

## ENVIRONMENTAL PRODUCT DECLARATION



In accordance with ISO 14025:2006 and EN 15804:2012+A2:2019/AC:2021 for:  
**Bi'Boya Comfort Mat**  
**Kalia Mat**  
from  
**Kalekim Kimyevi Maddeler Sanayi ve Ticaret A.Ş**

<b>Programme:</b>	The International EPD® System
<b>Programme Operator:</b>	EPD International AB
<b>Licensee:</b>	EPD Türkiye
<b>EPD registration number:</b>	EPD-IES-0029188:001
<b>Version Date:</b>	2026-04-16
<b>Validity Date:</b>	2031-04-15
<b>EPD Type:</b>	EPD of a single product

*An EPD may be updated or depublished if conditions change. To find the latest version of the EPD and to confirm its validity, see [www.environdec.com](http://www.environdec.com)*

# General Information

## Programme Information

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Programme :The International EPD System  
Address :EPD International AB Box 210 60 SE-100 31 Stockholm Sweden  
Website :www.environdec.com  
E-mail :support@environdec.com

## Product Category Rules (PCR)

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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, version 2.0.1., Construction EN 15804:2012+A2:2019/AC:2021 Sustainability of Construction Works, UN CPC code is 35110 Paints and varnishes and related products

PCR review was conducted by: The Technical Committee of the International EPD System. See [www.environdec.com](http://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/contact](http://www.environdec.com/contact).

Life Cycle Assessment (LCA)

LCA accountability: Furkan Can Akalin - Metsims Sustainability Consulting  
[info@metsims.com](mailto:info@metsims.com)

## Third-party Verification

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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: Vijay Thakur, Eco-Assure Verification & Advisory

Approved by: International EPD System

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

Yes                      No

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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.

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

# How To Read This EPD?

An Environmental Product Declaration (EPD) is an ISO Type III Environmental Declaration based on ISO 14025 standard. An EPD transparently reports the environmental performance of products or services from a lifecycle perspective. The preparation of an EPD includes different stages, from acquiring raw materials to the end of life of the final product/service. EPDs are based on international standards and consider the entire value chain. Additionally, **EPD is a third-party verified document**. This EPD includes the following sections described below.

## 1- General and Program Information

The first part of an EPD has information about the name of the manufacturer and product/service and other general information such as the validity and expiration dates of the document, the name of the program operator, geographical scope, etc. The second page states the standards followed and gives information about the program operator, third-party verifier, etc. The followed Product Category Rule (PCR) is indicated on the second page.

## 2- Company and Product/Service Information

Information about the company and the investigated product is given in this section. It summarizes the characteristics of the product provided by the manufacturer. It also includes information about the product such as product composition and packaging.

## 3- LCA Information

Life Cycle Analysis (LCA) information is one of the most important parts of the EPD as it describes the functional /declared unit, time representativeness of the study, database(s) and LCA software, along with system boundaries. The table presented in this part has columns for each stage in the life cycle. The considered stages are marked 'X' whereas the ones that are not considered are labeled as 'NR' (Not Relevant). Not all EPDs consider the full life cycle assessment for a product's entire life stages. The 'System Boundary' page is also the place where one can find detailed information about the stages and the assumptions made.

## 4. LCA Results

The results of the LCA analysis are presented in table format. The first column in each table indicates the name of the impact category and their measurement units are presented in the second column. These tables show an amount at each life cycle stage to see the impact of different indicators on different stages. Each impact can be understood as what is released through the production of the declared unit of the material. The benefits of reuse/recycling of the declared product are reflected in this section.

The first impact in the table is global warming potential (GWP), which shows how much CO<sub>2</sub> is released at each stage. Other impacts include eutrophication potential, acidification potential, ozone layer depletion, land use related impacts, etc. The second table provides results for resource use and the third table is about the waste produced during production. The fourth and final table shows the results for the GWP-GHG indicator, which is almost equivalent to the GWP-Total indicator mentioned previously. The only difference is that this indicator excludes the biogenic carbon content by following a certain methodology.

## Information About EPD Owner



**Owner of the EPD:** Kalekim Kimyevi Maddeler Sanayi ve Ticaret A.Ş

**Address:** Firuzköy Mahallesi Firuzköy Bulvarı No:188/1 Avcılar İstanbul

Founded in 1973 by Dr. H. Ibrahim Bodur, the founder of the Kale Group of Co only in its current fields of business but also new ones, and is carrying out studies to do this. To this end, Kalekim started operating in the decorative coating field in 2021 with the launch of Visuelle. It is making good use of inorganic growth opportunities and acquiring related companies. Kalekim prioritizes innovation in all these processes and regards innovation as a key company strategy. It is continuing to work to create dynamic products, generate new ideas, or improve existing goods and services. Kalekim aims to leave a more livable world to future generations by focusing on common values based on economic, environmental, and social aspects as part of its sustainability work.

# Product Information



Product name: Bi'Boya Comfort Mat, Kalia Mat

UN CPC code: 35110 Paints and varnishes and related products

Production site: Organize Sanayi Bölgesi 2. Cadde No: 9 Altieylül-Balıkesir

Acrylic emulsion-based interior decorative wall paints with silicone enhancement provide a matt finish that combines aesthetic quality with functional performance. These water-thinnable, solvent-free coatings are designed for application on suitably prepared new mineral surfaces such as concrete, mortar, cement and gypsum panels, as well as on previously painted surfaces, putty, glass textile and wallpaper. The product is typically applied in two coats by brush, roller or spray system after primer application, with clean water added up to a maximum of 25% by volume. A minimum waiting time of 24 hours after priming and at least 2 hours between coats is required. Depending on surface roughness and absorben- cy, the average consumption is approximately 0.05–0.07 L/m<sup>2</sup> per coat.

The silicone-enhanced structure provides high water vapour permeability, allowing interior spaces to breathe and supporting moisture regulation within buildings. The coatings offer a smooth, elegant matt appearance with high hiding power and are resistant to wiping and scrubbing, ensuring long-lasting surface cleanliness. Being solvent-free, practically odourless and diluted with water, these products are not harmful to human health and are compatible with environmental requirements.

## Technical Specifications

### Technical Properties (at 23°C and 50%Relative Humidity)

General Data	
Colors	Thousands of colors possible from a mixture of white and A, B, C, bases using the Renk Bankası
Composition	Acrylic emulsion based
Thinner	Water
Density	Approx. 1.49 g/cm <sup>3</sup>
Application Data	
Application Temperature Range	(+5°C) - (+35°C)
Drying Time	Recoatable after 6 hours and thoroughly dry after 24 hours. (Lower temperatures and/or higher relative humidity will lengthen the drying process.)
Consumption	Depending on the evenness and the porosity of the surface approximately 0.05–0.07lt/m <sup>2</sup> per coat
Application Tools	Brush, Roller, Airless spraying equipment

# Content Declaration

The content declaration is provided as intervals due to confidentiality reasons.

Product content	Mass, kg	Post-consumer recycled material, mass-% of product	Biogenic material, mass-% of product	Biogenic material, kg C/product
Fillers	30-40%	0	0	0
Water	20-30%	0	0	0
Binders	20-30%	0	0	0
Pigments	10-20%	0	0	0
Others	0-10%	0	0	0
<b>TOTAL</b>	<b>100</b>	<b>0</b>	<b>0</b>	<b>0</b>

Packaging materials	Mass, kg	Mass-% (versus the product)	Biogenic material, kg C/declared unit
Plastic bucket	3.88E-02	3.88%	0%
Euro pallet	1.28E-03	<1%	0%
Label	1.37E-05	<1%	0%
Plastic film	1.70E-06	<1%	0%
Polyethylene bag	8.22E-07	<1%	0%
<b>TOTAL</b>	<b>4.01E-02</b>	<b>4.01%</b>	<b>0%</b>

## 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 Information

## System Boundary

### A1 - Raw Material Supply

This stage includes raw materials extraction and pre-treatments before its use in manufacturing. The effects of raw materials were evaluated at this stage.

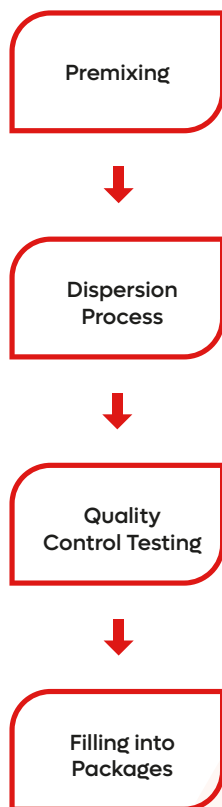
### A2 – Raw Material Transport

Transport information of the raw materials is provided by the manufacturer. The distances and routes are calculated accordingly

Transport Mode	Type
Road	Vehicle: Lorry Size Class: 16-32 metric ton Emission Standard: EURO6 Fuel Type: Diesel
Sea	Vehicle: Container Ship DWT (Load Capacity): 43000 tonnes Fuel Type: Heavy Fuel Oil

### A3 - Manufacturing

This stage includes the production-related environmental impacts of the investigated product. All energy-related inputs are supplied by the manufacturer. The effects of packaging are also included in this stage. The manufacturing stage includes the following processes as shown in the production flow diagram below.



# LCA Information

## A4 - Product Transport

Transport of the finished product from the manufacturing plant to the customer/construction site is included in Module A4. Transport distances and routes were determined according to the representative customer distribution. Deliveries are mainly performed by road freight, with sea freight used for export markets where relevant. The bulk density of the transported product is 1.55 g/cm<sup>3</sup>. A volume capacity utilization factor of 1 was assumed, while average vehicle loading and return-trip utilization were considered in the transport scenario assumptions.

Transport Mode	Type
Road	Vehicle: Lorry Size Class: 16-32 metric ton Emission Standard: EURO6 Fuel Type: Diesel
Sea	Vehicle: Container Ship DWT (Load Capacity): 43000 tonnes Fuel Type: Heavy Fuel Oil

## A5 - Installation

As the application is manual with rollers, there is no application effect. End-of-life treatment of the packaging waste associated with the product is included in this stage.

## C1 – Demolition

According to PCR 2019:14 2.0.1, the demolition effect is accepted as 0.0011 kWh of diesel per kilogram.

## C2 – Waste Transport

This module includes transportation of wastes from the demolished building to landfill, considered as 80 km, with a 50% load factor.

Transport Mode	Type
Road	Vehicle: Lorry Size Class: 16-32 metric ton Emission Standard: EURO5 Fuel Type: Diesel

## C3 – Waste Processing

Since all waste is sent to landfills, there is no impact at this stage.

## C4 – Disposal

The landfill impact of product waste has been calculated within this scope.

## D – Benefit

Since all waste is sent to landfills, there is no impact at this stage.

# LCA Information

**Declared Unit:** 1 kg of Bi'Boya Comfort Mat, Kalia Mat

**Time representativeness:** Full year of 2024 (01.01.2024- 31.12.2024).

## **Geographical Scope:**

Module A1 and A2 Material suppliers are Global (Asia, European and Türkiye)

Module A3 production is located in Türkiye (TR)

Module A4 transport and A5 installation locations are Global (Türkiye, European, Africa, Asia)

**Database(s) and LCA software used:** Ecoinvent 3.11 and SimaPro 10.2

**Description of system boundaries:** Cradle-to-gate with modules C1-C4 and module D

## **Allocation**

Source of raw material, water consumption, 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 2024 total waste generation.

## **Background Data**

For all LCA modelling and calculation, Ecoinvent database (v3.11) and SimaPro (v10.2) LCA software were used. 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.

## **Cut-off Criteria**

The criteria for exclusion were set so that individual input flows 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%.

# LCA Information

## Source of Electricity

Electricity Used in the Manufacturing Process in A3	
<b>Type of electricity mix</b>	Residual mix + Specific electricity mix as generated, or purchased from an electricity supplier, demonstrated by a contractual instrument
<b>Energy sources</b>	Solar 57%
	Natural gas 14%
	Coal 29%
<b>Climate impact (GWP-GHG):</b>	0.428 kg CO <sub>2</sub> eq./kWh

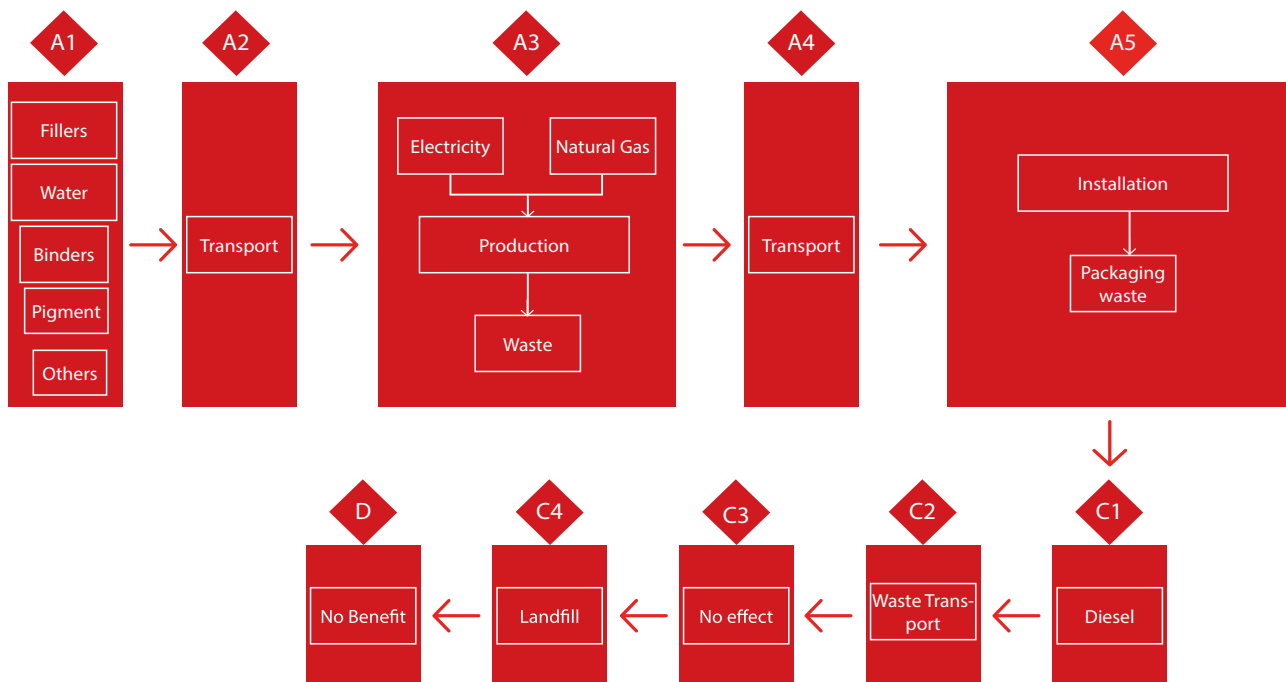
## Data Quality

The EPD is based on data collected by Kalekim from one site over one year from January 2024. The EPD type is a single product of Bi'Boya Comfort Mat and Kalia Mat produced in Balikesir Plant of Kalekim. The products Bi'Boya Comfort Mat and Kalia Mat have identical material compositions; only the brand name varies depending on the sales strategy and market location. The end-of-life stage of the EPD covers Europea. Kalekim uses same technology for all Bi'Boya Comfort Mat, Kalia Mat production and uses 100% primary raw material for the product. The EPD uses background data from the Ecoinvent 3.11 database, 2024, and EPD data for the specific primary input material used. The quality of the relevant data used for the EPD in terms of its time, geography and technology representativeness using EN 15804:2012+A2:2019, Annex E, E2 is mostly very good and good data. Fair category data is used for certain materials but it doesn't contribute > 30% to core indicators. The relevant data assessed included no poor or very poor data.

Process	Source type	Source	Reference year	Data category	Share of primary data, of GWP-GHG results for A1-A3
Manufacturing of product	Collected data	EPD owner	2024	Primary data	0.2%
Transport of raw materials to manufacturing site	Database	Ecoinvent v3.10	2024	Primary data	5%
Production of raw materials	Database	Ecoinvent v3.10	2024	Secondary data	0%
Production of packaging	Database	Ecoinvent v3.10	2024	Secondary data	0%
Total share of primary data, of GWP-GHG results for A1-A3					5.2%

# LCA Information

## System Boundary:



	Product Stage			Construction Process Stage		Process							End of Life Stage			Benefits and Loads	
	Raw Material Supply	Transport	Manufacturing	Transport	Construction Installation	Use	Maintenance	Repair	Replacement	Refurbishment	Operational Energy Use	Operational Water Use	Deconstruction / Demolition	Transport	Waste Processing		Disposal
<b>Module</b>	A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
<b>Modules Declared</b>	X	X	X	X	X	ND	ND	ND	ND	ND	ND	ND	X	X	X	X	X
<b>Geography</b>	GLO	GLO	TR	GLO	GLO	-	-	-	-	-	-	-	GLO	GLO	GLO	GLO	GLO
<b>Specific Data Used</b>	5.2%			-	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>Variation-Products</b>	0%			-	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>Variation-Sites</b>	0%			-	-	-	-	-	-	-	-	-	-	-	-	-	-

(X= Module included, ND = Module not included)

# 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

Impact category	Indicator	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D
Climate change - total	GWP-total	kg CO <sub>2</sub> eq.	1.76E+00	1.17E-01	6.48E-03	3.75E-04	2.59E-02	0.00E+00	2.73E-03	0.00E+00
Climate change - fossil	GWP-fossil	kg CO <sub>2</sub> eq.	1.75E+00	1.17E-01	4.62E-03	3.75E-04	2.59E-02	0.00E+00	2.73E-03	0.00E+00
Climate change - biogenic	GWP-biogenic	kg CO <sub>2</sub> eq.	2.93E-03	7.43E-06	1.86E-03	1.88E-08	1.70E-06	0.00E+00	2.53E-07	0.00E+00
Climate change - land use and land-use change	GWP-luluc	kg CO <sub>2</sub> eq.	1.26E-03	5.78E-06	2.56E-07	1.54E-08	1.32E-06	0.00E+00	1.60E-07	0.00E+00
Ozone depletion	ODP	kg CFC-11 eq.	2.46E-08	1.37E-09	1.08E-11	5.70E-12	3.07E-10	0.00E+00	3.92E-11	0.00E+00
Acidification	AP	mol H <sup>+</sup> eq.	1.62E-02	4.53E-04	3.14E-06	3.46E-06	7.32E-05	0.00E+00	2.46E-05	0.00E+00
Eutrophication aquatic freshwater	EP-freshwater	kg P eq.	7.32E-05	7.72E-07	4.99E-09	3.53E-10	1.81E-07	0.00E+00	8.96E-09	0.00E+00
Eutrophication aquatic marine	EP-marine	kg N eq.	1.89E-03	1.42E-04	1.37E-06	1.63E-06	2.53E-05	0.00E+00	1.12E-05	0.00E+00
Eutrophication terrestrial	EP-terrestrial	mol N eq.	2.02E-02	1.56E-03	1.33E-05	1.79E-05	2.79E-04	0.00E+00	1.23E-04	0.00E+00
Photochemical ozone formation	POCP	kg NMVOC eq.	8.07E-03	5.44E-04	5.66E-06	5.34E-06	1.04E-04	0.00E+00	3.72E-05	0.00E+00
Depletion of abiotic resources - minerals and metals	ADP-minerals&metals <sup>1</sup>	kg Sb eq.	1.96E-05	9.06E-09	7.80E-10	1.31E-11	2.12E-09	0.00E+00	9.08E-11	0.00E+00
Depletion of abiotic resources - fossil fuels	ADP-fossil <sup>1</sup>	MJ, net calorific value	2.65E+01	1.50E+00	9.53E-03	4.90E-03	3.39E-01	0.00E+00	3.49E-02	0.00E+00
Water use	WDP <sup>1</sup>	m <sup>3</sup> world eq. deprived	1.27E+00	2.73E-03	-6.16E-03	6.17E-06	6.32E-04	0.00E+00	4.87E-05	0.00E+00
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.									

## Additional Mandatory Environmental Performance Indicators

Impact category	Indicator	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D
Climate change - GWP-GHG	GWP-GHG <sup>1</sup>	kg CO <sub>2</sub> eq.	1.76E+00	1.17E-01	4.63E-03	3.75E-04	2.59E-02	0.00E+00	2.73E-03	0.00E+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 <sub>2</sub> is set to zero.									

## Additional voluntary environmental performance indicators according to EN 15804

Impact category	Indicator	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D
Particulate matter emissions	PM	Disease incidence	1.32E-07	8.91E-09	6.93E-11	9.97E-11	1.66E-09	0.00E+00	6.96E-10	0.00E+00
Ionizing radiation - human health	IRP <sup>1</sup>	kBq U235 eq.	1.97E-02	1.16E-04	2.96E-06	4.07E-07	2.63E-05	0.00E+00	3.46E-06	0.00E+00
Eco-toxicity - freshwater	ETP-fw <sup>2</sup>	CTUe	1.99E+01	1.53E-01	1.36E-02	1.41E-04	3.41E-02	1.33E-03	1.33E-03	0.00E+00
Human toxicity - cancer effects	HTP-c <sup>2</sup>	CTUh	8.41E-10	8.82E-12	1.79E-13	2.01E-14	1.85E-12	0.00E+00	1.89E-13	0.00E+00
Human toxicity - non-cancer effects	HTP-nc <sup>2</sup>	CTUh	1.03E-07	9.01E-10	2.69E-11	3.70E-13	1.66E-10	0.00E+00	3.62E-12	0.00E+00
Land-use related impacts/soil quality	SQP <sup>2</sup>	Dimensionless	5.24E+00	1.53E-02	2.23E-02	8.32E-06	3.57E-03	0.00E+00	4.12E-02	0.00E+00
Acronyms	PM = Potential incidence of disease due to particulate matter emissions; IRP = Potential human exposure efficiency relative to U235; ETP-fw = Potential comparative toxic unit for ecosystems; HTP-c = Potential comparative toxic unit for humans; HTP-nc = Potential comparative toxic unit for humans; SQP = Potential soil quality index.									
General disclaimer	It is discouraged to use the results of modules A1-A3 without considering the results of module C.									
Disclaimer 1	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 due to radioactive waste disposal in underground facilities. Potential ionizing radiation from the soil, from radon and from some construction materials is also not measured by this indicator.									
Disclaimer 2	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

## Resource Use Indicators According to EN 15804

Indicator	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D
<b>PERE</b>	MJ, net calorific value	1.40E+00	3.03E-03	1.63E-02	1.07E-05	6.86E-04	0.00E+00	1.64E-04	0.00E+00
<b>PERM</b>	MJ, net calorific value	1.62E-02	0.00E+00	-1.62E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
<b>PERT</b>	MJ, net calorific value	1.42E+00	3.03E-03	1.27E-04	1.07E-05	6.86E-04	0.00E+00	1.64E-04	0.00E+00
<b>PENRE</b>	MJ, net calorific value	2.48E+01	1.50E+00	1.66E+00	4.90E-03	3.39E-01	0.00E+00	3.49E-02	0.00E+00
<b>PENRM</b>	MJ, net calorific value	1.65E+00	0.00E+00	-1.65E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
<b>PENRT</b>	MJ, net calorific value	2.65E+01	1.50E+00	9.54E-03	4.90E-03	3.39E-01	0.00E+00	3.49E-02	0.00E+00
<b>SM</b>	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
<b>RSF</b>	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
<b>NRSF</b>	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
<b>FW</b>	m <sup>3</sup>	3.00E-02	6.51E-05	-1.43E-04	1.48E-07	1.50E-05	0.00E+00	1.18E-06	0.00E+00

**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.

## Waste Indicators According to EN 15804

Indicator	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D
<b>HWD</b>	kg	1.09E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
<b>NHWD</b>	kg	9.84E-03	0.00E+00	3.88E-02	0.00E+00	0.00E+00	0.00E+00	1.00E+00	0.00E+00
<b>RWD</b>	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

**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

Indicator	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D
<b>CRU</b>	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
<b>MFR</b>	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
<b>MER</b>	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
<b>EEE</b>	MJ, net calorific value	0.00E+00	0.00E+00	4.48E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
<b>EET</b>	MJ, net calorific value	0.00E+00	0.00E+00	6.72E-03	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.

# References

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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

**GPI** / General Programme Instructions for the International EPD® System. Version 5.0.1. [www.environdec.com](http://www.environdec.com)

**ISO 14020:2000** / Environmental Labels and Declarations — General principles

**ISO 14040/44 / DIN EN ISO 14040: 2006-10** / Environmental management - Life cycle assessment- Principles and framework (ISO14040:2006) and Requirements and guidelines (ISO 14044:2006)

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**ISO 5001:2018** / Energy Management System

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**PCR for Construction Products and Construction Services** / PCR 2019:14 Construction products (EN 15804:A2). Version 2.0.1. [www.environdec.com](http://www.environdec.com).

**The International EPD® System** / The International EPD System is a programme for type III environmental declarations, maintaining a system to verify and register EPDs as well as keeping a library of EPD®s and PCRs in accordance with ISO 14025. [www.environdec.com](http://www.environdec.com)

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**Kalekim** / [www.kalekim.com](http://www.kalekim.com)

**Metsims** / [www.metsims.com](http://www.metsims.com)

# Abbreviations

Abbreviation	Definition
ADP	Abiotic Depletion Potential
ADP-fossil	Abiotic depletion potential for fossil resources (MJ)
ADP-minerals&metals	Abiotic depletion potential for non-fossil resources (kg Sb eq.)
AP	Acidification Potential (mol H <sup>+</sup> eq.)
CAS No.	Chemical Abstracts Service Number
CEN	European Committee for Standardization
CFC-11 eq.	Chlorofluorocarbon-11 Equivalents
CFR	Components for Reuse (kg)
CLC	Co-location centre
CO <sub>2</sub> eq.	Carbon Dioxide Equivalents
CPC	Central product classification
EC No.	European Community Number
EEE	Exported Energy, Electricity (MJ)
EET	Exported Energy, Thermal (MJ)
EF	Environmental Footprint
EN	European Norm (Standard)
EP	Eutrophication Potential
EP-freshwater	Freshwater eutrophication potential (kg P eq.)
EP-marine	Marine eutrophication potential (kg N eq.)
EP-terrestrial	Terrestrial eutrophication potential (mol N eq.)
FW	Use of net fresh water (m <sup>3</sup> )
GHG	Greenhouse gas
GHS	Globally harmonized system of classification and labelling of chemicals
GLO	Global
GPI	General Programme Instructions
GRI	Global Reporting Initiative
GWP	Global Warming Potential (kg CO <sub>2</sub> eq.)
GWP-biogenic	Global Warming Potential from biogenic sources (kg CO <sub>2</sub> eq.)
GWP-fossil	Global Warming Potential from fossil sources (kg CO <sub>2</sub> eq.)
GWP-GHG	Global Warming Potential for greenhouse gases (kg CO <sub>2</sub> eq.)
GWP-luluc	Global Warming Potential from land use and land use change (kg CO <sub>2</sub> eq.)
GWP-total	Total Global Warming Potential (kg CO <sub>2</sub> eq.)
HW	Hazardous Waste (disposed) (kg)
ISO	International Organization for Standardization
kg	Kilogram
kg C	Kilograms of Carbon
kg CO <sub>2</sub> eq.	Kilograms of Carbon Dioxide Equivalent
m <sup>3</sup>	Cubic Meter
MER	Materials for Energy Recovery (kg)
MJ	Megajoule
MR	Material for Recycling (kg)
N eq.	Nitrogen Equivalents
ND	Not Declared
NHW	Non-Hazardous Waste (disposed) (kg)
NMVOG	Non-Methane Volatile Organic Compounds
NRSF	Use of non-renewable secondary fuels (MJ)
ODP	Ozone Depletion Potential (kg CFC-11 eq.)
P eq.	Phosphorus Equivalents
PENRE	Use of non-renewable primary energy excluding non-renewable primary energy resources used as raw materials (MJ)
PENRM	Use of non-renewable primary energy resources used as raw materials (MJ)
PENRT	Total use of non-renewable primary energy resources (MJ)
PERE	Use of renewable primary energy excluding renewable primary energy resources used as raw materials (MJ)
PERM	Use of renewable primary energy resources used as raw materials (MJ)
PERT	Total use of renewable primary energy resources (MJ)
POCP	Photochemical Ozone Creation Potential (kg NMVOC eq.)
RSF	Use of renewable secondary fuels (MJ)
RW	Radioactive Waste (disposed) (kg)
Sb eq.	Antimony Equivalents
SM	Use of secondary material (kg)
SVHC	Substances of Very High Concern
TR	Türkiye
WDP	Water Deprivation Potential (m <sup>3</sup> )

# Version History

Original version of the EPD. (2026-04-16)

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