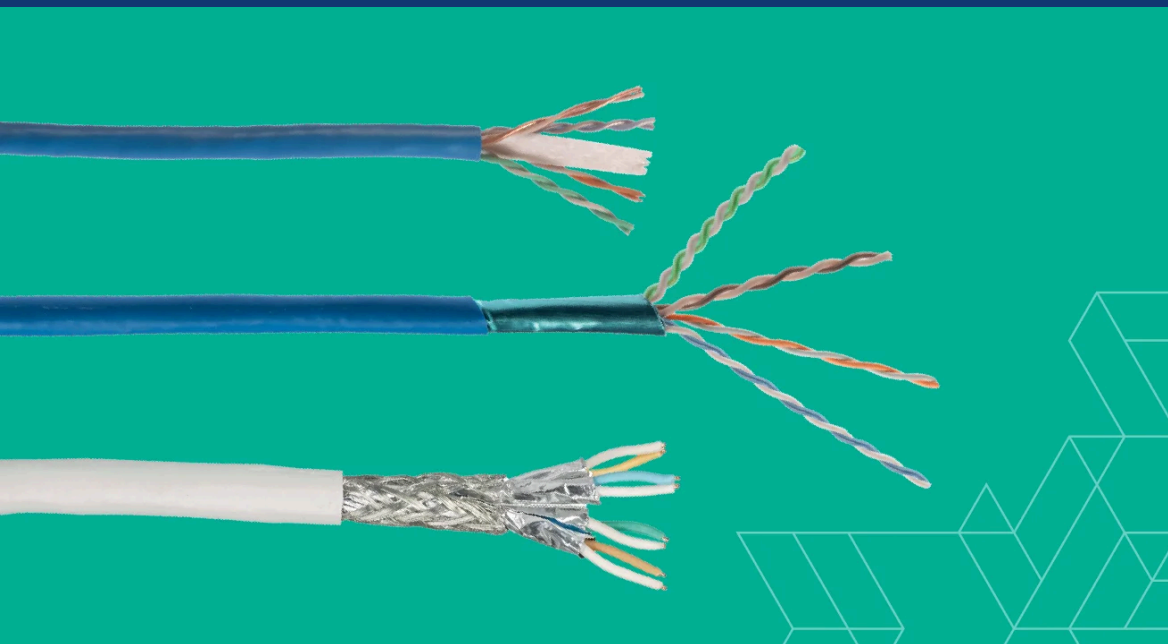


ENVIRONMENTAL PRODUCT DECLARATION

IN ACCORDANCE WITH ISO 14025:2006 AND EN 15804:2012+A2:2019/AC:2021

SmartEPD-2026-128-0835-01

Category 6A Plenum



PANDUIT™



Date of Issue:	Expiration:	Last updated:
Apr 17, 2026	Apr 17, 2031	Sep 30, 2026

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



General Information

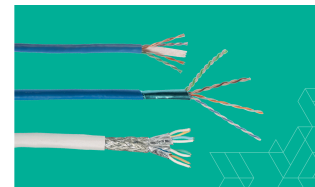
Panduit Corporation

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🌐 [panduit.com](https://www.panduit.com)



Product Name:	Category 6A Plenum
Functional Unit:	1 m - to transmit data and signals over a distance of 1 meter during 10 years at a 25% use rate
Declaration Number:	SmartEPD-2026-128-0835-01
Date of Issue:	April 17, 2026
Expiration:	April 17, 2031
Last updated:	September 30, 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 14025:2006 and EN 15804:2012+A2:2019/AC:2021
Core PCR:	PEP PCR Electrical, Electronic and HVAC-R Products v.4
	Date of issue: September 06, 2021
Sub-category PCR:	PEP ecopassport® PROGRAM PSR Specific Rules for Wires, Cables and Accessories (PSR-0001-ed4-EN-2022 11 16) v.4
	Date of issue: November 16, 2022
	Valid until: November 01, 2027
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
	 olivia@sustainablesolutionscorporation.com
EPD Program Operator:	 Smart EPD
	 info@smartepd.com
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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 m - to transmit data and signals over a distance of 1 meter during 10 years at a 25% use rate
Mass:	0.0775 kg
Reference Service Life:	10 Years
Product Specificity:	 Product Average
	 Product Specific

Product Description

This Panduit Category 6A Plenum Copper Cables EPD includes the following products:

PUP6AHD04** - Category 6A, U/UTP, Plenum
PUP6XHD04** - Category 6A, U/UTP, Plenum
PFP6X04** - Category 6A, F/UTP, Plenum
PUFP6X04** - Category 6A, U/FTP, Plenum

Product Specifications

Product SKU(s):

Product Classification Codes:

This EPD presents the impacts of PUFP6X04** as the baseline product, but this EPD is representative of the products listed in the Product Description section.

NAPCS - 26121609

EC3 - NetworkInfrastructure -> DataCabling

Table 1. Material Composition

Material/Component Category	Origin	% Mass
Aluminum	None	10.4364
Colorant	None	0.5570
Copper	None	33.0656
PVC	None	32.0517
Tin	None	0.1315

Packaging Material	Origin	kg Mass
Cardboard	None	0.0018827
Wood	None	0.0018827
Paper	None	9e-7
Plastic	None	0.0001312

Biogenic Carbon Content	kg C per m
Biogenic carbon content in product	0
Biogenic carbon content in accompanying packaging	0.000514

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.

Table 2. 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	✓

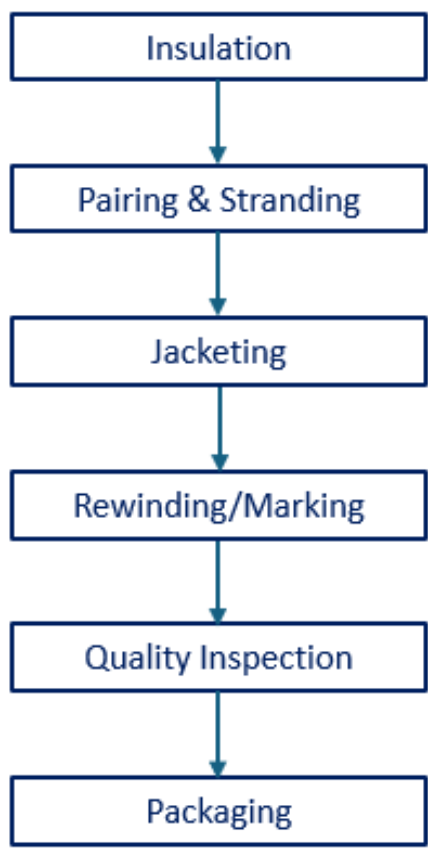
Note:

ND = Module not declared

Plants

 North America North America

Product Flow Diagram



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.

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 and its Tier 1 cable suppliers. Secondary data from the LCA Managed Content, DKI/ECI, 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. All manufacturing sites that produce the cables that are included in this EPD product grouping are included in this scope.

Copper wire goes through two drawing processes with an immediate subsequent annealing process. The wire continues down the line to an extruder where the insulation material is applied to the wire. Cooling and drying of the insulated wire then occurs. Insulated wires are then twinned together around each other. Twinned wire pairs, along with other cable components such as separator tape and/or shielding material, are then bunched together. Subsequently, the bunched wire has a jacket extruded around the bunched cable. After the jacket is applied, the cable is cooled and packaged. Various packaging options exist, but most products are shipped in spools and/or boxes.

LCA Discussion

Allocation Procedure

The LCI data was collected from the Panduit suppliers for the 2024 calendar year. Allocation was determined on a per meter 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: ✗ 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: 5 %
Product Lost per Declared/Functional Unit: 0.00387 kg
Waste Materials at the Construction Site Before Waste Processing: 3.90E-03 kg
Mass of Packaging Waste Specified by Type: 1.88E-03 cardboard, 1.88E-03 wood, 9.41E-07 paper, 1.31E-04 plastic wrap kg
Biogenic Carbon Contained in Packaging (kg C): 0.000514 kg
Assumptions for scenario development: To install these products into a building, some scrap will be generated. Per the PSR, installation scrap rate is assumed to be 5%. Packaging waste is also generated. All waste is empirically assumed to be disposed of in a landfill and to be transported 100 km by truck.

Use (B1)

B1 Module

Maintenance:
The use phase of this study leverages the system boundary as described in Section 3.2 of the PSR, which details that Module B1 is not applicable and so the module is equal to zero.

Maintenance (B2)

B2 Module

Further assumptions for scenario development: The use phase of this study leverages the system boundary as described in Section 3.2 of the PSR, which details that Module B2 is not applicable and so the module is equal to zero.

Repair (B3)

B3 Module

Further assumptions for scenario development:

The use phase of this study leverages the system boundary as described in Section 3.2 of the PSR, which details that Module B3 is not applicable and so the module is equal to zero.

Replacement (B4)

B4 Module

Further assumptions for scenario development:

The use phase of this study leverages the system boundary as described in Section 3.2 of the PSR, which details that Module B4 is not applicable and so the module is equal to zero.

Refurbishment (B5)

B5 Module

Further assumptions for scenario development:

The use phase of this study leverages the system boundary as described in Section 3.2 of the PSR, which details that Module B5 is not applicable and so the module is equal to zero.

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

B6 & B7 Modules

Characteristic Performance:

The study assumes the service life is 10 years with a 25% use rate, so that the used time is 2.5 years, in line with the PSR LAN: tertiary applications scenario. Energy consumed during use correlates to power losses due to resistivity of the products. Electricity consumption was calculated based on the power consumption values provided in Table 1 of the PSR.

Further assumptions for scenario development:

The use phase of this study leverages the system boundary as described in Section 3.2 of the PSR, which details that Module B7 is not applicable and so the module is equal to zero.

End of Life (C1 - C4)

C1 - C4 Modules

Assumptions for scenario development:

The end-of-life scenario was modeled based on the assumptions provided in Appendix D within the PCR. Therefore, the study assumes 50% of all plastic materials (except polypropylene which is 40%) are sent to incineration, and all remaining plastic materials are sent to landfill. 30% of any aluminum materials are sent to landfill, and the remaining aluminum is recycled. Furthermore, 40% of any copper materials are sent to landfill, and the remaining copper materials are recycled. Finally, 1,000km is the distance assumed that all waste travel via truck before reaching its final disposal destination.

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

D Module

Further assumptions for scenario development:

For this study, energy recovery from plastic materials is calculated using the percentages of any plastic (and any polypropylene) materials that were sent to incineration. Additionally, any recycled materials are modeled as a net benefit with recycling potential. The percentages for incineration and recycling are based on the values in Appendix D of the PCR.

Results

Table 3. Environmental Impact Assessment Results

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

per 1 m of product - to transmit data and signals over a distance of 1 meter during 10 years at a 25% use rate.

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	Total
GWP-total (excl biogenic)	kg CO2 eq	TRACI 2.2	4.68e-1	3.40e-2	2.53e-2	0	0	0	0	0	1.32e-2	0	0	5.96e-3	4.83e-2	2.71e-4	-3.47e-1	2.48e-1
GWP-total (incl biogenic)	kg CO2 eq	TRACI 2.2	4.60e-1	3.40e-2	2.49e-2	0	0	0	0	0	1.32e-2	0	0	5.96e-3	4.83e-2	2.69e-4	-3.46e-1	2.41e-1
ODP	kg CFC 11 eq	TRACI 2.2	6.59e-12	1.01e-12	3.80e-13	0	0	0	0	0	1.14e-13	0	0	8.17e-16	2.78e-15	8.60e-16	-1.16e-11	-3.50e-12
AP	kg SO2 eq	TRACI 2.2	1.58e-3	6.13e-4	1.11e-4	0	0	0	0	0	1.54e-5	0	0	4.72e-5	1.42e-5	1.61e-6	-1.64e-3	7.42e-4
EP-freshwater	kg P eq	TRACI 2.2	4.75e-7	3.95e-10	2.39e-8	0	0	0	0	0	2.04e-9	0	0	3.36e-10	2.34e-10	4.94e-8	-1.20e-7	4.31e-7
EP-marine	kg N eq	TRACI 2.2	6.01e-4	4.96e-4	5.57e-5	0	0	0	0	0	6.80e-6	0	0	4.25e-5	3.67e-6	8.21e-7	-5.19e-4	6.87e-4
POCP	kg O3 eq	TRACI 2.2	2.20e-2	1.76e-2	2.01e-3	0	0	0	0	0	2.43e-4	0	0	1.04e-3	9.69e-5	2.97e-5	-1.90e-2	2.40e-2
HTP-c	CTUh	TRACI 2.2	1.13e-10	1.40e-13	5.67e-12	0	0	0	0	0	1.37e-12	0	0	3.22e-14	2.15e-13	8.67e-15	-8.68e-11	3.36e-11
HTP-nc	CTUh	TRACI 2.2	1.39e-11	7.04e-14	7.01e-13	0	0	0	0	0	2.61e-14	0	0	1.15e-14	5.03e-15	6.37e-16	-2.64e-12	1.21e-11
ETP-fw	CTUe	TRACI 2.2	2.37e-3	6.32e-5	1.22e-4	0	0	0	0	0	7.86e-5	0	0	3.32e-5	1.79e-5	2.27e-6	-5.04e-3	-2.35e-3
PM	kg PM2.5 eq	TRACI 2.2	1.86e-4	1.30e-5	1.00e-5	0	0	0	0	0	1.08e-6	0	0	1.41e-6	4.45e-7	1.31e-7	-1.37e-4	7.51e-5
ODP	kg CFC-11 eq	CML 2016 v4.8	6.27e-12	1.01e-12	3.64e-13	0	0	0	0	0	1.14e-13	0	0	8.17e-16	2.78e-15	8.60e-16	-1.16e-11	-3.84e-12
AP	kg SO2 eq	CML 2016 v4.8	1.59e-3	4.88e-4	1.05e-4	0	0	0	0	0	1.48e-5	0	0	3.54e-5	1.19e-5	1.50e-6	-1.69e-3	5.57e-4
EP	kg PO4 eq	CML 2016 v4.8	1.40e-4	9.55e-5	1.19e-5	0	0	0	0	0	1.80e-6	0	0	8.17e-6	1.04e-6	9.55e-7	-1.16e-4	1.43e-4
POCP	kg C2H4 eq	CML 2016 v4.8	1.55e-4	1.97e-5	8.65e-6	0	0	0	0	0	1.38e-6	0	0	-1.44e-5	4.03e-7	1.21e-7	-1.23e-4	4.79e-5
ADP-fossil	MJ	CML 2016 v4.8	6.93e+0	4.35e-1	3.71e-1	0	0	0	0	0	1.61e-1	0	0	8.12e-2	2.23e-2	3.66e-3	-3.62e+0	4.38e+0
ADP-minerals&metals	kg Sb eq	CML 2016 v4.8	4.62e-5	2.63e-10	2.31e-6	0	0	0	0	0	2.08e-9	0	0	2.14e-10	4.09e-10	8.95e-11	-3.81e-5	1.04e-5

Impact Category	Unit	Method	A1 - A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D	Total
GWP- total	kg CO2 eq	EF3.1	4.69e-1	3.42e-2	2.53e-2	0	0	0	0	0	1.35e-2	0	0	6.03e-3	4.83e-2	2.74e-4	-3.51e-1	2.46e-1
GWP- fossil	kg CO2 eq	EF3.1	4.74e-1	3.42e-2	2.56e-2	0	0	0	0	0	1.34e-2	0	0	6.03e-3	4.83e-2	2.74e-4	-3.50e-1	2.52e-1
GWP-biogenic	kg CO2 eq	EF3.1	-6.21e-3	1.86e-6	-3.11e-4	0	0	0	0	0	1.40e-5	0	0	1.58e-6	1.15e-6	-1.41e-6	-5.00e-4	-7.00e-3
GWP-luluc	kg CO2 eq	EF3.1	2.94e-4	3.66e-7	1.54e-5	0	0	0	0	0	2.43e-5	0	0	3.12e-7	1.80e-6	1.21e-6	-9.41e-4	-6.04e-4
ODP	kg CFC11 eq	EF3.1	3.79e-12	6.94e-13	2.24e-13	0	0	0	0	0	9.70e-14	0	0	6.62e-16	2.36e-15	7.29e-16	-9.19e-12	-4.38e-12
AP	mol H+ eq	EF3.1	1.89e-3	6.74e-4	1.29e-4	0	0	0	0	0	1.78e-5	0	0	5.09e-5	7.85e-6	1.85e-6	-1.98e-3	7.91e-4
PM	disease incidence	EF3.1	3.69e-8	2.40e-9	1.98e-9	0	0	0	0	0	1.66e-10	0	0	3.69e-10	8.84e-11	2.26e-11	-2.45e-8	1.74e-8
IRP	kBq U235 eq	EF3.1	2.55e-2	2.59e-6	1.28e-3	0	0	0	0	0	1.86e-3	0	0	2.20e-6	3.47e-5	4.35e-6	-1.56e-2	1.31e-2
POCP	kg NMVOC eq	EF3.1	1.14e-3	7.46e-4	9.56e-5	0	0	0	0	0	1.18e-5	0	0	4.63e-5	4.63e-6	1.44e-6	-9.11e-4	1.13e-3
EP-fw	kg P eq	EF3.1	1.03e-6	8.48e-9	5.22e-8	0	0	0	0	0	4.53e-9	0	0	7.34e-10	5.12e-10	9.69e-8	-2.69e-7	9.24e-7
EP-marine	kg N eq	EF3.1	3.51e-4	2.84e-4	3.22e-5	0	0	0	0	0	4.10e-6	0	0	2.42e-5	1.68e-6	4.72e-7	-3.04e-4	3.94e-4
EP-terrestrial	mol N eq	EF3.1	3.84e-3	3.10e-3	3.53e-4	0	0	0	0	0	4.49e-5	0	0	2.66e-4	3.58e-5	5.19e-6	-3.33e-3	4.31e-3
SQI	dimensionless	EF3.1	4.36e-1	1.85e-4	2.22e-2	0	0	0	0	0	2.49e-2	0	0	1.57e-4	1.96e-3	7.89e-4	-1.12e+0	-6.34e-1
WDP	m3 world eq deprived	EF3.1	1.32e-1	2.80e-5	6.59e-3	0	0	0	0	0	2.80e-3	0	0	2.38e-5	3.77e-3	2.56e-5	-7.38e-2	7.14e-2
ADP-fossil	MJ, net calorific value	EF3.1	7.61e+0	4.38e-1	4.05e-1	0	0	0	0	0	2.25e-1	0	0	8.13e-2	2.34e-2	3.77e-3	-4.10e+0	4.69e+0
ADP-minerals&metals	kg Sb eq	EF3.1	4.60e-5	1.04e-10	2.30e-6	0	0	0	0	0	1.63e-9	0	0	8.80e-11	1.43e-10	2.21e-11	-3.81e-5	1.02e-5

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, 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.

Table 4. Resource Use Indicator

per 1 m of product - to transmit data and signals over a distance of 1 meter during 10 years at a 25% use rate.

Indicator	Unit	A1 - A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D	Total
PERE	MJ	8.12e-1	4.79e-4	4.09e-2	0	0	0	0	0	6.78e-2	0	0	4.07e-4	1.56e-3	6.19e-4	-2.25e+0	-1.33e+0
PERM	MJ	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00e+0
PERT	MJ	8.12e-1	4.79e-4	4.09e-2	0	0	0	0	0	6.78e-2	0	0	4.07e-4	1.56e-3	6.19e-4	-2.25e+0	-1.33e+0
PENRE	MJ	7.61e+0	4.38e-1	4.05e-1	0	0	0	0	0	2.25e-1	0	0	8.13e-2	2.34e-2	3.77e-3	-4.10e+0	4.69e+0
PENRM	MJ	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00e+0
PENRT	MJ	7.61e+0	4.38e-1	4.05e-1	0	0	0	0	0	2.25e-1	0	0	8.13e-2	2.34e-2	3.77e-3	-4.10e+0	4.69e+0
RPRE	MJ	8.12e-1	4.79e-4	4.09e-2	0	0	0	0	0	6.78e-2	0	0	4.07e-4	1.56e-3	6.19e-4	-2.25e+0	-1.33e+0
RPRM	MJ	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00e+0
RPRT	MJ	8.12e-1	4.79e-4	4.09e-2	0	0	0	0	0	6.78e-2	0	0	4.07e-4	1.56e-3	6.19e-4	-2.25e+0	-1.33e+0
NRPRE	MJ	7.61e+0	4.38e-1	4.05e-1	0	0	0	0	0	2.25e-1	0	0	8.13e-2	2.34e-2	3.77e-3	-4.10e+0	4.69e+0
NRPRM	MJ	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00e+0
NRPRT	MJ	7.61e+0	4.38e-1	4.05e-1	0	0	0	0	0	2.25e-1	0	0	8.13e-2	2.34e-2	3.77e-3	-4.10e+0	4.69e+0
SM	kg	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00e+0
RSF	MJ	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00e+0
NRSF	MJ	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00e+0
FW	m3	3.34e-3	7.37e-7	1.67e-4	0	0	0	0	0	8.41e-5	0	0	6.26e-7	8.83e-5	8.07e-7	-2.11e-3	1.57e-3
RE	MJ	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00e+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:

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, NRPT 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.

Table 5. Waste and Output Flow Indicators

per 1 m of product - to transmit data and signals over a distance of 1 meter during 10 years at a 25% use rate.

Indicator	Unit	A1 - A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D	Total
HWD	kg	-2.04e-8	1.96e-12	-1.02e-9	0	0	0	0	0	1.58e-10	0	0	1.67e-12	4.14e-12	9.28e-13	-3.40e-9	-2.47e-8
NHWD	kg	3.50e-2	3.26e-6	9.52e-3	0	0	0	0	0	6.54e-5	0	0	2.77e-6	4.24e-3	1.65e-2	-4.23e-2	2.30e-2
RWD	kg	2.46e-4	3.75e-8	1.23e-5	0	0	0	0	0	2.25e-5	0	0	3.19e-8	4.01e-7	4.03e-8	-1.70e-4	1.11e-4
CRU	kg	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00e+0
MFR	kg	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1.91e-2	1.91e-2
MER	kg	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00e+0
MNER	kg	0	0	0	0	0	0	0	0	0	0	0	0	1.96e-2	0	0	1.96e-2
EEE	MJ	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00e+0
EET	MJ	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00e+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:

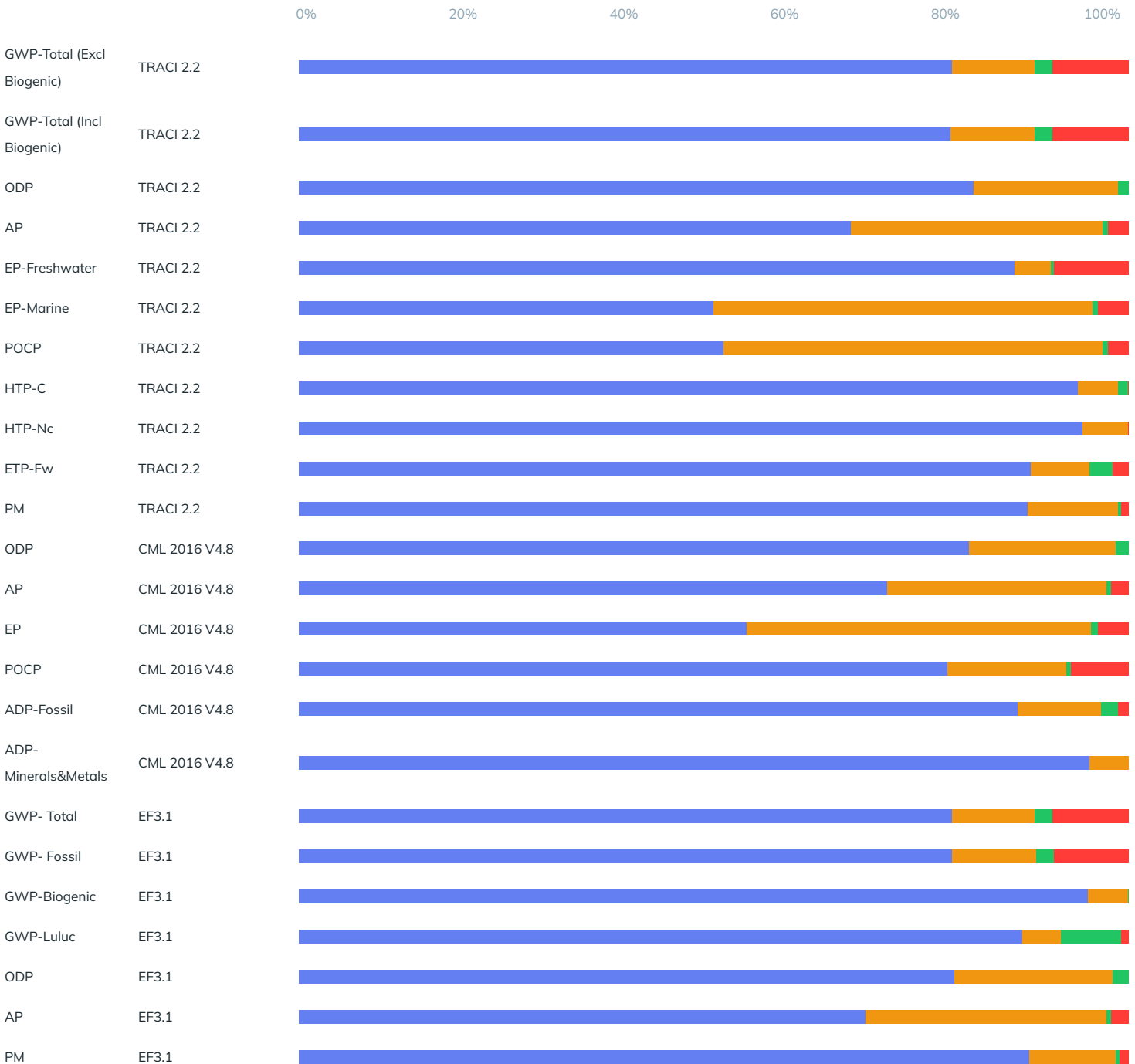
HWD = Hazardous waste disposed, NHWD = Non-hazardous waste disposed, RWD = Radioactive waste disposed, HLRW = High-level radioactive waste, ILLRW = Intermediate- and low-level radioactive waste, CRU = Components for re-use, MFR or MR = Materials for recycling, MER = Materials for energy recovery, MNER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

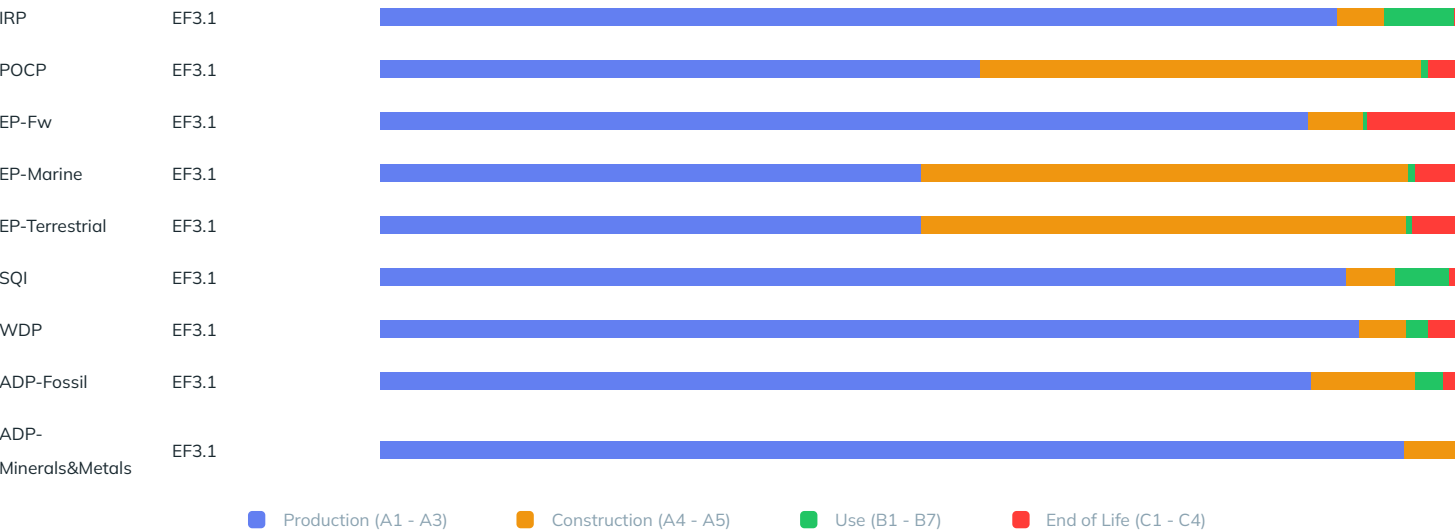
Table 6. Scaling Factors

Part Number	A1-A3 GWP	A1-A3 ODP	A1-A3 AP	A1-A3 Freshwater EP	A1-A3 Marine EP	A1-A3 Smog	A4	A5	B6	C2-D
PUP6AHD04**	0.66	0.76	0.92	0.67	0.69	0.70	0.68	0.68	1.00	0.68
PUP6XHD04**	0.67	0.76	0.92	0.68	0.70	0.70	0.68	0.68	1.00	0.68
PFP6X04**	0.63	0.84	4.47	0.56	0.63	4.08	0.99	0.99	1.00	0.99
PUFP6X04**	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Interpretation

When evaluating the TRACI 2.2 impact categories specifically, the production (A1-A3) stage has the greatest contribution to environmental impacts across all impact categories, emphasizing that material efficiency and energy use reduction strategies are where primary improvement strategies can be applied. It is noteworthy that Module D, shown as negative impacts, demonstrates the potential benefits of recovery at the product's end of life, which can come from recycling the metals contained within this product.





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 Wires, Cables and Accessories, v4.0, 2022 (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.

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

IPCC. 2018. Climate Change 2013. The Physical Science Basis. Cambridge University Press. (<http://www.ipcc.ch/report/ar5/wg1/>).