Environmental Product Declaration

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

TAMCRETE 672 **TAMPLAST 938**
TAMPLAST 982 **TAMPLAST 984**

Programme:	The International EPD® System, www.environdec.com
Programme operator:	EPD International AB
EPD registration number:	S-P08239
Publication date:	07-02-2023
Valid until:	07-02-2028

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

TAMBOUR

About the Company

For over 85 years, Tambour has taken part in shaping the Israeli landscape, from building structures, tunnels, and bridges, to painting roads, constructing national infrastructure, and improving Israeli residents' quality of life.

Today, we look to the future, understand the magnitude of our impact on future generations, and work towards building more innovative, healthy, and ecological living environments.

We have already begun this process, from developing greener products, building factories that meet international standards and use green energy to switching to the use of hybrid/electric vehicles and reusable utensils.

We have chosen our path - to do as much as we can, and more, to build a better future.

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 1.2.3, UN CPC 375
PCR review was conducted by: Claudia A. Pena
Life Cycle Assessment (LCA)
LCA accountability: *Shai Ben Aharon and Maya Oron, 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: *Ruben Carnerero Acosta, IK Ingenieria* 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: Tambour

Description of the organization: Tambour is Israel's market leader for paint and construction products – paint for home and industry; construction products such as plasterboard, powders, and adhesives; and special paint and coatings for the aviation, railway, shipbuilding, and other sectors.

Product-related or management system-related certifications: The Standards Institution of Israel (SII) has certified Tambour Ashkelon plant with ISO 14001, ISO 9001 and ISO 45001. TAMCRETE 672, TAMPLAST 982 and TAMPLAST 938 are certified by SII with the Israeli Green Label.

Name and location of production site(s): Tambour's manufacturing site is located in Ashkelon, Israel.

Environmental Declarations of the Organization: Tambour considers sustainability to be a core value and is currently in the process of conducting several EPDs for varying products.

Product information

Product name: TAMCRETE 672, TAMPLAST 982, TAMPLAST 938 AND TAMPLAST 984.

Product identification: Grey Cement Plasters. They need to be mixed with water before being applied.

Product description: The grey cement plasters are applied easily on walls, ceilings, tiles, etc. Their function is to be used as adhesives, filling, and cover layering for internal and external construction work.

- **TAMCRETE 672** mortar for flooring with tiles made from porcelain ceramic. terrazzo and natural stone.
  Characteristics:
  Ready to use, by just adding water. Easy to apply. High adhesive strength. Suitable for application in residential homes.
  Usage:
  Ready-to-use mixture for flooring with tiles. Suitable for flooring substrates: concrete floor, cementitious wearcoat, stabilized sand. and aggregates. For indoor and outdoor use.

- **TAMPLAST 982** water-repellent base coat to create a uniform substrate for cementitious and adhesive plaster systems
  Characteristics:
  Ready to use, by just adding water. Creates a uniform substrate for plaster and adhesive. Water repellent. Easy Application. High flexural and compressive strength. High adhesive strength.
  Usage:
  For indoor and outdoor use. Serves as a first primer coat for protection, and to repel water. Base coat for cement plaster and thermal plaster in interior and exterior surfaces, in a normal environment and in a marine environment. Serves as a substrate for tiles and thermal plaster.

- **TAMPLAST 938** leveling plaster for a marine environment or tile substrate in interior and exterior walls.
  Characteristics:
  Ready to use, by just adding water. High Mechanical Strength.
  Usage:
  Leveling plaster for a marine environment or tile substrate in interior and exterior walls. Gluing tiles that meet the requirements of Standard 114 (application according to the requirements of Israeli Standard 1555) and natural stone (application according to Standard 2378, For indoor and outdoor use.

- **TAMPLAST 984** leveling cement plaster for protected spaces and for leveling interior and exterior walls.
  Characteristics:
  Ready to use by just adding water, Easy application.
  Usage:
  Cement-based plaster for leveling walls and ceilings in protected spaces as required by Israeli Standard 5075. Also serves as a primer and protective layer for Thermal Plaster. For use in protected spaces and for interior and exterior walls.

Specifications:

Name of Product	TAMCRETE 672	TAMPLAST 982	TAMPLAST 938	TAMPLAST 984
Typical consumption	1.6 kg/m^2 for 1 mm width	1.6 kg/m^2 for 1 mm width	1.65 kg/m^2 for 1 mm width	1.7 kg/m^2 for 1 mm width
Water Consumption	3.5-4.0 L	4.0-4.5 L	4.0-4.5 L	4.0-4.5 L
Bending strength after 28 days	>4.0MPa	>5.0 MPa	>3.0 MPa	>2.5 MPa
Compressive strength after 28 days	>13.0MPa	>20.0MPa	>5.0 MPa	>4.0 MPa
Tensile adhesive strength after 28 days	>0.5MPa	>0.7 MPa	-	-
Restrained shrinkage	-	-	Without cracks	Without cracks
Duration of use for work	~60min (depends on the temp.)	~60min (depends on the temp.)	~2hrs (depends on the temp.)	~2hrs (depends on the temp.)
Application temperature	5°C – 35°C	5°C – 35°C	5°C – 35°C	5°C – 35°C
Color	Grey	Grey	Grey	Grey
Package size	25 kg	25 kg	25 kg	25 kg

UN CPC code: 375 – Articles of concrete, cement and plaster.

Geographical scope: The study represents the manufacturing of cement plasters in Tambour's manufacturing factory in Ashkelon, Israel. The end-of-life scenario of the products is demolishment and recycling in Israel.

LCA information

Functional unit / declared unit: 1 kg of Cement Plaster.

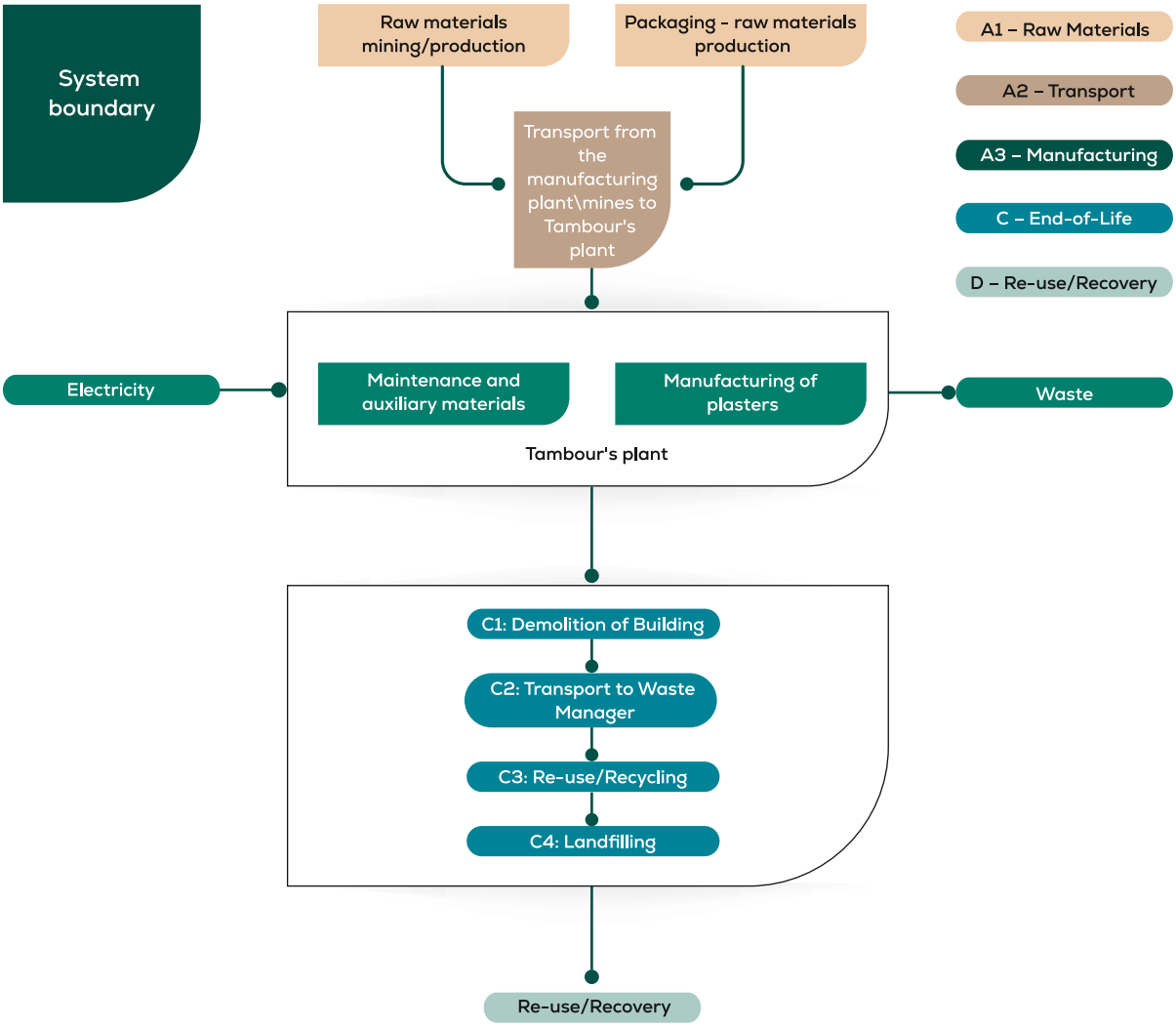
Reference service life: The RSL result in accordance with the /BBSR Service Life/ is as follows: a service life of 45 years can be considered for cement mortars (code 335.311 for "cement mortars" in the BBSR2017).

Time representativeness: The time coverage of the LCA's data is from January 2022 to August 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 C1–C4 and module D (A1–A3 + C + D).

System diagram:



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, ancillary material, and waste production as the information was only measured on factory or production process level.
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 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 production data. Since there are hardly any datasets available for Israel, background data for larger areas in which Israel is included was used for 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 environment in Israel and the water grid is modeled according to the natural water of Israel.

Description of the main product components: Sand and limestone are mined from quarries and the limestone is crushed to a powder in varying particle sizes. Cement is a powder produced from limestone and minerals such as aluminum oxides, and ferrous oxides that are mined from quarries. In addition to cement, additives are added in a small percentagesge.
The product does not contain any toxic or harmful substances and its manufacturing process and usage produce almost no waste.

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	ND	ND	ND	ND	ND	ND	ND	ND	ND	x	x	x	x	x
Geography	IL, EUR, Global	IL, EUR, Global	IL	ND	ND	ND	ND	ND	ND	ND	ND	ND	IL	IL	IL	IL	IL
Specific data used	The percentage of specific data is assumed to be larger than 80%					-	-	-	-	-	-	-	-	-	-	-	-
Variation – products	~30%					-	-	-	-	-	-	-	-	-	-	-	-
Variation – sites	0%					-	-	-	-	-	-	-	-	-	-	-	-

Product stage (A1-A3):

Module A1 – Supply of raw materials: The declared Tambour cement plasters consist of cement, aggregates mix and 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 locally or 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 raw materials that arrive at the manufacturing plant are transferred up to the production tower and stored inside silo containers. Then, the raw materials are poured gravitationally into a mixer. Cement is mixed with aggregates and additives according to the relevant recipes of each product. The end products are packaged into paper bags and compiled on wooden pallets, then covered with polyethylene. Electricity is consumed during the manufacturing process, and maintenance procedures are taken into account.

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 research that was conducted about construction waste in Israel by the Israeli parliament and according to interviews that were made with industry executives, 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 cement plasters will be landfilled.

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	0.45-0.65	0	0
Grey Cement	0.15-0.3	0	0
Limestone	0.02-0.05	0	0
Additives	0.005-0.02	0	0
TOTAL	>0.99	0	0
Packaging materials	**Weight, kg**	**Weight-% (versus the product)**	**Weight biogenic carbon, kg C/kg**
Wooden pallet	0.0085	<1	0
Polyethylene cover	0.0005	<0.1	0
Paper sack	0.0054	<0.5	0
TOTAL	0.0144	<2	0

Dangerous substances from the candidate list of SVHC for Authorisation	EC No.	CAS No.	Weight-% per functional or declared unit
ND	ND	ND	ND

Environmental Information

The environmental impacts of the included products are declared for 1 kg, according to the "worst case scenario" in the PCR.

Results per functional or declared unit																
Indicator	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
GWP-fossil	kg CO_2 eq.	3.09 E-01	ND	ND	ND	ND	ND	ND	ND	ND	ND	0	8.50 E-03	6.49 E-03	1.86 E-03	-1.27 E-02
GWP-biogenic	kg CO_2 eq.	-1.03 E-02	ND	ND	ND	ND	ND	ND	ND	ND	ND	0	4.60 E-06	-9.81E-06	2.23 E-06	-2.66 E-05
GWP-luluc	kg CO_2 eq.	1.57 E-04	ND	ND	ND	ND	ND	ND	ND	ND	ND	0	3.56 E-06	3.37E-07	3.91 E-06	-7.95 E-06
GWP-total	kg CO_2 eq.	2.99 E-01	ND	ND	ND	ND	ND	ND	ND	ND	ND	0	8.51 E-03	6.48 E-03	1.87 E-03	-1.27 E-02
ODP	kg CFC 11 eq.	2.12 E-08	ND	ND	ND	ND	ND	ND	ND	ND	ND	0	1.83 E-09	2.39 E-10	5.40 E-10	-3.58 E-09
AP	mol H^+ eq.	9.35 E-04	ND	ND	ND	ND	ND	ND	ND	ND	ND	0	2.50 E-05	3.26 E-05	1.66E-05	-4.52 E-05
EP-freshwater	kg P eq.	3.99 E-06	ND	ND	ND	ND	ND	ND	ND	ND	ND	0	7.21 E-08	1.78 E-07	1.67E-08	-3.09 E-08
EP-marine	kg N eq.	2.24 E-04	ND	ND	ND	ND	ND	ND	ND	ND	ND	0	4.98 E-06	4.73 E-06	6.40 E-06	-1.34 E-05
EP-terrestrial	mol N eq.	2.56 E-03	ND	ND	ND	ND	ND	ND	ND	ND	ND	0	5.56 E-05	5.24 E-05	7.02 E-05	-1.65 E-04
POCP	kg NMVOC eq.	7.07 E-04	ND	ND	ND	ND	ND	ND	ND	ND	ND	0	2.08 E-05	1.45 E-05	1.99 E-05	-5.15 E-05
ADP-minerals&metals*	kg Sb eq.	4.59 E-07	ND	ND	ND	ND	ND	ND	ND	ND	ND	0	2.95 E-08	1.40 E-08	3.80 E-09	-7.90 E-08
ADP-fossil*	MJ	2.53 E+00	ND	ND	ND	ND	ND	ND	ND	ND	ND	0	1.26 E-01	9.07 E-02	3.72 E-02	-1.89 E-01
WDP*	m^3	8.20 E-02	ND	ND	ND	ND	ND	ND	ND	ND	ND	0	4.40 E-04	4.36 E-04	1.04 E-03	-5.55 E-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															

** Disclaimer: 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.*

Potential environmental impact – additional mandatory and voluntary indicators

Results per functional or declared unit																
Indicator	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
GWP-GHG[1]	kg CO_2 eq.	3.09 E-01	ND	ND	ND	ND	ND	ND	ND	ND	ND	0	8.51 E-03	6.49 E-03	1.87 E-03	-1.27 E-02

Use of resources

Results per functional or declared unit																
Indicator	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
PERE	MJ	2.97 E-01	ND	ND	ND	ND	ND	ND	ND	ND	ND	0	1.47 E-03	2.70 E-03	3.84 E-04	-2.67 E-03
PERM	MJ	2.01 E-01	ND	ND	ND	ND	ND	ND	ND	ND	ND	0	0	0	0	0
PERT	MJ	4.98 E-01	ND	ND	ND	ND	ND	ND	ND	ND	ND	0	1.47 E-03	2.70 E-03	3.84 E-04	-2.67 E-03
PENRE	MJ	1.72 E+00	ND	ND	ND	ND	ND	ND	ND	ND	ND	0	1.26 E-01	9.07 E-02	3.72 E-02	-1.89 E-01
PENRM	MJ	8.07 E-01	ND	ND	ND	ND	ND	ND	ND	ND	ND	0	0	0	0	0
PENRT	MJ	2.53 E+00	ND	ND	ND	ND	ND	ND	ND	ND	ND	0	1.26 E-01	9.07 E-02	3.72 E-02	-1.89 E-01
SM	kg	0	ND	ND	ND	ND	ND	ND	ND	ND	ND	0	0	0	0	0
RSF	MJ	0	ND	ND	ND	ND	ND	ND	ND	ND	ND	0	0	0	0	0
NRSF	MJ	0	ND	ND	ND	ND	ND	ND	ND	ND	ND	0	0	0	0	0
FW	m^3	1.35 E-03	ND	ND	ND	ND	ND	ND	ND	ND	ND	0	1.45 E-05	1.33 E-05	2.52 E-05	-6.91 E-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

Results per functional or declared unit															
Indicator	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1 C1	C2	C3	C4	D
Hazardous waste disposed	kg	2.58 E-06	ND	ND	ND	ND	ND	ND	ND	ND	ND	0	3.32 E-07	1.05 E-07	7.41 E-08	-6.14 E-07
Non-hazardous waste disposed	kg	2.50 E-02	ND	ND	ND	ND	ND	ND	ND	ND	ND	0	6.50 E-03	4.53 E-04	1.50 E-01	-9.78 E-03
Radioactive waste disposed	kg	5.79 E-06	ND	ND	ND	ND	ND	ND	ND	ND	ND	0	8.20 E-07	2.07 E-08	2.46 E-07	-1.65 E-06

Output flows

Results per functional or declared unit																
Indicator	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Components for re-use	kg	0	ND	ND	ND	ND	ND	ND	ND	ND	ND	0	0	0	0	0
Material for recycling	kg	0	ND	ND	ND	ND	ND	ND	ND	ND	ND	0	0	8.50 E-01	0	0
Materials for energy recovery	kg	0	ND	ND	ND	ND	ND	ND	ND	ND	ND	0	0	0	0	0
Exported energy, electricity	MJ	0	ND	ND	ND	ND	ND	ND	ND	ND	ND	0	0	0	0	0
Exported energy, thermal	MJ	0	ND	ND	ND	ND	ND	ND	ND	ND	ND	0	0	0	0	0

References

General Programme Instructions of the International EPD® System. Version 4.0.
The PCR of EN 15804:2012+A2:2019/AC:2021

"The energy economy in Israel 2019" by The Ministry of Energy.

"Cement Plasters Datasheets" by Tambour, Israel, 2021.

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.

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

Ecoinvent database v3.8 (2021)

"Treatment of Construction Waste in Israel - Data and Points of Discussion", by the Knesset, the Israeli Parliament, Israel, 2022

Contact information

Programme operator

EPD International AB
info@environdec.com

EPD Owner

Tambour
https://tambour.co.il/
TamSupport@tambour.co.il
6 Meir Ariel St. Netanya ISRAEL
T: *6477

LCA Author

KVS
http://www.kvs.co.il/

3rd Party Verifier

IK Ingenieria
https://www.ik-ingenieria.com/
f.campo@ik-ingenieria.co
g.benito@ik-ingenieria.com