Environmental Product Declaration

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

L480

from

Balsan

Programme:	The International EPD System, www.environdec.com
Programme operator:	EPD International AB
Licensee:	N/A
Type of EPD:	EPD of a single product from a manufacturer
EPD registration number:	EPD-IES-0032143:001
Version date:	2026-05-26
Validity date:	2031-05-26

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

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:	support@environdec.com

Product Category Rules (PCR)
CEN standard EN 15804 serves as the Core Product Category Rules (PCR)
Product Category Rules (PCR): ***CONSTRUCTION PRODUCTS PCR 2019:14 VERSION 2.0.1, UN CPC code 2723***
PCR review was conducted by: The Technical Committee of the International EPD System, ***The review panel may be contacted via support@environdec.com.***
c-PCR: ***c-PCR-004 Resilient, textile and laminate floor coverings (EN 16810), version 1.0.0***

Third-party Verification
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: *Marie Bellemare, Marie Bellemare Consulting* Approved by: International EPD System
Procedure for follow-up of data during EPD validity involves third party verifier: ☐ Yes ☒ No

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

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.

In this EPD, a dot (.) is used as the decimal separator and no thousand separator is used.

INFORMATION ABOUT EPD OWNER

Owner of the EPD: Balsan
Address: Balsan Moquette, 2, Corbilly 36330 Arthon, France
Contact: Cedric CHARTON, cedric.charton@balsan.com
Address and contact information of the LCA practitioner commissioned by the EPD owner: Mad Max Environnement, 1, chemin Le Hézard, 50490, Saint Sauveur Villages, France, represented by Maxime ROBERT, mrobert@madmax-environnement.fr
Description of the organisation: Designer and manufacturer of textile floor coverings (carpet rolls and carpet tiles).

Product-related or management system-related certifications: NF EN 1307, NF EN 14041

PRODUCT INFORMATION

Product name: L480
Product identification: Modular textile floor covering (loose-lay carpet tiles), 50 × 50 cm per tile, total mass 4.040 kg/m², 100% recycled polyamide 6 fibers, proportion of recycled material 12%, total pile weight 480 g/m², Surface pile weight 300 g/m², total thickness 5.7 mm, backing bituminous compound.
Visual representation of the product

UN CPC code: 2723 - Carpets and other textile floor coverings, tufted
Other codes for product classification: N/A
Product description: According to the use class as defined in EN 1307 the product can be used in all professional areas which require class 33 or less. It is intended exclusively for indoor use and must be installed in accordance with NF DTU 53.12. It is not suitable for outdoor applications or areas exposed to permanent moisture.
During the use phase, the product contributes to the functional performance of the building by ensuring a stable and comfortable floor covering, while requiring periodic maintenance.
The product has an Estimated Service Life (ESL) of 15 years under normal conditions of use; however, in accordance with EN 16810, the Reference Service Life (RSL) used for the LCA modelling is 1 year.

Description of main processes of manufacturing:
The first manufacturing step consists of producing the tufted carpet using a 1/10 loop tufting machine, a primary polyester nonwoven backing, and ECONYL® polyamide yarn. This process involves inserting the yarn into the primary backing at a defined stitch rate in order to achieve a yarn mass of approximately 480 g/m². The energy used during this operation is mainly electricity, required to operate the tufting machines.

The second step consists of applying a styrene–butadiene latex compounded with calcium carbonate (referred to as precoat). The purpose of this operation is to anchor the yarn to the primary backing. It is

carried out on a continuous coating line and is a key step for achieving the required wear resistance performance of the finished product.

The compound is water-based, with a dry content of 78%, and is applied by foaming in order to control the applied weight. After application of the latex layer, the material undergoes a first drying stage in an oven operating with heating coils supplied by a thermal fluid. The material then passes through a second drying oven to dissipate residual stresses and ensure the dimensional stability of the product. After inspection, the material is wound into rolls of 75 linear metres and transferred to the Neuvy production site.
The next step consists of slitting the material to a width of 2.06 m so that it can be processed into tiles on the heavy coating line at the Neuvy site. The slit rolls are fed sequentially into the line and undergo a reheating operation to relax the material. In parallel, the tile backing is produced by applying a first layer of bituminous compound onto a polyester spunbond nonwoven. A glass fibre grid is then applied onto this bitumen layer, followed by the application of a second bitumen layer. The relaxed, precoated carpet is subsequently pressed onto the second bitumen layer while it is still hot.

The product is then cooled to ambient temperature in a cooling chamber before being cut into 50 × 50 cm tiles using a hydraulic press. The tiles are inspected and packed in cartons containing 20 tiles, which are then placed on pallets.
The pallets are finally transported to the logistics service provider's warehouse for storage and subsequent distribution.

The production has been modelled on data supplied by the manufacturer for its factory in France. All factory data are measured in square meters and it is assumed that the process consumptions are governed by area of flooring processed rather than mass (manufacturer's usual method of calculation). These quantities have been calculated by dividing the annual consumption per the quantity of m² produced in a year.

Name and location of production site(s): Arthon and Neuvy (France)
References to relevant websites: https://www.balsan.com/moquette-l480

EPD shall not include rating, judgements, or direct comparisons with other products or companies. "Other products" include previous or alternative versions of the studied product, i.e., the EPD shall not display changes in the environmental performance results of a product over time, or differences with regard to a hypothetical version of the product using, e.g., alternative production processes or input materials.
"Other companies" means that the EPD shall not in any way imply that the EPD owner is, for example, "a market leader" or "more sustainable" (or similar) compared to its competitors.

CONTENT DECLARATION

- The mass (weight) of one unit of a product, as purchased or per declared unit: 4.040 kg/m²
- Information on the environmental and hazardous/toxic properties of a substances contained in the product: The product does not contain any substances listed in the REACH Candidate List of Substances of Very High Concern (SVHC) above 0.1% (w/w), in accordance with Article 33 of Regulation (EC) No 1907/2006 (REACH).
- The declared share of biogenic/recycled materials: 12% of recycled materials

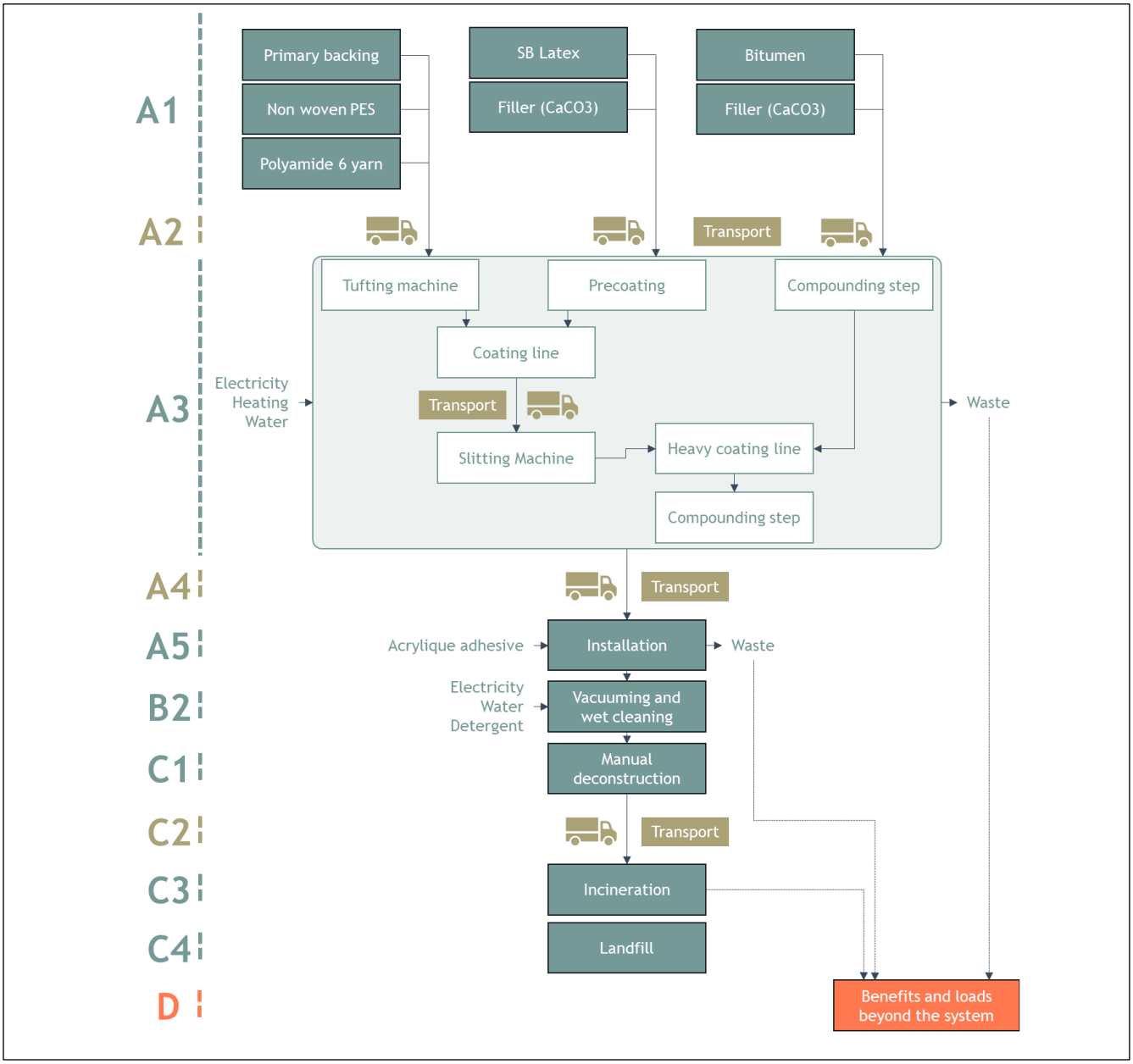
Product content	Mass, kg	Post-consumer recycled material, mass-% of product	Biogenic material, mass-% of product	Biogenic material, kg C/product
Polyamide 6	4.80E-01	100%	0%	0.0E+00
Polyester	1.70E-01	0%	0%	0.0E+00
Glass fibre	1.50E-02	0%	0%	0.0E+00
SBR-latex	1.33E-01	0%	0%	0.0E+00
Mineral filler	2.55E+00	0%	0%	0.0E+00
Bitumen	6.73E-01	0%	0%	0.0E+00
Other components	2.10E-02	0%	0%	0.0E+00
TOTAL	4.040E+00	14%	0%	0.0E+00

Packaging materials	Mass, kg	Mass-% (versus the product)	Biogenic material, kg C/product or declared unit
Packaging – Pallet	0.100	2.5 %	3,08E-02
Packaging – Cardboard	0.095	2.4 %	2,95E-02
Packaging – PE Film	0.001	0.03 %	0.0E+00
Packaging – EVA Adhesive	0.006	0.1 %	0.0E+00
TOTAL	0.202	5.0 %	6.03E-02

1 kg biogenic carbon in the product/packaging is equivalent to the uptake of 44/12 kg of CO_2.

LCA INFORMATION

Functional unit Providing coverage and aesthetic finish for 1 m² of interior flooring, installed in accordance with NF DTU 53.12 and maintained periodically over a Reference Service Life of 1 year.
Conversion factor to mass if mass is not used as functional/declared unit (not applicable for services).
Reference service life: 1 year
Time representativeness: The LCA study, based on data from Balsan in 2024, was conducted and reported in 2026
Geographical scope: France (A3), Global (A1-A2, A4-D).
Database(s) and LCA software used: Ecoinvent 3.10, SimaPro LCA software 9.6.0.1.
Description of system boundaries: Cradle to grave and module D (A + B + C + D).
Process flow diagram:



More information:
The EPD is prepared in accordance with EN 15804:2012+A2:2019/AC:2021, NF EN 15804+A2/CN:2022, ISO 21930:2017, EN 16810:2017, ISO 14025:2006, the EF 3.1 characterisation factors, and PCR 2019:14-c-PCR-004 for the European market.

Modelling does not include infrastructures, production tools, factory construction, cleaning, administration department and employee transport, except in the case of data included in the generic databases.

Data quality assessment summary:
The data quality assessment has been carried out in accordance with EN 15941 Section 7.3.3.
Primary data for manufacturing processes (Module A3) are based on the production year 2024.
Overall, the data quality is considered good to very good, with most datasets showing high representativeness in terms of technology, geography, and time.
However, some limitations have been identified:

- The geographical representativeness of natural gas supply is rated as poor due to the unknown origin of the gas.
- The transport distances for end-of-life processes are based on assumptions and show limited precision.
- The maintenance scenario is based on standardised usage assumptions and shows variability depending on user practices.

These limitations are not expected to significantly affect the overall conclusions of the study.

Manufacturing datas:
Electricity used in processes under the control of the EPD owner (Module A3) is modelled based on a renewable electricity contract supported by Guarantees of Origin (GOs).

The electricity mix corresponds to renewable energy sources, and the associated climate change impacts are:

- 8.99E-03 kg CO_2 eq/kWh for Arthon site
- 9.07E-03 kg CO_2 eq/kWh for Neuvy site.

These values reflect the contractual electricity supply and are consistent with the requirements for electricity modelling in EPDs.

Downstream stages and module D scenarios: The following scenarios are applied for downstream life cycle stages (A4–C4) and Module D, in accordance with PCR 2019:14 Sections 4.8.2 to 4.8.5.

A4 – Transport to site:
Transport is modelled using Balsan's sales data:

Information	Units
Type of vehicle used for transport	Manufacturing site to logistics platform: diesel truck >32 tons, EURO5 Logistics platform to implementation site: diesel truck >32 tons, EURO5 ; Transport, freight, sea, container ship
Distance	Neuvy to logistics platform: 33.6 km by road Distribution: 1028 km by road in Europe and 1716 km by sea in the world
Capacity Utilisation	100% capacity utilisation (default data from the Ecoinvent)
Bulk density of transported products	7.44E+02 kg/m^3
Volume capacity utilisation factor (factor: =1 or <1 or >1 for compressed or nested packaged products)	1
Description of the scenario: The product is distributed throughout the world, with a weighted average transport distance of 1028 km by road in Europe and 1716 km by sea in the world, based on annual sales volumes.	

A5 – Installation:
Installation is modelled using:

Information	Units
Ancillary materials for installation (specified by material)	Acrylic adhesive, 120 g/m²
Water use	None
Other resource use	None
Quantitative description of energy type (regional mix) and consumption during the installation process	None
Description of the scenario: Installation requires the use of an acrylic adhesive in aqueous emulsion. The adhesive UZIN U 1000, covered by an EPD is used for the modelling with a 120g/m² weight. No additional materials or energy inputs are required for installation. A product loss rate of 3% is assumed based on a collective French FDES (UFTM). Installation waste is treated via landfill.	

B2 – Maintenance:
Maintenance scenario describes annual consumption and the results are calculated for the RSL of 1 years. It is taken from UFTM (French union for carpets) FDES covering 160 similar products.
This one year-scenario, considered representative of average maintenance for the installed surface, is applied to the product:

- Vacuum cleaning: 208 times per year
- Wet cleaning: 1.5 times per year

The estimated annual resource consumption is:

- Electricity: 0.314 kWh/m²/year
- Freshwater: 0.004 kg/m²/year
- Detergent: 0.09 kg/m²/year.

Low voltage electricity mixes are used in proportion to the distribution of sales for France (44%) and global (66%).

No wastewater is generated during the maintenance process, as water and detergent are applied for cleaning and remain within the carpet before evaporating during drying.

B1, B3-B7 – Use stage:
As per EN 16810, floor coverings do not generate environmental impacts during normal use and are not repaired, replaced, or refurbished.

C1 – De-construction:
At the end of its reference service life the carpet tiles are removed manually from the building. No specific energy consumption or additional materials are required for this operation.

C2–C4 – End-of-life:
The acrylic adhesive used for the product installation is considered is the final waste scenarios as it is not separated, making its total waste weight 4.16 kg.
Waste is assumed to be transported over a distance of 50 km.

Information	Units
Type of vehicle used for transport	Ecoinvent process: Transport, freight, lorry 16-32 metric ton, EURO5 {RoW} Operating with Diesel
Distance	50 km by road
Capacity Utilisation	100% capacity utilisation (default data from the Ecoinvent)
Bulk density of transported products	7.30E+02 kg/m^3
Volume capacity utilisation factor (factor: =1 or <1 or >1 for compressed or nested packaged products)	1

The end-of-life scenario applied in the LCA modelling is 100% landfill. This assumption is aligned with the collective FDES developed by UFTM, covering 160 similar products, and is used here to ensure consistency with sectoral practices. The results for the alternative 100% incineration scenario are provided in the 'Additional LCA results' section.

Processes	Units
Collection process specified by type	4.16 kg collected separately
	0 kg collected with mixed construction waste
Recovery system specified by type	0 kg for re-use
	0 kg for recycling
	0 kg for energy recovery
Disposal specified by type	4.16 kg for final deposition
Assumptions for scenario development	Scenario based on collective FDES developed by UFTM

Module D – Benefits beyond the system boundary:
Yarn losses and product packaging end-of-life are accounted in Module D.

Energy recovery from incineration (D-I) is modelled with the following efficiencies:

- 25% electricity
- 45% thermal energy

Recovered electricity substitutes the Global grid mix, while recovered thermal energy substitutes rest of world stream. Energy recovery is calculated based on the lower heating value (LHV) of the material.

Cut-off criteria:
The cut-off criteria used for this study follow the guidelines set out in the PCR which conform to the EN 15804-A2, as following:

- All inputs and outputs to a (unit) process are included in the calculation where the data is available
- A maximum of 1% of the total mass per unit process may be omitted
- A maximum of 1% of the total renewable and non-renewable energy for a unit process may be omitted

- A maximum of 5% of the total energy usage and mass per module may be omitted

All inputs and outputs flows have been considered, including raw materials as per the product composition provided by the manufacturer and packaging of raw materials as well as the final product. Energy and water consumptions have also been considered at 100% according to the data provided.

Modules A1-A3:
A1 – Raw Material Supply: All processes were modelled using appropriate data modules.
A2 – Transport: Transport of raw material packaging was considered negligible.
A3 – Manufacturing: 100% of the manufacturing processes were modelled.
Modules A4-A5:
All inputs and outputs flows have been considered.
Module B1 et B3 – B7:
No flows are allocated to this module; it is empty.
Module B2:
All inputs and outputs flows have been considered.
Module C1-C4:
100% of the end-of-life processes were modelled.
Module D:
All inputs and outputs flows have been considered.

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

	Product stage			Distribution/ installation stage		Use stage							End-of-life stage				Beyond product life cycle
	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	X	X	X	X	X	X	X	X	X	X	X	X
Geography	GLO	GLO	FR	GLO	GLO	GLO	GLO	GLO	GLO	GLO	GLO	GLO	GLO	GLO	GLO	GLO	GLO
Share of primary data	32%			-	-	-	-	-	-	-	-	-	-	-	-	-	-
Variation – products	0%			-	-	-	-	-	-	-	-	-	-	-	-	-	-
Variation – sites	0%			-	-	-	-	-	-	-	-	-	-	-	-	-	-

The share of primary data is calculated based on GWP-GHG results:

$$Share\ of\ primary\ data = \sum GWPGHG_{primary\ datas} / \sum GWPGHG_{total\ A1\text{-}A3}$$

Primary data considered are production consumption of energy and water, production waste, packaging and supplier data for transport. EPD from suppliers used as a data source do not contain their share of primary are conservatively assumed to be based on 0% primary data.

It is a simplified indicator for data quality that supports the use of more primary data, to increase the representativeness of and comparability between EPDs. Note that the indicator does not capture all relevant aspects of data quality and is not comparable across product categories.

Main GWP-GHG contributors are displayed in the following table.

Process	Source type	Source	Reference year	Data category	Share of primary data, of GWP-GHG results for A1-A3
A1 Polyamide yarn	EPD	EPD (Registration No. of EPD International AB: S-P-08203)	2024	Secondary data	0%
A1 First backing PES	Database	Ecoinvent v3.10	2024	Secondary data	0%
A1 Other raw materials	Database	EPD, Ecoinvent v3.10	2024	Secondary data	0%
A3 Fossil fuels (GPL and natural gas)	Collected data	Ecoinvent v3.10	2024	Primary data	14%
A3 Raw materials compensation	EPD	Manufacturer LCA	2024	Secondary data	0%
A3 Other processes	Collected data	Ecoinvent v3.10	2024	Primary data	13%
A2 Transport	Database	Ecoinvent v3.10	2024	Primary data	5%
Total share of primary data, of GWP-GHG results for A1-A3					32%

The GWP-GHG intensity of recycled PA6 is 1.52E+00 kg CO2 eq. It is based on the supplier-specific ECONYL® EPD. Impacts are taken directly from this EPD, including the allocation approach defined by the supplier.

ENVIRONMENTAL PERFORMANCE

LCA results of the product(s) - main environmental performance results

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.
The results of the end-of-life stage (modules C1-C4) should be considered when using the results of the product stage (modules A1-A3).
Biogenic carbon leaving the product system in module A5 have been balanced out already in modules A1-A3.

Mandatory impact category indicators according to EN 15804

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-total	kg CO_2 eq.	3.40E+00	5.31E-01	6.86E-01	0.00E+00	1.85E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.95E-02	0.00E+00	3.72E-01	-8.18E-02
GWP-fossil	kg CO_2 eq.	3.75E+00	5.31E-01	3.28E-01	0.00E+00	1.82E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.95E-02	0.00E+00	3.72E-01	-7.76E-02
GWP-biogenic	kg CO_2 eq.	-3.57E-01	9.39E-05	3.57E-01	0.00E+00	1.93E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	6.73E-06	0.00E+00	1.83E-05	-5.87E-02
GWP-luluc	kg CO_2 eq.	7.50E-03	1.95E-04	3.38E-04	0.00E+00	3.29E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.57E-05	0.00E+00	8.12E-06	1.12E-04
ODP	kg CFC 11 eq.	2.81E-06	1.03E-08	8.55E-08	0.00E+00	2.31E-09	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.52E-10	0.00E+00	1.36E-09	-8.64E-09
AP	mol H^+ eq.	1.76E-02	3.57E-03	1.38E-03	0.00E+00	1.03E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.32E-04	0.00E+00	2.79E-04	-1.37E-04
EP-freshwater	kg P eq.	8.01E-05	3.86E-06	5.88E-06	0.00E+00	9.57E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.64E-07	0.00E+00	3.26E-07	-5.96E-07
EP-marine	kg N eq.	4.35E-03	1.02E-03	3.56E-04	0.00E+00	2.09E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.21E-05	0.00E+00	4.19E-04	-1.21E-05
EP-terrestrial	mol N eq.	4.27E-02	1.12E-02	3.74E-03	0.00E+00	2.01E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.64E-04	0.00E+00	1.23E-03	-3.40E-04
POCP	kg NMVOC eq.	1.48E-02	3.98E-03	1.15E-03	0.00E+00	6.05E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.83E-04	0.00E+00	5.56E-04	-1.85E-04
ADP-minerals&metals*	kg Sb eq.	1.69E-05	1.34E-06	6.56E-07	0.00E+00	1.83E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.30E-07	0.00E+00	9.31E-08	-2.70E-08
ADP-fossil*	MJ	8.86E+01	7.53E+00	7.14E+00	0.00E+00	3.89E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.54E-01	0.00E+00	9.51E-01	-1.09E+00
WDP*	m^3	3.77E+00	3.42E-02	1.72E-01	0.00E+00	6.94E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.54E-03	0.00E+00	-2.09E-02	-3.10E-03
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 on these results are high or as there is limited experienced with the indicator.*

Additional mandatory and voluntary impact category 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.	3.76E+00	5.31E-01	3.29E-01	0.00E+00	1.85E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.95E-02	0.00E+00	3.72E-01	-2.32E-02
Particulate matter	disease inc.	1.62E-07	4.77E-08	6.75E-09	0.00E+00	8.95E-09	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.12E-09	0.00E+00	6.50E-09	0.00E+00
Ionising radiation[2]	kBq U-235 eq	5.37E-02	3.09E-03	1.74E-03	0.00E+00	2.32E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.79E-04	0.00E+00	6.01E-04	0.00E+00
Ecotoxicity freshwater	CTUe	2.91E+01	1.73E+00	9.74E-01	0.00E+00	1.07E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.48E-01	0.00E+00	1.18E+00	0.00E+00
Human toxicity, cancer	CTUh	7.92E-09	3.14E-09	3.57E-10	0.00E+00	4.43E-10	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.05E-10	0.00E+00	2.52E-10	0.00E+00
Human toxicity, non-cancer	CTUh	4.11E-08	4.51E-09	1.47E-09	0.00E+00	2.15E-09	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.45E-10	0.00E+00	2.24E-09	0.00E+00
Land use	Pt	4.40E+01	6.77E+00	1.62E+00	0.00E+00	1.03E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.31E-01	0.00E+00	2.30E+00	0.00E+00

Resource use 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
PERE	MJ	3.23E+01	1.12E-01	2.59E+00	0.00E+00	6.26E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	7.28E-03	0.00E+00	2.94E-02	-4.90E-01
PERM[3]	MJ	-6.50E-01	0.00E+00	-2.95E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-3.11E-01
PERT	MJ	3.17E+01	1.12E-01	-3.54E-01	0.00E+00	6.26E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	7.28E-03	0.00E+00	2.94E-02	-8.00E-01
PENRE	MJ	6.04E+01	7.52E+00	4.61E+00	0.00E+00	3.89E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.54E-01	0.00E+00	9.50E-01	-1.46E+00
PENRM	MJ	4.45E+01	0.00E+00	3.01E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PENRT	MJ	1.05E+02	7.52E+00	7.62E+00	0.00E+00	3.89E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.54E-01	0.00E+00	9.50E-01	-1.46E+00
SM	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	6.97E-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 CO_2 is set to zero.

[2] 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.

[3] The negative PERM value in A5 reflects the embodied energy of the packaging leaving the product system at its end-of-waste state, per EN 15804+A2 / INIES guidelines.

RSF	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
NRSF	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
FW	m^3	9.12E-02	1.06E-03	3.73E-03	0.00E+00	2.61E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	7.39E-05	0.00E+00	-1.81E-02	-2.38E-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 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**
Hazardous waste disposed	kg	8.22E-02	2.37E-04	2.97E-03	0.00E+00	1.58E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.69E-05	0.00E+00	9.36E-05	-5.38E-04
Non-hazardous waste disposed	kg	1.36E+00	6.47E-01	2.09E-01	0.00E+00	1.73E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.33E-02	0.00E+00	4.05E+00	3.76E-04
Radioactive waste disposed	kg	3.49E-04	2.10E-06	9.11E-05	0.00E+00	2.52E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.12E-07	0.00E+00	3.69E-07	-5.08E-06

Output flow 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**
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	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-4.14E-05
Material for recycling	kg	1.90E-01	0.00E+00	1.47E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-5.16E-02
Materials for energy recovery	kg	5.57E-04	0.00E+00	1.67E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Exported energy, electricity	MJ	1.63E+00	0.00E+00	1.13E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Exported energy, thermal	MJ	6.81E-02	0.00E+00	7.32E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

Additional LCA results (other environmental performance results) of the product(s)

The 2 end-of life scenarios were modelled separately. LCA results are presented here with:

- Scenario L: 100% landfill disposal (C4-L; D-L)
- Scenario I: 100% municipal waste incineration with energy recovery and incineration residues landfill (C3-I; C4-I; D-I)

Column D corresponds to the module D cumulated for A1-C2 modules.

Mandatory impact category indicators according to EN 15804

Results per functional or declared unit						
Indicator	**C3-I**	**C4-I**	**C4-L**	**D**	**D-L**	**D-I**
GWP-total	2.10E+00	5.20E-01	3.72E-01	-8.18E-02	0.00E+00	-4.85E+00
GWP-fossil	2.10E+00	5.19E-01	3.72E-01	-7.76E-02	0.00E+00	-4.85E+00
GWP-biogenic	8.41E-05	4.44E-04	1.83E-05	-5.87E-02	0.00E+00	-1.72E-03
GWP-luluc	3.58E-05	2.03E-04	8.12E-06	1.12E-04	0.00E+00	-3.33E-03
ODP	2.62E-09	2.55E-09	1.36E-09	-8.64E-09	0.00E+00	-4.62E-08
AP	1.18E-03	1.67E-03	2.79E-04	-1.37E-04	0.00E+00	-1.98E-02
EP-freshwater	2.26E-06	6.96E-06	3.26E-07	-5.96E-07	0.00E+00	-1.44E-04
EP-marine	5.40E-04	4.88E-04	4.19E-04	-1.21E-05	0.00E+00	-3.24E-03
EP-terrestrial	5.56E-03	5.55E-03	1.23E-03	-3.40E-04	0.00E+00	-3.59E-02
POCP	1.47E-03	1.61E-03	5.56E-04	-1.85E-04	0.00E+00	-1.28E-02
ADP-minerals&metals*	4.19E-07	2.24E-06	9.31E-08	-2.70E-08	0.00E+00	-2.81E-06
ADP-fossil*	1.44E+00	3.16E+00	9.51E-01	-1.09E+00	0.00E+00	-6.17E+01
WDP*	4.87E-02	5.83E-02	-2.09E-02	-3.10E-03	0.00E+00	-4.44E-01

** Disclaimer: The results of this environmental impact indicator shall be used with care as the uncertainties on these results are high or as there is limited experienced with the indicator.*

Additional mandatory and voluntary impact category indicators

Results per functional or declared unit						
Indicator	**C3-I**	**C4-I**	**C4-L**	**D**	**D-L**	**D-I**
GWP-GHG	2.10E+00	5.20E-01	3.72E-01	-2.32E-02	0.00E+00	-4.85E+00
Particulate matter	1.10E-08	1.74E-08	6.50E-09	0.00E+00	0.00E+00	-2.08E-07
Ionising radiation	1.17E-03	1.99E-03	6.01E-04	0.00E+00	0.00E+00	-1.26E-01
Ecotoxicity, freshwater	7.63E+00	1.89E+00	1.18E+00	0.00E+00	0.00E+00	-9.16E+00
Human toxicity, cancer	2.04E-09	6.88E-09	2.52E-10	0.00E+00	0.00E+00	-5.08E-09
Human toxicity, non-cancer	2.33E-08	4.32E-07	2.24E-09	0.00E+00	0.00E+00	-2.05E-08
Land use	7.72E-01	3.29E+00	2.30E+00	0.00E+00	0.00E+00	-6.42E+00

Resource use indicators

Results per functional or declared unit						
Indicator	**C3-I**	**C4-I**	**C4-L**	**D**	**D-L**	**D-I**
PERE	4.96E-02	1.32E-01	2.94E-02	-4.90E-01	0.00E+00	-3.86E+00
PERM	0.00E+00	0.00E+00	0.00E+00	-3.11E-01	0.00E+00	0.00E+00
PERT	4.96E-02	1.32E-01	2.94E-02	-8.00E-01	0.00E+00	-3.86E+00
PENRE	1.44E+00	3.15E+00	9.50E-01	-1.46E+00	0.00E+00	-6.15E+01
PENRM	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PENRT	1.44E+00	3.15E+00	9.50E-01	-1.46E+00	0.00E+00	-6.15E+01
SM	0.00E+00	0.00E+00	0.00E+00	6.97E-02	0.00E+00	0.00E+00
RSF	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
NRSF	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
FW	4.41E-03	1.48E-03	-1.81E-02	-2.38E-04	0.00E+00	-1.61E-02

Waste indicators

Results per functional or declared unit						
Indicator	**C3-I**	**C4-I**	**C4-L**	**D**	**D-L**	**D-I**
Hazardous waste disposed	1.01E+00	1.43E+00	9.36E-05	-5.38E-04	0.00E+00	-1.27E-03
Non-hazardous waste disposed	1.61E-01	1.82E+00	4.05E+00	3.76E-04	0.00E+00	-2.63E+00
Radioactive waste disposed	9.31E-07	1.24E-06	3.69E-07	-5.08E-06	0.00E+00	-8.01E-05

Output flow indicators

Results per functional or declared unit						
Indicator	**C3-I**	**C4-I**	**C4-L**	**D**	**D-L**	**D-I**
Components for re-use	0.00E+00	0.00E+00	0.00E+00	-4.14E-05	0.00E+00	0.00E+00
Material for recycling	0.00E+00	0.00E+00	0.00E+00	-5.16E-02	0.00E+00	0.00E+00
Materials for energy recovery	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Exported energy, electricity	1.12E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Exported energy, thermal	2.02E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

ADDITIONAL ENVIRONMENTAL INFORMATION

Balsan provides recommendations for proper use and maintenance in order to optimize durability and limit environmental impacts over the product’s lifetime.

Information regarding product durability, recyclability, and end-of-life management is also considered, including guidance on disposal and potential recovery solutions where applicable.

Balsan’s commitment to sustainability is supported by ISO 9001 and ISO 14001 certified manufacturing sites. In addition, an annual CSR report is published, offering comprehensive insight into the company’s environmental policies, actions, and continuous improvement initiatives.

ABBREVIATIONS

General Abbreviations	
EN	European Norm (Standard)
EPD	Environmental Product Declaration
EF	Environmental Footprint
GPI	General Programme Instructions
ISO	International Organization for Standardization
LCA	Life Cycle Assessment
PCR	Product Category Rules
c-PCR	Complementary Product Category Rules
CEN	European Committee for Standardization
CPC	Central product classification
GHG	Greenhouse Gas
PEF	Product Environmental Footprint
RSL	Reference Service Life
ESL	Estimated Service Life
Environmental Impact Indicators (EN 15804)	
GHG	Greenhouse Gas
GWP	Global Warming Potential (kg CO_2 eq.)
GWP-fossil	Global Warming Potential from fossil sources (kg CO_2 eq.)
GWP-biogenic	Global Warming Potential from biogenic sources (kg CO_2 eq.)
GWP-luluc	Global Warming Potential from land use and land use change (kg CO_2 eq.)
GWP-total	Total Global Warming Potential (kg CO_2 eq.)
GWP-GHG	Global Warming Potential for greenhouse gases (kg CO_2 eq.)
ODP	Ozone Depletion Potential (kg CFC-11 eq.)
AP	Acidification Potential (mol H^+ eq.)
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.)
POCP	Photochemical Ozone Creation Potential (kg NMVOC eq.)
ADP	Abiotic Depletion Potential
ADP-minerals&metals	Abiotic depletion potential for non-fossil resources (kg Sb eq.)
ADP-fossil	Abiotic depletion potential for fossil resources (MJ)
WDP	Water Deprivation Potential (m^3)
Resource Use Indicators	
PERE	Renewable primary energy (excluding as raw materials) (MJ)
PERM	Renewable primary energy used as raw materials (MJ)
PERT	Total renewable primary energy (MJ)
PENRE	Non-renewable primary energy (excluding as raw materials) (MJ)
PENRM	Non-renewable primary energy used as raw materials (MJ)
PENRT	Total non-renewable primary energy (MJ)
SM	Use of secondary material (kg)
RSF	Use of renewable secondary fuels (MJ)
NRSF	Use of non-renewable secondary fuels (MJ)
FW	Use of net fresh water (m^3)
HW	Hazardous Waste (disposed) (kg)
NHW	Non-Hazardous Waste (disposed) (kg)
RW	Radioactive Waste (disposed) (kg)
Output Flow Indicators	
CFR	Components for Reuse (kg)
MR	Material for Recycling (kg)
MER	Materials for Energy Recovery (kg)
EEE	Exported Energy, Electricity (MJ)
EET	Exported Energy, Thermal (MJ)
Lifecycle Stages / Modules	
A1	Raw material supply
A2	Transport
A3	Manufacturing
A4	Transport to site
A5	Construction/Installation
B1	Use
B2	Maintenance
B3	Repair
B4	Replacement
B5	Refurbishment

B6	Operational energy use
B7	Operational water use
C1	Deconstruction/Demolition
C2	Transport to waste processing
C3	Waste processing
C4	Disposal
D	Reuse-Recovery-Recycling potential
Other Relevant Terms	
SVHC	Substances of Very High Concern
EC No.	European Community Number
CAS No.	Chemical Abstracts Service Number
MJ	Megajoule
kg	Kilogram
m^3	Cubic Meter
NMVOC	Non-Methane Volatile Organic Compounds
Sb eq.	Antimony Equivalents
P eq.	Phosphorus Equivalents
N eq.	Nitrogen Equivalents
CFC-11 eq.	Chlorofluorocarbon-11 Equivalents
CO_2 eq.	Carbon Dioxide Equivalents
kg C	Kilograms of Carbon
kg CO_2 eq.	Kilograms of Carbon Dioxide Equivalent
ND	Not Declared

REFERENCES

a) General Programme Instructions of the International EPD® System. Version 5.01.
b) CONSTRUCTION PRODUCTS ; PCR 2019:14 ; VERSION 2.0.1
c) RESILIENT, TEXTILE AND LAMINATE FLOOR COVERINGS (EN 16810:2017) ; C-PCR-004 (TO PCR 2019:14) ; VERSION 1.0.0 ; c-PCR to PCR 2019:14
d) ISO 14040:2006 Environmental management - Life cycle assessment - Principles and framework
e) ISO 14044:2006 Environmental management - Life cycle assessment - Requirements and
f) guidelines
g) EN 15804+A2:2019 Sustainability of construction works - Environmental product declarations - Core rules for the product category of construction products
h) MME_EPD_Rapport accompagnement Pilote² - Verified LCA report.

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VERSION HISTORY

Version 1, 2020-07-05
The original version of this EPD was developed under the IBU programme (Institut Bauen und Umwelt e.V.), published in 2020, according to EN 15804+A1.

Version 2, 2026-05-26
This EPD is an updated version developed under the International EPD® System. Compared to the previous version, the following main changes have been implemented:

- Alignment with PCR 2019:14 and EN 15804+A2 requirements
- Update of the LCA model and background datasets
- Revised electricity modelling based on renewable energy contracts (Guarantees of Origin)
- Updated end-of-life and Module D assumptions
- Improved documentation and transparency of assumptions and data quality.

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