ENVIRONMENTAL PRODUCT DECLARATION

IN ACCORDANCE WITH ISO 21930 & ISO 14025

GatorBar
Neuvokas Corporation

EPD HUB, HUB-3867
Published on 12.09.2025, last updated on 12.09.2025, valid until 11.09.2030

Life Cycle Assessment study has been performed in accordance with the requirements of ISO 21930 & ISO 14025, EPD Hub PCR version 1.2 (24 Mar 2025) and JRC characterization factors EF 3.1.

Created with One Click LCA

GENERAL INFORMATION

MANUFACTURER

Manufacturer	Neuvokas Corporation
Address	3206 Number 6 Rd, Ahmeek, MI, USA, 49901
Contact details	info@gatorbar.com
Website	GatorBar.com

EPD STANDARDS, SCOPE AND VERIFICATION

Program operator	EPD Hub, hub@epdhub.com
Reference standard	ISO 21930:2017 and ISO 14025
PCR	EPD Hub Core PCR Version 1.2, 24 Mar 2025
Sector	Construction product
Category of EPD	Third party verified EPD
Scope of the EPD	Cradle to gate with options, A4-A5, and modules C1-C4, D
EPD author	Travis Dahl and Saravanan Jeyabarathy, Dahl Management Inc.
EPD verification	Independent verification of this EPD and data, according to ISO 14025: ☐ Internal verification ☑ External verification
EPD verifier	Lucas Rodriguez, as an authorized verifier acting for EPD Hub Limited

This EPD is intended for business-to-business and/or business-to-consumer communication. The manufacturer has the sole ownership, liability, and responsibility for the EPD. EPDs within the same product category but from different programs may not be comparable. EPDs of construction products may not be comparable if they do not comply with ISO 21930 and if they are not compared in a building context.

PRODUCT

Product name	GatorBar
Additional labels	-
Product reference	-
Place(s) of raw material origin	United States
Place of production	United States
Place(s) of installation and use	United States
Period for data	2024 calendar year
Averaging in EPD	No grouping
Variation in GWP-fossil for A1-A3 (%)	-
GTIN (Global Trade Item Number)	-
A1-A3 Specific data (%)	24.3

ENVIRONMENTAL DATA SUMMARY

Declared unit	Mass
Declared unit mass	1 kg
GWP-TRACI, A1-A3 ($kgCO_2e$)	3.49E+00
Secondary material, inputs (%)	0.85
Secondary material, outputs (%)	0
Total energy use, A1-A3 (kWh)	10.7
Net freshwater use, A1-A3 (m^3)	0.02

PRODUCT AND MANUFACTURER

ABOUT THE MANUFACTURER

Neuvokas Corporation, the manufacturer of GatorBar, is a U.S.-based composite technology company headquartered in Ahmeek, Michigan. Founded with the mission to modernize construction materials through innovative engineering, Neuvokas focuses on the development and production of sustainable, high-performance reinforcement solutions. Its flagship product, GatorBar, is a glass fiber reinforced polymer (GFRP) rebar designed to replace traditional steel reinforcement in concrete applications, offering significant advantages in corrosion resistance, weight reduction, and ease of handling.

PRODUCT DESCRIPTION

GatorBar is a glass fiber reinforced polymer (GFRP) rebar used as an alternative to steel reinforcement in concrete applications. It is manufactured in the United States by Neuvokas Corporation using a continuous pultrusion process. GatorBar offers high tensile strength, corrosion resistance, and a lightweight profile that simplifies handling and installation. The product is used in a range of infrastructure, commercial, and residential construction projects, and is designed to extend the service life of concrete structures by eliminating corrosion-related failure. In many corrosion-prone environments, GatorBar may enable structural service lives exceeding 100 years, particularly in bridge decks and other long-life infrastructure applications.

Further information can be found at:
GatorBar.com

PRODUCT RAW MATERIAL MAIN COMPOSITION

Raw material category	Amount, mass %	Material origin
Metals	0	-
Minerals	64.98	USA
Fossil materials	35.02	USA
Bio-based materials	0	-

BIOGENIC CARBON CONTENT

Product's biogenic carbon content at the factory gate

Biogenic carbon content in product, kg C	0
Biogenic carbon content in packaging, kg C	0.0114

FUNCTIONAL UNIT AND SERVICE LIFE

Declared unit	Mass
Mass per declared unit	1 kg
Functional unit	
Reference service life	50

SUBSTANCES, REACH - VERY HIGH CONCERN

The product does not contain any REACH SVHC substances in amounts greater than 0,1 % (1000 ppm).

PRODUCT LIFE-CYCLE

SYSTEM BOUNDARY

This EPD covers the life-cycle modules listed in the following table.

Product stage			Assembly stage		Use stage							End of life stage				Beyond the system boundaries		
A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D		
×	×	×	×	×	MND	MND	MND	MND	MND	MND	MND	×	×	×	×	×		
Raw materials	Transport	Manufacturing	Transport	Assembly	Use	Maintenance	Repair	Replacement	Refurbishment	Operational energy use	Operational water use	Deconstruction/ demolition	Transport	Waste processing	Disposal	Reuse	Recovery	Recycling

Modules not declared = MND. Modules not relevant = MNR

The scenarios described in modules A4–A5, C1–C4, and D are currently in use and are representative of the most likely scenarios for the relevant region. Alternative scenarios may exist, but the declared scenarios reflect common practice for GFRP rebar products in North America.

MANUFACTURING AND PACKAGING (A1-A3)

The environmental impacts considered for the product stage cover the manufacturing of raw materials used in the production as well as packaging materials and other ancillary materials. Also, fuels used by machines, and handling of waste formed in the production processes at the manufacturing facilities are included in this stage. The study also considers the material losses occurring during the manufacturing processes as well as losses during electricity transmission.

A market-based approach is used in modelling the electricity mix utilized in the factory.

The A1–A3 modules cover raw material extraction, transport to the manufacturing facility, and the GatorBar production process. Primary raw materials include glass fiber roving, resin, catalyst, and polymer film, all sourced from U.S. suppliers and transported by diesel truck over distances ranging from 254 km to 1,486 km. Packaging inputs such as wood skid boards and strapping are included. Manufacturing takes place at Neuvokas Corporation's facility in Ahmeek, Michigan, using a pultrusion process. Energy consumption is modeled using facility-level data for electricity and natural gas. Waste generated during production is landfilled, and all upstream and on-site emissions, material losses, and packaging waste are included in this stage. Ancillary and packaging materials representing less than 0.5% of total product mass per unit were not modeled, in accordance with the data inclusion threshold.

TRANSPORT AND INSTALLATION (A4-A5)

Transportation impacts occurred from final products delivery to construction site (A4) cover fuel direct exhaust emissions, environmental impacts of fuel production, as well as related infrastructure emissions.

The A4 stage models transport from the manufacturing facility in Ahmeek, Michigan to the construction site using a 500 km average distance by standard diesel truck. GatorBar's low weight enables up to 5–7 times more material per truckload compared to steel rebar, though this logistical benefit is not explicitly credited. A5 includes a 5% installation loss of GatorBar,

modeled as inert waste, and disposal of pallet packaging waste (0.0204 kg) as untreated wood with a 50 km transport distance to landfill.

PRODUCT USE AND MAINTENANCE (B1-B7)

No use-phase emissions, maintenance, or operational impacts are associated with GatorBar. As a passive, embedded structural reinforcement product, it does not require energy, water, maintenance, or material replacement during the reference service life. Modules B1–B7 are not declared.

Air, soil, and water impacts during the use phase have not been studied.

PRODUCT END OF LIFE (C1-C4, D)

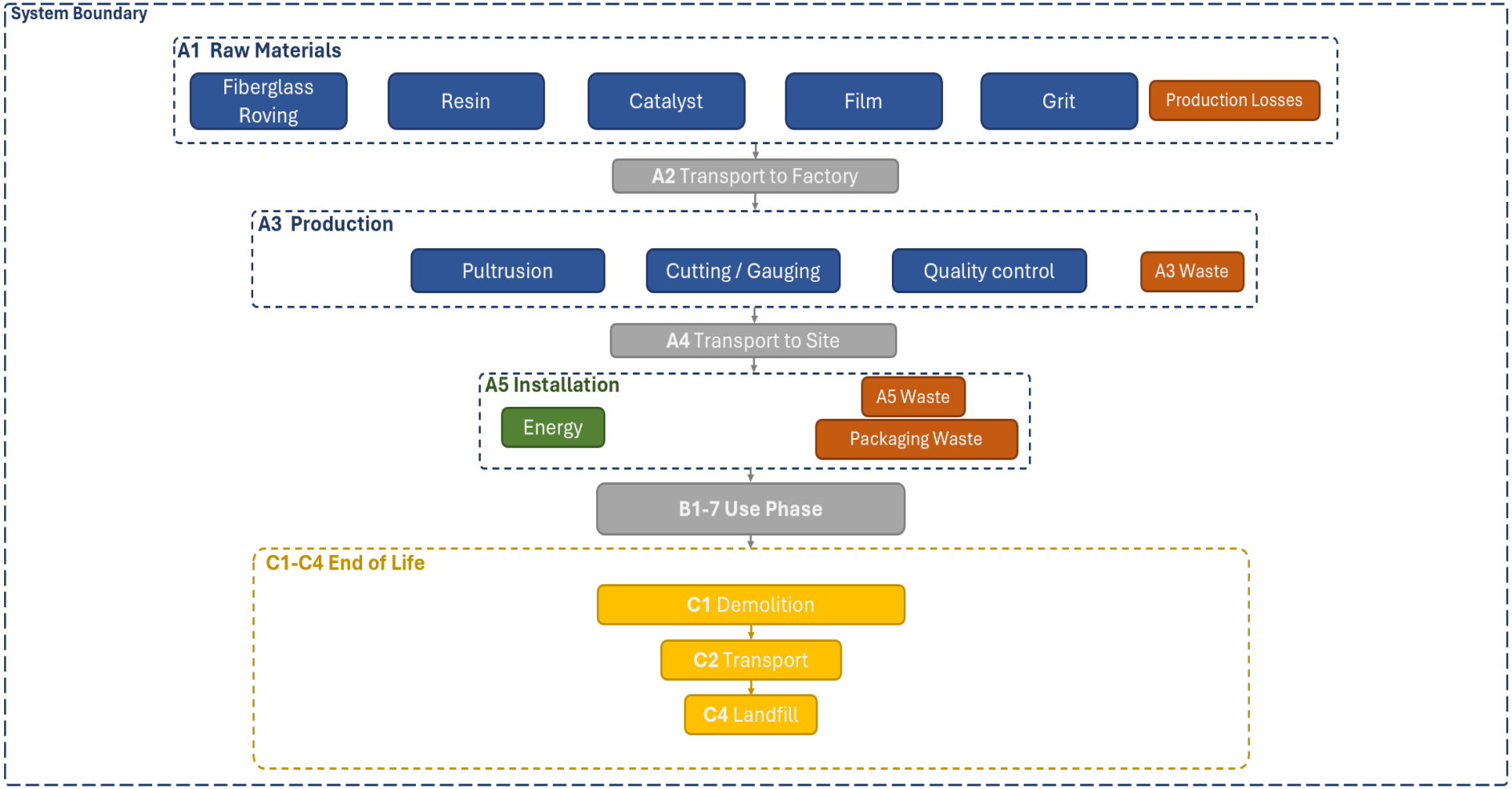
At end of life, GatorBar remains embedded within concrete and is not separated during demolition or recycling of the host structure. Therefore, no additional processing or transport is assigned in C1–C3. Module C4 includes landfill treatment of installation losses only (0.05 kg per declared unit). No benefits or burdens are declared in Module D.

EXCLUDED PROCESSES

The following processes have been excluded from the system boundary due to their insignificant contribution to overall environmental impacts, in accordance with EN 15804+A2, section 8.2:

- Manufacture of equipment used in production, buildings, or other capital goods
- Environmental impacts from infrastructure, construction, production equipment, and tools not directly consumed in the production process
- Personnel-related impacts, such as commuting
- Research and development activities
- Long-term emissions beyond the product's reference service life

MANUFACTURING PROCESS



LIFE-CYCLE ASSESSMENT

USE OF COMPANY-SPECIFIC DATA

Primary data for the LCA model was collected directly from Neuvokas Corporation's manufacturing facility in Ahmeek, Michigan. This includes electricity consumption, material inputs, packaging, transport distances, and waste generation for the declared product.

The facility only produces one type of product (glass fiber reinforced rebar), so no allocation across product lines was necessary. The only allocation applied was for office utilities (10.1% of facility floor area), which were excluded from the model.

The collected data was entered into One Click LCA and matched with background datasets from Ecoinvent 3.10 and LCA Commons (2023) where available. Selection of datasets was based on material type, regional relevance, and the most recent, representative records. Justification for these selections is provided in the accompanying LCA background report.

CUT-OFF CRITERIA

The study does not exclude any modules or processes which are stated mandatory in the reference standard and the applied PCR. The study does not exclude any hazardous materials or substances. The study includes all major raw material and energy consumption. All inputs and outputs of the unit processes, for which data is available for, are included in the calculation. There is no neglected unit process more than 1% of total mass or energy flows. The module specific total neglected input and output flows also do not exceed 5% of energy usage or mass.

The production of capital equipment, construction activities, and infrastructure, maintenance and operation of capital equipment, personnel-related activities, energy and water use related to company management and sales activities are excluded.

VALIDATION OF DATA

Data collection for production, transport, and packaging was conducted using time and site-specific information, as defined in the general information section on page 1 and 2. Upstream process calculations rely on generic data as defined in the Bibliography section. Manufacturer-provided specific and generic data were used for the product's manufacturing stage. The analysis was performed in One Click LCA EPD Generator, with the 'Cut-Off, EN 15804+A2' allocation method, and characterization factors according to EN 15804:2012+A2:2019/AC:2021 and JRC EF 3.1.

ALLOCATION, ESTIMATES AND ASSUMPTIONS

Allocation is required if some material, energy, and waste data cannot be measured separately for the product under investigation. All allocations are done as per the reference standards and the applied PCR. In this study, allocation has been done in the following ways:

Data type	Allocation
Raw materials	No allocation
Packaging material	No allocation
Ancillary materials	No allocation
Manufacturing energy and waste	Allocated by mass or volume

PRODUCT & MANUFACTURING SITES GROUPING

Type of grouping	No grouping
Grouping method	Not applicable
Variation in GWP-fossil for A1-A3, %	-

This EPD is product and factory-specific.

LCA SOFTWARE AND BIBLIOGRAPHY

This EPD has been created using One Click LCA EPD Generator. The LCA and EPD have been prepared according to the reference standards and ISO 14040/14044. The EPD Generator uses Ecoinvent v3.10.1, EPDs with TRACI methodologies, and the Federal LCA Commons as sources of environmental data. Allocation used in Ecoinvent 3.10.1 environmental data sources follow the methodology ‘allocation, cut-off, EN 15804+A2‘.

ENVIRONMENTAL IMPACT DATA

The estimated impact results are only relative statements which do not indicate the end points of the impact categories, exceeding threshold values, safety margins or risks.

ENVIRONMENTAL IMPACTS – TRACI 2.1. / ISO 21930

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Global Warming Pot.	kg CO_2e	2.90E+00	2.36E-01	3.56E-01	3.49E+00	5.53E-02	1.79E-01	MND	MND	MND	MND	MND	MND	MND	1.08E-01	0.00E+00	0.00E+00	1.00E+03	0.00E+00
Ozone Depletion	kg $CFC_{-11}e$	8.11E-07	3.72E-09	3.41E-09	8.18E-07	9.52E-10	4.10E-08	MND	MND	MND	MND	MND	MND	MND	6.70E-10	0.00E+00	0.00E+00	4.52E-05	0.00E+00
Acidification	kg SO_2e	1.25E-02	7.09E-04	1.73E-03	1.50E-02	1.24E-04	7.60E-04	MND	MND	MND	MND	MND	MND	MND	3.01E-04	0.00E+00	0.00E+00	5.10E+00	0.00E+00
Eutrophication	kg Ne	6.70E-03	7.54E-05	1.51E-04	6.92E-03	1.52E-05	3.49E-04	MND	MND	MND	MND	MND	MND	MND	4.50E-05	0.00E+00	0.00E+00	8.79E-01	0.00E+00
POCP (“smog”)	kg O_3e	1.03E-01	1.79E-02	1.74E-02	1.38E-01	2.64E-03	7.17E-03	MND	MND	MND	MND	MND	MND	MND	3.12E-03	0.00E+00	0.00E+00	1.19E+02	0.00E+00
ADP-fossil	MJ	4.73E+01	3.47E+00	2.42E+00	5.31E+01	8.45E-01	2.72E+00	MND	MND	MND	MND	MND	MND	MND	2.14E+00	0.00E+00	0.00E+00	3.59E+04	0.00E+00

USE OF NATURAL RESOURCES

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Renew. PER as energy[1)]	MJ	1.66E+00	4.75E-02	3.80E-01	2.09E+00	1.16E-02	-2.40E-01	MND	MND	MND	MND	MND	MND	MND	5.70E-02	0.00E+00	0.00E+00	3.55E+02	0.00E+00
Renew. PER as material	MJ	0.00E+00	0.00E+00	3.09E-01	3.09E-01	0.00E+00	-3.09E-01	MND	MND	MND	MND	MND	MND	MND	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Total use of renew. PER	MJ	1.66E+00	4.75E-02	6.88E-01	2.40E+00	1.16E-02	-5.49E-01	MND	MND	MND	MND	MND	MND	MND	5.70E-02	0.00E+00	0.00E+00	3.55E+02	0.00E+00
Non-re. PER as energy	MJ	2.84E+01	3.46E+00	4.66E+00	3.65E+01	8.43E-01	1.88E+00	MND	MND	MND	MND	MND	MND	MND	2.14E+00	0.00E+00	0.00E+00	3.59E+04	0.00E+00
Non-re. PER as material	MJ	5.96E+00	0.00E+00	-3.96E-01	5.57E+00	0.00E+00	-2.04E-02	MND	MND	MND	MND	MND	MND	MND	0.00E+00	0.00E+00	0.00E+00	-5.55E+00	0.00E+00
Total use of non-re. PER	MJ	3.43E+01	3.46E+00	4.27E+00	4.21E+01	8.43E-01	1.86E+00	MND	MND	MND	MND	MND	MND	MND	2.14E+00	0.00E+00	0.00E+00	3.59E+04	0.00E+00
Secondary materials	kg	8.55E-03	1.48E-03	1.75E-03	1.18E-02	3.58E-04	6.13E-04	MND	MND	MND	MND	MND	MND	MND	1.99E-04	0.00E+00	0.00E+00	7.28E+00	0.00E+00
Renew. secondary fuels	MJ	2.14E-03	1.88E-05	8.15E-03	1.03E-02	4.56E-06	5.16E-04	MND	MND	MND	MND	MND	MND	MND	6.45E-07	0.00E+00	0.00E+00	2.33E-01	0.00E+00
Non-ren. secondary fuels	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	MND	MND	MND	MND	MND	MND	MND	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Use of net fresh water	m^3	1.32E-02	5.10E-04	2.20E-03	1.59E-02	1.27E-04	7.35E-04	MND	MND	MND	MND	MND	MND	MND	5.68E-04	0.00E+00	0.00E+00	4.84E+01	0.00E+00

1) PER = Primary energy resources.

END OF LIFE – WASTE

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Hazardous waste	kg	1.24E-01	5.88E-03	4.48E-02	1.74E-01	1.42E-03	8.81E-03	MND	MND	MND	MND	MND	MND	MND	1.02E-02	0.00E+00	0.00E+00	3.59E+01	0.00E+00
Non-hazardous waste	kg	3.99E+00	1.09E-01	1.12E+00	5.22E+00	2.63E-02	3.64E-01	MND	MND	MND	MND	MND	MND	MND	2.16E-01	0.00E+00	0.00E+00	9.35E+02	0.00E+00
Radioactive waste	kg	2.59E-05	7.36E-07	4.78E-05	7.44E-05	1.79E-07	3.73E-06	MND	MND	MND	MND	MND	MND	MND	1.32E-05	0.00E+00	0.00E+00	5.92E-03	0.00E+00

END OF LIFE – OUTPUT FLOWS

Impact category	Unit	A1	A2	A3	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	MND	MND	MND	MND	MND	MND	MND	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Materials for recycling	kg	5.70E-06	0.00E+00	0.00E+00	5.70E-06	0.00E+00	2.85E-07	MND	MND	MND	MND	MND	MND	MND	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Materials for energy rec	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	MND	MND	MND	MND	MND	MND	MND	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Exported energy	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	MND	MND	MND	MND	MND	MND	MND	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

ENVIRONMENTAL IMPACTS – EN 15804+A1, CML

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Global Warming Pot.	kg CO_2e	1.80E+00	2.38E-01	3.59E-01	2.39E+00	5.57E-02	1.25E-01	MND	MND	MND	MND	MND	MND	MND	1.08E-01	0.00E+00	0.00E+00	1.02E+03	0.00E+00
Ozone depletion Pot.	kg CFC_{-11}e	5.31E-08	2.82E-09	2.52E-09	5.84E-08	7.20E-10	2.97E-09	MND	MND	MND	MND	MND	MND	MND	5.43E-10	0.00E+00	0.00E+00	3.41E-05	0.00E+00
Acidification	kg SO_2e	6.04E-03	6.12E-04	1.79E-03	8.44E-03	1.14E-04	4.32E-04	MND	MND	MND	MND	MND	MND	MND	3.02E-04	0.00E+00	0.00E+00	4.54E+00	0.00E+00
Eutrophication	kg PO_4^3e	1.13E-02	1.49E-04	3.82E-04	1.19E-02	2.71E-05	5.96E-04	MND	MND	MND	MND	MND	MND	MND	3.67E-05	0.00E+00	0.00E+00	1.96E+00	0.00E+00
POCP (“smog”)	kg C_2H_4e	2.34E-03	5.47E-05	8.37E-05	2.48E-03	1.08E-05	1.25E-04	MND	MND	MND	MND	MND	MND	MND	1.68E-05	0.00E+00	0.00E+00	4.41E-01	0.00E+00
ADP-elements	kg Sbe	1.56E-05	6.58E-07	1.36E-07	1.64E-05	1.58E-07	8.30E-07	MND	MND	MND	MND	MND	MND	MND	1.35E-07	0.00E+00	0.00E+00	2.68E-03	0.00E+00
ADP-fossil	MJ	3.27E+01	3.41E+00	4.76E+00	4.08E+01	8.32E-01	2.10E+00	MND	MND	MND	MND	MND	MND	MND	1.23E+00	0.00E+00	0.00E+00	3.55E+04	0.00E+00

SCENARIO DOCUMENTATION

Manufacturing energy scenario documentation

Scenario parameter	Value
Electricity data source and quality	Electricity, at eGrid, RFCM, 2010 (NREL); Federal LCA Commons; United States/Canada
Electricity CO2e / kWh	0.30
District heating data source and quality	Not used in the manufacturing process. No district heating or cooling is applied during GatorBar production.
District heating CO2e / kWh	0.0

Transport scenario documentation A4

Scenario parameter	Value
Fuel and vehicle type. Eg, electric truck, diesel powered truck	Market for transport, freight, lorry, unspecified; World; Ecoinvent 3.10.1
Average transport distance, km	500
Capacity utilization (including empty return) %	50
Bulk density of transported products	520
Volume capacity utilization factor	1

Installation scenario documentation A5

Scenario information	Value
Ancillary materials for installation (specified by material) / kg or other units as appropriate	0.02
Water use / m^3	0
Other resource use / kg	0
Quantitative description of energy type (regional mix) and consumption during the installation process / kWh or MJ	0.02
Waste materials on the building site before waste processing, generated by the product's installation (specified by type) / kg	0.07
Output materials (specified by type) as result of waste processing at the building site e.g. collection for recycling, for energy recovery, disposal (specified by route) / kg	0.07
Direct emissions to ambient air, soil and water / kg	0

End of life scenario documentation

Scenario information	Value
Collection process – kg collected separately	0 kg (not sorted separately)
Collection process – kg collected with mixed waste	1 kg (entire declared unit enters mixed demolition waste stream)
Recovery process – kg for re-use	0 kg (not reused or reinstalled)
Recovery process – kg for recycling	0 kg (GFRP rebar is not commonly recycled due to thermoset matrix)
Recovery process – kg for energy recovery	0 kg (not used for incineration or fuel substitution)
Disposal (total) – kg for final deposition	1 kg (entire product ends up in landfill)
Scenario assumptions e.g. transportation	-

THIRD-PARTY VERIFICATION STATEMENT

EPD Hub declares that this EPD is verified in accordance with ISO 14025 by an independent, third-party verifier. The project report on the Life Cycle Assessment and the report(s) on features of environmental relevance are filed at EPD Hub. EPD Hub PCR and ECO Platform verification checklist are used.

EPD Hub is not able to identify any unjustified deviations from the PCR and EN 15802+A2 in the Environmental Product Declaration and its project report.

EPD Hub maintains its independence as a third-party body; it was not involved in the execution of the LCA or in the development of the declaration and has no conflicts of interest regarding this verification.

The company-specific data and upstream and downstream data have been examined as regards plausibility and consistency. The publisher is responsible for ensuring the factual integrity and legal compliance of this declaration.

The software used in creation of this LCA and EPD is verified by EPD Hub to conform to the procedural and methodological requirements outlined in ISO 14025:2010, ISO 14040/14044, EN 15804+A2, and EPD Hub Core Product Category Rules and General Program Instructions.

Verified tools

Tool verifier: Magaly Gonzalez Vazquez
Tool verification validity: 27 March 2025 - 26 March 2028

Lucas Rodriguez, as an authorized verifier acting for EPD Hub Limited

12.09.2025