Environmental Product Declaration

In accordance with ISO 14025, ISO14040/14044 and NEN-EN 15804+A2:2019

TVM 5445

Vogel's Full-Motion + TV Wall Mount

EPD Issue date
01/05/2025

Expiration date
01/05/2030

Vogel's. For Sure.

General information

This environmental product declaration was drawn up on 01/05/2025 and complies with the requirements stated in the NEN-EN ISO 14040 (1), NEN-EN ISO 14044 (2), NEN-EN 15804+A2:2019 (3).
This EPD is a self-declared EPD, independently verified by an accredited LCA verifier. This EPD transparently describes the potential environmental impacts associated with the identified life cycle stages of the described product. EPD data may not be comparable if the datasets used are not developed in accordance with the above mentioned LCA standards and if the background systems are not based on the same database version.

EPD Program	Self-Declared EPD
LCA-standard & method	NEN-EN ISO 14025, NEN-EN ISO 14040/14044, NEN-EN 15804+A2:2019
EPD Type	Cradle to grave; no stages were omitted.
EPD owner / Manufacturer	**Vogel's Products B.V.** Hondsruglaan 93 5628DB, Eindhoven The Netherlands www.vogels.com
LCA Report Prepared by	**Vogel's Products B.V.** Stefan Luijben Saskia Smits Fieke Jagtman
LCA Software	EcoChain Mobius **Ecochain** H.J.E. Wenchebachweg 123 1096 AM, Amsterdam The Netherlands
Background data	Ecoinvent database version 3.8
Year of Study	2024
Geographic Representation	Europe
EPD Prepared By	**Vogel's Products B.V.** Stefan Luijben Saskia Smits Fieke Jagtman
LCA reviewer	**EcoReview NL B.V.** Bijsterhuizen 4019-023 6604 LW, Wijchen The Netherlands +31 (0)85 40 08 515 www.ecoreview.nl

Verification statement

Validity: This EPD has been verified in accordance with the above mentioned LCA standards and is valid for 5 years from the date of issue.
Issue date: 01/05/2025
End of validity: 01/05/2030

Independent third-party verification statement:

DEMONSTRATION OF VERIFICATION	
CEN standard EN15804 serves as the core PCR(a)	
Independent verification of the declaration on data according to ISO14025 and 15804+A2(+indicators A1)	
internal	external: X
Tim Mol, EcoReview NL B.V. 	
[a] PCR = Product Category Rules	

Company

What began as a personal quest for perfection has evolved into an international successful company that manufactures a highly distinctive range of mounts and support systems for audio/video & multimedia equipment. Our products combine versatile functionality and robust performance with sleek design. For more than 50 years, Vogel's solutions have been based on the talent and commitment of people who care passionately about the products they create and the customers who use them.

Corporate social responsibility is an indispensable part of how we work. Respect for people and planet is an important value. Every day we work hard to make steps towards a more sustainable future.

Vogel's believes open, transparent and reliable communication of accurate quantitative environmental data with our stakeholders such as customers, suppliers, governments, users and others, is essential to continuously improve the footprint of Vogel's products.

When you are looking for an accessory to complete your valued AV equipment, not just anything will do. You choose only the solution you can be sure of. You choose high-quality materials. Products made with respect for people and the planet.
Products that are easy to install, and intuitive to use. That keep your equipment safe and hanging level. With first-class service and support too. A solution that suits you and your TV perfectly.

Vogel's. For Sure.

Scope

Reference Unit

The basis for conducting this life cycle analysis is a functional unit.
The functional unit encompasses the production, transport, installation, use and waste processing of one piece of TVM 5445 Full-Motion + Wall Mount including packaging and everything included in the box as sold by Vogel's Products BV

What's included the box (see Figure 1):

- Product (Main product assembly, product components)
- Packaging (cardboard lid, cardboard box, warranty leaflet, paper pulp interior, mounting kits, drilling template, manual/quick install guide)

Figure 1: Packaging contents

Product Description

With the elegant ELITE Full-Motion + TV wall mount, you're choosing design and performance. The wall mount is specially designed for TVs from 32 to 65 inches in size and weighing up to 35 kg, and can be Full-Motioned up to 180°, allowing you to optimally enjoy your TV from any corner in the room. In the starting position, there is only 4 cm between the TV and the wall.
Main functionality:
- Highest load capacity due to 3-arm construction
- Slimmest construction (40mm flat to wall)
- Highest extension. Up to 72mm more extension for double arm wall mounts compared with Comfort wall mounts.
- Smooth stepless leveling adjustment.
- Rotation up to 180° for double arm versions depending on screen size.
- Integrated cable management

Product Specifications

Product specifications	
Series	Elite
Type Nr.	TVM 5445
Colours	White & Black
Screen size (inch)	32 - 65
Max load (kg)	35
VESA pattern (mm)	100 x 100 – 400 x 400
Extension (min – max, mm)	40 – 562
Rotation angle	Up to 180°
Tilt range	-
Reference Service Life	10 Years

Table 1: Product specifications of Vogels Full Motion TV Wall Mounts

At Vogel's Products, TV Mounts are built to last. The expected life span is likely to exceed the warranty life span. Endurance tests are conducted on all Vogels TV mounts for at least 5,000 cycles. All smooth tilt mechanisms are tested for 1000 cycles. Endurance tests represent use for a minimum period of ten years.

Product Packaging

Vogel's has put much effort into designing a mono material packaging where possible; made of paper and paper pulp. The entire packaging can be easily recycled through standard recycling processes.

Process Description

All phases of life cycle analysis were included in the study. The scope of the analysis is 'cradle-to-grave'. (See Figure 2: Process tree of Vogel's Full Motion TV Wall Mounts)

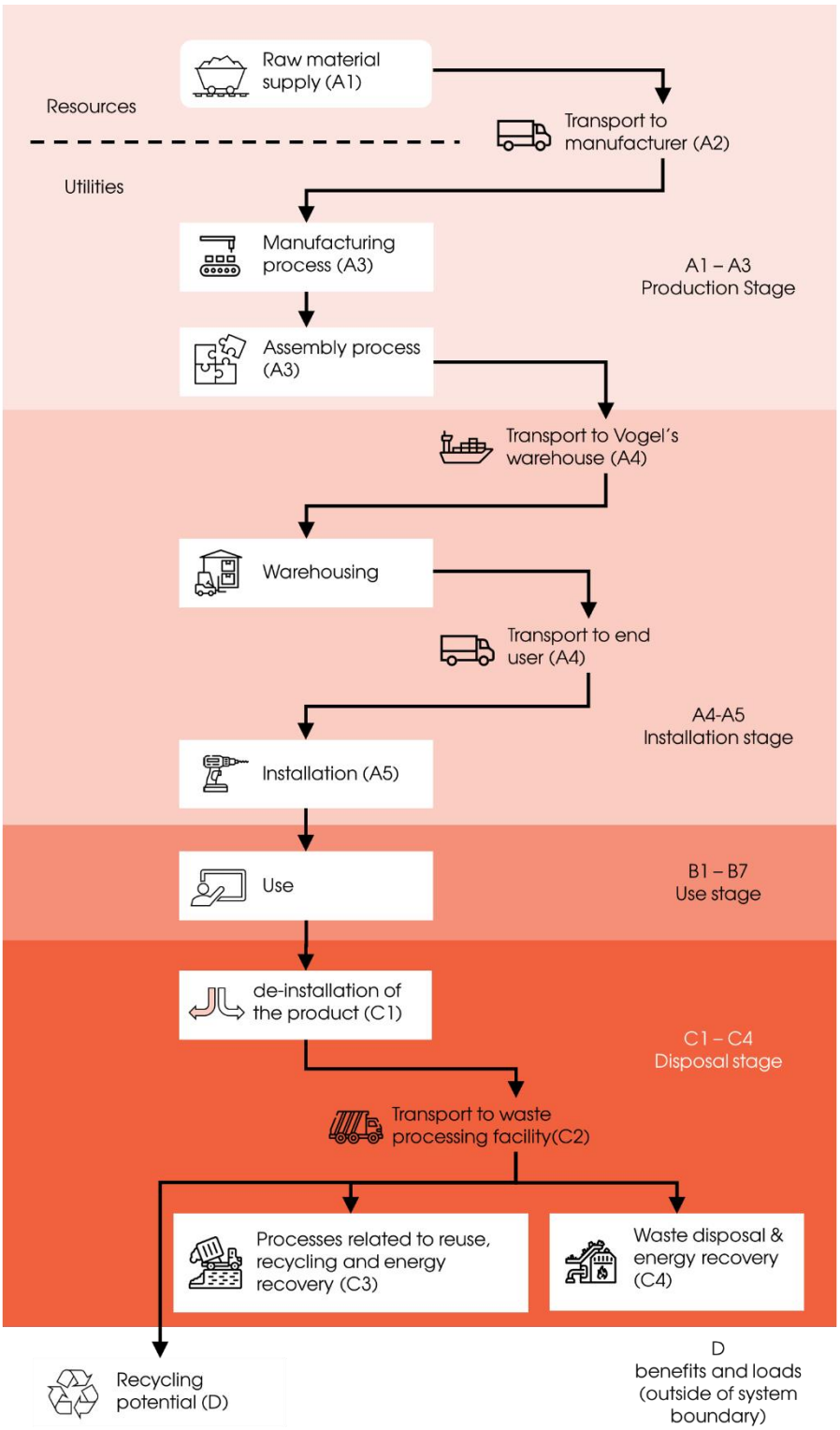

Figure 2: Process tree of Vogel's Full Motion TV Wall Mounts

Life cycle inventory Analysis

Data representation

The data used concerning manufacturing the TVM 5445 is based on the 2024 production status. Data has been modelled using the database ecoinvent v3.8. Calculations were performed in Ecochain Mobius is v1.1.98 .

Based on our design specifications and chosen production methods representative datasets were selected from ecoinvent v3.8 using the Ecochain Mobius platform. No primary data was collected on the materials or production processes.

System boundary and cut off criteria

All relevant inputs and outputs - like emissions, energy and materials - have been taken into account in this LCA in accordance with NEN-EN 15804+A2:2019.

Great care has been taken in conducting the LCA to ensure no more than 1% of energy usage and mass have been neglected for each unit process. The total neglected input flows per module do not exceed 5% of energy usage and mass.

Waste treatment processes have been allocated to the module in which they are generated. This means that the environmental impacts of processes required to achieve end-of-waste status are assigned to the life cycle of the original product. When materials reach the end-of-waste stage, these secondary materials are "free of charge". When the value of these secondary materials is increased after reaching end-of-waste status, which is the case for example in certain reprocessing processes, the environmental impact of the reprocessing process is allocated to the life cycle of the secondary materials.

Data Quality

Supplier specific process data could not be collected. For production of components, market-average references from ecoinvent v3.8 are used to calculate impacts.

The study is fully reproducible. In this context, the references of all sources, both primary and public sources and literature, have been documented in the LCA background report.

Inventory and allocation

This section discusses the quantity, quality and allocation of various materials, energy flows and emissions. It considers the requirements for system boundaries, as stated in NEN-EN 15804+A2:2019

Module A1- Raw materials

All relevant materials in production phase A1 have been included in this study. The composition of TVM 5445 product family was determined using Vogel's design and production specifications.

Material		Quantity	Unit
Product	Steel	6,022	Kg
	Chromium steel	0,000	Kg
	Acrylonitrile butadiene styrene (ABS)	0,252	Kg
	Nylon (PA66)	0,038	Kg
	Thermoplastic Elastomer (TPE)	0,018	Kg
	Plastics, Other	0,030	Kg
Packaging	Cardboard & Paper pulp	1,295	Kg
	LD-PE plastic packaging film	0,010	Kg
Total Weight		**8,015**	**Kg**

Table 2: Composition of TVM 5445

None of the substances contained in the product are listed in the "Candidate List of Substances of Very High Concern for authorization", or they do not exceed the threshold with the European Chemicals Agency.

Module A2 - Transport

Transport of materials to the manufacturer is not included separately in the calculations as this is largely already included in the data cards of materials and processes. In some data cards it is stated that the transport is deemed irrelevant for the total impact of the material or process. When this is stated, the transport is considered negligible for our impact and not added separately.

Module A3 - Production

All relevant production processes in phase A3, such as internal transport and potential production losses, have been included in this study. The production site has no hazardous waste streams that need to be reported.

Module A4 - Transport

The transport from the manufacturer to the Vogel's distribution center are assigned separately in the A4 module.
The reference in tonne kilometer is calculated using the weight of the product and the actual transport distance. Vogel's calculates actual distances for transport from factory to warehouse instead of market averages.

For transport from warehouse to consumer/end user, specific information is not available. Vogel's uses the default transport scenario from PEF Annex 1 and 2 to calculate the impact. Distribution from factory directly to end-user/consumer does not occur.

All products are distributed from the storage warehouse. The ratio between products sold through retail and directly from warehouse to end-user is derived from actual sales data. Sales through Vogel's Webshop are delivered directly from Vogel's warehouse to consumer /end user. Remaining products are sold through retailers, both online and physical stores (see Figure 3)

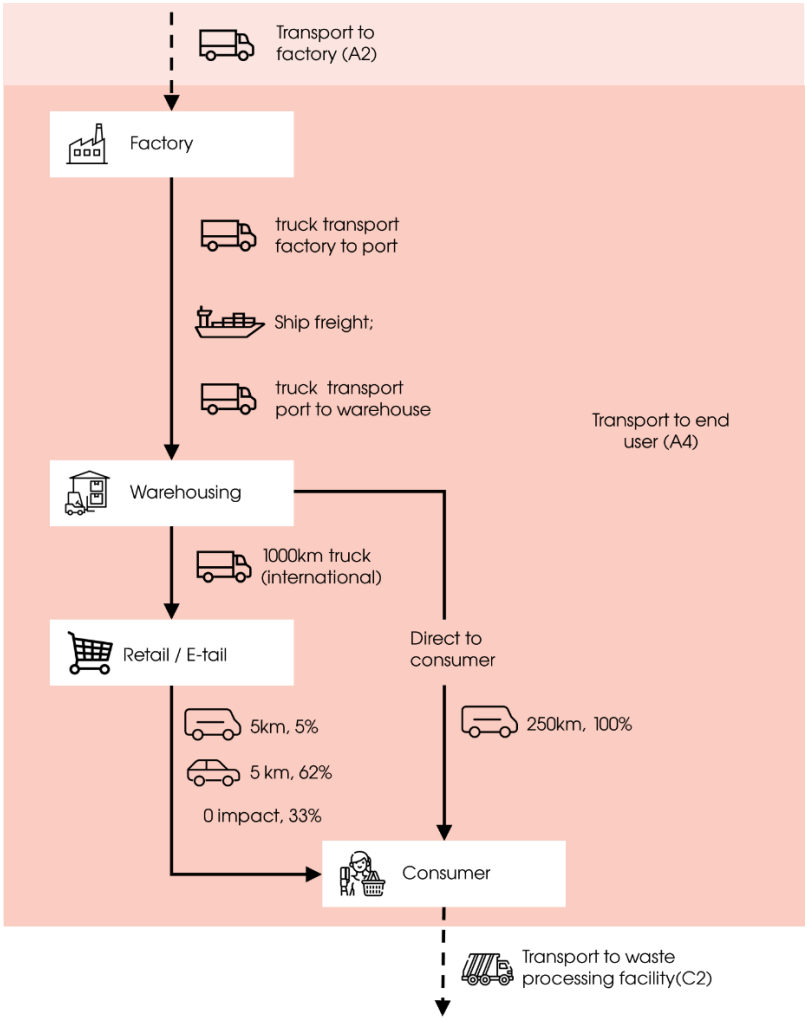

Figure 3: Specific application of default transport scenario from factory to client (PEF Annex 1 and 2) for Vogel's Full Motion+ TV wall mounts

Module A5 - Installation

Product installation, including drilling of holes to mount the product to the wall, as well as waste processing of packaging materials is seen as the impact of the installation phase (A5).

The disposal and treatment of the packaging material is included in this phase because it is disposed of at the customer location.

Losses of product during transportation and installation is considered negligible.

Module B2-B5- Maintenance and replacements .

The product consumes no resources or materials when in use and the applied materials do not cause emissions when in use. The product is free of maintenance. A period of use is not relevant for any emission or used resources.

Module C1 - Deinstallation

For deconstruction of the product, manual deinstallation is considered to be the applied method. No resources are used and no emissions are caused.

Module C2 - Transport to waste processing facility

All transport, provision of all materials, products and related energy and water use regarding transport to waste processing and waste processing are included.

Module C3 - Process related to reuse, recycling, and/or energy recovery & C4 Waste Disposal and energy recovery.

The following values are applicable for the modules C3 and C4. Waste streams are calculated using PEF ver. 6.3 Annex C from the European Platform on LCA. The recycling rate per material is used from R2, and the leftover material is split based on European Union 28 countries values from R3. As metals cannot be incinerated, it is assumed that when not recycled, these are fully placed in landfill.

Material Group	Landfill %	Incineration %	Recycling %	Product re-use%
Metals, sheet material	5	0	95	0
Metals Other	15	0	85	0
Plastics	54.75	45.25	0	0
Plastics (packaging)	39	32	29	0
Packaging paper & Carton	13.9	11.49	75	0

Table 3: Waste Scenarios C3-D

Module C4 - End of waste

When part of the used materials is recovered, this recovered material ceases to be waste. The benefits of the recovered materials are all calculated in module D, but the costs needed for the recovery process are accounted for in module C3 and C4.

Module D - Environmental charges and benefits beyond the system boundary

Module D includes the benefits and burdens of recycling, reuse or energy generation from burning waste. The energy saved as a result of incinerating Vogel's TVM 5445 Full-Motion + TV Wall Mount components in a waste-to-energy incinerator (WWTP) is included in Module D.

Environmental Indicators

Impact category name	Reference Unit	A1-3	A4	A5	B	C1	C2	C3	C4	D	Total
Climate change - total (GWP-t)	kg CO2 eq	2.11E+01	2.25E+00	2.05E+00	0.00E+00	0.00E+00	3.27E-02	5.51E-01	2.33E-02	-7.16E+00	**1.89E+01**
Climate change - fossil (GWP-f)	kg CO2 eq	2.29E+01	2.25E+00	2.00E-01	0.00E+00	0.00E+00	3.27E-02	5.51E-01	2.33E-02	-7.17E+00	**1.88E+01**
Climate change - biogenic (GWP-b)	kg CO2 eq	-1.78E+00	0.00E+00	1.85E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	**6.98E-02**
Climate change - land use and LU change (GWP-luluc)	kg CO2 eq	2.87E-02	1.31E-03	1.24E-04	0.00E+00	0.00E+00	1.19E-05	1.40E-04	3.72E-06	4.72E-03	**3.50E-02**
Ozone depletion (ODP)	kg CFC11 eq	1.32E-06	4.82E-07	3.28E-08	0.00E+00	0.00E+00	7.87E-09	1.90E-08	1.24E-09	-3.04E-07	**1.56E-06**
Acidification (AP)	mol H+ eq	1.05E-01	4.70E-02	1.01E-03	0.00E+00	0.00E+00	1.66E-04	1.01E-03	3.27E-05	-2.47E-02	**1.29E-01**
Eutrophication, freshwater (EP-fw)	kg P eq	1.05E-03	1.17E-05	4.47E-06	0.00E+00	0.00E+00	2.26E-07	5.78E-06	5.29E-08	-2.19E-04	**8.57E-04**
Eutrophication, marine (EP-m)	kg N eq	2.40E-02	1.21E-02	5.30E-04	0.00E+00	0.00E+00	5.67E-05	3.84E-04	3.30E-05	2.99E-03	**4.00E-02**
Eutrophication, terrestrial (EP-t)	mol N eq	2.31E-01	1.34E-01	3.45E-03	0.00E+00	0.00E+00	6.24E-04	3.20E-03	1.21E-04	-6.24E-02	**3.10E-01**
Photochemical ozone formation (POCP)	kg NMVOC eq	8.88E-02	3.53E-02	1.13E-03	0.00E+00	0.00E+00	1.86E-04	8.87E-04	3.96E-05	3.30E-02	**1.59E-01**
Resource use, minerals and metals (ADP-mm)	kg Sb eq	3.85E-04	4.39E-06	8.94E-07	0.00E+00	0.00E+00	7.56E-08	4.35E-06	1.05E-08	-2.00E-06	**3.92E-04**
Resource use, fossils (ADP-f)	MJ	2.74E+02	3.14E+01	2.75E+00	0.00E+00	0.00E+00	5.14E-01	1.87E+00	9.17E-02	-7.24E+01	**2.38E+02**
Water use (WDP)	m3 depriv.	8.80E+00	8.03E-02	2.28E-02	0.00E+00	0.00E+00	1.77E-03	4.02E-02	4.01E-03	-2.88E-01	**8.67E+00**

Table 4: Results of TVM 5445 - Core environmental impact categories according to the NEN-EN 15804+A2:2019.

Impact category name	Reference Unit	A1-3	A4	A5	B	C1	C2	C3	C4	D	Total
Particulate matter (PM)	kg	1.72E-06	1.51E-07	1.83E-08	0.00E+00	0.00E+00	3.93E-09	1.59E-08	6.35E-10	-5.33E-07	**1.38E-06**
Ionising radiation (IR)	kg	6.28E-01	1.35E-01	1.45E-02	0.00E+00	0.00E+00	2.23E-03	9.69E-03	3.67E-04	-4.63E-02	**7.43E-01**
Ecotoxicity, freshwater - organics (ETF-o)	kg	7.73E+00	1.92E+00	1.27E-01	0.00E+00	0.00E+00	3.10E-02	7.36E-02	5.07E-03	9.81E-01	**1.09E+01**
Human toxicity, cancer - organics (HTC-o)	MJ	4.48E-08	3.89E-10	4.80E-11	0.00E+00	0.00E+00	5.26E-12	1.31E-10	9.37E-13	-3.81E-08	**7.25E-09**
Human toxicity, non-cancer - organics (HTNC-o)	MJ	1.28E-08	9.80E-10	4.36E-10	0.00E+00	0.00E+00	1.57E-11	3.58E-10	2.26E-11	1.36E-09	**1.59E-08**
Land use (SQP)	MJ	5.69E+01	1.76E+01	2.04E+00	0.00E+00	0.00E+00	5.88E-01	5.78E+00	2.03E-01	9.01E+01	**1.73E+02**

Table 5: Results of TVM 5445 – Additional environmental impact categories and indicators according to the NEN-EN 15804+A2:2019

Impact category name	Reference Unit	A1-3	A4	A5	B	C1	C2	C3	C4	D	Total
Waste, hazardous (HWD)	kg	1.83E-03	5.22E-05	5.96E-06	0.00E+00	0.00E+00	1.24E-06	4.96E-06	1.39E-07	-7.12E-04	**1.18E-03**
Waste, non hazardous (NHWD)	kg	7.90E+00	1.29E+00	2.90E-01	0.00E+00	0.00E+00	4.81E-02	1.61E-01	4.87E-01	9.16E-03	**1.02E+01**
Waste, radioactive (RWD)	kg	5.85E-04	2.15E-04	1.85E-05	0.00E+00	0.00E+00	3.48E-06	1.14E-05	5.69E-07	-6.33E-05	**7.70E-04**
Energy, primary, renewable, excluding materials (PERE)	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**
Energy, primary, renewable, materials (PERM)	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**
Energy, primary, renewable (PERT)	MJ	1.62E+01	3.05E-01	1.60E-01	0.00E+00	0.00E+00	6.54E-03	1.78E-01	1.35E-03	1.73E+01	**3.41E+01**
Energy, primary, non-renewable, excluding materials (PENRE)	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**
Energy, primary, non-renewable, materials (PENRM)	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**
Energy, primary, non-renewable (PENRT)	MJ	2.93E+02	3.33E+01	2.91E+00	0.00E+00	0.00E+00	5.46E-01	1.98E+00	9.74E-02	-7.65E+01	**2.55E+02**
Secondary material (SM)	kg	1.07E+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	**1.07E+00**
Secondary fuel, renewable (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**
Secondary fuel, non-renewable (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**
Water, fresh water use (FW)	m3	2.63E-01	2.75E-03	1.05E-03	0.00E+00	0.00E+00	6.12E-05	1.51E-03	9.68E-05	-1.13E-02	**2.57E-01**

Table 6: Results of TVM 5445 – Parameters describing resource use according to the NEN-EN 15804+A2:2019

Impact category name	Reference Unit	A1-3	A4	A5	B	C1	C2	C3	C4	D	Total
Components for re-use (CRU)	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**
Materials for recycling (MFR)	kg	1.07E+00	N/A	8.82E-01	0.00E+00	N/A	N/A	5.55E+00	N/A	N/A	**7.50E+00**
Materials for energy recovery (MER)	kg	0.00E+00	N/A	1.93E-01	0.00E+00	N/A	N/A	1.53E-01	N/A	N/A	**3.46E-01**
Exported energy, electric (EEE)	MJ	0.00E+00	N/A	2.95E+00	0.00E+00	N/A	N/A	1.66E+00	N/A	N/A	**4.61E+00**
Exported energy, thermal (EET)	MJ	0.00E+00	N/A	6.85E+00	0.00E+00	N/A	N/A	3.86E+00	N/A	N/A	**1.07E+01**

Table 7 Results of TVM 5445 - Environmental information describing output flows

Biogenic carbon content	Unit (expressed per functional unit or per declared unit)
Biogenic carbon content in product kg C	0
Biogenic carbon content in accompanying packaging	0.5675

Table 8 Results of TVM 5445 Information describing the biogenic carbon content at the factory gate

References

(1) *ISO 14040: Environmental management - Life cycle assessment – Principles and Framework', International Organization for Standardization, ISO14040:2006.*

(2) *ISO 14044: Environmental management - Life cycle assessment - Requirements and guidelines', International Organization for Standardization, ISO14044:2006.*

(3) *NEN-EN 15804:2012+A2:2019 - Sustainability of construction works- Environmental product declarations - Core rules for the product category of construction products.*

(4) "ecoinvent database version 3.8," ecoinvent, 2025. (Online). Available: https://ecoinvent.org/database/.

(5) "Ecochain Mobius v1.1.98," Ecochain, 27-06-2023. (Online). Available: mobius.ecochain.com.

(6) "PEF Annex 1 and 2," (Online). Available: https://environment.ec.europa.eu/document/download/680503dc-5a19-4f6a-bb92-84d9bfc8f312_en?filename=Annexes%201%20to%202.pdf.

(7) "Version of the Annex C valid for PEFCRs and OEFSRs developed in the EF Pilot Phase (PEFCR ver. 6.3) including default application-specific and material-specific values to be used in the application of the Circular Footprint Formula when performing a PEF o," European Commission, (Online). Available: https://eplca.jrc.ec.europa.eu/permalink/CFF_Default_Parameters_March2018_EFPilotPhase.xlsx.

(8) *Environmental Performance Assessment Method for Construction Works,* NMD, March 2022.