Environmental Product Declaration

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

TAMBOND 851

Cat. No. 670305202500

from Tambour

Programme:	The International EPD® System, www.environdec.com
Programme operator:	EPD International AB
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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 88 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): Construction products 2019:14 version 2.0.1 UN CPC code 375 – Articles of concrete, cement and plaster
PCR review was conducted by: The Technical Committee of the International EPD® System. See www.environdec.com/TC for a list of members. Review chair: Claudia A. Peña, University of Concepción, Chile. The review panel may be contacted via the secretariat www.environdec.com/contact
Life Cycle Assessment (LCA)
LCA accountability: *Eli Shmushko, Green Target* Contact at: *office@yaadyarok.co.il* More info: *www.yaadyarok.co.il*
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, Ik ingenieria, Observer: Iñaki Telleria, 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 organisation: Since its founding in 1936, Tambour has become synonymous with paints and with pioneering the construction industry in Israel. By investing heavily in R&D and using groundbreaking technologies, the private company has developed an extensive range of sophisticated painting and construction solutions for the private sector, construction market, and industry. Tambour also produces emulsions, which is one of the most important raw materials for paints and adhesives.

Product-related or management system-related certifications: Tambour plant in Ashkelon is certified for ISO 9001, ISO 14001 & ISO 45001. All of Tambour cement adhesives are SI 4004 certified and received the Standard Institution of Israel's Green label (certificate no. 119448).

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

Product information

Product name: Tambond 851

Product identification: Cement adhesive (C1TES1 grade according to SI 4004).

Product description: Suitable for ceramic tiles with high absorptivity over cement or plasterboard infrastructure, for interior and exterior use and for use in wet rooms.

UN CPC code: 3756 – Other articles of cement, concrete or artificial stone

Geographical scope: The study represents the manufacturing of cement adhesives in Tambour's manufacturing factory in Ashkelon, Israel.

Technical specifications

Typical consumption	1.4 kg\sqm (1mm thickness)
Adhesion strength after 28 days	>0.5 MPa
Availability for work duration	> 2 hr (temperature dependant)
Open time	>45 min
Application temperature	5°c – 35°c
Colour	White
Packaging size	25 kg

LCA information

Declared unit: 1 kg of cement adhesive.

Reference service life: According to BBSR in a publication from 2017, the RSL of cement adhesives is 50 years.

Time representativeness: The specific data for the LCA study is based on 2023 production data from Tambour's manufacturing site in Ashkelon. Electricity was modelled according using Israeli grid data available on Ecoinvent 3.10.

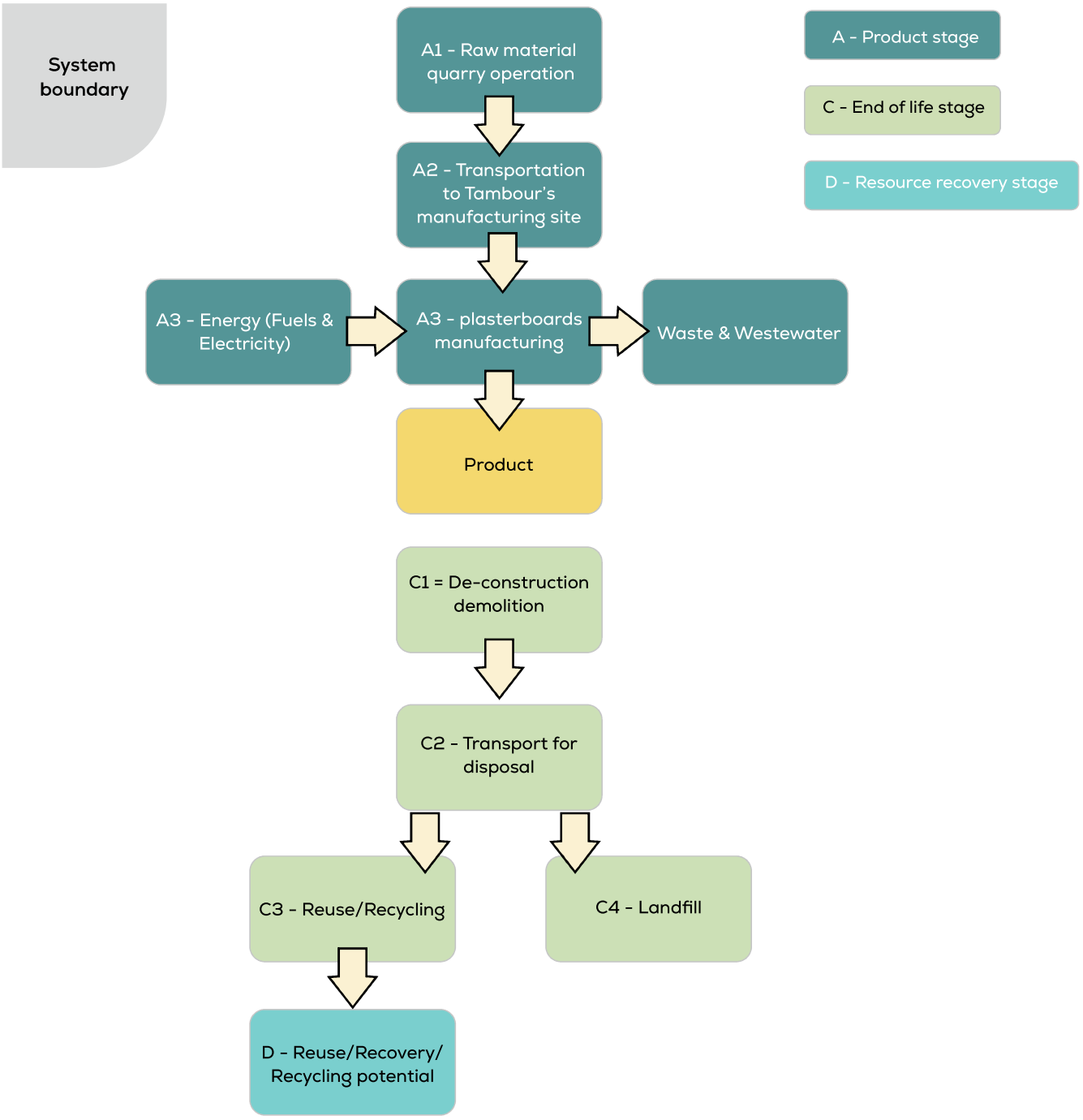
Database(s) and LCA software used: Open LCA v2.0.0 & Ecoinvent v3.10 (cut-off approach) + EN15804 EF 3.1.

Description of system boundaries:
Cradle to gate with options, modules C1–C4 and module D and module A5 (A1–A3, A5 + C + D). Modules A4 & B were excluded from the LCA study.

Cut-off rules & assumptions: All inputs & outputs were considered in this study. The study does not include the manufacturing processes and maintenance of capital goods or spare parts as their lifespan is more than 3 years.
The environmental impacts of general organizational operations and employees' activities (offices, travels etc.) were not included in this study as well, as they are relevant for Tambour's entire manufacturing sites and headquarters and not only for the cement adhesives production line.

Allocations: According to EN 15804:2012+A2:2019, allocations in this LCA were avoided where possible. Energy and waste data have been allocated on physical criteria of mass as this data in the process level was not available. Tambour's power supply is from a private electricity supplier - OPC. This low-carbon electricity is produced by co-generation from natural gas. The power mix was modeled according to the data available in Ecoinvent V3.10 (emission factor: 0.6005kgCO2eq/kWh).

System diagram:



Modules A4 & B were excluded from the LCA study

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	X	ND	ND	ND	ND	ND	ND	ND	X	X	X	X	X
Geography	Glo	Glo	IL	ND	Glo	ND	ND	ND	ND	ND	ND	ND	IL	IL	IL	IL	IL
Specific data used	10.37%			-	-	-	-	-	-	-	-	-	-	-	-	-	-
Variation – products	0%			-	-	-	-	-	-	-	-	-	-	-	-	-	-
Variation – sites	0%			-	-	-	-	-	-	-	-	-	-	-	-	-	-

Specific data:

Product components	Source type	Source	Year	Data type	Percentage of primary GWP-GHG data results for A1-A3
Production of raw materials	Database	Ecoinvent 3.10	2022	Representative secondary data	00.00%
Transportation of raw materials to the production site	Information collected	SAP	2022	Primary data	8.84%
Manufacture of the product	Information collected	SAP	2022	Primary data	1.53%
Total percentage of primary data from GWP-GHG results for A1-A3					10.37%

Product stage (A1-A3):

Module A1 – Raw material supply
The product consists of cement, aggregates and various additives. This module includes the raw materials and packaging materials extraction, the manufacturing operations and the "balancing-out reporting" of the biogenic CO2 of packaging released in module A5.

Module A2 – Transport (materials)
This module includes the transport of all raw materials and packaging materials. The cement is imported from Turkey and both overseas and land transportation are accounted for. The aggregates are extracted locally from a quarry in Israel south region and other additives are imported from Europe, transported overseas by container ships and by trucks to Tambour's manufacturing site in Ashkelon.

Module A3 – Manufacturing
Cement, aggregates and additives are mixed together according to the products' recipe. The Mixer and all machinery involved are derived by electricity. Fine dust arising in the manufacturing process is collected and fed back into the process. The mixture is than packed in 25kg paper sacks and piled up on wood pellets and wrapped with LDPE for storage and transportation.

Module A5 - Construction installation
Installation is performed manually and doesn't require any energy input. Thus, the emissions from this activity were considered negligible. Packaging waste treatment was calculated according to average common waste treatment methods per each material.

End of Life stage (C1-C4):

Module C1 – De-construction and demolition
Demolition of cement adhesive takes place with the demolition of the whole construction and can also be done using manpower alone. Thus, it is assumed that energy used for the demolition of cement adhesive is negligible and the environmental impacts of this module as well.

Module C2 – Transport
Estimated average distance from demolition site to disposal facility in Israel is 50 km.

Module C3 – Waste processing
According to a report published by the Israeli parliament in 2022, 81% of construction waste in Israel is recycled. Construction waste is mostly recycled to aggregate beddings for different infrastructures and thus the waste processing was modelled assuming the electricity consumption for grinding is 0.01 kWh per 1 kg of waste.

Module C4 – Disposal
According to a report published by the Israeli parliament in 2022, 19% of construction waste in Israel is not recycled. Thus, product disposal was modelled as 19% inert waste in a sanitary landfill.

Reuse-Recovery-Recycling-potential (D):
Benefits beyond the system boundaries are tied to the recycling mixed aggregates and calculated according to the Annex D of 15804+A2.

Content information

Product components	Weight, kg	Post-consumer material, weight-%	Biogenic material, weight-% and kg C/kg
Cement	0.2	0	0
Silica sand	0.75	0	0
Additives	0.05	0	0
TOTAL	1	0	0
Packaging materials	**Weight, kg**	**Weight-% (versus the product)**	**Weight biogenic carbon, kg C/kg**
Paper sack	0.0037	< 1	0.002
Wood pallet	0.0115	< 1	0.006
LDPE Strech	0.0003	< 1	0
TOTAL	0.0155	< 1	0.008

Biogenic carbon containing materials in the product are less than 5% of the products' mass, thus the declaration of biogenic carbon content in the product is omitted.

The product declared in this LCA study does not contain substances from the SVHC list.

Results of the environmental performance indicators

Mandatory impact category indicators according to EN 15804

Results per declared unit								
Indicator	Unit	A1-A3	A5	C1	C2	C3	C4	D
GWP-fossil	kg CO_2 eq.	3.69E-01	5.15E-04	0.00E+00	9.58E-03	6.23E-03	1.19E-03	-3.49E-01
GWP-biogenic	kg CO_2 eq.	-2.46E-02	1.92E-02	0.00E+00	2.80E-07	-1.12E-05	1.64E-07	-1.02E-03
GWP-luluc	kg CO_2 eq.	1.98E-04	8.78E-08	0.00E+00	3.89E-06	3.23E-07	6.12E-07	-1.29E-04
GWP-total	kg CO_2 eq.	3.45E-01	1.97E-02	0.00E+00	9.59E-03	6.22E-03	1.19E-03	-3.50E-01
GWP-GHG[1]	kg CO_2 eq.	3.69E-01	1.38E-02	0.00E+00	9.59E-03	6.23E-03	1.19E-03	-3.50E-01
ODP	kg CFC 11 eq.	6.25E-09	3.71E-12	0.00E+00	1.42E-10	8.85E-11	3.43E-11	-4.66E-09
AP	mol H^+ eq.	1.30E-03	5.82E-06	0.00E+00	2.20E-05	3.20E-05	8.42E-06	-1.10E-03
EP-freshwater	kg P eq.	6.06E-05	2.04E-07	0.00E+00	7.58E-07	1.21E-06	9.87E-08	-5.87E-05
EP-marine	kg N eq.	3.09E-04	1.09E-05	0.00E+00	5.10E-06	4.89E-06	3.21E-06	-2.52E-04
EP-terrestrial	mol N eq.	3.35E-03	3.02E-05	0.00E+00	5.51E-05	5.14E-05	3.50E-05	-2.73E-03
POCP	kg NMVOC eq.	1.34E-03	1.49E-05	0.00E+00	3.07E-05	1.98E-05	1.25E-05	-1.09E-03
ADP-minerals&metals **	kg Sb eq.	1.75E-06	6.93E-10	0.00E+00	3.21E-08	2.38E-09	1.89E-09	-1.66E-06
ADP-fossil**	MJ	4.96E+00	3.43E-03	0.00E+00	1.35E-01	8.30E-02	2.91E-02	-4.49E+00
WDP	m^3	6.22E-02	1.30E-04	0.00E+00	6.12E-04	4.51E-04	8.15E-05	-6.14E-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:

- Results shall be examined for the whole product's life cycle – considering stage C along with stage A as the products' - End-Of-Life has environmental impacts as well as its manufacturing.
- 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.

[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 CO_2 is set to zero.

Resource use indicators

Results per functional or declared unit								
Indicator	Unit	A1-A3	A5	C1	C2	C3	C4	D
PERE	MJ	4.69E-01	4.77E-05	0.00E+00	1.79E-03	3.90E-04	2.70E-04	-2.37E-01
PERM	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PERT	MJ	4.69E-01	4.77E-05	0.00E+00	1.79E-03	3.90E-04	2.70E-04	-2.37E-01
PENRE	MJ	4.60E+00	3.12E-03	0.00E+00	1.22E-01	7.91E-02	2.63E-02	-4.19E+00
PENRM	MJ	3.59E-01	3.10E-04	0.00E+00	1.24E-02	3.90E-03	2.80E-03	-3.04E-01
PENRT	MJ	4.96E+00	3.43E-03	0.00E+00	1.35E-01	8.30E-02	2.91E-02	-4.49E+00
SM	kg	1.18E-02	3.39E-06	0.00E+00	1.01E-04	1.24E-05	1.36E-05	-8.27E-03
RSF	MJ	4.79E-03	3.68E-07	0.00E+00	1.29E-05	1.44E-06	2.80E-06	-2.99E-03
NRSF	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
FW	m^3	2.39E-03	1.18E-06	0.00E+00	1.80E-05	1.08E-05	3.02E-05	-2.35E-03
Acronyms	PERE = Use of renewable primary energy excluding renewable primary energy resources used as raw materials; PERM = Use of renewable primary energy resources used as raw materials; PERT = Total use of renewable primary energy resources; PENRE = Use of non-renewable primary energy excluding non-renewable primary energy resources used as raw materials; PENRM = Use of non-renewable primary energy resources used as raw materials; PENRT = Total use of non-renewable primary energy re-sources; SM = Use of secondary material; RSF = Use of renewable secondary fuels; NRSF = Use of non-renewable secondary fuels; FW = Use of net fresh water							

** 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.

Waste indicators

Results per functional or declared unit								
Indicator	Unit	A1-A3	A5	C1	C2	C3	C4	D
Hazardous waste disposed	kg	6.07E-03	1.84E-05	0.00E+00	1.63E-04	1.83E-04	2.17E-05	-6.64E-03
Non-hazardous waste disposed	kg	7.39E-02	1.56E-02	0.00E+00	1.29E-03	3.86E-04	3.15E-04	-4.81E-02
Radioactive waste disposed	kg	4.33E-06	7.20E-10	0.00E+00	2.74E-08	2.26E-09	4.53E-09	-3.27E-06

Output flow indicators

Results per functional or declared unit								
Indicator	Unit	A1-A3	A5	C1	C2	C3	C4	D
Components for re-use	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Material for recycling	kg	9.10E-03	2.58E-06	0.00E+00	8.92E-05	1.10E-05	1.12E-05	-5.84E-03
Materials for energy recovery	kg	2.15E-06	1.65E-10	0.00E+00	5.79E-09	6.46E-10	1.26E-09	-1.34E-06
Exported energy, electricity	MJ	2.56E-03	2.66E-07	0.00E+00	9.72E-06	8.08E-07	1.75E-06	-1.71E-03
Exported energy, thermal	MJ	6.45E-03	4.27E-07	0.00E+00	1.96E-05	2.39E-06	1.13E-06	-6.23E-03

Additional information

End-of-life scenarios if 100% of the product is recycled:

Results per declared unit					
Indicator	Unit	C1	C2	C3	C4
GWP-fossil	kg CO_2 eq.	0.00E+00	9.58E-03	7.69E-0.3	0.00E+00
GWP-biogenic	kg CO_2 eq.	0.00E+00	2.80E-07	-1.39E-05	0.00E+00
GWP-luluc	kg CO_2 eq.	0.00E+00	3.89E-06	3.99E-07	0.00E+00
GWP-total	kg CO_2 eq.	0.00E+00	9.59E-03	7.67E-03	0.00E+00
GWP-GHG[2]	kg CO_2 eq.	0.00E+00	9.59E-03	7.69E-03	0.00E+00
ODP	kg CFC 11 eq.	0.00E+00	1.42E-10	1.09E-10	0.00E+00
AP	mol H^+ eq.	0.00E+00	2.20E-05	3.95E-05	0.00E+00
EP-freshwater	kg P eq.	0.00E+00	7.58E-07	1.49E-06	0.00E+00
EP-marine	kg N eq.	0.00E+00	5.10E-06	6.04E-06	0.00E+00
EP-terrestrial	mol N eq.	0.00E+00	5.51E-05	6.34E-05	0.00E+00
POCP	kg NMVOC eq.	0.00E+00	3.07E-05	2.44E-05	0.00E+00
ADP-minerals&metals**	kg Sb eq.	0.00E+00	3.21E-08	2.94E-09	0.00E+00
ADP-fossil**	MJ	0.00E+00	1.35E-01	1.02E-01	0.00E+00
WDP	m^3	0.00E+00	6.12E-04	5.57E-04	0.00E+00

End-of-life scenarios if 100% of the product is landfilled:

Results per declared unit					
Indicator	Unit	C1	C2	C3	C4
GWP-fossil	kg CO_2 eq.	0.00E+00	9.58E-03	0.00E+00	6.26E-03
GWP-biogenic	kg CO_2 eq.	0.00E+00	2.80E-07	0.00E+00	8.62E-07
GWP-luluc	kg CO_2 eq.	0.00E+00	3.89E-06	0.00E+00	3.22E-06
GWP-total	kg CO_2 eq.	0.00E+00	9.59E-03	0.00E+00	6.26E-03
GWP-GHG[2]	kg CO_2 eq.	0.00E+00	9.59E-03	0.00E+00	6.26E-03
ODP	kg CFC 11 eq.	0.00E+00	1.42E-10	0.00E+00	1.81E-10
AP	mol H^+ eq.	0.00E+00	2.20E-05	0.00E+00	4.43E-05
EP-freshwater	kg P eq.	0.00E+00	7.58E-07	0.00E+00	5.19E-07
EP-marine	kg N eq.	0.00E+00	5.10E-06	0.00E+00	1.69E-05
EP-terrestrial	mol N eq.	0.00E+00	5.51E-05	0.00E+00	1.84E-04
POCP	kg NMVOC eq.	0.00E+00	3.07E-05	0.00E+00	6.60E-05
ADP-minerals&metals**	kg Sb eq.	0.00E+00	3.21E-08	0.00E+00	9.97E-09
ADP-fossil**	MJ	0.00E+00	1.35E-01	0.00E+00	1.53E-01
WDP	m^3	0.00E+00	6.12E-04	0.00E+00	4.29-E04
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				

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Abbreviations

Abbreviation	Definition
General Abbreviations	
EN	European Norm (Standard)
EF	Environmental Footprint
ISO	International Organization for Standardization
CEN	European Committee for Standardization
CPC	Central product classification
SVHC	Substances of Very High Concern
ND	Not Declared
CRU	Components for re-use
EEE	Exported electrical energy
EET	Exported thermal energy
EoL	End of life
EPD ®	Environmental product declaration
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
Eq.	Equivalent(s)
ET-freshwater	Ecotoxicity, freshwater
EU	European union
FW	Use of net fresh water
GWP-biogenic	Global Warming Potential biogenic
GWP-fossil	Global Warming Potential fossil fuels
GWP-GHG	Global Warming Potential greenhouse gases
GWP-luluc	Global Warming Potential land use and land use change
GWP-total	Global Warming Potential total
HWD	Hazardous waste disposed
Kg	kilogram
Km	kilometer
LCA	Life cycle assessment

References

- General Programme Instructions of the International EPD® System. Version 5.0.
- PCR 2019:14. Construction Products. Version 2.0.1
- “Spatial Planning Report 2017”, Germany Building and regional planning federal office
- Central Product Classification (CPC), Version 2.1, Department of Economic and Social Affairs Statistics Division, UN.
- Tambond C1TES1 851 data sheet, Tambour
- ISO14020:2000 Environmental lables and declarations – General principles
- ISO14025:2006 Environmental lables and declarations – Type III environmental declarations – principles and procedures
- ISO14040:2006 Environmental management – Life cycle assessment – principles and framework
- ISO14044:2006 Environmental management – Life cycle assessment – requirments and guilines
- 15804:2012+A2:2019/AC:2021 Sustainability of construction works – Environmental product declarations – Core rules for the product category of construction products.
- Ecoinvent database V3.10

Version history

Original version of the EPD, 2025-XX-XX

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

LCA accountability:
Eli Shmushko, Green Target
Contact at: office@yaadyarok.co.il
More info: www.yaadyarok.co.il

3rd Party Verifier

IK Ingenieria
https://www.ik-ingenieria.com/
i.telleria@ik-ingenieria.com
r.carnerero@ik-ingenieria.com