq.	7.29E-07	8.40E-08	1.54E-07	0.00E+00	1.28E-07	9.76E-07	4.69E-08	7.03E-08	-1.67E-08
Acidification	AP	mol H ⁺ eq.	9.30E-01	2.26E-02	4.28E-03	0.00E+00	7.71E-02	2.63E-01	2.85E-02	4.38E-02	-1.98E-02
Eutrophication aquatic freshwater	EP-freshwater	kg P eq.	2.17E+03	7.27E-04	3.04E-04	0.00E+00	2.78E-04	8.45E-03	2.90E-06	1.38E-05	-2.44E-03
Eutrophication aquatic marine	EP-marine	kg N eq.	2.44E-01	7.18E-03	8.81E-04	0.00E+00	3.59E-02	8.34E-02	1.34E-02	2.01E-02	8.20E-04
Eutrophication terrestrial	EP-terrestrial	mol N eq.	2.18E+00	7.80E-02	9.00E-03	0.00E+00	3.93E-01	9.06E-01	1.47E-01	2.20E-01	-2.39E-03
Photochemical ozone formation	POCP	kg NMVOC eq.	5.91E-01	3.07E-02	2.74E-03	0.00E+00	1.18E-01	3.56E-01	4.39E-02	6.66E-02	2.06E-03
Depletion of abiotic resources - minerals and metals	ADP- minerals & metals ¹	kg Sb eq.	2.99E-04	2.17E-05	3.61E-06	0.00E+00	3.01E-06	2.52E-04	1.08E-07	1.63E-07	-4.03E-05
Depletion of abiotic resources - fossil fuels	ADP-fossil ¹	MJ, net calorific value	1.28E+03	9.17E+01	9.97E+00	0.00E+00	1.12E+02	1.07E+03	4.03E+01	6.21E+01	-5.43E+01
Water use	WDP ¹	m ³ world eq. deprived	1.84E+02	5.20E-01	2.86E+01	0.00E+00	3.25E-01	6.04E+00	5.08E-02	8.51E-02	-1.06E+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 mandatory environmental performance indicators

Module	Indicator	Unit	A1-A3	A4	A5	B1	C1	C2	C3	C4	D
Climate change - GWP-GHG	GWP-GHG ¹	kg CO ₂ eq.	2.64E+02	6.64E+00	8.02E-01	-2.14E+01	8.63E+00	7.71E+01	3.08E+00	4.84E+00	-4.37E+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	B1	C1	C2	C3	C4	D
PERE	MJ, net calorific value	2.63E+02	1.27E+00	1.04E+00	0.00E+00	7.05E-01	1.48E+01	8.79E-02	2.62E-01	-8.55E+00
PERM	MJ, net calorific value	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PERT	MJ, net calorific value	2.63E+02	1.27E+00	1.04E+00	0.00E+00	7.05E-01	1.48E+01	8.79E-02	2.62E-01	-8.55E+00
PENRE	MJ, net calorific value	3.10E+03	9.17E+01	9.97E+00	0.00E+00	1.12E+02	1.07E+03	4.03E+01	6.21E+01	-5.43E+01
PENRM	MJ, net calorific value	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PENRT	MJ, net calorific value	3.10E+03	9.17E+01	9.97E+00	0.00E+00	1.12E+02	1.07E+03	4.03E+01	6.21E+01	-5.43E+01
SM	kg	3.08E-01	4.04E-02	2.63E-02	0.00E+00	4.65E-02	4.69E-01	8.11E-05	1.38E-04	-8.37E-02
RSF	MJ, net calorific value	3.26E-03	5.22E-04	2.01E-05	0.00E+00	1.22E-04	6.07E-03	1.41E-05	2.30E-05	-6.64E-04
NRSF	MJ, net calorific value	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
FW	m ³	6.32E+00	1.27E-02	6.66E-01	0.00E+00	7.93E-03	1.47E-01	1.22E-03	2.06E-03	-2.51E-01
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	B1	C1	C2	C3	C4	D
HWD	kg	6.54E+00	2.10E-01	9.73E-02	0.00E+00	1.26E-01	2.44E+00	4.23E-03	2.48E-02	-6.62E-01
NHWD	kg	6.84E+01	4.04E+00	1.50E+01	0.00E+00	1.84E+00	4.70E+01	1.45E-01	1.67E+03	-1.32E+01
RWD	kg	3.14E-04	1.81E-05	1.66E-05	0.00E+00	1.17E-05	2.11E-04	1.88E-06	3.40E-06	-1.67E-04
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	B1	C1	C2	C3	C4	D
CRU	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
MFR	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	7.15E+02	0.00E+00	0.00E+00
MER	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
EEE	MJ, net calorific value	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
EET	MJ, net calorific value	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	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.									

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, 2025-10-27.

References

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)

ISO 14040:2021 "Environmental management - Life cycle assessment - Principles and framework".

ISO 14044:2018 "Environmental management - Life cycle assessment - Requirements and guidelines".

ISO 14025:2006 "Environmental labels and declarations - Type III environmental declarations - Principles and procedures".

General Program Instructions of International EPD System, (Ver. 5.0.1) 2025-02-27 "General Programme Instructions for the International EPD® System".

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

Sönmez Çimento www.limakcimento.com

Metsims www.metsims.com

Contact

Programme & Programme Operator



EPD International AB Box 210 60
SE-100 31 Stockholm, Sweden
www.environdec.com
info@environdec.com

Licensee



EPD registered through fully aligned
regional licensee: EPD Türkiye
www.epdturkey.org
info@epdturkey.org
NEF 09 B Blok No:7/15, 34415
Kağıthane/İstanbul, Türkiye

Owner of the declaration



Contact person: Akın Yalçın
ayalcin@limakcement.com
www.limakcimento.com

LCA Consultant & EPD Designer



The United Kingdom
Clear Water Place Oxford OX2 7NL, UK
0 800 722 0185
www.metsims.com
info@metsims.com
Türkiye
Nef 09 B Blok No:7/46-47 34415
Kağıthane/İstanbul, Türkiye
+90 212 281 13 33

Additional LCA Results

In compliance with the PCR requirements, 100% end-of-life scenarios have been modelled for the product. Tables below present the results for modules C3, C4 and D, based on these scenarios, covering all mandatory impact indicators as specified in EN 15804.

100% recycling scenario

Module	Indicator	Unit	C3	C4	D
Climate change - total	GWP-total	kg CO ₂ eq.	2.55E+00	0.00E+00	-1.91E+01
Climate change - fossil	GWP-fossil	kg CO ₂ eq.	2.55E+00	0.00E+00	-1.90E+01
Climate change - biogenic	GWP-biogenic	kg CO ₂ eq.	2.98E-04	0.00E+00	-9.15E-02
Climate change - land use and land-use change	GWP-luluc	kg CO ₂ eq.	1.05E-04	0.00E+00	-1.75E-02
Ozone depletion	ODP	kg CFC-11 eq.	3.88E-08	0.00E+00	-1.37E-07
Acidification	AP	mol H ⁺ eq.	2.35E-02	0.00E+00	-1.08E-01
Eutrophication aquatic freshwater	EP-freshwater	kg P eq.	2.40E-06	0.00E+00	-7.34E-04
Eutrophication aquatic marine	EP-marine	kg N eq.	1.11E-02	0.00E+00	-2.74E-02
Eutrophication terrestrial	EP-terrestrial	mol N eq.	1.22E-01	0.00E+00	-3.00E-01
Photochemical ozone formation	POCP	kg NMVOC eq.	3.63E-02	0.00E+00	-9.56E-02
Depletion of abiotic resources - minerals and metals	ADP- minerals & metals ¹	kg Sb eq.	8.94E-08	0.00E+00	-2.35E-06
Depletion of abiotic resources - fossil fuels	ADP-fossil ¹	MJ, net calorific value	3.33E+01	0.00E+00	-2.50E+02
Water use	WDP ¹	m ³ world eq. deprived	4.20E-02	0.00E+00	-3.39E+01

100% disposal scenario

Module	Indicator	Unit	C3	C4	D
Climate change - total	GWP-total	kg CO ₂ eq.	0.00E+00	5.62E+00	0.00E+00
Climate change - fossil	GWP-fossil	kg CO ₂ eq.	0.00E+00	5.62E+00	0.00E+00
Climate change - biogenic	GWP-biogenic	kg CO ₂ eq.	0.00E+00	3.70E-03	0.00E+00
Climate change - land use and land-use change	GWP-luluc	kg CO ₂ eq.	0.00E+00	3.11E-04	0.00E+00
Ozone depletion	ODP	kg CFC-11 eq.	0.00E+00	8.16E-08	0.00E+00
Acidification	AP	mol H ⁺ eq.	0.00E+00	5.08E-02	0.00E+00
Eutrophication aquatic freshwater	EP-freshwater	kg P eq.	0.00E+00	1.60E-05	0.00E+00
Eutrophication aquatic marine	EP-marine	kg N eq.	0.00E+00	2.33E-02	0.00E+00
Eutrophication terrestrial	EP-terrestrial	mol N eq.	0.00E+00	2.56E-01	0.00E+00
Photochemical ozone formation	POCP	kg NMVOC eq.	0.00E+00	7.73E-02	0.00E+00
Depletion of abiotic resources - minerals and metals	ADP- minerals & metals ¹	kg Sb eq.	0.00E+00	1.89E-07	0.00E+00
Depletion of abiotic resources - fossil fuels	ADP-fossil ¹	MJ, net calorific value	0.00E+00	7.22E+01	0.00E+00
Water use	WDP ¹	m ³ world eq. deprived	0.00E+00	9.88E-02	0.00E+00

Limak Çimento  **now**