

ENVIRONMENTAL PRODUCT DECLARATION

IN ACCORDANCE WITH ISO 14025 AND EN 50693:2019

SmartEPD-2026-127-0832-01

Patch Panels and Accessories



PANDUIT™



Date of Issue: Apr 17, 2026 Expiration: Apr 17, 2031 Last updated: Apr 17, 2026



General Information

Panduit Corporation

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Product Name:	Patch Panels and Accessories
Functional Unit:	1 unit
Declaration Number:	SmartEPD-2026-127-0832-01
Date of Issue:	April 17, 2026
Expiration:	April 17, 2031
Last updated:	April 17, 2026
EPD Scope:	Cradle to grave A1 - A3, A4, A5, B1 - B7, C1 - C4, D
Market(s) of Applicability:	Global

General Organization Information

At Panduit, we understand that what we deliver matters: high-quality infrastructure and connectivity solutions. But it's how we deliver them that defines who we are. We remain deeply aware of our environmental responsibilities, the importance of an inclusive workplace, and the value of transparent, ethical governance. These principles guide every decision we make and shape how we serve our customers, our people, and our partners.

As we've grown, so has our commitment—to not only deliver dependable, scalable network connectivity and powerful infrastructure, but also to embed sustainability into everything we do. By integrating environmental, social, and governance principles into our operations, we're creating smarter solutions that reduce packaging waste, move products more efficiently, and support a more responsible customer journey. Today's successes are the springboard for what comes next - anticipating tomorrow's challenges so we can build a future that is more connected, resilient, and sustainable."

Further information can be found at: <https://www.panduit.com/en/about/about-panduit/environmental-social-and-governance.html>

Limitations, Liability and Ownership

This declaration is an environmental product declaration (EPD) in accordance with ISO 14025 and EN 15804+A2. EPDs rely on Life Cycle Assessment (LCA) to provide information on a number of environmental impacts of products over their life cycle. Exclusions: EPDs do not indicate that any environmental or social performance benchmarks are met, and there may be impacts that they do not encompass. LCAs do not typically address the site-specific environmental impacts of raw material extraction, nor are they meant to assess human health toxicity. EPDs can complement but cannot replace tools and certifications that are designed to address these impacts and/or set performance thresholds – e.g. Type 1 certifications, health assessments and declarations, environmental impact assessments, etc.

Accuracy of Results: EPDs regularly rely on estimations of impacts, and the level of accuracy in estimation of effect differs for any particular product line and reported impact. Comparability: EPDs are not comparative assertions and are either not comparable or have limited comparability when they cover different life cycle stages, are based on different product category rules or are missing relevant environmental impacts. EPDs from different programs may not be comparable.

Reference Standards

Standard(s):	ISO 14025 and EN 50693:2019
Core PCR:	PEP ecopassport® PROGRAM PCR Product Category Rules for Electrical, Electronic and HVAC-R Products (PCR-ed4-EN-2021 09 06)
	Date of issue: September 06, 2021
	Valid until: September 06, 2026
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:	Olivia Jurewicz Sustainable Solutions Corporation info2024@sustainablesolutions.com
EPD Program Operator:	Smart EPD info@smarterpd.com www.smarterpd.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 Independent external verification of EPD, according to ISO 14025 and reference PCR(s): Arka Pandit pandit_arka@outlook.com

External

External

Product Information

Functional Unit:	1 unit
Mass:	0.00297 kg
Reference Service Life:	20 Years
Product Specificity:	<input checked="" type="checkbox"/> Product Average <input type="checkbox"/> Product Specific

Product Description

This EPD includes the following products:

Mini-Com Elongated Surface Mount Box: Part Number CBX1AW-A

Mini-Com Elongated Surface Mount Box: Part Number CBX1BL-A

Mini-Com Elongated Surface Mount Box: Part Number CBX1EI-A
Mini-Com Elongated Surface Mount Box: Part Number CBX1IG-A
Mini-Com Elongated Surface Mount Box: Part Number CBX1IW-A
Mini-Com Elongated Surface Mount Box: Part Number CBX1WH-A
Mini-Com Elongated 2-Port Surface Mount Box: Part Number CBX2AW-AY
Mini-Com Elongated 2-Port Surface Mount Box: Part Number CBX2BL-AY
Mini-Com Elongated 2-Port Surface Mount Box: Part Number CBX2EI-AY
Mini-Com Elongated 2-Port Surface Mount Box: Part Number CBX2IG-AY
Mini-Com Elongated 2-Port Surface Mount Box: Part Number CBX2IW-AY
Mini-Com Elongated 2-Port Surface Mount Box: Part Number CBX2WH-AY
Mini-Com Elongated 4-Port Surface Mount Box: Part Number CBX4AW-AY
Mini-Com Elongated 4-Port Surface Mount Box: Part Number CBX4BL-AY
Mini-Com Elongated 4-Port Surface Mount Box: Part Number CBX4EI-AY
Mini-Com Elongated 4-Port Surface Mount Box: Part Number CBX4IG-AY
Mini-Com Elongated 4-Port Surface Mount Box: Part Number CBX4IW-AY
Mini-Com Elongated 4-Port Surface Mount Box: Part Number CBX4WH-AY
Mini-Com Multimedia 12-Port Surface Mount Box: Part Number CBXF12AW-AY
Mini-Com Multimedia 12-Port Surface Mount Box: Part Number CBXF12BL-AY
Mini-Com Multimedia 12-Port Surface Mount Box: Part Number CBXF12IW-AY
Mini-Com Multimedia 12-Port Surface Mount Box: Part Number CBXF12WH-AY
Mini-Com Multimedia 6-Port Surface Mount Box: Part Number CBXF6AW-AY
Mini-Com Multimedia 6-Port Surface Mount Box: Part Number CBXF6BL-AY
Mini-Com Multimedia 6-Port Surface Mount Box: Part Number CBXF6EI-AY
Mini-Com Multimedia 6-Port Surface Mount Box: Part Number CBXF6IW-AY
Mini-Com Multimedia 6-Port Surface Mount Box: Part Number CBXF6WH-AY
Mini-Com 2-Port Surface Mount Box with Quick Release Cover: Part Number CBXQ2AW-A
Mini-Com 2-Port Surface Mount Box with Quick Release Cover: Part Number CBXQ2EI-A
Mini-Com 2-Port Surface Mount Box with Quick Release Cover: Part Number CBXQ2IW-A
Mini-Com 2-Port Surface Mount Box with Quick Release Cover: Part Number CBXQ2WH-A
Mini-Com 6-Port Surface Mount Box with Quick Release Cover: Part Number CBXQ6AW-A
Mini-Com 6-Port Surface Mount Box with Quick Release Cover: Part Number CBXQ6EI-A
Mini-Com 6-Port Surface Mount Box with Quick Release Cover: Part Number CBXQ6IW-A
Mini-Com 6-Port Surface Mount Box with Quick Release Cover: Part Number CBXQ6WH-A
Mini-Com 1-Port 22.5x45 Flat/Shuttered Adapter: Part Number CFA1FSAW-X
Mini-Com 2-Port 45x45 Sloped/Shuttered Adapter: Part Number CFP45LS2SAW
Mini-Com 1-Port 45x45 Sloped/Shuttered Adapter: Part Number CFPFLS1SAW
Mini-Com 2-Port 45x45 Sloped/Shuttered Adapter: Part Number CFPFLS2SAW
Mini-Com 1-Port 45x45 Sloped/Shuttered Adapter: Part Number CFPFS1SAW
Mini-Com 2-Port 45x45 Sloped/Shuttered Adapter: Part Number CFPFS2SAW
Mini-Com 2-Port 45x45 Sloped/Shuttered Adapter: Part Number CFPFS2SBL
Mini-Com 2 Port Horizontal Faceplate: Part Number CFPH2IW
Mini-Com 2 Port Horizontal Faceplate: Part Number CFPH2WH
Mini-Com 2 Port 86x86 Sloped/Shuttered Faceplate: Part Number CFPUKS2SAWY
Mini-Com 2 Port 86x86 Sloped/Shuttered Faceplate: Part Number CFPUKS2SIWY
Mini-Com Water Resistant 4 Port Faceplate: Part Number CFPWR4CIG
Mini-Com Water Resistant 4 Port Faceplate: Part Number CFPWR4CL
Mini-Com 1 Port Sloped/Shuttered Euromod Adapter: Part Number CM6CESSAW-X
Mini-Com 1 Port Sloped/Shuttered LJ6 Adapter: Part Number CM6CSSAW-X

Mini-Com 6 Port MuTOA: Part Number CM6PBL
Mini-Com 6 Port MuTOA: Part Number CM6PIW
Mini-Com 24 Port Shielded Patch Panel: Part Number CP24BLY
Mini-Com 24 Port Shielded Patch Panel: Part Number CP24WH
Mini-Com 24 Port Shielded Patch Panel with Cable Management: Part Number CP24WSBLY
Mini-Com 24 Port Shielded Angled Patch Panel: Part Number CPA24BL
Mini-Com 24 Port Shielded Angled Patch Panel: Part Number CPA24WH
Mini-Com High Density 48 Port Shielded Angled Patch Panel: Part Number CPA48HDBL
Mini-Com High Density 48 Port Shielded Angled Patch Panel: Part Number CPA48HDWH
Mini-Com 24 Port Flush Mount Patch Panel: Part Number CPP24FMWBLY
Mini-Com 24 Port Flush Mount Patch Panel: Part Number CPP24FMWWH
Mini-Com Faceplate 24 Port Patch Panel: Part Number CPP24WBLY
Mini-Com High Density 48 Port Patch Panel: Part Number CPP48HDEWBLY
Mini-Com High Density 48 Port Patch Panel: Part Number CPP48HDEWWH
Mini-Com High Density 48 Port Patch Panel: Part Number CPP48HDWBLY
Mini-Com High Density 48 Port Patch Panel: Part Number CPP48HDWWH
Mini-Com Faceplate 24 Port Patch Panel: Part Number CPPL24M6BLY
Mini-Com Faceplate 24 Port Patch Panel: Part Number CPPL24WBLY
Mini-Com Faceplate 24 Port Angled Patch Panel: Part Number CPPLA24WBLY
NetKey 2 Port Surface Mount Box: Part Number NK2BXAW-A
NetKey 2 Port Surface Mount Box: Part Number NK2BXBL-A
NetKey 2 Port Surface Mount Box: Part Number NK2BXEI-A
NetKey 2 Port Surface Mount Box: Part Number NK2BXIG-A
NetKey 2 Port Surface Mount Box: Part Number NK2BXIW-A
NetKey 2 Port Surface Mount Box: Part Number NK2BXWH-A
NetKey 2 Port Horizontal Sloped Faceplate: Part Number NK2HSFEIY
NetKey 2 Port Horizontal Sloped Faceplate: Part Number NK2HSFIGY
NetKey 2 Port Horizontal Sloped Faceplate: Part Number NK2HSFIWY
NetKey 2 Port Horizontal Sloped Faceplate: Part Number NK2HSFWHY
NetKey 1 Port Shuttered LJ6 Adapter: Part Number NK6CSAW-X
NetKey 1 Port Sloped/Shuttered LJ6 Adapter: Part Number NK6CSSAW-X
NetKey Faceplate 24 Port Patch Panel: Part Number NKFP24Y
NetKey 2 Port 86x86 Shuttered Faceplate: Part Number NKFPLUKF2SAW
NetKey 2 Port 45x45 Sloped/Shuttered Adapter: Part Number NKFS2SAW
NetKey 2 Port 86x86 Sloped/Shuttered Faceplate: Part Number NKUKS2SAW
Shielded Keystone 24 Port Patch Panel: Part Number SKPP24BL
Shielded Keystone 24 Port Angled Patch Panel: Part Number SKPPA24BL

Product Specifications

Product SKU(s): This EPD presents the impacts of CB1AW-A as the baseline product, but this EPD is representative of the products listed in the Product Description section.

Product Classification Codes: UNSPSC - 43223301

Material Composition

Material/Component Category	Origin	% Mass
ABS	None	92.94
Tape	None	7.06

Packaging Material	Origin	kg Mass
Adhesive Tape	None	1.41E-07
Cardboard	None	2.34E-07
Paper	None	4.82E-09
Wood	None	1.33E-07

Biogenic Carbon Content	kg C per unit
Biogenic carbon content in product	None
Biogenic carbon content in accompanying packaging	5.08e-8

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:

Allocation for the products within this EPD was conducted based on weighted production by mass.

System Boundary




Production	A1	Raw material supply	✓
	A2	Transport	✓
	A3	Manufacturing	✓

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

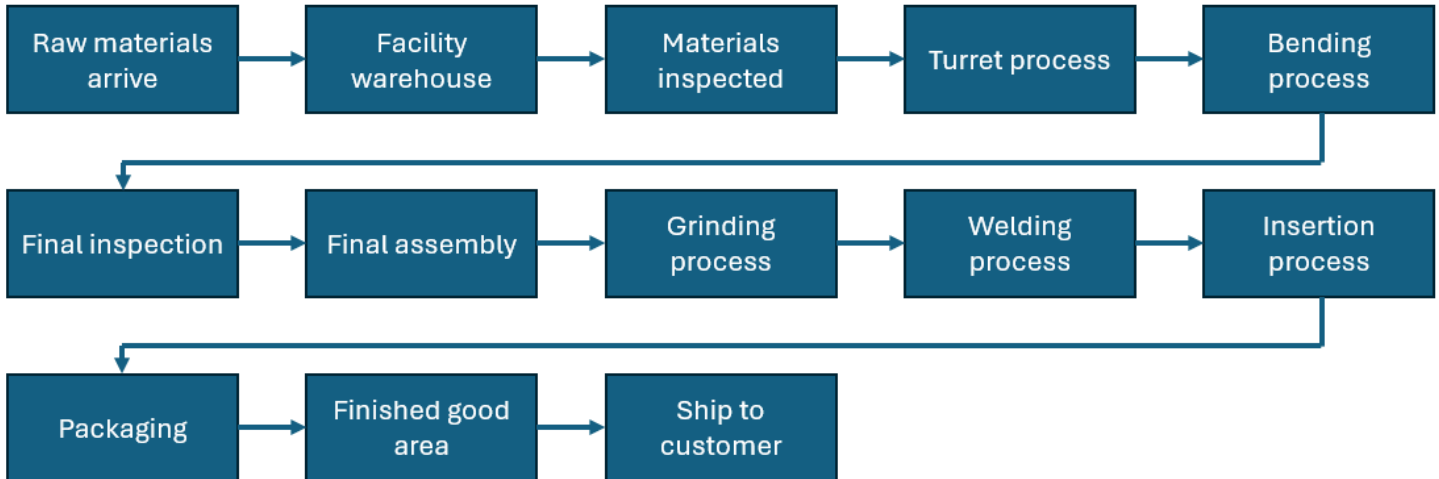
Note:

ND = Module not declared

Plants

-  Europe Europe
-  North America North America
-  Asia Asia

Product Flow Diagram



The manufacturing of patch panel accessories starts with the steel or plastic bases of the majority of the products. Those bases are then inspected to ensure they have the proper amount of bend required by the final product. The bases are then painted and bent to their final product dimensions. Then pieces are molded for additional small pieces that go on the bases and they are welded on. The components are then put through their final assembly and packaged. There are additional inspections at each level of the manufacturing process.

Each plant produces a variety of products with differing impacts, so allocation was conducted based on overall production mass.

Software And Database

LCA Software:

☰ Sphera LCA for Experts (formerly GaBi) v. 10.9

LCI Foreground Database(s):

☰ Sphera Managed LCA Content (formerly GaBi Professional Database) v. |

☰ Plastics Europe v. | ☰ US LCI v. | ☰ worldsteel v.

LCI Background Database(s):

☰ Sphera Managed LCA Content (formerly GaBi Professional Database) v.

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

Primary data were collected for every process in the product system under the control of Panduit's facilities. Secondary data from the LCA Managed Content, USLCI, WorldSteel, and PlasticsEurope databases were utilized when necessary. These data were evaluated and have temporal, geographic, and technical coverage appropriate to the scope of the product category.

The data sources used are complete and representative of global systems in terms of the geographic and technological coverage and are a recent vintage (i.e. less than ten years old). The data used for primary data are based on direct information sources of the manufacturers and suppliers. Secondary data sets were used for raw materials extraction and processing, end of life, transportation, and energy production flows. Wherever secondary data is used, the study adopts critically reviewed data for consistency, precision, and reproducibility to limit uncertainty.

Life Cycle Module Description

The primary manufacturing processes occur in multiple locations across North America, Europe, and Asia. All manufacturing sites that produce the part numbers that are included in this EPD product grouping are included in this scope.

The scope of this EPD is cradle-to-grave and includes the life cycle stages of Raw Material Extraction and Processing, Raw Material Shipping, Manufacturing, Product Shipping, Packaging, Use, and Final Disposal.

LCA Discussion

Allocation Procedure

The LCI data was collected from the Panduit facilities for the 2024 calendar year. Allocation was determined on a per product basis for primary data. For secondary data, cut-off methodology was used.

Cut-off Procedure

Processes whose total contribution to the final result, with respect to their mass and in relation to all considered impact categories, is less than 1% can be neglected.

The sum of the neglected processes may not exceed 5% by mass of the considered impact categories. For that a documented assumption is admissible. For Hazardous Substances the following requirements apply:

- The Life Cycle Inventory (LCI) of hazardous substances will be included, if the inventory is available.
- If the LCI for a hazardous substance is not available, the substance will appear as an input in the LCI of the product, if its mass represents more than 0.1% of the product composition.
- If the LCI of a hazardous substance is approximated by modeling another substance, documentation will be provided.

This EPD is in compliance with the cut-off criteria. No processes were neglected or excluded. Capital items for the production processes (machine, buildings, etc.) were not taken into consideration.

Renewable Electricity

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

Scenarios

Transport to the building/construction site (A4)

A4 Module

Fuel Type: Diesel
Liters of Fuel: 38 l/100km

Installation in to the building/construction site (A5)

A5 Module

Installation Scrap Rate Assumed: 0 %
Ancillary Materials: 0 kg
Waste Materials at the Construction Site Before Waste Processing: 5.13E-07 kg
Mass of Packaging Waste Specified by Type: 1.41E-07 adhesive tape, 2.34E-07 cardboard, 4.82E-09 paper, 1.33E-07 wood kg
Biogenic Carbon Contained in Packaging (kg C): 5.08E-08 kg
Assumptions for scenario development: For the installation of these products, only standard tools are needed. Per the PCR, there was no scrap rate assumed for the installation of Patch Panels and Accessories into a building. Packaging waste is generated; this waste is assumed to be 100% disposed in a landfill.

Use (B1)

B1 Module

Use Conditions:
The use phase assumptions for this EPD follow the PSR Section 3.12.1. and there are no use (B1) phase assumptions for the products in this EPD.

Maintenance (B2)

B2 Module

Further assumptions for scenario development: There are no maintenance (B2) phase assumptions for the products in this EPD.

Repair (B3)

B3 Module

Further assumptions for scenario development: The use phase assumptions for this EPD follow the PSR Section 3.12.1. and there are no repair (B3) phase assumptions for the products in this EPD.

Replacement (B4)

B4 Module

Further assumptions for scenario development: The use phase assumptions for this EPD follow the PSR Section 3.12.1. and there are no replacement (B4) phase assumptions for the products in this EPD.

Refurbishment (B5)

B5 Module

Further assumptions for scenario development: The use phase assumptions for this EPD follow the PSR Section 3.12.1. and there are no restoration (B5) phase assumptions for the products in this EPD.

Operational Energy Use (B6) & Operational Water Use (B7)

B6 & B7 Modules

Further assumptions for scenario development:

The use phase assumptions for this EPD assume that there are no energy (B6) use and no operational water (B7) phase scenarios for the products in this EPD.

End of Life (C1 - C4)

C1 - C4 Modules

Recovery

Recycling: 1.45E-01 kg

Disposal

Product or Material for Final Disposal: 3.68E-02 kg

Removals of Biogenic Carbon: 0 kg CO₂

Assumptions for scenario development:

The end-of-life scenario was modeled based on the PCR, therefore the study assumes varying amounts of recycling and landfill depending on the material. Aluminum is assumed to be recycled at 70% and landfilled at 30%, while other non-ferrous metals are assumed to be recycled at 60% and landfilled at 40%. Steel is assumed to be recycled at 80% and landfilled at 20%. PVC is assumed to be incinerated with no landfill recovery at 50% and landfilled at 50%. Finally, any other materials are assumed to be landfilled at 100%. 100km is the distance assumed that the waste travels via truck before reaching the end-of-life.

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

D Module

Net Energy Benefit from Material Flow Declared in 0 MJ

C3 for Energy Recovery:

Results

Environmental Impact Assessment Results

TRACI 2.2, CML 2016 v4.8, EF3.1

per 1 unit 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	Unit	Method	A1 - A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
GWP-total (excl biogenic)	kg CO2 eq	TRACI 2.2	1.08e-2	1.30e-3	6.17e-4	0	0	0	0	0	0	0	0	2.29e-4	0	4.40e-5	-6.43e-3
ODP	kg CFC 11 eq	TRACI 2.2	2.90e-14	3.88e-14	3.40e-15	0	0	0	0	0	0	0	0	3.14e-17	0	1.41e-16	-4.48e-14
AP	kg SO2 eq	TRACI 2.2	2.49e-5	1.65e-5	1.91e-5	0	0	0	0	0	0	0	0	1.63e-6	0	1.42e-7	-8.51e-6
EP-freshwater	kg P eq	TRACI 2.2	1.22e-8	1.51e-11	6.16e-10	0	0	0	0	0	0	0	0	1.29e-11	0	4.52e-11	-1.59e-9
EP-marine	kg N eq	TRACI 2.2	1.65e-5	2.36e-5	2.54e-6	0	0	0	0	0	0	0	0	1.81e-6	0	2.74e-7	-1.95e-5
PM	kg PM2.5 eq	TRACI 2.2	9.49e-7	5.00e-7	7.67e-8	0	0	0	0	0	0	0	0	5.40e-8	0	2.29e-8	-1.73e-6
ODP	kg CFC-11 eq	CML 2016 v4.8	2.89e-14	3.87e-14	3.39e-15	0	0	0	0	0	0	0	0	3.14e-17	0	1.41e-16	-4.48e-14
AP	kg SO2 eq	CML 2016 v4.8	2.09e-5	1.87e-5	2.08e-6	0	0	0	0	0	0	0	0	1.36e-6	0	2.56e-7	-1.90e-5
EP	kg PO4 eq	CML 2016 v4.8	3.93e-6	3.67e-6	3.99e-7	0	0	0	0	0	0	0	0	3.14e-7	0	2.88e-8	-1.88e-6
POCP	kg C2H4 eq	CML 2016 v4.8	2.81e-6	7.59e-7	1.47e-7	0	0	0	0	0	0	0	0	-5.55e-7	0	2.07e-8	-2.26e-6
ADP-fossil	MJ	CML 2016 v4.8	2.60e-1	1.67e-2	1.41e-2	0	0	0	0	0	0	0	0	3.12e-3	0	5.69e-4	-6.48e-2
ADP-minerals&metals	kg Sb eq	CML 2016 v4.8	4.35e-9	1.01e-11	2.19e-10	0	0	0	0	0	0	0	0	8.21e-12	0	1.37e-11	-5.26e-10
GWP- total	kg CO2 eq	EF3.1	1.11e-2	1.31e-3	6.33e-4	0	0	0	0	0	0	0	0	2.31e-4	0	4.44e-5	-6.53e-3
GWP- fossil	kg CO2 eq	EF3.1	1.10e-2	1.31e-3	6.31e-4	0	0	0	0	0	0	0	0	2.31e-4	0	4.45e-5	-6.51e-3
GWP-biogenic	kg CO2 eq	EF3.1	-1.44e-5	7.14e-8	-7.28e-7	0	0	0	0	0	0	0	0	6.08e-8	0	-3.06e-7	-4.63e-6
GWP-luluc	kg CO2 eq	EF3.1	5.05e-5	1.40e-8	2.54e-6	0	0	0	0	0	0	0	0	1.20e-8	0	2.67e-7	-2.03e-5
ODP	kg CFC11 eq	EF3.1	2.32e-14	2.67e-14	2.50e-15	0	0	0	0	0	0	0	0	2.54e-17	0	1.20e-16	-3.80e-14

Impact Category	Unit	Method	A1 - A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
AP	mol H+ eq	EF3.1	2.72e-5	2.59e-5	2.79e-6	0	0	0	0	0	0	0	0	1.96e-6	0	3.16e-7	-2.31e-5
PM	disease incidence	EF3.1	1.80e-10	9.22e-11	1.47e-11	0	0	0	0	0	0	0	0	1.42e-11	0	3.96e-12	-3.15e-10
IRP	kBq U235 eq	EF3.1	2.02e-4	9.92e-8	1.01e-5	0	0	0	0	0	0	0	0	8.45e-8	0	7.13e-7	-1.11e-4
POCP	kg NMVOC eq	EF3.1	2.84e-5	2.87e-5	2.97e-6	0	0	0	0	0	0	0	0	1.78e-6	0	2.49e-7	-1.48e-5
EP-fw	kg P eq	EF3.1	2.69e-8	3.26e-10	1.36e-9	0	0	0	0	0	0	0	0	2.82e-11	0	1.01e-10	-3.56e-9
EP-marine	kg N eq	EF3.1	9.71e-6	1.09e-5	1.09e-6	0	0	0	0	0	0	0	0	9.30e-7	0	8.13e-8	-4.99e-6
EP-terrestrial	mol N eq	EF3.1	1.11e-4	1.19e-4	1.21e-5	0	0	0	0	0	0	0	0	1.02e-5	0	8.95e-7	-5.42e-5
SQP	dimensionless	EF3.1	1.57e-2	7.08e-6	7.92e-4	0	0	0	0	0	0	0	0	6.03e-6	0	1.61e-4	-1.10e-2
WDP	m3 world eq deprived	EF3.1	2.84e-3	1.07e-6	1.43e-4	0	0	0	0	0	0	0	0	9.13e-7	0	5.09e-6	-1.99e-3
ADP-fossil	MJ, net calorific value	EF3.1	2.67e-1	1.68e-2	1.44e-2	0	0	0	0	0	0	0	0	3.12e-3	0	5.86e-4	-6.98e-2
ADP-minerals&metals	kg Sb eq	EF3.1	2.91e-9	3.97e-12	1.46e-10	0	0	0	0	0	0	0	0	3.38e-12	0	2.88e-12	-4.42e-10
ETP-fwio	CTUe	EF3.1	1.28e-1	2.34e-2	7.79e-3	0	0	0	0	0	0	0	0	3.70e-3	0	3.38e-4	-1.02e-2
ETP-fwo	CTUe	EF3.1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
HTP-cio	CTUh	EF3.1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
HTP-co	CTUh	EF3.1	9.30e-12	3.43e-13	4.86e-13	0	0	0	0	0	0	0	0	5.59e-14	0	7.98e-15	-1.38e-12
HTP-ncio	CTUh	EF3.1	ND	ND	ND	0	0	0	0	0	ND	0	0	ND	ND	ND	ND
HTP-nc	CTUh	EF3.1	4.68e-11	1.99e-11	3.40e-12	0	0	0	0	0	0	0	0	8.41e-13	0	3.08e-13	-2.25e-11

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 = Particulate 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 unit of product.

Indicator	Unit	A1 - A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
PERE	MJ	5.87e-2	1.83e-5	2.94e-3	0	0	0	0	0	0	0	0	1.56e-5	0	1.02e-4	-2.28e-2
PERM	MJ	6.82e-6	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PERT	MJ	5.87e-2	1.83e-5	2.94e-3	0	0	0	0	0	0	0	0	1.56e-5	0	1.02e-4	-2.28e-2
PENRE	MJ	2.67e-1	1.68e-2	1.44e-2	0	0	0	0	0	0	0	0	3.12e-3	0	5.86e-4	-6.98e-2
PENRM	MJ	1.11e-1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PENRT	MJ	2.67e-1	1.68e-2	1.44e-2	0	0	0	0	0	0	0	0	3.12e-3	0	5.86e-4	-6.98e-2
RPRE	MJ	5.87e-2	1.83e-5	2.94e-3	0	0	0	0	0	0	0	0	1.56e-5	0	1.02e-4	-2.28e-2
RPRM	MJ	6.82e-6	0	0	0	0	0	0	0	0	0	0	0	0	0	0
RPRT	MJ	5.87e-2	1.83e-5	2.94e-3	0	0	0	0	0	0	0	0	1.56e-5	0	1.02e-4	-2.28e-2
NRPRE	MJ	2.67e-1	1.68e-2	1.44e-2	0	0	0	0	0	0	0	0	3.12e-3	0	5.86e-4	-6.98e-2
NRPRM	MJ	1.11e-1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NRPRT	MJ	3.78e-1	1.68e-2	1.44e-2	0	0	0	0	0	0	0	0	3.12e-3	0	5.86e-4	-6.98e-2
SM	kg	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
RSF	MJ	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NRSF	MJ	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
FW	m3	1.05e-4	2.82e-8	5.24e-6	0	0	0	0	0	0	0	0	2.40e-8	0	1.55e-7	-4.75e-5
RE	MJ	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-3.12e-2

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 unit of product.

Indicator	Unit	A1 - A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
HWD	kg	8.51e-11	7.53e-14	4.27e-12	0	0	0	0	0	0	0	0	6.41e-14	0	1.46e-13	-5.70e-11
NHWD	kg	9.90e-5	1.25e-7	1.54e-4	0	0	0	0	0	0	0	0	1.06e-7	0	2.97e-3	-3.43e-5
RWD	kg	2.36e-6	1.44e-9	1.18e-7	0	0	0	0	0	0	0	0	1.22e-9	0	6.16e-9	-1.77e-6
CRU	kg	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
MFR	kg	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
MER	kg	0	0	0	0	0	0	0	0	0	0	0	0	1.49e-3	0	0
MNER	kg	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
EEE	MJ	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-3.12e-2
EET	MJ	0	0	0	0	0	0	0	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:

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 unit of product.

Indicator	Unit	A1 - A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
BCRP	kg CO2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
BCEP	kg CO2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
BCRK	kg CO2	1.86e-7	0	0	0	0	0	0	0	0	0	0	0	0	0	0
BCEK	kg CO2	0	1.86e-7	0	0	0	0	0	0	0	0	0	0	0	0	0
BCEW	kg CO2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CCE	kg CO2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CCR	kg CO2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CWNR	kg CO2	0	0	0	0	0	0	0	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.

Scaling Factors

Part Number	A1-A3 GWP	A1-A3 ODP	A1-A3 AP	A1-A3 Freshwater EP	A1-A3 Marine EP	A1-A3 Smog	A4	A5	C2-D
CBX1AW-A	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
CBX1BL-A	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
CBX1EI-A	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
CBX1IG-A	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
CBX1IW-A	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
CBX1WH-A	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
CBX2AW-AY	13.97	12.78	13.97	13.83	14.04	13.83	13.42	13.42	13.42

Part Number	A1-A3 GWP	A1-A3 ODP	A1-A3 AP	A1-A3 Freshwater EP	A1-A3 Marine EP	A1-A3 Smog	A4	A5	C2-D
CBX2BL-AY	13.97	12.78	13.97	13.83	14.04	13.83	13.42	13.42	13.42
CBX2EI-AY	13.97	12.78	13.97	13.83	14.04	13.83	13.42	13.42	13.42
CBX2IG-AY	13.97	12.78	13.97	13.83	14.04	13.83	13.42	13.42	13.42
CBX2IW-AY	13.97	12.78	13.97	13.83	14.04	13.83	13.42	13.42	13.42
CBX2WH-AY	13.97	12.78	13.97	13.83	14.04	13.83	13.42	13.42	13.42
CBX4AW-AY	17.04	15.24	17.00	16.65	16.99	16.55	16.32	16.32	16.32
CBX4BL-AY	17.04	15.24	17.00	16.65	16.99	16.55	16.32	16.32	16.32
CBX4EI-AY	17.04	15.24	17.00	16.65	16.99	16.55	16.32	16.32	16.32
CBX4IG-AY	17.04	15.24	17.00	16.65	16.99	16.55	16.32	16.32	16.32
CBX4IW-AY	17.04	15.24	17.00	16.65	16.99	16.55	16.32	16.32	16.32
CBX4WH-AY	17.04	15.24	17.00	16.65	16.99	16.55	16.32	16.32	16.32
CBXF12AW-AY	60.11	54.06	60.83	60.14	61.20	60.83	58.45	58.45	58.45
CBXF12BL-AY	60.11	54.06	60.83	60.14	61.20	60.83	58.45	58.45	58.45
CBXF12IW-AY	60.11	54.06	60.83	60.14	61.20	60.83	58.45	58.45	58.45
CBXF12WH-AY	60.11	54.06	60.83	60.14	61.20	60.83	58.45	58.45	58.45
CBXF6AW-AY	48.18	43.41	48.61	47.99	48.84	48.37	46.75	46.75	46.75
CBXF6BL-AY	48.18	43.41	48.61	47.99	48.84	48.37	46.75	46.75	46.75
CBXF6EI-AY	48.18	43.41	48.61	47.99	48.84	48.37	46.75	46.75	46.75
CBXF6IW-AY	48.18	43.41	48.61	47.99	48.84	48.37	46.75	46.75	46.75
CBXF6WH-AY	48.18	43.41	48.61	47.99	48.84	48.37	46.75	46.75	46.75
CBXQ2AW-A	19.94	6725.72	19.43	31.67	18.58	17.33	24.42	24.42	24.42
CBXQ2EI-A	19.94	6725.72	19.43	31.67	18.58	17.33	24.42	24.42	24.42
CBXQ2IW-A	19.45	6725.46	18.97	31.23	18.10	16.84	23.96	23.96	23.96
CBXQ2WH-A	19.94	6725.72	19.43	31.67	18.58	17.33	24.42	24.42	24.42
CBXQ6AW-A	48.32	1005.88	46.80	58.83	46.62	45.93	52.61	52.61	52.61
CBXQ6EI-A	48.32	1005.88	46.80	58.83	46.62	45.93	52.61	52.61	52.61
CBXQ6IW-A	48.32	1005.88	46.80	58.83	46.62	45.93	52.61	52.61	52.61

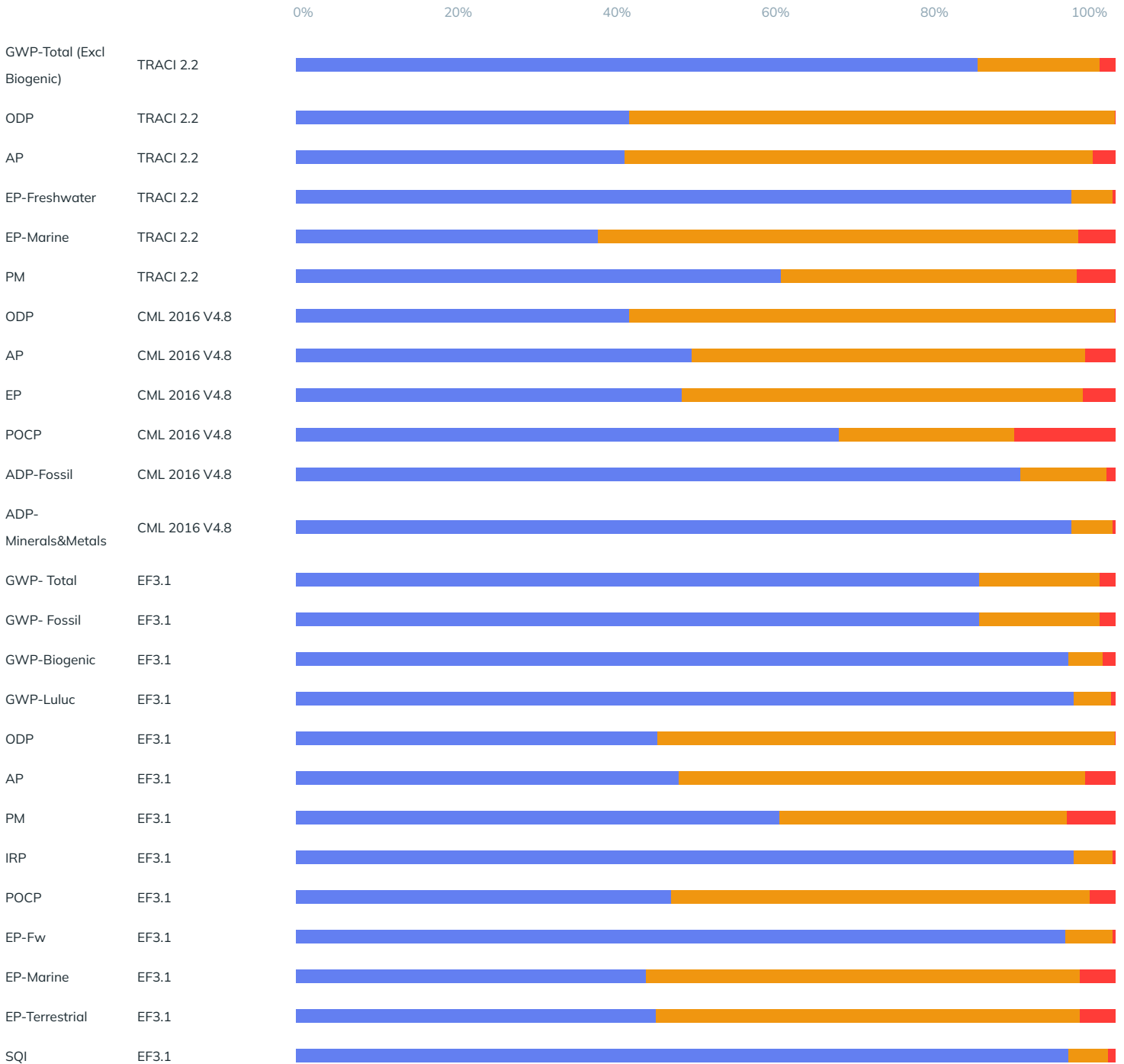
Part Number	A1-A3 GWP	A1-A3 ODP	A1-A3 AP	A1-A3 Freshwater EP	A1-A3 Marine EP	A1-A3 Smog	A4	A5	C2-D
CBXQ6WH-A	48.32	1005.88	46.80	58.83	46.62	45.93	52.61	52.61	52.61
CFA1FSAW-X	18.14	9.63	17.95	16.28	17.33	16.40	19.43	19.43	19.43
CFP45LS2SAW	21.50	12.17	21.02	20.92	21.61	22.07	21.49	21.49	21.49
CFPFLS1SAW	15.78	6722.46	15.25	21.37	15.02	14.49	17.65	17.65	17.65
CFPFLS2SAW	15.97	6722.56	15.44	21.54	15.21	14.68	17.83	17.83	17.83
CFPFS1SAW	16.91	9.28	16.22	15.26	16.68	17.01	16.20	16.20	16.20
CFPFS2SAW	12.30	6.75	11.80	11.10	12.13	12.37	11.79	11.79	11.79
CFPFS2SBL	26.54	14.56	25.47	23.96	26.18	26.71	25.43	25.43	25.43
CFPH2IW	15.74	8.34	15.17	13.52	15.11	14.86	15.58	15.58	15.58
CFPH2WH	15.74	8.34	15.17	13.52	15.11	14.86	15.58	15.58	15.58
CFPUKS2SAWY	28.63	6728.73	23.60	33.90	22.73	27.25	29.10	29.10	29.10
CFPUKS2SIWY	32.85	6731.69	31.67	36.47	31.68	31.22	34.24	34.24	34.24
CFPWR4CIG	56.86	399127.51	59.54	129.31	45.31	5.21	54.15	54.15	54.15
CFPWR4CL	56.86	399127.51	59.54	129.31	45.31	5.21	54.15	54.15	54.15
CM6CESSAW-X	7.24	3.86	5.89	6.87	5.85	7.41	6.76	6.76	6.76
CM6CSSAW-X	5.15	2.74	4.19	4.89	4.16	5.26	4.80	4.80	4.80
CM6PBL	24.02	187814.73	25.81	52.28	20.14	1.65	25.17	25.17	25.17
CM6PIW	24.02	187814.73	25.81	52.28	20.14	1.65	25.17	25.17	25.17
CP24BLY	83.11	86138.91	153.20	132.14	56.89	-0.97	107.94	107.94	107.94
CP24WH	277.98	9589.92	872.68	63.00	299.68	18.30	307.43	307.43	307.43
CP24WSBLY	71.71	67213.10	123.58	105.75	45.70	-1.61	84.53	84.53	84.53
CPA24BL	102.82	2970.14	274.26	41.69	99.50	12.58	95.03	95.03	95.03
CPA24WH	102.82	2970.14	274.26	41.69	99.50	12.58	95.03	95.03	95.03
CPA48HDBL	242.35	5316.04	550.47	128.82	234.85	33.54	219.58	219.58	219.58
CPA48HDWH	228.02	5199.12	512.67	101.19	195.84	28.19	219.58	219.58	219.58
CPP24FMWBLY	79.43	67930.48	180.36	116.13	113.83	6.14	81.94	81.94	81.94
CPP24FMWWH	216.60	44.37	182.70	94.98	116.08	19.85	222.60	222.60	222.60

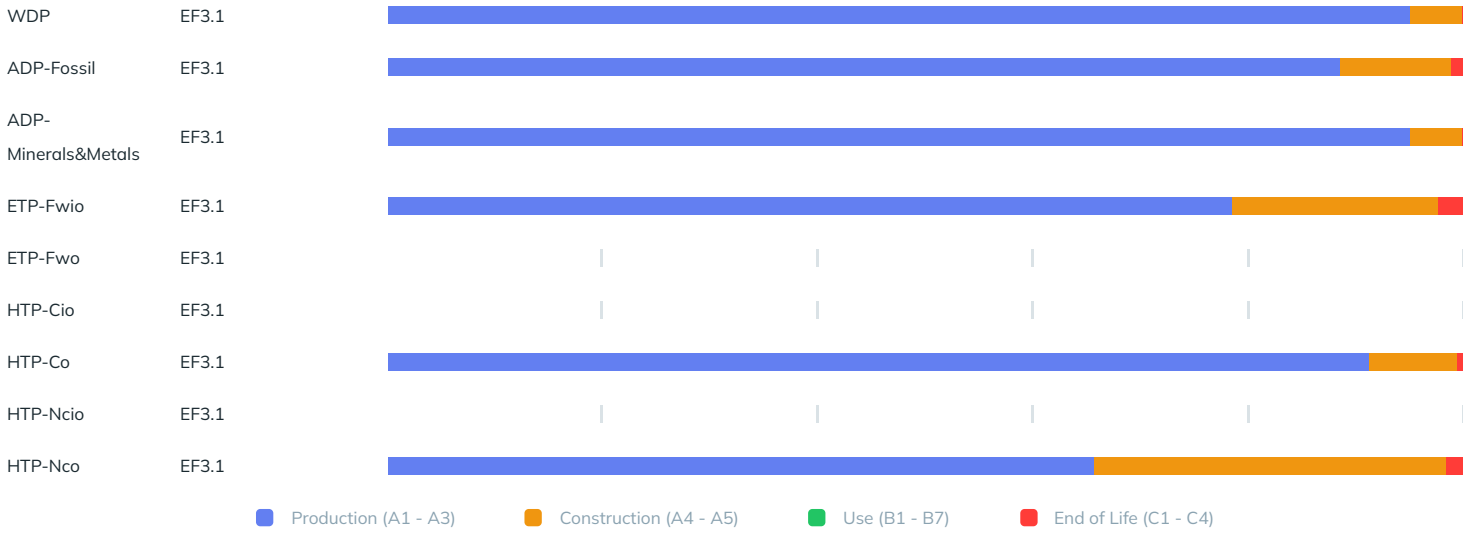
Part Number	A1-A3 GWP	A1-A3 ODP	A1-A3 AP	A1-A3 Freshwater EP	A1-A3 Marine EP	A1-A3 Smog	A4	A5	C2-D
CPP24WBLY	80.40	41254.70	155.98	98.72	117.34	33.93	80.20	80.20	80.20
CPP48HDEWBL	122.96	85492.58	186.09	173.54	94.55	40.51	135.40	135.40	135.40
CPP48HDEWWH	179.16	56.33	157.99	74.49	103.65	27.47	198.06	198.06	198.06
CPP48HDWBLY	114.21	76589.51	170.91	158.77	88.82	40.31	125.87	125.87	125.87
CPP48HDWWH	267.37	84.07	235.77	111.16	154.68	40.99	295.57	295.57	295.57
CPPL24M6BLY	61.06	50862.13	100.28	92.76	44.81	11.76	71.77	71.77	71.77
CPPL24WBLY	100.12	80.57	106.06	65.24	90.50	41.48	93.80	93.80	93.80
CPPLA24WBLY	128.52	108046.80	216.97	209.05	100.41	32.32	160.71	160.71	160.71
NK2BXAW-A	11.48	9.76	11.50	10.65	11.07	10.32	11.55	11.55	11.55
NK2BXBL-A	11.48	9.76	11.50	10.65	11.07	10.32	11.55	11.55	11.55
NK2BXEI-A	11.48	9.76	11.50	10.65	11.07	10.32	11.55	11.55	11.55
NK2BXIG-A	11.48	9.76	11.50	10.65	11.07	10.32	11.55	11.55	11.55
NK2BXIW-A	11.48	9.76	11.50	10.65	11.07	10.32	11.55	11.55	11.55
NK2BXWH-A	11.48	9.76	11.50	10.65	11.07	10.32	11.55	11.55	11.55
NK2HSFEIY	11.02	9.86	11.24	11.15	11.35	11.38	10.77	10.77	10.77
NK2HSFIGY	11.02	9.86	11.24	11.15	11.35	11.38	10.77	10.77	10.77
NK2HSFIWY	11.02	9.86	11.24	11.15	11.35	11.38	10.77	10.77	10.77
NK2HSFWHY	11.02	9.86	11.24	11.15	11.35	11.38	10.77	10.77	10.77
NK6CSAW-X	21.14	10.90	20.43	17.47	19.88	18.98	21.42	21.42	21.42
NK6CSSAW-X	5.32	2.81	4.31	5.05	4.29	5.42	4.92	4.92	4.92
NKFP24Y	51.64	41206.69	114.31	73.23	73.58	6.18	54.09	54.09	54.09
NKFPLUKF2SAW	31.19	6729.52	30.35	32.06	28.29	25.42	34.75	34.75	34.75
NKFS2SAW	13.60	7.46	13.05	12.28	13.41	13.68	13.04	13.04	13.04
NKUKS2SAW	29.01	6729.42	24.19	34.17	23.17	27.96	30.35	30.35	30.35
SKPP24BL	88.25	924.79	146.36	125.31	66.35	7.72	114.39	114.39	114.39
SKPPA24BL	43.53	1706.30	205.54	997.31	81.38	9.00	114.39	114.39	114.39

Individual product recipes, transportation of upstream materials, production inputs and outflows, product mass, end-of-life disposition, etc. all contribute to variations in product part impacts across the entire life cycle. For this EPD, an impact assessment was completed for the CBX1AW-A reference product and the impacts were reported as representation of the patch panel and accessories group. The rest of the products in this EPD are represented through scaling factors and can be independently calculated.

Interpretation

When evaluating the TRACI 2.2 impact categories specifically for the represented product, the production (A1-A3) stage is the driver of global warming potential, primarily due to the materials in the product's composition. The product distribution phase is the driver of ozone depletion, acidification, marine eutrophication, and photochemical oxidation formation due to the fuel combustion emissions during transportation activities. The freshwater eutrophication is driven by the disposal phase, due to the release of chemicals while waste decomposes in landfill scenarios.





Additional Environmental Information

Fire: This product has no negative extraordinary environmental effects resulting from exposure to fire.

Water: This product has no negative extraordinary environmental effects resulting from exposure to water.

Mechanical Destruction: This product has no negative extraordinary environmental effects resulting from exposure to mechanical destruction.

References

Product Category Rule (PCR) PEP ecopassport Program: Product Category Rules for Electrical, Electronic and HVAC-R Products, v4.0, 2021 (PCR Part A)

PEP ecopassport Program: Product Specific Rules for Electrical Switchgear and Control Gear Solutions, v3.1, 2023 (PSR Part B)

Sphera LCA for Experts v10.9.1.17 O 14025:2011-10, Environmental labels and declarations — Type III environmental declarations — Principles and procedures.

ISO 14040:2009-11, Environmental management — Life cycle assessment — Principles and framework.

ISO 14044:2006-10, Environmental management — Life cycle assessment — Requirements and guidelines.

EN 15804+A2:2019: Sustainability of construction works — Environmental Product Declarations — Core rules for the product category of construction product