ENVIRONMENTAL PRODUCT DECLARATION

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

CT400

Programme: The International EPD ® System, www.environdec.com
Programme operator: EPD International AB
EPD registration number: S-P-10392
Publication date: 21.11.2023
Valid until: 20.11.2028

An EPD should provide current information and may be updated if conditions change. The stated validity is therefore subject to the continued registration and publication at www.environdec.com

GENERAL INFORMATION

Programme information

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

Accountabilities for PCR, LCA and independent, third-party verification
Product Category Rules (PCR)
CEN standard EN 15804 serves as the Core Product Category Rules (PCR)
Product Category Rules (PCR): 2019:14, Construction products, version 1.2.5, UN CPC 375
PCR review was conducted by: The Technical Committee of the International EPD® System. A full list of members available on www.environdec.com. The review panel may be contacted via info@environdec.com Chair of the PCR review: Claudia A. Peña
Life Cycle Assessment (LCA)
LCA accountability: Shai Ben Aharon, KVS
Third-party verification
Independent third-party verification of the declaration and data, according to ISO 14025:2006, via: ☒ EPD verification by individual verifier Third-party verifier: Prof. Ing. *Vladimír Kočí*, Ph.D., MBA LCA Studio Šárecká 5,16000 Prague 6 - Czech Republic www.lcastudio.cz Approved by: The 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 registered in different EPD programmes, or not compliant with EN 15804, may not be comparable. For two EPDs to be comparable, they must be based on the same PCR (including the same 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 equivalent system boundaries and descriptions of data; apply equivalent data quality requirements, methods of data collection, and allocation methods; apply identical cut-off rules and impact assessment methods (including the same version of characterisation factors); have equivalent content declarations; 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: Prima Ciment

Description of the organisation: Prima Ciment company is part of the Ciment group – which is the biggest importer of bulk cement (grey, white, and slag) and gypsum boards to Israel. Prima Ciment is one of the biggest building materials manufacturers in Israel. The headquarters are located in Haifa, Israel and its facilities and offices are based in the industrial zone of the Nitzany Shalom.

The company was founded in 2022, but the building materials production activity was purchased from Keshet Prima, which is a veteran in the construction industry and has been operating since 1979.

Today, Prima Ciment is a leading construction product company that specializes in the production, distribution, and innovation of cement-based products such as concrete, mortars, and grouts.

Our product portfolio also includes sealants, coatings, and additives that improve the durability, performance, and aesthetics of concrete buildings and structures.

Our mission is to create high-performance construction materials that meet the evolving needs of our customers while minimizing environmental impact. We believe in quality and safety, and we have implemented rigorous quality control procedures and international safety standards to ensure that our products meet and exceed customer expectations. Our team of engineers, chemists, and technical experts work closely with our clients to develop tailored solutions to their specific project requirements.

We are committed to sustainability and environmental responsibility, and we have implemented green initiatives across our entire value chain. Our products are locally sourced, and we strive to reduce waste and energy consumption during production and distribution.

At Prima Ciment, we are proud of our legacy as a trusted and reliable partner for the building industry. We are dedicated to driving innovation and maintaining the highest standards of quality and sustainability in all our products and services.

Product-related or management system-related certifications: Prima Ciment is a leading construction product company that specializes in the production, distribution, and innovation of cement-based products such as concrete, mortars, and grouts. Our product portfolio also includes sealants, coatings, and additives that improve the durability, performance, and aesthetics of concrete buildings and structures. Among the certifications of the products are SI 4004, SI 1920, SI 1661, SI 1414, SI 6069 and SI 6422.

The company has ISO 9001 quality system management certification.

Name and location of production site(s): Prima Ciment manufacturing site is located in the industrial area of Nitzany Shalom, Israel.

PRODUCT INFORMATION

Product name: CT 400.
Product identification: Thermal Plaster.
Product description:

Thermal plaster for the use of insulation of cold and hot environments, applicable in varying environments in internal and external surfaces, including protected areas. The product provides thermal insulation for the envelope of the building and cold bridges

Specifications:

Name of Product	CT 400
Dry density	1.5-1.6 kg/L
Water Consumption	13-14 L
Compressive strength after 28 days	>1.2 MPa
Thermal conductivity [lamda]	0.105 W/m·°C
Calculated thermal conductivity [lamda]	0.112 W/m·°C
R (for 1 cm)	0.087 m^2·°C /W
Adhesion strength after 28 days	≥0.2 MPa
Duration of use for work	~120 min
Application temperature	5°C-35°C
Color	Grey
Package size	23 kg of sack

Product test standard:
The product meets the Israeli standard 1414 and 14020.

UN CPC code: 37530 – Articles of plaster or of compositions based on plaster.

Geographical scope: The study represents the manufacturing of cement products in Prima Ciment's manufacturing factory in the industrial area of Nitzany Shalom, Israel. The end-of-life scenario of the products is demolishment and recycling in Israel, according to market research that was conducted.

LCA INFORMATION

Functional unit / declared unit: 1kg of product.

Reference service life: 50 years. This value is the amount of time that Prima Ciment recommends their products last for without refurbishment, and corresponds to standard building design life.

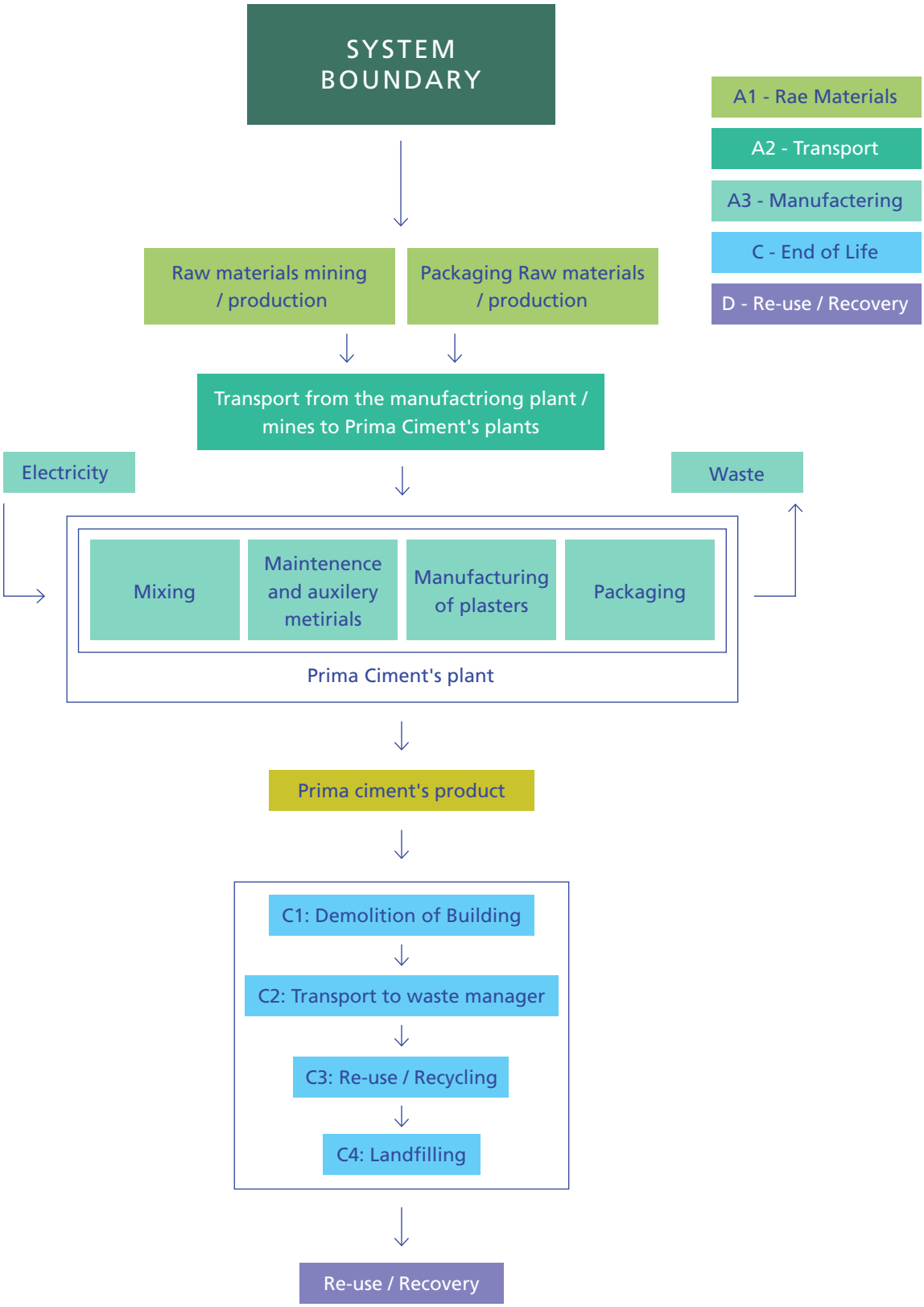
Time Representativeness: The time coverage of the LCA's data is from January 2022 to December 2022.

Database(s) and LCA software used: The software used is SimaPro, Analyst 9.4.0.2. The database used is the Ecoinvent database v3.8 (2021) using the cut-off by classification approach (SCLCI, 2017).

Description of system boundaries:
Cradle to gate with modules A4, A5, C1–C4 and module D (A1–A5 + C + D).

Electricity grid CO2 coeffientnet: the CO2 coefficient of the electricity grid is 0.648 kg CO2-eq/kWh (2020) based on the renewable and non-renewable fuel sources in Israel.

SYSTEM DIAGRAM:



MANUFACTURER'S CONTACT INFORMATION:

Address: Yulius Simon St 53, Haifa Port
Phone Number: +972- 04-8460570
Email: contact@ciment.co.il
Website: WWW.ciment.co.il
Name and contact information of the LCA practitioner: Shai Ben Aharon shai@kvs.co.il of KVS.
Assumptions: The relative amount per declared unit was used in the calculations of renewable primary energy of raw materials.

The packaging relative amount per declared unit was calculated on a basis of the amount of product in each sack and sacks per one wooden pallet. The relative amount per declared unit was used in the calculations of renewable primary energy of raw materials.

Assumptions were made regarding the transportation for all materials required for manufacturing and packaging the product, and the calculations were made on a distance basis.

Generic data of larger areas have been used for some materials and processes inputs.

The primary energy of raw materials was calculated for all renewable and non-renewable raw materials that had LHV value sources.

Allocations: In this study, as per EN 15804, allocation is conducted in the following order:

1. Allocation should be avoided.
2. Allocation should be based on physical properties (e.g. mass, volume) when the difference in revenue is small.
3. Allocation should be based on economic values.

Overall and in general, allocations were avoided whenever possible. Nevertheless, allocations were made in the general energy usage.

Allocation used in Ecoinvent 3.8 environmental data sources follows the methodology 'allocation, cut-off by classification'. This methodology is in line with the requirements of the EN 15804 standard.

Cut-off rules: The study does not exclude any modules or processes which are stated mandatory in the EN 15804:2012+A2:2019 and the applied PCR of the EPD International Institution. The study does not exclude any hazardous materials or substances. The study includes all major raw materials and energy consumption. All inputs and outputs of the unit processes with available data are included in the calculation. There is no neglected unit process of more than 1% of total mass or energy flows, and in fact components with a share of even less than 1% are included.

Background Database: The EPD is based on the primary production data of Prima Ciment. The background database is Ecoinvent database v3.8 (2021). Since there are several missing datasets for Israel, background data for larger areas in which Israel is included in was used for a small part of the life cycle inventory. The electricity mix of the high voltage electricity grid according to 2020 data is given by a formal report from the ministry of energy in Israel and the water grid is modeled according to the water sources in Israel.

Modules declared, geographical scope, share of specific data (in GWP-GHG results) and data variation (in GWP-GHG results):

	Product stage			Construction process stage		Use stage							End of life stage				Resource recovery stage
	Raw material supply	Transport	Manufacturing	Transport	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	IL EUR Global	IL EUR Global	IL	IL	IL	ND	ND	ND	ND	ND	ND	ND	IL	IL	IL	IL	IL
Specific data used	>90%			-	-	-	-	-	-	-	-	-	-	-	-	-	-
Variation-products	0%			-	-	-	-	-	-	-	-	-	-	-	-	-	-
Variation-sites	0%			-	-	-	-	-	-	-	-	-	-	-	-	-	-

MODULE A1 – **Supply of raw materials:** The declared Prima Ciment white cement products consist of cement, aggregates mix with additives. The raw materials supply includes raw material extraction/ production that are taken into account in this study. The raw materials of packaging i.e., wooden pallets, paper bags and polyethylene are also included in this module.

MODULE A2 – **Transport of raw materials:** The cement is produced abroad in a nearby country. Accordingly, transport distances are short and done by ships and trucks. The aggregates are mainly extracted in Israel and transported locally. Further raw materials are supplied from manufacturers within Israel or other European countries.

MODULE A3 – **Manufacturing:** The manufacturing includes mixing of cement with aggregates and additives according to the relevant recipes of each product. The end products are packaged into bags and compiled on wooden pallets. Powder plaster products must be protected from moisture absorption, therefore during transportation and storage they are stored in enclosed spaces. Electricity is consumed during the manufacturing process, in addition to maintenance procedures.

MODULE A4 – **Transport:** Transport to the building site. This module includes transport from the production gate to the building site. Transport is calculated on the basis of a scenario in Israel of average disntance of 80 km between the production gate to the building site. The scenario also accounts the empty return of the truck to the production gate.

MODULE A5 – **Construction assembly:** The installation in the building is not consider in this EPD. However, this stage will model the end-of-life of the packaging to get the proper balance of biogenic carbon. The product itself does not include biogenic carbon.

End-of-Life stage (C1-C4):

MODULE C1 – **De-construction:** Demolition of cement mortars takes place with the whole demolition of the building/construction. Thus it is assumed that energy used for the demolition of cement mortars has minor significance and the environmental impact of this module is set to be zero. At the end-of-life, in the demolition phase 100% of the waste is assumed to be collected as mixed construction waste.

MODULE C2 – **Transportation:** Transportation distance to the closest disposal area is estimated as 50 km by a 16-32 tonne lorry, which is the most common.

MODULE C3 – **Waste processing:** According to a report of the Knesset (the Israeli Parliament) from 2022, named "Treatment of Construction Waste in Israel - Data and Points of Discussion" in Hebrew (Page 9, Table 3), and according to interviews with industry executives that manage the construction waste in Israel (GREENMIX), approx. 85% of the mineral construction waste which cement plasters are included in are recycled, and about 15% are landfilled. The mineral construction waste is commonly recycled to bedding aggregated products used for infrastructure and thus the dataset was modeled to fit this assumption. For the waste processing, an energy consumption of 0.01 kWh of electricity/kg of waste input was calculated.

MODULE C4 – **Disposal:** 15% of the product will be landfilled.

The scenarios included are currently in use and are representative for one of the most probable alternatives.

Resource Recovery stage (D):

MODULE D – **Reuse-Recovery-Recycling potential:** Module D calculates the potential environmental benefits of the recycling or reuse of materials. 85% of the product is assumed to be recycled to bedding aggregated products used for infrastructures of roads, sidewalks, etc. The calculations of this module were according to Annex D in EN 15804:2012+A2:2019.

CONTENT INFORMATION

PRODUCT COMPONENTS	Weight, kg	Post-consumer material, weight-%	Biogenic material, weight-% and kg C/kg
Silica	50%-75%	0	0
White Cement	24%-85%	0	0
Limestone	4%-82%	0	0
Additives	0.5%-20%	0	0
TOTAL	100	0	0
PACKAGING MATERIALS	**Weight, kg**	**Weight-% (versus the product)**	**Weight biogenic carbon-%**
Wooden legs	<0.1	<1	<1
PE cover	<0.1	<1	0
Paper sack	<0.1	<1	<1
TOTAL	<0.1	<1	<1

Dangerous substances from the candidate list of SVHC for Authorisation	EC No.	CAS No.	Weight-% per functional or declared unit
Not present in the product	ND	ND	0

ENVIRONMENTAL INFORMATION

The EPD is for a specific product - Environmental impacts of 1 kg of CT 400.

Potential environmental impact – mandatory indicators according to EN 15804

INDICATOR	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D
GWP-fossil	kg CO2 eq.	7.76E-01	2.61E-02	3.52E-03	0	8.50E-03	6.49E-03	1.86E-03	-1.27E-02
GWP-biogenic	kg CO2 eq.	-2.33E-02	2.25E-05	2.77E-02	0	4.60E-06	-9.81E-06	2.23E-06	-2.66E-05
GWP - luluc	kg CO2 eq.	2.26E-04	1.04E-05	1.40E-07	0	3.56E-06	3.37E-07	3.91E-06	-7.95E-06
GWP - total	kg CO2 eq.	7.53E-01	2.61E-02	3.12E-02	0	8.51E-03	6.48E-03	1.87E-03	-1.27E-02
ODP	kg CFC 11 eq.	4.09E-08	6.04E-09	3.29E-11	0	1.83E-09	2.39E-10	5.40E-10	-3.58E-09
AP	mol H+ eq.	1.85E-03	7.40E-05	4.12E-06	0	2.50E-05	3.26E-05	1.66E-05	-4.52E-05
EP - freshwater	kg PO4 eq.	6.96E-04	5.69E-07	1.56E-08	0	2.21E-07	5.46E-07	5.12E-08	-9.46E-08
EP - freshwater	kg P eq.	2.28E-04	1.86E-07	5.11E-09	0	7.21E-08	1.78E-07	1.67E-08	-3.09E-08
EP - marine	kg N eq.	5.93E-04	1.47E-05	1.86E-06	0	4.98E-06	4.73E-06	6.40E-06	-1.34E-05
EP - terrestrial	mol N eq.	6.48E-03	1.64E-04	1.98E-05	0	5.56E-05	5.24E-05	7.02E-05	-1.65E-04
POCP	kg NMVOC eq.	1.69E-03	6.30E-05	4.90E-06	0	2.08E-05	1.45E-05	1.99E-05	-5.15E-05
ADP- fossil *	MJ	4.19E+00	3.95E-01	3.19E-03	0	1.26E-01	9.07E-02	3.72E-02	-1.89E-01
ADP minerals&metals *	kg Sb eq.	4.04E-07	9.24E-08	1.10E-09	0	2.95E-08	1.40E-08	3.80E-09	-7.90E-08
WDP*	m3	3.11E-02	1.20E-03	1.15E-04	0	4.40E-04	4.36E-04	1.04E-03	-5.55E-02
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								

* Disclaimers:
I: 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.
II: when considering the results, one should account all declared modules and not only modules A1-A3.
III: 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

Potential environmental impact – additional mandatory and voluntary indicators

INDICATOR	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D
GWP-GHG	kg CO2 eq.	7.76E-01	2.61E-02	3.53E-03	0	8.51E-03	6.49E-03	1.87E-03	-1.27E-02

1 This 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 CO2 is set to zero.

USE OF RESOURCES

INDICATOR	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D
PERE	MJ	3.97E-01	5.65E-03	1.05E-04	0	1.47E-03	2.70E-03	3.84E-04	-2.67E-03
PERM	MJ	4.51E-01	0.00E+00	0.00E+00	0	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PERT	MJ	8.48E-01	5.65E-03	1.05E-04	0	1.47E-03	2.70E-03	3.84E-04	-2.67E-03
PENRE	MJ	4.15E+00	3.95E-01	3.19E-03	0	1.26E-01	9.07E-02	3.72E-02	-1.89E-01
PENRM	MJ	4.68E-02	0.00E+00	0.00E+00	0	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PENRT	MJ	4.19E+00	3.95E-01	3.19E-03	0	1.26E-01	9.07E-02	3.72E-02	-1.89E-01
SM	kg	0	0	0	0	0	0	0	0
RSF	MJ	0	0	0	0	0	0	0	0
NRSF	MJ	0	0	0	0	0	0	0	0
FW	m3	7.40E-04	4.47E-05	6.21E-06	0	1.45E-05	1.33E-05	2.52E-05	-6.91E-04
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								

WASTE PRODUCTION AND OUTPUT FLOWS

Waste production

Indicator	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D
Hazardous waste disposed	kg	3.46E-06	1.03E-06	7.67E-09	0	3.32E-07	1.05E-07	7.41E-08	-6.14E-07
Non-hazardous waste disposed	kg	2.48E-02	2.07E-02	4.59E-04	0	6.50E-03	4.53E-04	1.50E-01	-9.78E-03
Radioactive waste disposed	kg	6.49E-06	2.67E-06	6.78E-09	0	8.20E-07	2.07E-08	2.46E-07	-1.65E-06

Output flows

Indicator	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D
Components for re-use	kg	0	0	0	0	0	0	0	0
Material for recycling	kg	0	0	0	0	0	0	0	8.5E-01
Materials for energy recovery	kg	0	0	1.95E-02	0	0	0	0	0
Exported energy, electricity	MJ	0	0	0	0	0	0	0	0
Exported energy, thermal	MJ	0	0	0	0	0	0	0	0

REFERENCES

- General Programme Instructions of the International EPD® System. Version 4.0.
- PCR 2019:14, Construction products, version 1.2.5
- A national-level LCA of a water supply system in a Mediterranean semi-arid climate—Israel as a case study / auth. Thoma Noa Meron & Vered Blass & Greg. - Germany: The International Journal of Life Cycle Assessment, 2020.
- EN 15804:2012+A2 - Sustainability of construction works - Environmental product declarations - Core rules for the product category of construction products
- ISO 14025:2010 Environmental labels and declarations – Type III environmental declarations principles and procedures.
- ISO 14040:2006 Environmental management. Life cycle assessment principles and frameworks.
- ISO 14044:2006 Environmental management. Life cycle assessment requirements and guidelines.
- SimaPro Database Manual - Methods Library / auth. Sustainability PRé. - 2020.
- System Models / auth. Ecoinvent // Ecoinvent. - https://ecoinvent.org/the-ecoinvent-database/system-models/.

CONTACT INFORMATION

Programme operator:

EPD International AB
info@environdec.com

EPD owner:

Prima Ciment
contact@ciment.co.il
WWW.ciment.co.il

3rd party verifier:

Prof. Ing. Vladimír Kočí, Ph.D., MBA
LCA Studio
Šárecká 5,16000
Prague 6 - Czech Republic

LCA author:

KVS
Leading Climate Action

KVS
http://www.kvs.co.il/
info@kvs.co.il
T: +972-3-917 2202