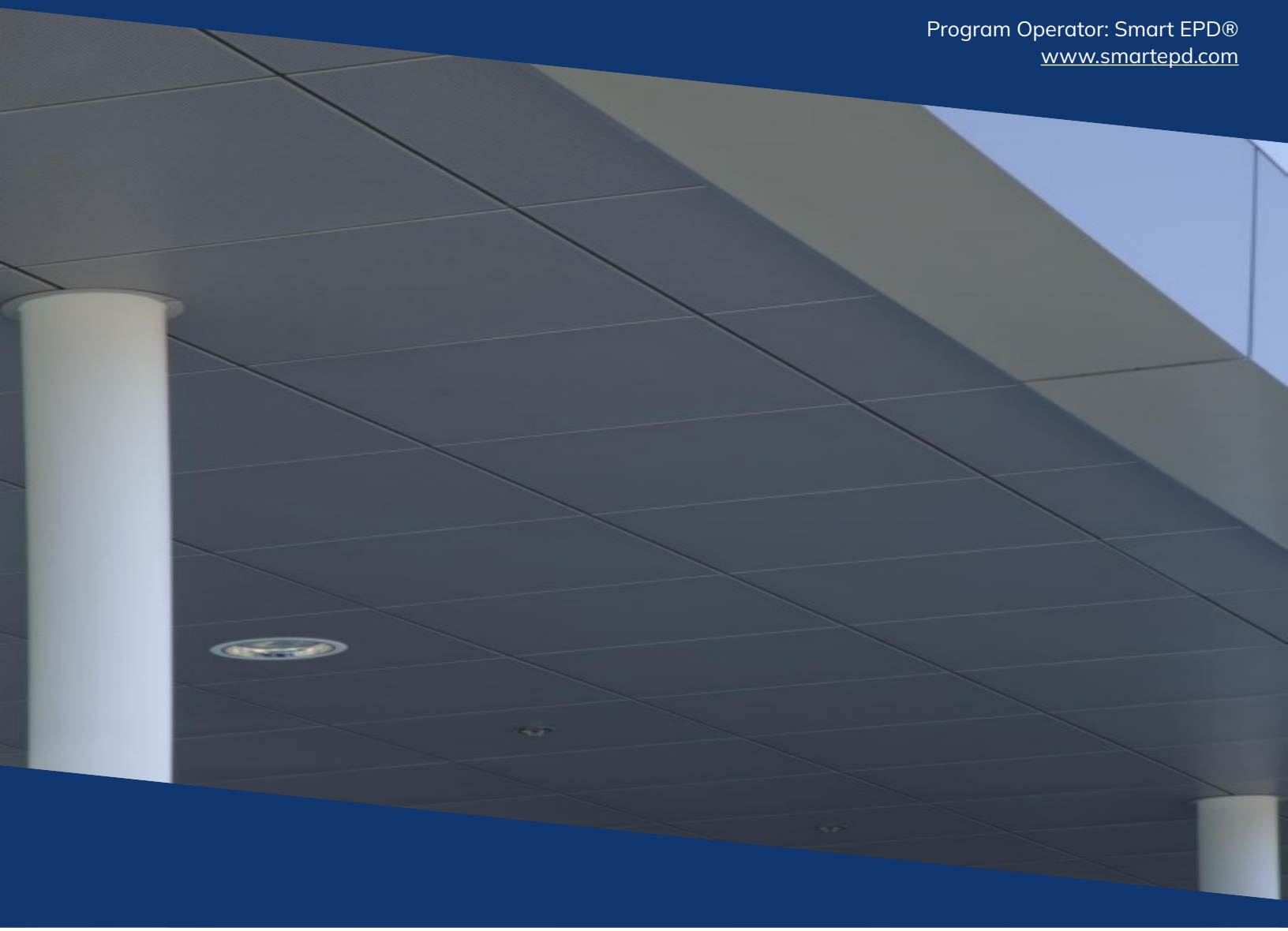
Environmental Product Declaration

IN ACCORDANCE WITH ISO 14025 AND ISO 21930:2017

Program Operator: Smart EPD®
www.smartepd.com



Steel Specialty Products

Date of Issue	Expiration date	Last updated
Jul 31, 2025	**Jul 31, 2030**	**Jul 31, 2025**

CISCA
Ceilings and Interior Systems Construction Association

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

General Information

Ceilings and Interior Systems Construction Association (CISCA)

PO Box 570030, Atlanta, GA 30357

630-584-1919

CISCA@cisca.org cisca.org

Product Name:	Steel Specialty Products
Declared Unit:	1 kg
Declaration Number:	SmartEPD-2025-078-0572-01
Date of Issue:	July 31, 2025
Expiration:	July 31, 2030
Last updated:	July 31, 2025
EPD Scope:	Cradle to gate with other options A1 - A3, A4, A5, C1 - C4, D
Market(s) of Applicability:	North America

General Organization Information

The Ceilings and Interior Systems Construction Association - CISCA is the global premier authority for the interior construction, acoustical ceilings and acoustical treatment industry. CISCA fosters and enables professional development and exchanges for and between association members and industry professionals.

Limitations, Liability, and Ownership

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

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 or construction works 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 in results upstream or downstream of the life cycle stages declared.

The environmental impact results of products in this document are based on a declared unit and therefore do not provide sufficient information to establish comparisons. The results shall not be used for comparisons without knowledge of how the physical properties of the product impact the precise function at the construction level. The environmental impact results shall be converted to a functional unit basis before any comparison is attempted.

A manufacturer shall not make claims based on an industry-average EPD which leads the market to believe the industry-average is representative of manufacturer-specific or product-specific results.

Reference Standards

Standard(s):	ISO 14025 and ISO 21930:2017

Core PCR:	UL Part A PCR for Building-Related Products and Services v.4 Date of issue: March 01, 2022
Sub-category PCR:	UL Part B: Metal Ceiling and Interior Wall Panel System Date of issue: January 15, 2020 Valid until: July 31, 2025
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:	Athar Kamal | Sphera Solutions | AKamal@sphera.com
EPD Program Operator:	Smart EPD | info@smartepd.com | www.smartepd.com 585 Grove St., Ste. 145 PMB 966, Herndon, VA 20170, USA
Verification:	Independent critical review of the LCA and data, according to ISO 14044 and ISO 14071: External Alison Conroy | Independent Contractor | alisonleeconroy@gmail.com Independent external verification of EPD, according to ISO 14025 and reference PCR(s): External Alison Conroy | Independent Contractor | alisonleeconroy@gmail.com

Product Information

Declared Unit:	1 kg
Mass:	1 kg
Product Specificity:	✓ Product Average ✗ Product Specific

Product Description

Steel specialty products are manufactured from metal coil or sheet and are perforated and bent as needed for the customer's specifications. Depending on the application, the steel may be coated or laminated with additional materials. Common uses for metal specialty products include ceiling panels, wall coverings, and column coverings. Metal specialty products may be chosen for both durability and aesthetic reasons.

Product Specifications

Product SKU(s):	•ASCE 7-10: Minimum Design Loads for Buildings and Other Structures •ASTM A568: Standard Specification for Steel, Sheet, Carbon, Structural, and High-Strength, Low-Alloy, Hot-Rolled and Cold-Rolled •ASTM A641: Standard Specification for Zinc–Coated (Galvanized) Carbon Steel Wire •ASTM A653: Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process •ASTM C423: Standard Test Method for Sound Absorption and Sound Absorption Coefficients by the Reverberation Room Method •ASTM C635: Standard Specification for the Manufacture, Performance, and Testing of Metal Suspension Systems for Acoustical Tile and Lay-in Panel Ceilings •ASTM C636: Standard Practice for Installation of Metal Ceiling Suspension Systems for Acoustical Tile and Lay-In Panels •ASTM D1002: Standard Test Method for Apparent Shear Strength of Single-Lap-Joint Adhesively Bonded Metal Specimens by Tension Loading (Metal-to-Metal) •ASTM E1264: Standard Classification for Acoustical Ceiling Products •ASTM E1477: Standard Test Method for Luminous Reflectance Factor of Acoustical Materials by Use of Integrating-Sphere Reflectometers •ASTM E488: Standard Test Methods for Strength of Anchors in Concrete Elements •ASTM E580: Standard Practice for Installation of Ceiling Suspension Systems for Acoustical Tile and Lay-in Panels in Areas Subject to Earthquake Ground Motions •ASTM E84: Standard Test Method for Surface Burning Characteristics of Building Materials •CISCA Metal Ceilings Technical Guidelines
Product Classification Codes:	EC3 -

Material Composition

Material/Component Category	Origin	% Mass
Hot-Dipped Galvanized Steel	Varies	69.37
Coated Hot-Dipped Galvanized Cold Roll Steel	Varies	28.87
Other Steel (Uncoated, Stainless, Fasteners, Cold Roll, etc.)	Varies	0.64
Coating	Varies	0.63
Insulation	Varies	0.30
Ancillary Materials (Lubricants, Film, etc.)	Varies	0.20

Packaging Material	Origin	kg Mass
Corrugated Board	Varies	0.0239
Wooden Pallet	Varies	0.0215
Other materials (Sack paper, Plastic Band, etc.)	Varies	0.0004

Biogenic Carbon Content	kg C per kg
Biogenic carbon content in product	None
Biogenic carbon content in accompanying packaging	0.0108

Hazardous Materials
No regulated hazardous or dangerous substances are included in this product.

EPD Data Specificity

Primary Data Year: 2024

Manufacturing Specificity:

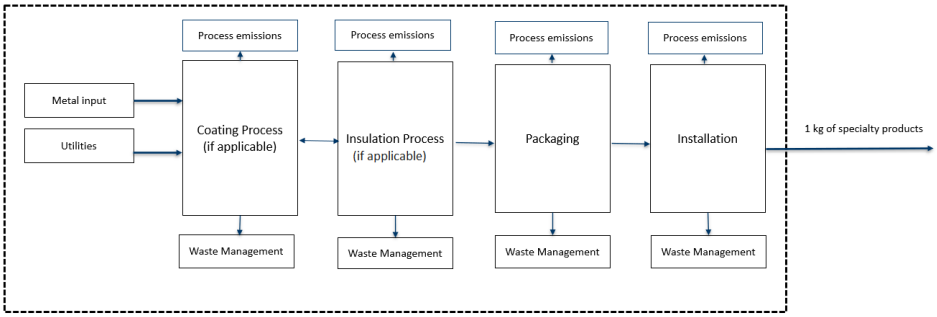
- ✓ Industry Average
- ✗ Manufacturer Average
- ✗ Facility Specific

Averaging:

The study is intended to represent an industry-weighted, environmental profile of the participating CISCA member companies' technologies and supply chain. This weighted average was based on the total output of manufactured products by mass at each manufacturing facility and then dividing it by the total output for all facilities. Data on raw material inputs and manufacturing are primary data from the individual member companies. Energy use and waste disposal are based on measured data during the reference time period.

System Boundary

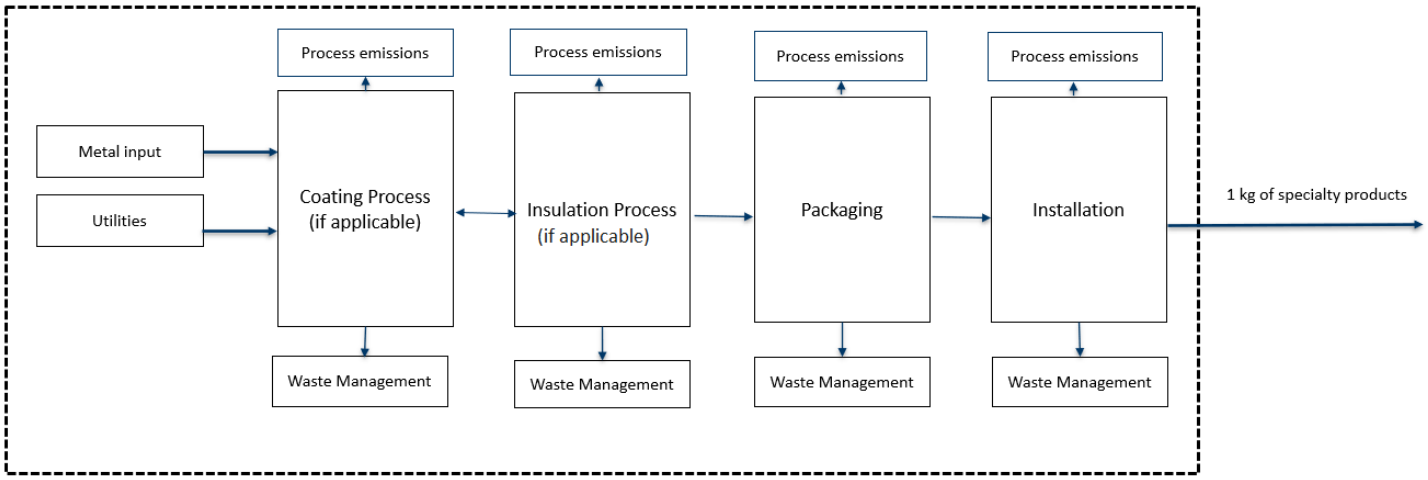
	A1	Raw material supply	✓
	A2	Transport	✓
	A3	Manufacturing	✓



Participating Manufacturers

- USG
- Rockfon
- Maxxit Group
- Gordon Inc.
- Adams Campbell Co. Ltd.
- Nelson Industrial Inc
- Lindner USA

Product Flow Diagram



Software and Database

LCA Software:	Sphera LCA for Experts (formerly GaBi) v. 10.9	
LCI Foreground Database(s):	Managed LCA Content v. 2025.1	North America
LCI Background Database(s):	Managed LCA Content v. 2025.1	North America

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

All assumptions, methods and data are consistent with each other and with the study's goal and scope. System boundaries, allocation rules, and impact assessment methods have been applied consistently throughout the study. The majority of primary data collected from CISCA members represents 12 continuous months of production during the 2024 calendar year. The averaging of all CISCA member companies will help to reduce any potential error introduced by time coverage inconsistent with PCR requirements. Background datasets for upstream and downstream data are representative of the years 2016 2024 and were obtained from the MLC 2025.1 databases. Differences in background data quality were minimized by exclusively using LCI data from the MLC 2025.1 databases.

Life Cycle Module Descriptions

The production stage includes the following mandatory modules:

Module A1: Raw materials supply and processing of secondary materials serving as inputs e.g. processing of secondary metals , production of alloying elements as well as ingredients for the onsite production.

Module A2: Transport of the raw materials to plant site. Specific distances from the suppliers, as well as mode of transportation (trucks with various fuels [e.g., diesel, biodiesel, electricity], rail, ship, or plane) were provided and considered in the study.

Module A3: Production of the panels, including energy generation, auxiliaries and their transport, as well as waste processing up to the end-of waste state or disposal of final residues during the production stage. The production and transportation of packaging materials for the final product is included within Module A3.

The study does not include production of packaging materials which belong to the raw materials/pre-products, since the effect on the results is expected to be negligible, and thus there is no treatment of packaging waste within A1-A3.

The construction stage includes the following modules:

Module A4: Transport to the building site; includes transportation on a heavy truck. A default value of 800 km was assumed for scalability of the transportation impacts, based on PCR B.

Module A5: Based on PCR Part B Section 3.13, no installation materials (e.g., screws) and energy such as electricity are considered in the model. The waste processing of packaging materials is considered in A5. This module also includes the production and waste management of the 7% loss during installation.

The end-of-life stage includes the following modules:

Module C1: Deconstruction is assumed be done manually and thus have negligible environmental burdens.

Module C2: Transport to waste processing or disposal.

Module C3: Waste processing for reuse, recovery, and/or recycling

Module C4: Disposal by incineration of landfilling

The Aluminum and Steel specialty products are assumed to reach the end of waste status directly at construction sites. The treatment and credits for substituted primary production are grouped to Module D.

LCA Discussion

Allocation Procedure

No co-product or by-product allocation was necessary during the manufacturing, use, or end of life stages in the foreground model. Allocation of background data (energy and materials) taken from Sphera's managed LCA content (MLC) 2025.1 databases (Sphera, 2025) is documented online at https://lcadatabase.sphera.com/.

In this LCA, an net scrap substitution approach is used. Open scrap inputs from the production stage are subtracted from scrap to be recycled at end of life to give the net scrap output from the product life cycle. This remaining net scrap is then sent to material recycling. The original burden of the primary material input is then allocated between the current and subsequent life cycle using the mass of recovered secondary material to scale the substituted primary material, i.e., applying a credit for the substitution of primary material so as to distribute burdens appropriately among the different product life cycles. These subsequent process steps are modeled using industry average inventories.

In cases where materials are sent to waste incineration, they are linked to an inventory that accounts for waste composition and heating value as well as for regional efficiencies and heat-to-power output ratios. Credits are assigned for power and heat outputs using the regional grid mix and thermal energy from natural gas. The latter represents the cleanest fossil fuel and therefore results in a conservative estimate of the potential credits.

In cases where materials are sent to landfills, they are linked to an inventory that accounts for waste composition, regional leakage rates, landfill gas capture as well as utilization rates (flaring vs. power production). A credit is assigned for power output using the regional grid mix.

Cut-off Procedure

All known mass and energy flows are reported, and no known flows were deliberately excluded as required by the UL Part A PCR, section 2.9. Any unintentionally excluded flows are considered to be well within the cut-off criteria described in ISO 21930, section 7.1.8.

The system boundary was defined based on relevance to the goal of the study. For the processes within the system boundary, all available energy and material flow data have been included in the model. In cases where no matching life cycle inventories are available to represent a flow, proxy data have been applied based on conservative assumptions regarding environmental impacts.

Renewable Electricity

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

Scenarios

Transport to the building/construction site (A4)

A4 Module

Fuel Type:	Diesel
Liters of Fuel:	6.12 l/100km
Vehicle Type:	Truck
Transport Distance:	800 km
Capacity Utilization:	65 %
Gross density of products transported:	7850 kg/m3
Capacity utilization volume factor:	=1

Installation in to the building/construction site (A5)

A5 Module

Installation Scrap Rate Assumed:	7 %
Ancillary Materials:	0 kg
Net Fresh Water Consumption Specified by Water Source and Fate:	0 m3
Other Resources:	0 kg
Electricity Consumption:	0 kWh
Other Energy Carriers:	0 MJ
Product Lost per Declared/Functional Unit:	0.07 kg
Waste Materials at the Construction Site Before Waste Processing:	0.1159 kg
Mass of Packaging Waste Specified by Type:	0.0459 kg
Direct Emissions to Ambient Air, Soil and Water:	0.0203 kg
Assumptions for scenario development:	Manual installation & deconstruction procedures based on Part B PCR

End of Life (C1 - C4)

C1 - C4 Modules

Collection Process

Collected Separately:	0.95 kg
Collected with Mixed Construction Waste:	0.05 kg

Recovery

Recycling:	0.97 kg
Landfill:	0.03 kg

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

D Module

Recycling Rate of Product:	97 %
Recycled Content of Product:	36 %
Further assumptions for scenario development:	Only one of the member companies provided the data related to the recycled content. Considering the weighted average this meant that less than 1% of the raw material was considered 100% recycled. However, based on the MLC database, the recycled content of the raw material is calculated to be 36%. This is representative of the regional averages and covers the amount of recycled content in primary Steel raw material.

Results

Environmental Impact Assessment Results

IPCC AR5 GWP 100, TRACI 2.1, CML 2016 v4.8

per 1 kg of product .

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

Impact Category	Method	Unit	A1A2A3	A4	A5	C1	C2	C3	C4	D
GWP-total	IPCC AR5 GWP 100	kg CO2 eq	2.81	0.0141	0.189	0	0.0135	0	0.000681	-1.28
ODP	TRACI 2.1	kg CFC 11 eq	1.51e-13	6.24e-16	1.04e-14	0	5.97e-16	0	1.4e-16	2.97e-14
AP	TRACI 2.1	kg SO2 eq	0.00569	0.0000253	0.000388	0	0.0000242	0	0.00000424	-0.00275
EP	TRACI 2.1	kg N eq	0.000378	0.00000247	0.0000237	0	0.00000236	0	4.9e-7	-0.000201
POCP	TRACI 2.1	kg O3 eq	0.0957	0.000556	0.00657	0	0.000532	0	0.0000607	-0.03
ADP-fossil	CML 2016 v4.8	MJ	31.8	0.177	2.16	0	0.169	0	0.00972	-13
ADP-fossil	TRACI 2.1	MJ	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:

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 Indicators

per 1 kg of product .

Indicator	Unit	A1A2A3	A4	A5	C1	C2	C3	C4	D
PERE	MJ, net calorific value	3.31	0.00743	0.218	0	0.00711	0	0.00143	-1.61
PERM	MJ, net calorific value	0.656	0	0.0439	0	0	0	0	0
PERT	MJ, net calorific value	3.96	0.00743	0.262	0	0.00711	0	0.00143	-1.61
PENRE	MJ, net calorific value	34.5	0.179	2.34	0	0.171	0	0.01	-12.6
PENRM	MJ, net calorific value	0.282	0	0.0189	0	0	0	0	0
PENRT	MJ, net calorific value	34.8	0.179	2.35	0	0.171	0	0.01	-12.6
SM	kg	0.397	0	0.0266	0	0	0	0	0
RSF	MJ, net calorific value	0	0	0	0	0	0	0	0
NRSF	MJ, net calorific value	0	0	0	0	0	0	0	0
RE	MJ	0	0	0	0	0	0	0	0
FW	m3	0.0134	0.00000802	0.00088	0	0.00000767	0	0.00000109	-0.121

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, NRPRT or PENRT = 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 kg of product .

Indicator	Unit	A1A2A3	A4	A5	C1	C2	C3	C4	D
HWD	kg	0	0	0	0	0	0	0	0
NHWD	kg	0.0162	0	0.07	0	0	0	0.03	0
HLRW	kg	0.00000139	7.29e-10	9.18e-8	0	6.97e-10	0	1.26e-10	-2.28e-8
ILLRW	kg	0.00116	6.13e-7	0.0000769	0	5.86e-7	0	1.1e-7	-0.0000188
CRU	kg	0	0	0	0	0	0	0	0
MFR	kg	0.0297	0	0	0	0	0	0.97	0
MER	MJ	0	0	0	0	0	0	0	0
EE	MJ	0.0108	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:

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 kg of product .

Indicator	Unit	A1A2A3	A4	A5	C1	C2	C3	C4	D
BCRP	kg CO2	0	0	0	0	0	0	0	0
BCEP	kg CO2	0	0	0	0	0	0	0	0
BCRK	kg CO2	0.0745	0	0.00499	0	0	0	0	0
BCEK	kg CO2	0.0745	0	0.00499	0	0	0	0	0
BCEW	kg CO2	0	0	0	0	0	0	0	0
CCE	kg CO2	0	0	0	0	0	0	0	0
CCR	kg CO2	0	0	0	0	0	0	0	0
CWNR	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:

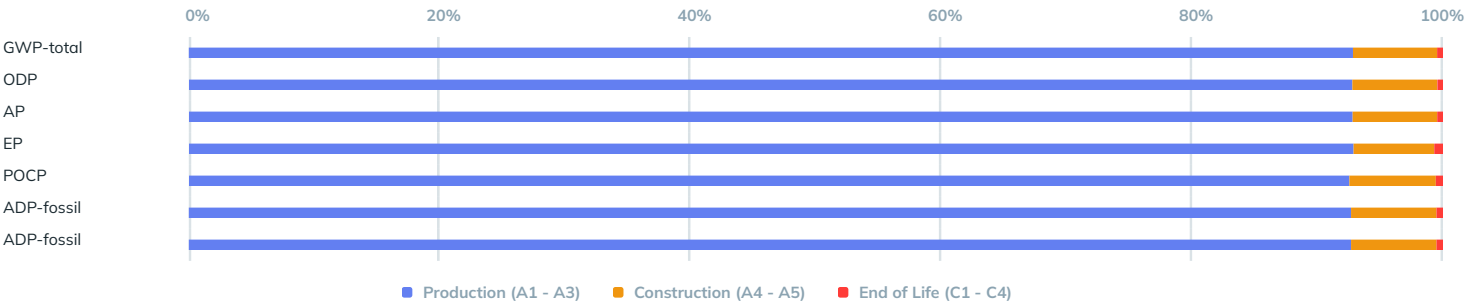
BCRP = Biogenic Carbon Removal from Product, BCEP = Biogenic Carbon Emission from Product, BCRK = Biogenic Carbon Removal from Packaging, BCEK = Biogenic Carbon Emission from Packaging, BCEW = Biogenic Carbon Emission from Combustion of Waste from Renewable Sources Used in Production Processes, CCE = 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.

Impact Scaling Factors

Product Name and/or Product Attribute	Product Specific Functional/Declared Unit Multiplier

Interpretation

Production (A1-A3) is the primary driver of all indicators. In Production, the primary driver of the individual environmental burdens is the Raw Materials (A1). Overall, Manufacturing (A3) and Installation (A5) also make a high contribution across most indicators. Raw Materials (A1) contributes 59% to the gross GWP burden (i.e. excluding Module D), while Installation (A5) contributes 4% due to the upstream burden associated with the 7% installation loss. Manufacturing (A3) contributes 5% to the gross GWP burden. Similar to GWP, when accounting for the recycled material, Raw Materials accounts for 64% gross ODP burden, 59% to AP, 44% to EP, 67% to SFP and 61% to ADPf. The upstream gross environmental burden of installation (A5) loss is 5% for ODP, 4% for AP and EP, 5% for SFP, and for ADPf. Manufacturing contributes 14% to the gross ODP burden, however, the contribution is 5% for AP, 17% for EP, 4% for SFP, and 6% for ADPf. In all other cases, Inbound Transport (A2), Waste Transport (C2), and Disposal (C4) all account for less than 0.45% gross environmental burden across all impact categories. Module D reduces the gross environmental burden by 30% for GWP, 31% for AP, 33% for EP, 22% for SFP, and 28% for ADPf



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