

Program Operator: Smart EPD®

www.smartepd.com



SmartEPD-2025-094-0632-01.1

Molded Grating

Date of Issue

Nov 03, 2025

Expiration date

Nov 03, 2030

Last updated

May 07, 2026



Refer to the EPD Library at www.smartepd.com for the latest EPD listing information

General Information

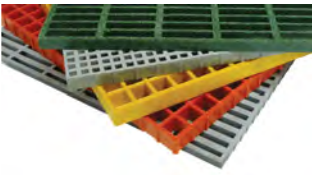
Fibergrate Composite Structures

📍 1234 Johnson Rd, STE 366, Allen, TX 75013

☎ (800) 527-4043

✉ info@fibergrate.com

🌐 fibergrate.com



Product Name:	Molded Grating
Declared Unit:	1 m2 of a molded fiberglass grating
Declaration Number:	SmartEPD-2025-094-0632-01.1
Date of Issue:	November 03, 2025
Expiration:	November 03, 2030
Last updated:	May 07, 2026
EPD Scope:	Cradle to gate with other options A1 - A3, A4, A5, C1 - C4, D
Market(s) of Applicability:	North America

General Organization Information

Fibergrate Composite Structures Inc. is the leading manufacturer of fiberglass reinforced plastic (FRP) solutions for industrial and commercial use globally. Fibergrate sets the standard for high-performance composite products with such proven brands as Fibergrate® and Chemgrate® molded grating, Safe-T-Span® pultruded grating, Dynarail® railing and ladder systems, and Dynaform® structural shapes.

As the originator of FRP molded grating, Fibergrate began manufacturing in 1966 in Dallas, Texas. Today, Fibergrate's ISO 9001 certified manufacturing facilities in Stephenville, Texas, and Querétaro, Mexico, manufacture a full line of FRP products and structural systems using a variety of technologies.

Further information can be found at: <https://www.fibergrate.com/>

Limitations, Liability and Ownership

Environmental declarations from different programs (ISO 14025) may not be comparable. Comparison of the environmental performance of products using EPD information shall be based on the product's use and impacts at the building level, and therefore EPDs may not be used for comparability purposes when not considering the whole building life cycle. EPD comparability is only possible when all stages of a life cycle have been considered. However, variations and deviations are possible. Example of variations: Different LCA software and background LCI datasets may lead to differences results for upstream or downstream of the life cycle stages declared. The EPD owner has sole ownership, liability, and responsibility for the EPD.

Reference Standards

Standard(s):	ISO 14025 and ISO 21930:2017
Core PCR:	Smart EPD® Part A Product Category Rules for Building and Construction Products and Services, 1000, v1.2
	Date of issue: March 14, 2025

Valid until: March 14, 2030

Sub-category PCR review panel:

 Contact Smart EPD for more information.

General Program Instructions:

 Smart EPD General Program Instructions v.2.0, March 2025

Verification Information

LCA Author/Creator:

 Samuel Fafel
 samuel@parqhq.com

EPD Program Operator:

 Smart EPD
 info@smartepd.com
 www.smartepd.com
 585 Grove St., Ste. 145, Herndon, VA 20170, USA

Verification:

Independent critical review of the LCA and data, according to ISO 14044 and ISO 14071:

 Arka Pandit |  pandit_arka@outlook.com

External

Independent external verification of EPD, according to ISO 14025 and reference PCR(s):

 Arka Pandit |  pandit_arka@outlook.com

External

Product Information

Declared Unit:

1 m2 of a molded fiberglass grating

Mass:

4.4593 kg

Product Specificity:

 Product Average
 Product Specific

Product Description

Fibergrate molded fiberglass gratings are available in a variety of resins, standard and custom colors, depths, panel sizes and mesh configurations. Surface options include a meniscus or integrally applied grit top, both of which offer superior, slip resistant footing. Fibergrate molded grating is used in place of traditional materials for a FRP solution that fits a wide range of applications and environments.

Further information can be found at: <https://www.fibergrate.com/products/molded-gratings/fibergrate%C2%AE-molded-gratings/>

Product Specifications

Product Classification Codes:

EC3 - Finishes -> Flooring -> OtherFlooring

Material Composition

Material/Component Category	Origin	% Mass
Accelerator	EUR	< 10
Additive	FR	< 10
Base monomer	EUR	< 10
Base oils	USA	< 10
Catalyst	ES	< 10
Fiberglass roving	CN	21 - 31
Flame retardant	USA	25 - 38
Metal catalyst	ES	< 10
Pigment dispersion	MX	< 10
Polymer initiator	TR	< 10
Polyol	EUR	< 10
Resin	MX	23 - 35

Packaging Material	Origin	kg Mass
Plastic HDPE		0None
Steel generic		0None
Wood pallet		0.01

Hazardous Materials
Polymerized Resin (None)
Fiberglass (65997-17-3)
Glass Oxides (None)

EPD Data Specificity

- Primary Data Year:09/01/2024 - 08/31/2025
- Manufacturing Specificity:

✗ Industry Average

✗ Manufacturer Average

✓ Facility Specific

Averaging:

Averaging was not conducted for this EPD

System Boundary

Production	A1	Raw material supply	✓
	A2	Transport	✓
	A3	Manufacturing	✓
Construction	A4	Transport to site	✓
	A5	Assembly / Install	✓
Use	B1	Use	ND
	B2	Maintenance	ND
	B3	Repair	ND
	B4	Replacement	ND
	B5	Refurbishment	ND
	B6	Operational Energy Use	ND
	B7	Operational Water Use	ND
End of Life	C1	Deconstruction	✓
	C2	Transport	✓
	C3	Waste Processing	✓
	C4	Disposal	✓
Benefits & Loads Beyond System Boundary	D	Recycling, Reuse Recovery Potential	✓

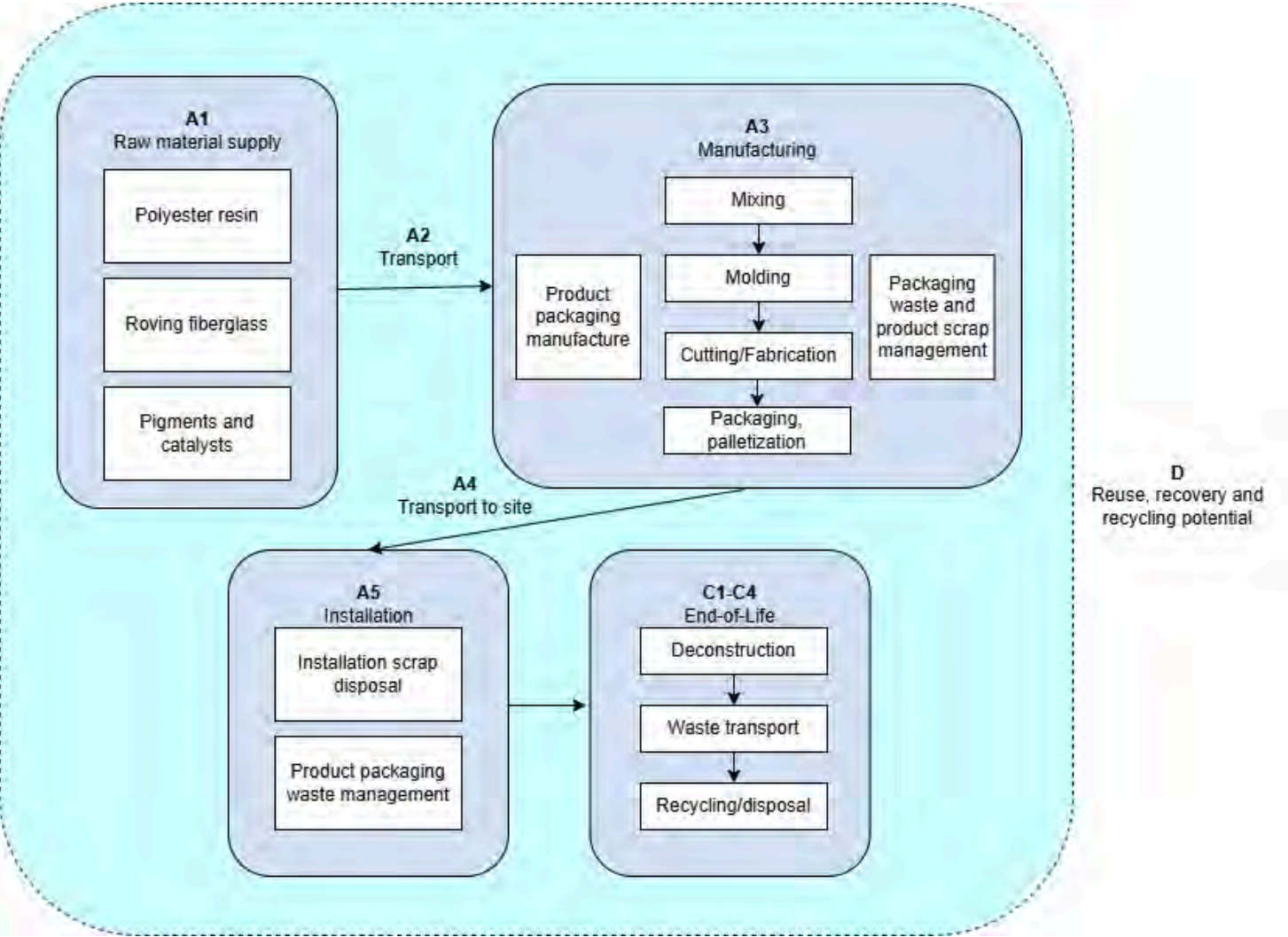
Note:

ND = Module not declared

Plants

 Queretaro Av. Las Misiones 21 76240 El Marqués Querétaro Mexico

Product Flow Diagram



Software And Database

- LCA Software:
- Simapro v. 10.2
- LCI Foreground Database(s):
- Ecoinvent v. 3.11
- LCI Background Database(s):
- Ecoinvent v. 3.11

A foreground LCI database is the database used to model the primary, site-specific data collected for this EPD. A background LCI database is the database used to model generic or non-specific data.

Data Quality

Precision & Completeness

- **Precision:** Inventory data were directly measured, calculated, or conservatively estimated from primary sources using consistent units and QA checks. Background processes from ecoinvent v3 were adopted with their documented uncertainty/precision metadata where available, preserving a transparent record of data quality.
- **Completeness:** The product system’s mass and energy balance, as well as inventory completeness, were verified. Minor exclusions deemed immaterial under ISO 21930 § 7.1.8 were applied, including personnel impacts, R&D activities, business travel, and point-of-sale infrastructure. No data were intentionally omitted.

Consistency and Reproducibility

- **Consistency:** Primary data for all modules were consistently gathered aiming at the highest level of detail possible. Background processes were modeled mainly with the ecoinvent database. The same allocation rules, cut-off criteria, and impact assessment methods were applied throughout, ensuring methodological coherence and consistent data quality across the entire LCA model.
- **Reproducibility:** This study ensures reproducibility by providing comprehensive disclosure of input–output data, dataset choices, and modeling approaches. A knowledgeable third party should be able to approximate the results using the same data and modeling methods.

Representativeness

- **Temporal:** Primary data were collected over a 12-month period representing the 2024 calendar year. Secondary data from the ecoinvent v3 database are representative of recent reference years.
- **Geographical:** Primary data reflect the actual production facilities. Where relevant, differences in electricity grid mixes were accounted for, using appropriate secondary datasets. Country-specific data were used whenever available to ensure high geographical representativeness, while proxy data were applied only when necessary.
- **Technological:** Primary and secondary data were selected to reflect the actual technologies used, ensuring high technological representativeness.

Data Sources

Material/Process Category	Module	Material/Process Name	Inventory Dataset Name	Dataset Geographic Region	Reporting Period/Year Dataset Represents	Reference	Amount (if relevant)	Unit
ecoinvent 3.11								

Life Cycle Module Description

Modules A1–A3:The LCA model covers the manufacture of raw materials and components for the products (A1), followed by transport to production or assembly facilities primarily by truck (A2). The manufacturing stage (A3) begins with receipt of these materials and includes operations such as cutting, forming, molding, machining, surface preparation, and final assembly into finished components or systems.

Modules A4–A5: Once manufacture is completed, products are shipped to distribution centers and then to the end user by truck (A4). For installation (A5), a 3% material installation loss was assumed, conservatively. This module includes disposal of that waste and of the product packaging.

Modules C1–C4 and D: At end of life (C1–C4), the product is assumed to be collected, and landfilled (as per the PCR regional default. Loads and benefits beyond the system boundary are considered in Module D (e.g., displacement of virgin materials from packaging waste recycling).

LCA Discussion

Allocation Procedure

Allocation of co-products was avoided, to the extent possible, based on the guidance given in ISO 14044:2006, 4.3, and in ISO 21930:2019. Utilities used at the facility level were allocated by mass. The manufacturing process does not consume water or generate wastewater or air emissions, other than those from fuel combustion. Solid waste was estimated using packaging masses and material losses and allocated following the polluter pays principle.

Cut-off Procedure

For the processes within the system boundary, all available energy and material flow data have been included in the model. Cut-off criteria, however, were applied to exclude capital goods and infrastructure, personnel impacts, R&D activities, business travel, and point-of-sale infrastructure, as these are assumed to not significantly affect LCA results nor conclusions.

Renewable Electricity

Energy Attribute Certificates (EACs) such as ✗ No
Renewable Energy Certificates (RECs) or Power
Purchase Agreements (PPAs) are included in the
baseline reported results:

Scenarios

Transport to the building/construction site (A4)

A4 Module

Fuel Type:	Diesel
Vehicle Type:	Truck and Trailer
Transport Distance:	755 km
Capacity Utilization:	33 %
Packaging Mass:	0.009989 kg
Weight of products transported:	4.469 kg
Capacity utilization volume factor:	1
Assumptions for scenario development:	Transport distance includes finished product to distribution center and distribution center to point of sale.

Installation in to the building/construction site (A5)

A5 Module

Mass of Packaging Waste Specified by Type:	0.009989 kg
Biogenic Carbon Contained in Packaging (kg C):	0.002567 kg
Assumptions for scenario development:	

End of Life (C1 - C4)

C1 - C4 Modules

Collection Process

Collected with Mixed Construction Waste: 4.459 kg

Recovery

Landfill: 4.459 kg

Reuse, Recovery and / or Recycling Potentials & Relevant Scenario Information (D)

D Module

Results

Environmental Impact Assessment Results

TRACI 2.2

per 1 m2 of product of a molded fiberglass grating.

LCIA results are relative expressions and do not predict impacts on category endpoints, the exceeding of thresholds, safety margins or risks.

Impact Category	Unit	Method	A1 - A3	A4	A5	C1	C2	C3	C4	D
GWP-total	kg CO2 eq	TRACI 2.2	1.58e+1	3.11e-1	7.37e-4	0	1.59e-2	0	1.29e-2	-3.34e-3
GWP-fossil	kg CO2 eq	TRACI 2.2	1.58e+1	3.11e-1	7.08e-4	0	1.59e-2	0	1.29e-2	-3.40e-3
GWP-biogenic	kg CO2 eq	TRACI 2.2	1.46e-2	1.37e-4	2.84e-5	0	3.71e-6	0	1.74e-6	6.44e-5
GWP-luluc	kg CO2 eq	TRACI 2.2	1.90e-2	2.14e-4	2.62e-8	0	7.18e-6	0	1.41e-6	-8.15e-7
ODP	kg CFC-11 eq	TRACI 2.2	5.17e-7	4.28e-9	1.05e-12	0	2.26e-10	0	1.91e-10	-2.38e-11
AP	kg SO2 eq	TRACI 2.2	7.12e-2	1.03e-3	4.20e-7	0	4.97e-5	0	1.04e-4	-1.03e-5
SFP	kg O3 eq	TRACI 2.2	1.02e+0	2.22e-2	1.18e-5	0	1.11e-3	0	3.23e-3	-1.51e-4
EP-freshwater	kg P eq	TRACI 2.2	2.21e-3	2.75e-5	7.09e-7	0	1.13e-6	0	3.71e-7	-3.93e-7
EP-marine	kg N eq	TRACI 2.2	8.96e-3	1.91e-4	1.89e-7	0	9.50e-6	0	2.71e-5	-1.34e-6

Note:

Not all abbreviated indicators listed below may be present in the results above. The inclusion of indicators varies based on PCR requirements.

Abbreviations:

GWP = Global Warming Potential, 100 years (may also be denoted as GWP-total, GWP-fossil (fossil fuels), GWP-biogenic (biogenic sources), GWP-luluc (land use and land use change)), ODP = Ozone Depletion Potential, AP = Acidification Potential, EP = Eutrophication Potential, SFP = Smog Formation Potential, POCP = Photochemical oxidant creation potential, ADP-Fossil = Abiotic depletion potential for fossil resources, ADP-Minerals&Metals = Abiotic depletion potential for non-fossil resources, WDP = Water deprivation potential, PM = Particular Matter Emissions, IRP = Ionizing radiation, human health, ETP-fw = Eco-toxicity (freshwater), HTP-c = Human toxicity (cancer), HTP-nc = Human toxicity (non-cancer), SQP = Soil quality index.

Comparisons cannot be made between product-specific or industry average EPDs at the design stage of a project, before a building has been specified. Comparisons may be made between product-specific or industry average EPDs at the time of product purchase when product performance and specifications have been established and serve as a functional unit for comparison. Environmental impact results shall be converted to a functional unit basis before any comparison is attempted. Any comparison of EPDs shall be subject to the requirements of ISO 21930 or EN 15804. EPDs are not comparative assertions and are either not comparable or have limited comparability when they have different system boundaries. EPDs are not comparative assertions and are either not comparable or have limited comparability when they have different system boundaries, are based on different

product category rules or are missing relevant environmental impacts. Such comparison can be inaccurate, and could lead to erroneous selection of materials or products which are higher-impact, at least in some impact categories.

Resource Use Indicator

per 1 m2 of product of a molded fiberglass grating.

Indicator	Unit	A1 - A3	A4	A5	C1	C2	C3	C4	D
RPRE	MJ	1.10e+1	1.08e-1	1.55e-5	0	3.04e-3	0	1.38e-3	-8.90e-4
RPRM	MJ	6.34e-1	0	0	0	0	0	0	0
RPRT	MJ	1.16e+1	1.08e-1	1.55e-5	0	3.04e-3	0	1.38e-3	-8.90e-4
NRPRE	MJ	2.19e+2	4.31e+0	8.82e-4	0	2.24e-1	0	1.63e-1	-3.53e-2
NRPRM	MJ	0	0	0	0	0	0	0	0
NRPRT	MJ	2.77e+2	4.31e+0	8.82e-4	0	2.24e-1	0	1.63e-1	-4.26e-2
SM	kg	0	0	0	0	0	0	0	0
RSF	MJ	0	0	0	0	0	0	0	0
NRSF	MJ	0	0	0	0	0	0	0	0
RE	MJ	0	0	0	0	0	0	0	0
ADP-fossil	MJ	2.77e+2	4.31e+0	8.82e-4	0	2.24e-1	0	1.63e-1	-4.26e-2
FW	m3	3.14e+0	2.66e-2	-5.66e-5	0	1.19e-3	0	3.71e-4	-3.54e-4

Note:

Not all abbreviated indicators listed below may be present in the results above. The inclusion of indicators varies based on PCR requirements.

Abbreviations:

RPRE or PERE = Renewable primary resources used as energy carrier (fuel), RPRM or PERM = Renewable primary resources with energy content used as material, RPRT or PERT = Total use of renewable primary resources with energy content, NRPRE or PENRE = Non-renewable primary resources used as an energy carrier (fuel), NRPRM or PENRM = Non-renewable primary resources with energy content used as material, NRPRM or PENRM = Total non-renewable primary resources with energy content, SM = Secondary materials, RSF = Renewable secondary fuels, NRSF = Non-renewable secondary fuels, RE = Recovered energy, ADPF = Abiotic depletion potential, FW = Use of net freshwater resources, VOCs = Volatile Organic Compounds.

Waste and Output Flow Indicators

per 1 m2 of product of a molded fiberglass grating.

Indicator	Unit	A1 - A3	A4	A5	C1	C2	C3	C4	D
HWD	kg	0	0	0	0	0	0	0	0
NHWD	kg	4.77e-1	0	2.42e-3	0	0	0	4.46e+0	0
HLLRW	kg	0	0	0	0	0	0	0	0
ILLRW	kg	0	0	0	0	0	0	0	0
CRU	kg	0	0	0	0	0	0	0	0
MR	kg	1.08e-2	0	6.51e-3	0	0	0	0	0
MER	kg	0	0	5.51e-4	0	0	0	0	0
EE	MJ	0	0	8.51e-3	0	0	0	0	0

Note:

Not all abbreviated indicators listed below may be present in the results above. The inclusion of indicators varies based on PCR requirements.

Abbreviations:

HWD = Hazardous waste disposed, NHWD = Non-hazardous waste disposed, RWD = Radioactive waste disposed, HLRW = High-level radioactive waste, ILLRW = Intermediate- and low-level radioactive waste, CRU = Components for re-use, MFR or MR = Materials for recycling, MER = Materials for energy recovery, MNER = Materials for incineration, no energy recovery, EE or EEE = Recovered energy exported from the product system, EET = Exported thermal energy.

Carbon Emissions and Removals

per 1 m2 of product of a molded fiberglass grating.

Indicator	Unit	A1 - A3	A4	A5	C1	C2	C3	C4	D
Bio Carbon Removal from Product	kg CO2	-9.99e-3	0	0	0	0	0	0	0
Bio Carbon Emission from Product	kg CO2	5.35e-4	0	0	0	0	0	9.46e-3	0
Bio Carbon Removal from Packaging	kg CO2	-5.63e-2	0	0	0	0	0	0	0
Bio Carbon Emission from Packaging	kg CO2	4.69e-2	0	9.41e-3	0	0	0	0	0
Bio Carbon Emission from Waste during Manufacturing (renewable source)	kg CO2	0	0	0	0	0	0	0	0
Calcination Carbon Removal	kg CO2	0	0	0	0	0	0	0	0
Carbonation Carbon Emission	kg CO2	0	0	0	0	0	0	0	0
Carbon Emission from Waste during Manufacturing (non-renewable source)	kg CO2	0	0	0	0	0	0	0	0

Note:

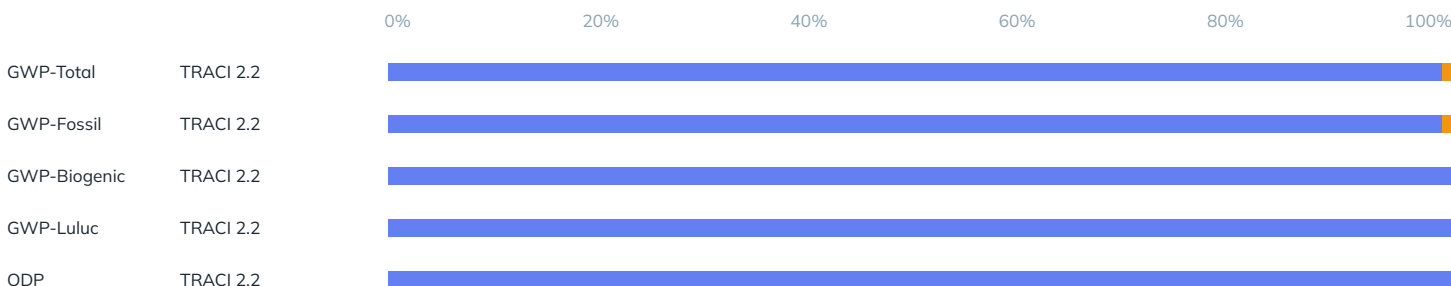
Not all abbreviated indicators listed below may be present in the results above. The inclusion of indicators varies based on PCR requirements.

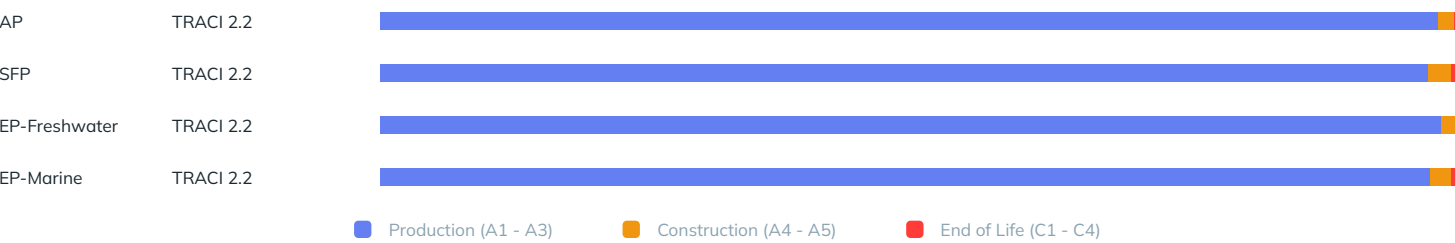
Abbreviations:

BCRP = Biogenic Carbon Removal from Product, BCEP = Biogenic Carbon Emission from Product, BCRK = Biogenic Carbon Removal from Packaging, BCEK = Biogenic Carbon Emission from Packaging, BCEW = Biogenic Carbon Emission from Combustion of Waste from Renewable Sources Used in Production Processes, CCE = Calcination Carbon Emissions, CCR = Carbonation Carbon Removals, CWNR = Carbon Emissions from Combustion of Waste from Non-Renewable Sources used in Production Processes, GWP-luc = Carbon Emissions from Land-use Change.

Interpretation

- The manufacturing of the products in this analysis involves the direct procurement of raw materials from suppliers. These materials are then transported to manufacturing facilities where they are stored, processed, and combined to produce finished products. Notably, the product stage (stage 1) has the highest impact contribution, mainly attributed to the combined environmental impacts associated with raw material manufacturing and energy used in manufacturing the products.
- For products with significant manufacturing energy impacts, the shift to renewable energy sources is recommended.
- Given that the raw materials used in product manufacturing have a significant impact, exploration of opportunities to substitute these materials with alternatives that have a lower environmental impact. Additionally, consideration should be given to collaborating with suppliers who employ sustainable manufacturing techniques or integrate more renewable energy into their production processes. Such initiatives can lead to more environmentally friendly products and further enhance the sustainability of the products in this analysis.





Additional Environmental Information

None

References

International Organization for Standardization (ISO). (2006). ISO 14040:2006 – Environmental management – Life cycle assessment – Principles and framework. Geneva: ISO. (Amendment 1:2020; confirmed current 2022)

International Organization for Standardization (ISO). (2006). ISO 14044:2006 – Environmental management – Life cycle assessment – Requirements and guidelines. Geneva: ISO. (Amendments 1:2017 and 2:2020 included; confirmed current 2022)

International Organization for Standardization (ISO). (2017). ISO 21930:2017 – Sustainability in buildings and civil engineering works – Core rules for environmental product declarations of construction products and services. Geneva: ISO

European Committee for Standardization (CEN). (2019). EN 15804:2012+A2:2019 – Sustainability of construction works – Environmental product declarations – Core rules for the product category of construction products. Brussels: CEN. (Including AC:2021)

SMART EPD®. (2019). Smart EPD Part A PCR Standard 1000, version 1.2. March 14, 2025.

International Organization for Standardization (ISO). (2006). ISO 14025:2006 – Environmental labels and declarations – Type III environmental declarations – Principles and procedures. Geneva: ISO

PRé Sustainability. (2022). SimaPro 9 LCA Software [Computer software]. Amersfoort, The Netherlands: PRé Sustainability B.V. (Version 9.5 used for LCA modeling)

ecoinvent Association. (2022). ecoinvent data v3.9.1 [Life Cycle Inventory database]. Zurich, Switzerland: ecoinvent. (Database version for background LCI data; latest update as of 2022)

Intergovernmental Panel on Climate Change (IPCC). (2021). Climate Change 2021: The Physical Science Basis. Contribution of Working Group I to the Sixth Assessment Report of the IPCC [V. Masson-Delmotte et al. (Eds.)]. Cambridge, UK: Cambridge University Press. (Source of 100-year GWP factors; AR6 latest values)

US EPA (2024). TRACI Version 2.2 TTool for Reduction and Assessment of Chemicals and Other Environmental Impacts (TRACI). https://www.epa.gov/chemical-research/tool-reduction-and-assessment-chemicals-and-other-environmental-impacts-traci[https://www.epa.gov/chemical-research/tool-reduction-and-assessment-chemicals-and-other-environmental-impacts-traci?utm_source=chatgpt.com]

Andreasi Bassi, S., Biganzoli, F., Ferrara, N., Amadei, A., Valente, A., Sala, S., & Ardente, F. (2023). Updated characterisation and normalisation factors for the Environmental Footprint 3.1 method. Luxembourg: Publications Office of the European Union. (JRC Technical Report EUR 31414; details of EF 3.1 method and factors)