nurus

Environmental Product Declaration

In accordance with ISO 14025, ISO 21930 :2017, EN15804+A2:2019/AC:2021 for:

CALMA LARGE

from

NUMAŞ TEKNOLOJİ ÜRETİM A.Ş.

Programme:	The International EPD System, www.environdec.com
Programme operator:	EPD International AB
Licensee:	EPD Türkiye
Type of EPD:	EPD of a single product from a manufacturer
EPD registration number:	EPD-IES-0027521
Version date:	2025-12-25
Validity date:	2030-12-24

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): PCR 2019:14. Construction products (EN 15804+A2) Version 2.0.1
PCR review was conducted by: The Technical Committee of the International EPD System A full list of members is available on www.environdec.com. The review panel may be contacted via support@environdec.com
c-PCR: c-PCR-021 Furniture and components of furniture, Version 2.0.1 (adopted from NPCR 026:2024), Valid until: 2027-10-08

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: *Ipek Göktas Kalkan, Göktas Kalkan Ipek TMI* Approved by: International EPD System *EPD process certification involves an accredited certification body certifying and periodically auditing the EPD process and conducting external and independent verification of EPDs that are regularly published. More information can be found in the General Programme Instructions on www.envrondec.com.
Procedure for follow-up of data during EPD validity involves third party verifier: ☐ Yes ☒ No

NUMAŞ TEKNOLOJİ ÜRETİM A.Ş. 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.

INFORMATION ABOUT EPD OWNER

Owner of the EPD: NUMAŞ TEKNOLOJİ ÜRETİM A.Ş.
Address: Oğuz Caddesi 1. Organize San. Blg. No:25 06934 Sincan/Ankara
Contact: Hazal Sena YERLİKAYA, Product Manager - CALMA, Phone: +90 312 589 00 00
Address and contact information of the LCA practitioner commissioned by the EPD owner:

Eren Yaman
ERKE Sustainability Consultancy
www.erkeconsultancy.com
info@erkeconsultancy.com

'Sustainability Consultancy'

Description of the organisation:

Founded in 1927 in Ankara by Nurettin Usta, Nurus has become one of Türkiye's leading furniture manufacturers. Led by third-generation managers Renan and Güran Gökyay, the company blends technology and innovative design to create solutions for work and living spaces. Nurus exports a significant portion of its products globally and emphasizes sustainability with its 2.4 MW solar power plant covering most of its energy needs.

Product-related or management system-related certifications: NURUS's management system is certified against ISO 9001, ISO 14001, ISO 27001, and ISO 45001.

PRODUCT INFORMATION

Product name: CALMA LARGE
Product identification: CALMA LARGE is an acoustic working pod for 2-4 people, with overall dimensions of 144 × 220 × 224 cm (W × D × H).
Visual representation of the product:

UN CPC code: 3812
Product description:

CALMA acoustic pods create private spaces for collaborative sessions, meetings, and focused work. Each pod uses Basotect G+ acoustic foam to reduce both low- and high-frequency noise and achieves ISO 23351-1 Class A sound insulation with a reverberation time of 0.30 s. Flicker-free 2700 K lighting combines dimmable ambient lights. Users can adjust lighting and ventilation through an intuitive touch-screen, while motion sensors and occupancy lights automate daily operation. Integrated Nurus Links provide power, USB and Ethernet connections, making the pods versatile spaces. Sustainability principles are integrated into CALMA's design and manufacturing. The pods are constructed from low VOC materials, including recycled PET felt, and they use an HDF powder coated finish that is scratch- and wear-resistant, UV-stable, and solvent-free. Each unit is manufactured in Nurus's 45 000 m² facility, 95 % vertically integrated and powered by a 2.4 MW rooftop solar-panel system providing around 65 % of the annual electricity demand, significantly reducing the carbon footprints and enabling circular production. CALMA's modular construction and recyclable packaging minimize material waste during manufacturing and transport. The pods are delivered in recyclable crates and can be easily relocated or reconfigured during their lifetime.

Name and location of production site(s): Oğuz Caddesi 1. Organize San. Blg. No:25 06934 Sincan/Ankara/Türkiye

Additional information: You can visit calma.nurus.com for more information.

CONTENT DECLARATION

- **The mass (weight) of one unit of a product, as purchased or per declared unit:** 651.35 kg
- **The mass and the content of distribution and/or consumer packaging:** 92.05 kg
- **Information on the environmental and hazardous/toxic properties of a substances contained in the product:** There are no SVHC substances in the product, or their amounts are below EU regulation limits.
- **Other information on substances with hazardous and toxic properties:** Products do not contain any substances that can be included in "Candidate List of Substances of Very High Concern for Authorization" and raw materials used are not part of the EU REACH regulation.
- **The declared share of biogenic/recycled materials:** CALMA LARGE crafted from sustainable materials, featuring 100% post-consumer recycled polyester fabric. Additionally, the felt component consists of 50% post-consumer recycled polyester. The steel and aluminum components contain a limited amount of recycled content by default. The components containing biogenic carbon in the product are the wooden parts. In addition, the packaging materials—such as paper, cardboard, and pallets—also contain biogenic carbon.

Product components	Weight, kg	Post-consumer material, weight-%	Biogenic material	
			weight-%	kg C/kg
Wood Sections	283.4	0%	23.2%	150.9
Aluminium	56.9	1%	0.0%	0.0
Steel Parts	77.1	4%	0.0%	0.0
Glass	179.7	0%	0.0%	0.0
Plastics	50.7	2%	0.0%	0.0
Electronics	3.6	0%	0.0%	0.0
TOTAL	**651.3**	**7%**	**23.2%**	**150.9**
Packaging materials	**Weight, kg**	**Weight-% (versus the product)**	**Weight biogenic carbon, kg C/kg**	
Stretch	0.2	0.0%	0.0	
Kraft paper	8.4	1.3%	3.3	
Polyester fiber	2.5	0.4%	0.0	
Styrofoam	1.5	0.2%	0.0	
Cardboard box	35.5	5.5%	15.0	
Wooden pallet	44.0	6.8%	19.6	
TOTAL	**92.1**	**14.1%**	**37.9**	

1 kg biogenic carbon in the product/packaging is equivalent to the uptake of 44/12 kg of CO2.

LCA INFORMATION

Functional unit: The lifetime of one CALMA LARGE

Estimated service life: The estimated service life is set at 10 years, based on a conservative estimate provided by the manufacturer, as no products have yet reached their end-of-life

Time representativeness: The goal of this study is to determine the actual environmental loads of the product system using primary data representing a consecutive 12-month production period, specifically from June 2024 through June 2025.

Geographical scope: TR (A3), GLO (A1, A2, A4-C4)

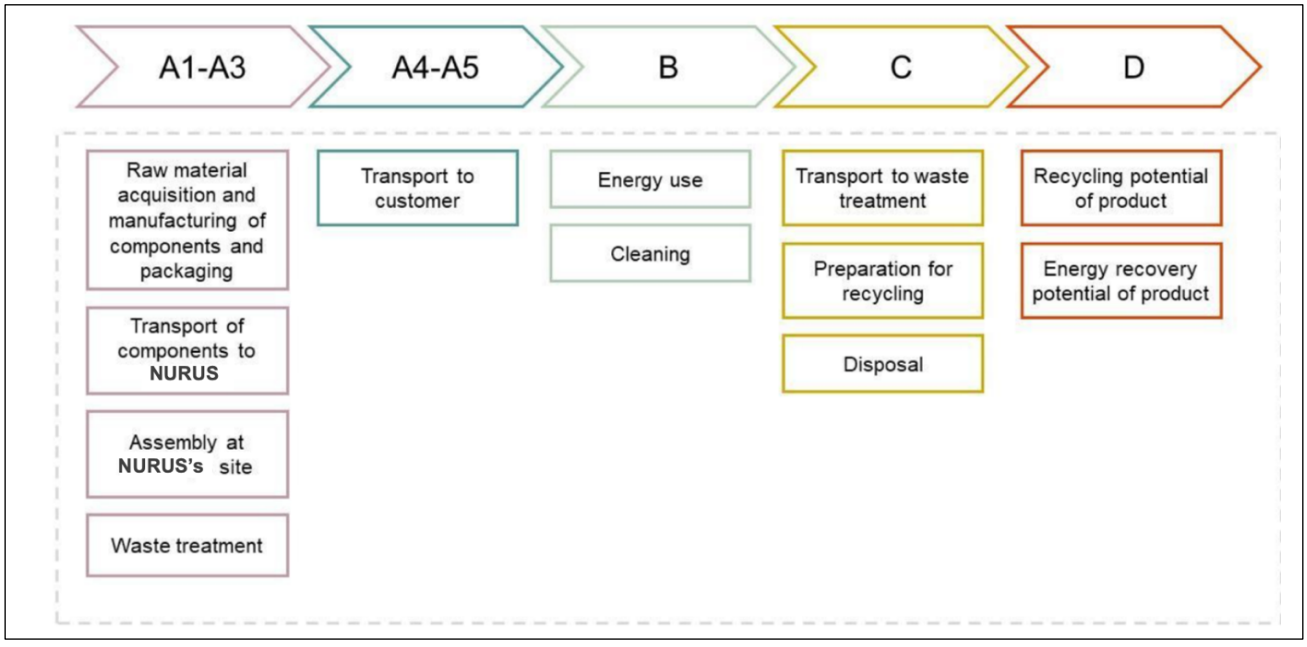
Database(s) and LCA software used: Ecoinvent v3.11 and OpenLCA v2.5.0 based on EF 3.1

Description of system boundaries: Cradle to grave (A-C), and module D.

Excluded lifecycle stages: All modules are included in the scope. Modules B1, B3-B5, B7 and C1 were deemed irrelevant for this product (see justifications below on Calculation assumptions). These are presented as zero in the result tables.

Process flow diagram:

Process flow diagram of the product system, divided into the life-cycle stages and modules (or other division of the product life cycle, if defined in the PCR), showing the main processes included and the system boundary of the LCA. The diagram shall make it clear when the end-of-waste state is reached for main input flows of reused/recycled materials and recovered energy, and for output flows of reused/recycled materials and recovered energy exiting the end-of-life stage.



Cut-off: All inputs and outputs for a (unit) process are included in the calculation, provided that data are available. The applied cut-off criteria are 1% for both renewable and non-renewable primary energy usage and 1% of the total mass input for a unit process in cases of insufficient input data or data gaps.

The total neglected input flows are limited to a maximum of 5% of energy usage and mass. Additionally, the total neglected input and output flows do not exceed 1% of energy usage or mass, as specified in the Product Category Rules (PCR).

The product stage (A1-A3) encompasses the provision of raw materials, transportation, and manufacturing. The end-of-life stage includes the recycling and disposal of final waste, while Module D addresses the benefits of reuse, recovery, and recycling. However, infrastructure, transportation of products to storage at the manufacturing site, the production of manufacturing equipment, and personnel-related activities, which are considered cut-off criteria, are not included in this LCA study. Infrastructure and capital goods for upstream, core, and downstream processes are excluded.

Waste streams arise from the packaging materials of raw materials, auxiliary materials, and raw material losses during production. These losses are sent to recycling facilities. To account for potential environmental effects from recycling, the waste masses are added to the relevant raw materials in Module A1 using economic allocation. Benefits from recovered packaging materials at the installation stage are considered negligible due to the assumption of conservative waste processing practices.No other deductions are made within the scope of this study.

Exceptions apply for substances on the REACH candidate list, whereby a cut-off of 0.1 % applies.

Allocation: The allocation process was conducted by fixing the product output to one unit, with the corresponding product quantity used in the calculations.

An average breakdown was applied based on the total weight of the product in relation to annual production. Accordingly, the total energy and raw materials used in product manufacturing were divided by the total annual production. Raw material inputs, energy inputs, and waste outputs were allocated according to the total annual mass production and calculated for one unit of the product.
Since the production processes for the products are identical, annual production percentages were considered when allocating energy consumption. Given that electricity is used in the production of other products within the factory, the energy share was calculated in proportion to the production quantity.

Economic allocation was applied for co-product. The inherent properties such as biogenic carbon content, energy content and secondary material are allocated based on the actual quantity of the flows.

Calculation assumptions:

The calculation methodology adheres to the specified standards and PCR requirements. Life cycle impacts are characterized in OpenLCA using EN 15804 guidelines, with EF 3.1 factors. Where data gaps exist, or future operations need to be projected, assumptions have been made. In the absence of primary data, conservative assumptions are applied to ensure reliability. The representativeness of secondary data is dependent on the available datasets in OpenLCA.

The study's background documentation details all assumptions, data limitations, and justifications for transparency and clarity.

- **Module A1-A3:**

The product is assembled from components manufactured by various suppliers. Component production includes processes such as raw material extraction and processing, energy and water consumption, transportation, waste management, and emissions. After modeling the components, their transportation to the NURUS production facility is incorporated.

CALMA's production assessment uses data from June 2024 to June 2025. The included operations are logistics, assembly at NURUS's production facility, packaging, and waste management. Mass allocation is used to scale the annual data to a single pod. NURUS utilizes diesel trucks and electric vehicles for internal logistics.

The energy source from Ecoinvent

The inventory data for the generation of electricity used in A1-A3 has been modelled based on residual electricity mix on the market and generated electricity from PV panels installed on the roof of the production facility. The climate impact (GWP-GHG) of the residual electricity mix and the self-generated renewable electricity from PV panels used in the model is 0.89 and 0.06 kg CO_2eq/kWh, respectively. Since there is no residual electricity mix data for Türkiye in the data list, renewables have been removed from consumption mix.

- **Module A4-A5:**

Transportation to the customer is modelled according to the actual market distribution, with 87%, 10% and 3% of annual sales delivered to Markets 1–3 respectively. Depending on destination, shipments use Euro 6 diesel heavy-duty trucks for domestic and regional transport, container ships for long-distance export, and air freight for specific overseas routes. Applied distances are 1,200–1,000 km for road transport, 20,000 km for sea transport and 9,500 km for air transport. Based on the weighted scenario, the total transport work amounts to 836 tkm by lorry, 1,487 tkm by ship, and 212 tkm by plane, modelled using ecoinvent 3.11 EN15804 allocation, cut-off datasets in accordance with PCR 2019:14 v2.0.1 and EN 15804+A2.

In Module A5, the packaging waste generated during installation, together with its transportation and treatment, has been modelled. The end-of-life processes for packaging materials—including separation, sorting for recycling, incineration and landfill—are represented using ecoinvent 3.11 global market average datasets, reflecting internationally representative waste management conditions rather than region-specific recovery rates. Packaging flows are therefore treated through globally averaged recycling and energy-recovery routes consistent with the ecoinvent modelling approach.

- **Module B1-B7:**

Since pod usage produces no direct environmental impacts (emissions or uptake), Module B1 is considered zero according to the PCR.

Module B2 involves cleaning the pod every two weeks using an electric vacuum cleaner. Over the estimated service life, the total electricity demand for cleaning is calculated as 19.5 kWh. Electricity consumption is modelled using global average electricity data, reflecting internationally representative grid conditions rather than location-specific mixes.

No part replacements or refurbishments are expected during the use phase, and there is no data on potential repair operations. In line with the PCR, Modules B3-B5 are considered zero in this study.

Module B6 accounts for the pod's electricity consumption, primarily for lighting, the touch panel, and fans. Depending on usage type, there are three different power levels: maximum, entry-level, and passive mode. NURUS has assessed the average time allocation for these usage types, and total electricity consumption over the pod's 10-year lifespan has been calculated accordingly. Accordingly, 1440 kWh is consumed during the estimated service life. The electricity dataset in B6 is the same as that used in Module B2.

Since the pod does not consume operational water, Module B7 is irrelevant for this product.

- **Module C1-C4:**

The pod is collected separately, and its deconstruction (Module C1) primarily involves manual labor, which is therefore considered zero.

The waste transportation for the pod is accounted for in Module C2. The default transportation distance is 50 km, and the vehicle used is a Euro 6 diesel truck. While actual waste transportation routes and vehicles may vary depending on the location of the use phase, they cannot be precisely tracked in advance.

In Module C3, the pod is separated into its primary material categories and the fractions suitable for recycling undergo preparation processes such as sorting or shredding in accordance with EN 15804. Based on the defined scenario, wood-based materials (MDF, HDF and powder coating; do not enter any recycling route in C3, while 85% of aluminium, 90% of steel , 25% of plastic-based composites and

50% of electronic components are prepared for recycling. The remaining portions of wood-based materials are allocated to energy recovery, equally divided between high-efficiency and low-efficiency incineration (40% each), and the remaining fractions of plastics and electronics proceed to incineration or disposal in later stages. Glass bypasses C3 entirely, as no share is sorted for recycling.

Module C4 includes all final disposal processes for fractions not recycled or recovered. Wood-based materials follow a combined disposal pathway, where 40% is treated through low-efficiency incineration (R1<60), followed by 20% sent to landfill. Aluminium, steel and plastic composites contribute 15%, 10% and 15% to landfill, respectively. The remainder of the plastic composites is incinerated across both high- and low-efficiency energy-recovery routes. Electronics that are not recycled in C3 result in 50% of the fraction being landfilled. Glass is fully directed to landfill due to the absence of a recycling pathway. All disposal and incineration flows are modelled using ecoinvent 3.11 EN15804 datasets to ensure consistency with the LCA model.

- **Module D:**

Potentially avoidable burdens resulting from waste recovery are evaluated in Module D. The scope of this evaluation includes materials, energy recovered in Module C3.

Module D accounts for the potential benefits generated from recovered secondary materials and energy produced during incineration. Recycled material flows from C3—namely aluminium, steel, recycled portions of plastics, and the recoverable fraction of electronics—are credited with substituting the production of equivalent primary materials outside the system boundary. Energy recovered from incineration processes in both R1>60 and R1<60 facilities is credited based on recovery efficiencies of 25% electricity and 45% heat for high-efficiency plants, and 20% electricity and 10% heat for low-efficiency plants. Recovered heat is assumed to displace heat produced from natural gas, and recovered electricity displaces global average grid electricity. No additional co-product benefits are assigned beyond these recycling and energy-recovery credits.

There is no benefit from allocated co-products.

Data quality assessment: Primary data were collected from the production facility of Nurus for the reference year 2024 and are representative of annual average operation. All activity data related to raw material use, electricity consumption, process emissions, packaging, and waste management in modules A1–A3 originate from site-specific measurements and records. Secondary data were sourced from ecoinvent 3.11 (EN 15804 +A2) datasets, representing global or European averages when no local dataset was available.

The data quality can be considered good to very good, as the study is predominantly based on recent, site-specific primary data that accurately represent actual operations. The reliance on reputable secondary datasets (ecoinvent 3.11) further supports consistency and reliability. Minor limitations stem from the use of non-local secondary datasets where regional data were unavailable, but these do not significantly compromise the overall representativeness of the LCA.

Modules declared, geographical scope, share of primary 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
SYSTEM BOUNDARY	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
ecoinventgraphy	GLO	GLO	TR	GLO	GLO	GLO	GLO	GLO	GLO	GLO	GLO	GLO	GLO	GLO	GLO	GLO	GLO
Specific data used	11 %			-	-	-	-	-	-	-	-	-	-	-	-	-	-
Variation – products	0 %			-	-	-	-	-	-	-	-	-	-	-	-	-	-
Variation – sites	0 %			-	-	-	-	-	-	-	-	-	-	-	-	-	-

Process	Source type	Source	Reference year	Data category	Share of primary data, of GWP-GHG results for A1-A3
Generation and use of heat in manufacturing	Database	Ecoinvent v3.11	2024	Primary data	4%
Generation of electricity used in manufacturing of product	Database	Ecoinvent v3.11	2024	Primary data	2%
Transport of components to manufacturing site	Database	Ecoinvent v3.11	2024	Primary data	5%
Total share of primary data, of GWP-GHG results for A1-A3					11%

ENVIRONMENTAL PERFORMANCE

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

Modules that have 0 as entries are excluded from the result tables in the rest of this document to increase legibility of the results.

Mandatory impact category indicators according to EN 15804

Results per functional or declared unit										
Indicator	**Unit**	**A1-A3**	**A4**	**A5**	**B2**	**B6**	**C2**	**C3**	**C4**	**D**
GWP-fossil	kg CO_2 eq.	2.05E+3	3.59E+2	6.32E+0	1.32E+1	9.76E+2	6.45E+0	4.45E+1	4.15E+1	-6.53E+2
GWP-biogenic	kg CO_2 eq.	-5.63E+2	7.51E-2	1.39E+2	7.78E-2	5.75E+0	1.92E-3	2.22E+2	3.32E+2	4.44E-1
GWP-luluc	kg CO_2 eq.	6.64E+0	9.77E-2	1.12E-3	2.79E-2	2.06E+0	2.95E-3	4.14E-3	2.53E-3	-1.23E+0
GWP-total	kg CO_2 eq.	1.49E+3	3.59E+2	1.45E+2	1.33E+1	9.84E+2	6.45E+0	2.67E+2	3.73E+2	-6.54E+2
ODP	kg CFC 11 eq.	1.43E-4	5.11E-6	3.63E-8	8.33E-8	6.15E-6	8.70E-8	1.08E-7	1.03E-7	-5.37E-6
AP	mol H^+ eq.	1.34E+1	1.58E+0	3.69E-2	6.59E-2	4.87E+0	1.55E-2	7.68E-2	4.62E-2	-3.15E+0
EP-freshwater [1]	kg P eq.	9.23E-1	2.12E-2	9.01E-4	6.38E-3	4.71E-1	7.03E-4	1.83E-3	1.62E-3	-2.28E-1
EP-marine	kg N eq.	2.62E+0	5.01E-1	5.28E-2	1.34E-2	9.86E-1	3.55E-3	3.77E-2	5.76E-2	-5.89E-1
EP-terrestrial	mol N eq.	2.78E+1	5.48E+0	1.96E-1	1.34E-1	9.86E+0	3.84E-2	3.65E-1	2.16E-1	-6.19E+0
POCP	kg NMVOC eq.	9.34E+0	1.93E+0	6.04E-2	3.94E-2	2.91E+0	2.09E-2	1.03E-1	6.36E-2	-2.06E+0
ADP-minerals&metals [2]	kg Sb eq.	6.20E-2	6.19E-4	6.51E-6	1.29E-5	9.56E-4	2.20E-5	3.46E-5	1.00E-5	1.21E-4
ADP-fossil [2]	MJ	2.51E+4	4.83E+3	3.03E+1	1.48E+2	1.09E+4	8.92E+1	9.47E+1	8.44E+1	-7.72E+3
WDP [2]	m^3	7.36E+2	1.61E+1	2.42E+0	3.35E+0	2.48E+2	4.79E-1	6.81E+0	8.97E+0	-1.25E+2
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									

[1] Required characterisation method and data are in kg P-eq. Multiply by 3.07 to get PO4e.
[2] 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**	**B2**	**B6**	**C2**	**C3**	**C4**	**D**
GWP-GHG[1]	kg CO_2 eq.	2.18E+3	3.59E+2	6.32E+0	1.33E+1	9.84E+2	6.45E+0	4.57E+1	4.15E+1	-6.54E+2
PM	Disease inc.	2.37E-4	1.41E-5	1.47E-5	6.08E-7	4.49E-5	4.69E-7	2.18E-6	7.06E-7	-6.17E-5
IRP[2]	kBq U-235 eq	1.57E+2	2.59E+0	3.14E-2	1.86E+0	1.37E+2	7.26E-2	1.59E-1	8.06E-2	-3.77E+1
ETP-fw[3]	CTUe	8.70E+4	5.34E+2	1.82E+2	3.67E+2	2.71E+4	1.64E+1	1.05E+3	7.68E+4	-1.93E+4
HTP-c[3]	CTUh	2.26E-6	4.15E-8	1.52E-8	1.50E-9	1.11E-7	1.07E-9	1.32E-8	7.10E-9	-1.69E-7
HTP-nc[3]	CTUh	2.66E-5	3.28E-6	3.90E-7	7.74E-8	5.72E-6	5.60E-8	4.01E-7	3.74E-7	6.70E-8
SQP[3]	dimensionless	5.89E+4	1.53E+3	4.32E+1	2.50E+1	1.84E+3	5.34E+1	6.49E+1	1.55E+2	-1.05E+3
Acronyms	GWP-GHG = Global Warming Potential greenhouse gases, PM = Particulate Matter emissions, IR = Ionizing radiation, human health, SQP = Land use related impacts/Soil quality, HTTP-C = Human toxicity, cancer effects, HTTP-NC = Human toxicity, non-cancer effects									

[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.
[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 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.

Resource use indicators

Results per functional or declared unit										
Indicator	**Unit**	**A1-A3**	**A4**	**A5**	**B2**	**B6**	**C2**	**C3**	**C4**	**D**
PERE	MJ	8.44E+3	4.22E+1	1.08E+3	2.36E+1	1.74E+3	1.26E+0	5.36E+2	2.13E+3	-7.71E+2
PERM	MJ	5.51E+3	0.00E+0	-1.08E+3	0.00E+0	0.00E+0	0.00E+0	-1.77E+3	-2.66E+3	0.00E+0
PERT	MJ	1.40E+4	4.22E+1	4.58E-1	2.36E+1	1.74E+3	1.26E+0	-1.24E+3	-5.29E+2	-7.71E+2
PENRE	MJ	2.58E+4	4.83E+3	1.99E+2	1.77E+2	1.31E+4	8.92E+1	2.78E+2	8.10E+2	-7.81E+3
PENRM	MJ	2.11E+3	0.00E+0	-1.68E+2	0.00E+0	0.00E+0	0.00E+0	-1.03E+3	-9.13E+2	3.32E+2
PENRT	MJ	2.79E+4	4.83E+3	3.09E+1	1.77E+2	1.31E+4	8.92E+1	-7.49E+2	-1.03E+2	-7.48E+3
SM	kg	6.39E+1	1.31E+0	2.52E-2	1.86E-2	1.37E+0	3.97E-2	1.22E-1	6.46E-2	9.78E+1
RSF	MJ	1.10E+3	1.45E-2	2.78E-4	9.07E-5	6.70E-3	5.18E-4	1.94E-3	7.61E-4	-9.64E-3
NRSF	MJ	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0
FW	m^3	1.66E+1	4.33E-1	2.71E-2	7.86E-2	5.80E+0	1.23E-2	7.62E-2	-8.74E-1	-4.02E+0
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**	**B2**	**B6**	**C2**	**C3**	**C4**	**D**
Hazardous waste disposed	kg	2.83E+2	6.44E+0	1.85E+0	1.25E+0	9.24E+1	2.04E-1	1.58E+0	1.40E+0	-1.04E+2
Non-hazardous waste disposed	kg	8.01E+3	1.25E+2	9.96E+1	3.08E+1	2.28E+3	3.94E+0	1.41E+2	8.05E+2	-5.02E+2
Radioactive waste disposed	kg	3.99E-2	6.32E-4	7.82E-6	4.52E-4	3.34E-2	1.78E-5	3.93E-5	1.99E-5	-9.19E-3

Output flow indicators

Results per functional or declared unit										
Indicator	**Unit**	**A1-A3**	**A4**	**A5**	**B2**	**B6**	**C2**	**C3**	**C4**	**D**
Components for re-use	kg	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0
Material for recycling	kg	2.30E+1	2.13E-1	4.53E-4	1.17E-2	8.64E-1	1.02E-3	1.32E+2	1.56E-3	3.16E-1
Materials for energy recovery	kg	2.75E-3	1.86E-4	2.84E-6	1.56E-5	1.15E-3	6.06E-6	1.07E-5	7.36E-6	-1.40E-3
Exported energy, electricity	MJ	3.07E+1	2.69E-1	3.64E-3	2.07E-1	1.53E+1	7.56E-3	5.94E+2	4.75E+2	-6.74E-1
Exported energy, thermal	MJ	3.22E+1	3.91E-1	6.50E-3	7.23E-3	5.34E-1	1.35E-2	1.07E+3	2.37E+2	-1.06E+0

Mass balance approaches (MBAs), to claim, for example, biobased, renewable, and/or recycled product content, are not applied.

The use of the results of modules A1-A3 without considering the results of module C is not encouraged.

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.

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

Alternative end-of-life (EOL) scenarios have been developed to represent cases providing minimum and maximum benefits, as illustrated by the LCA results below. Recycling all components of the product delivers the highest benefit to the subsequent product system. Conversely, treating all components of the product in landfill without any recovery provides no contribution to the subsequent product system.

Results per functional or declared unit (100% recycling and 100% landfill)							
		100% recycling			100% landfill		
Indicator	**Unit**	**C3**	**C4**	**D**	**C3**	**C4**	**D**
GWP-fossil	kg CO_2 eq.	2.68E+1	0.00E+0	-5.15E+2	0.00E+0	1.13E+1	0.00E+0
GWP-biogenic	kg CO_2 eq.	5.56E+2	0.00E+0	-4.68E+2	0.00E+0	5.53E+2	0.00E+0
GWP- luluc	kg CO_2 eq.	5.22E-2	0.00E+0	-1.05E+0	0.00E+0	4.67E-3	0.00E+0
GWP-total	kg CO_2 eq.	5.83E+2	0.00E+0	-9.84E+2	0.00E+0	5.65E+2	0.00E+0
ODP	kg CFC 11 eq.	3.11E-7	0.00E+0	-5.35E-6	0.00E+0	1.75E-7	0.00E+0
AP	mol H^+ eq.	1.56E-1	0.00E+0	-2.91E+0	0.00E+0	4.85E-2	0.00E+0
EP-freshwater	kg P eq.	6.61E-3	0.00E+0	-1.73E-1	0.00E+0	2.87E-3	0.00E+0
EP-marine	kg N eq.	6.26E-2	0.00E+0	-5.41E-1	0.00E+0	2.17E-1	0.00E+0
EP-terrestrial	mol N eq.	6.03E-1	0.00E+0	-5.86E+0	0.00E+0	2.02E-1	0.00E+0
POCP	kg NMVOCe.	1.89E-1	0.00E+0	-2.06E+0	0.00E+0	7.69E-2	0.00E+0
ADP-minerals &metals	kg Sb eq.	1.01E-4	0.00E+0	-1.02E-4	0.00E+0	1.31E-5	0.00E+0
ADP-fossil	MJ	3.13E+2	0.00E+0	-7.00E+3	0.00E+0	1.53E+2	0.00E+0
WDP	m^3	4.36E+0	0.00E+0	-1.46E+2	0.00E+0	6.86E+0	0.00E+0

Results per functional or declared unit (100% recycling and 100% landfill)							
		100% recycling			100% landfill		
Indicator	**Unit**	**C3**	**C4**	**D**	**C3**	**C4**	**D**
GWP-GHG	kg CO_2 eq.	2.95E+1	0.00E+0	-5.08E+2	0.00E+0	1.13E+1	0.00E+0
PM	Disease inc.	4.89E-6	0.00E+0	-6.92E-5	0.00E+0	1.11E-6	0.00E+0
IRP	kBq U-235 eq	1.15E+0	0.00E+0	-1.38E+1	0.00E+0	1.34E-1	0.00E+0
ETP-fw	CTUe	3.39E+3	0.00E+0	-1.78E+4	0.00E+0	5.11E+5	0.00E+0
HTP-c	CTUh	2.20E-8	0.00E+0	-3.69E-7	0.00E+0	2.15E-9	0.00E+0
HTP-nc	CTUh	3.05E-7	0.00E+0	6.46E-7	0.00E+0	2.24E-7	0.00E+0
SQP	dimensionless	2.84E+2	0.00E+0	-1.23E+4	0.00E+0	3.55E+2	0.00E+0

Results per functional or declared unit (100% recycling and 100% landfill)							
		100% recycling			100% landfill		
Indicator	Unit	C3	C4	D	C3	C4	D
PERE	MJ	-2.81E+3	0.00E+0	-1.73E+3	0.00E+0	4.43E+3	0.00E+0
PERM	MJ	-4.43E+3	0.00E+0	3.81E+3	0.00E+0	-4.43E+3	0.00E+0
PERT	MJ	-7.24E+3	0.00E+0	2.08E+3	0.00E+0	4.09E+0	0.00E+0
PENRE	MJ	3.32E+2	0.00E+0	-5.12E+3	0.00E+0	2.09E+3	0.00E+0
PENRM	MJ	-1.94E+3	0.00E+0	1.53E+3	0.00E+0	-1.94E+3	0.00E+0
PENRT	MJ	-1.61E+3	0.00E+0	-3.59E+3	0.00E+0	1.47E+2	0.00E+0
SM	kg	3.31E-1	0.00E+0	5.67E+2	0.00E+0	5.27E-2	0.00E+0
RSF	MJ	4.54E-3	0.00E+0	-2.47E+0	0.00E+0	1.04E-3	0.00E+0
NRSF	MJ	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0
FW	m^3	-1.86E-1	0.00E+0	-4.60E+0	0.00E+0	-2.11E+0	0.00E+0

Results per functional or declared unit (100% recycling and 100% landfill)							
		100% recycling			100% landfill		
Indicator	Unit	C3	C4	D	C3	C4	D
Hazardous waste disposed	kg	1.55E+0	0.00E+0	-1.04E+2	0.00E+0	3.10E-1	0.00E+0
Non-hazardous waste disposed	kg	2.31E+2	0.00E+0	-3.89E+2	0.00E+0	1.52E+3	0.00E+0
Radioactive waste disposed	kg	2.86E-4	0.00E+0	-3.35E-3	0.00E+0	3.27E-5	0.00E+0

Results per functional or declared unit (100% recycling and 100% landfill)							
		100% recycling			100% landfill		
Indicator	Unit	C3	C4	D	C3	C4	D
Components for re-use	kg	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0
Material for recycling	kg	6.51E+2	0.00E+0	9.32E-1	0.00E+0	2.63E-3	0.00E+0
Materials for energy recovery	kg	4.10E-5	0.00E+0	-1.72E-1	0.00E+0	9.98E-6	0.00E+0
Exported energy, electricity	MJ	1.46E-1	0.00E+0	-7.59E-1	0.00E+0	6.74E-2	0.00E+0
Exported energy, thermal	MJ	5.33E-2	0.00E+0	-1.38E+0	0.00E+0	1.87E-2	0.00E+0

ADDITIONAL SOCIAL AND ECONOMIC INFORMATION

With Indoor Air Quality Gold, CE, and FSC certifications, CALMA products comply with rigorous environmental standards and provide a professional and comfortable meeting environment.

ABBREVIATIONS

Abbreviation	Definition
General Abbreviations	
EN	European Norm (Standard)
EF	Environmental Footprint
GPI	General Programme Instructions
ISO	International Organization for Standardization
CEN	European Committee for Standardization
SVHC	Substances of Very High Concern
ND	Not Declared
REACH	Registration, Evaluation, Authorisation and Restriction of Chemicals
VOC	Volatile Organic Compounds
FSC	Forest Stewardship Council

REFERENCES

• General Programme Instructions of the International EPD® System. Version 5.0.1.
• PCR 2019:14 Construction products v2.0.1.
• Furniture and components of furniture (c-PCR to PCR 2019:14) (adopted from EPD Norway) (2.0.1)
• EN 15804:2012+A2:2019: Sustainability of construction works — Environmental product declarations — Core rules for the product category of construction product
• ISO 14040: 2006 Environmental management - Life cycle assessment - Principles and framework
• ISO 14044: 2006 Environmental management - Life cycle assessment - Requirements and Guidelines
• ISO 14020: 2002 Environmental labels and declarations- General principles
• ISO 14025: 2006 Environmental labels and declarations - Type III environmental declarations - Principles and procedures
• The International EPD® System; www.environdec.com
• openLCA Software, ecoinvent 3.11 database; https://www.openlca.org/openlca

VERSION HISTORY

Original Version of the EPD, 2025-12-25

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