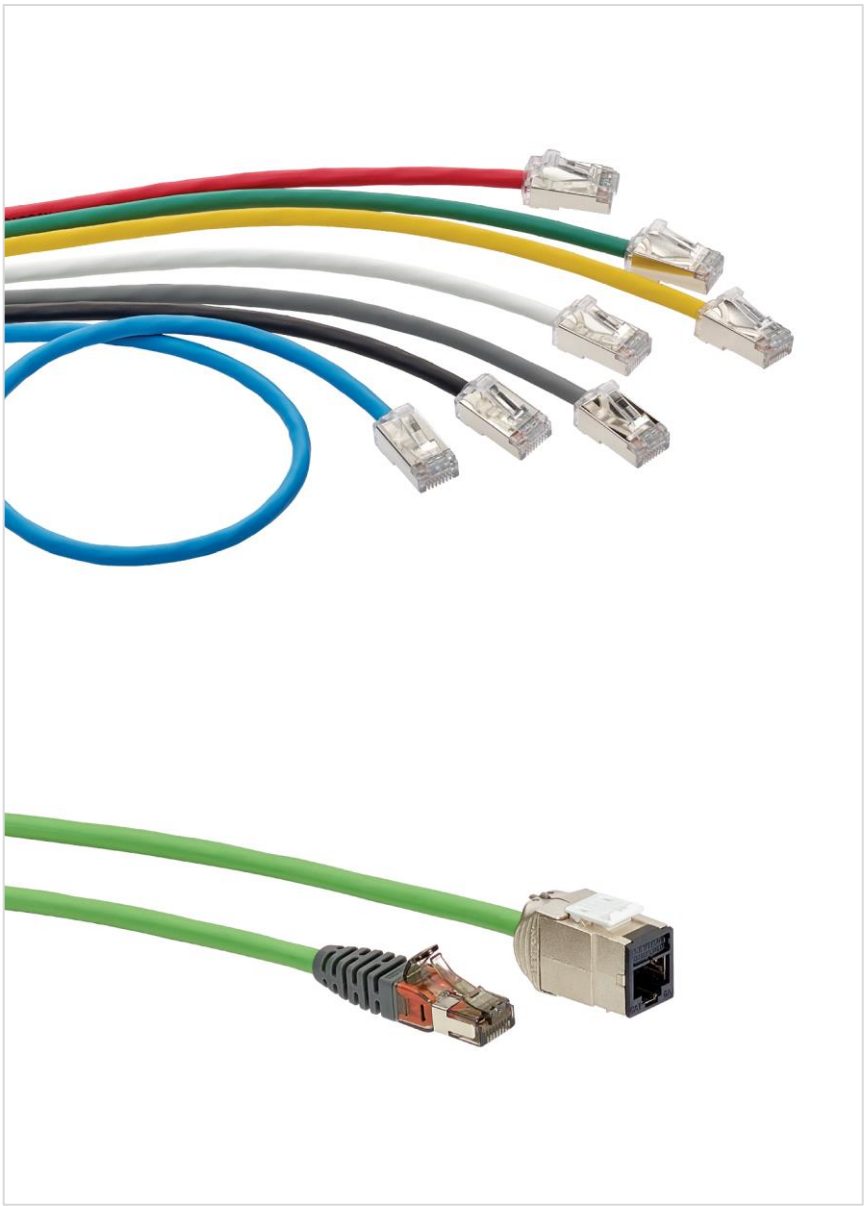
ENVIRONMENTAL PRODUCT DECLARATION

LEVITON COPPER PATCH CORDS

COPPER CONNECTIVITY - PATCH CORDS AND PLUGS



The image represents Leviton Network Solutions Copper data communication Patch Cords and plugs

Every day, Leviton is engineering possibilities that make the future happen, meeting the needs of today's residential, commercial, and industrial customers globally. From electrical, to lighting, to data networks, and energy management, Leviton develops thoughtful solutions that help make its customers' lives easier, safer, more efficient, and more productive. Leviton is also driven by its commitment to sustainability. Leviton has created CN2030, a set of sustainability goals to achieve company-wide carbon neutrality by 2030, and to achieve net zero by 2050. The CN2030 program is based on the company's refreshed commitment to reduce its environmental impact in several key focus areas: energy, waste, recycling, water, and by creating innovations that empower and enable customers to be more sustainable.

NETWORK SOLUTIONS SVL SYSTEM VERIFICATION LAB

UL CERTIFIED ENVIRONMENTAL PRODUCT DECLARATION ULCOM/EPD

ENVIRONMENTAL PRODUCT DECLARATION

According to ISO 14025, EN 50693 and EN 15804+A2/AC

Copper Patch Cords: C6U, C6A (U/FTP, S/FTP), Plugs (Shielded, Unshielded, Field Termination), Consolidation Point

EPD PROGRAM AND PROGRAM OPERATOR NAME, ADDRESS, LOGO, AND WEBSITE	UL Solutions 333 Pfingsten rd, Northbrook IL, 60062 www.ul.com www.spot.ul.com
GENERAL PROGRAM INSTRUCTIONS AND VERSION NUMBER	Program Operator Rules v 2.7 2022
MANUFACTURER NAME AND ADDRESS	Leviton Network Solutions, 132 White Oak Road, New Holland, PA, 17557, United States of America
DECLARATION NUMBER	4790742360.102.1
DECLARED PRODUCT & FUNCTIONAL UNIT OR DECLARED UNIT	1 m of Leviton copper patch cord
REFERENCE PCR AND VERSION NUMBER	P.E.P Association. PCR for Electrical, Electronic and HVAC-R Products (2021) P.E.P Association. PSR Specific Rules for Wires, Cables and Accessories (2022))
DESCRIPTION OF PRODUCT APPLICATION/USE	Datacommunication cable
PRODUCT RSL DESCRIPTION (IF APPL.)	30 years with 70% utilization
MARKETS OF APPLICABILITY	EU, International
DATE OF ISSUE	November 1, 2023
PERIOD OF VALIDITY	5 Years
EPD TYPE	Product Specific
RANGE OF DATASET VARIABILITY	Manufacturer Specific
EPD SCOPE	Cradle to grave
YEAR(S) OF REPORTED PRIMARY DATA	2021
LCA SOFTWARE & VERSION NUMBER	LCA for Experts v10.7
LCI DATABASE(S) & VERSION NUMBER	Managed LCA Content CUP 2022.2
LCIA METHODOLOGY & VERSION NUMBER	EN 15804+A2/AC , IPCC AR6, CML

The PCR review was conducted by:	P.E.P. Association PCR Review Panel contact@pep-ecopassport.org
This declaration was independently verified in accordance with ISO 14025: 2006. ☐ INTERNAL ☒ EXTERNAL	Cooper McCollum, UL Solutions
This life cycle assessment was conducted in accordance with ISO 14044 and the reference PCR by:	Sphera
This life cycle assessment was independently verified in accordance with ISO 14044 and the reference PCR by:	Thomas P. Gloria, Industrial Ecology Consultants

LIMITATIONS

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; the level of accuracy in estimation of effect differs for any particular product line and reported impact.

Comparability: EPDs from different programs may not be comparable. Full conformance with a PCR allows EPD comparability only 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.

LEVITON

According to ISO 14025, EN 50693 and EN 15804+A2/AC

Copper Patch Cords: C6U, C6A (U/FTP, S/FTP), Plugs (Shielded, Unshielded, Field Termination), Consolidation Point

1. Product Definition and Information

1.1. Description of Company/Organization

Leviton Network Solutions is a single-source global manufacturer of copper and fiber cabling systems. Leviton Network Solutions is committed to protecting the environment through the design, manufacture, delivery of sustainable network infrastructure for data centers, businesses, schools, hospitals, government facilities, and commercial mixed-use markets around the world. All Leviton products are engineered to exacting standards while considering environmental impact through every step of our ISO 9001 certified product development process, from initial material sourcing to final packaging and logistics. Leviton's primary cable and connectivity factories are ISO 14001 and ISO 50001 certified for environmental and energy management systems and our EMEA headquarters was the first data communications factory to achieve BSI PAS 2060 Carbon Neutrality. Through these sustainable design and manufacture practices, Leviton Network Solutions produces products that contribute to greater energy savings, less waste, and carbon footprint reduction. Additionally, there are no substances of very high concern in Leviton's products.

1.2. Product Description

Three copper patch cords are covered in this declaration. Patch cords are installed in a variety of applications inside a building, including telecommunications rooms, desktops, and device connections. All products listed below have been verified as Category 6 or Category 6A. Products listed below are UL Listed CM and/or third-party verified to meeting ISO/IEC 60332-1. Various packaging options exist for these products.

Table 1. Product Description

Patch Cord	Category	Product Type	Part Number	Description
Patch 1	6 and 6A	Small Diameter High Flex Patch Cord	6H4**-*, H6A**-*	Category 6 and 6A Small Diameter High-Flex Patch Cords, with a compact plug and boot, are designed to be used in 10 Gigabit applications for all frequencies from 1 to 500 MHz (Cat 6A) or 1 Gigabit applications for all frequencies from 1 to 250 MHz (Cat 6). Patch cords offer flexible, high-density patching. They reduce patch cord density in a 24-port patch panel by up to 38 percent when compared to typical Cat 6 patch cords.
Patch 2	6 and 6A	Patch Cords	AC6PCF*-* 6AS1*-* 6D46*-* C6CPCU*-*	Category 6 and 6A stranded patch cords are designed to be used in 10 Gigabit applications for all frequencies from 1 to 500 MHz (Cat 6A) or 1 Gigabit applications for all frequencies from 1 to 250 MHz (Cat 6). Both UTP and shieled system patch cords are covered within this averaged grouping.
Plug 1	6 and 6A	Patch Cord Plugs	6H4**-*, H6A**-*	The Cat6/6A plugs are designed to optimize Leviton's patch cord range.
Plug 2	6A	Field Termination Plug	6APLG-*	The Cat 6A Universal Tool-Free Plug supports 10GBASE-T networks. Offers easy field termination without special tools. The universal connector provides superior alien crosstalk (AXT) suppression and

				protects critical data from potential electromagnetic interference/radio frequency interference (EMI/RFI).
CP Cord	6 and 6A	Consolidation Point Cord	CP-AC6ZE*	Leviton Copper Consolidation Point (CP) Cords give optimum performance when used as part of a Leviton cabling system. The system comprises of high-performance cables and connectivity which not only provide a reliable platform for all of today's network applications but is also designed to future-proof networks for the emerging higher bandwidth applications of tomorrow.

1.3. Product Average

Within this EPD, all the cables are four (4) twisted pair construction for data networking. All cables are manufactured using the same processes and materials. Each patch cord was calculated as a single meter with two plugs at either end. Groupings were determined and averaged dependant on patch cord construction.

1.4. Application

The products listed are used in telecommunications rooms, at desktops, etc. The primary application is patching between active equipment and patch panels in the telecommunications room, and connection between a device and a jack in other areas of the building. Applications for the products include 1GBASE-T through 10GBASE-T Ethernet, Power over Ethernet (PoE) IEEE 802.3bt Types 1, 2, 3, and 4.

1.5. Declaration of Methodological Framework

The system boundary for this EPD is "Cradle-to-grave", i.e., all stages of the life cycle have been included: manufacturing, distribution, installation, use, and end-of-life. The net benefits and loads beyond the system boundaries (potential for reuse, recovery, and/or recycling), expressed as net benefits or impacts, is also included. The analysis follows the modular structure as defined by (EN 15804+A2/AC, 2021).

1.6. Industry Standards

The products listed meet the following Standards:

- ANSI/TIA-568.2-D - Generic Telecommunications Cabling for Customer Premises
- ISO/IEC 11801-1 - Information technology - Generic cabling for customer premises
- EN50173-1:2002 - Information technology. Generic cabling systems. Alternative cabling configurations
- ANSI/TIA-1096-A (formerly FCC Part 68) - Telecommunications Telephone Terminal Equipment Connector Requirements for Connection of Terminal Equipment to the Telephone Network
- UL 444 (UL Standard for Safety Communications Cables) CM Rated - H6A*-* and 6H4*-*
- UL 444 (UL Standard for Safety Communications Cables) CMR Rated – 6AS10
- IEC 60332-1 (LSHF/LSZH) – AC6PCF, C6CPCU, H6A*-* and 6H4*-*
- IEEE 802.3bt PoE Type 1, 2, 3, 4 (100 watts max)

- Exceeds IEEE 802.3bt standard up to 0.5 amps per conductor (100 watts) continuously
- Fully supports the safe delivery of power over LAN cabling described by IEEE 802.3bt (Type 4) and complies with the unmating under electrical load requirements prescribed by IEC 60512-99-002
- Cisco UPOE, UPOE+ (90 watts max)
- Power over HDBaseT™ PoH (95 watts max)
- cULus Listed (UL 1863) – H6A*-*, 6H4*-* and 6APLG-*
- UL 2043 - 6APLG-*
- RoHS 3

1.7. Delivery Status

Patch cords are delivered in bulk to the customer's specified location using various transportation to distribution centers or stores and cut to desired length.

1.8. Material Composition

Table 2 shows the percent (%) composition and weight of the material components that are used in the production of patch cords and plugs covered in the study.

Table 2: Material composition of copper data patch cords

Material	Patch Cords		Plug	Plug	CP Cord
	Cat 6/6A High Flex	Cat6/6A	CAT 6/6A Patch Cord Plug	Cat 6/6A Field Termination plug	Copper Consolidation Point cord
	%	%	%	%	%
Copper	8%	5%	9%	--	4%
HDPE – High Density Polyethylene	3%	1%	--	--	1%
HFFR - Halogen Free, Flame Retardant	89%	69%	--	--	63%
AL/PET – Aluminum/ Polyethylene Terephthalate	0%	18%	--	--	16%
Tin	0%	6%	--	--	6%
Glass-reinforced Epoxy	--	--	--	8%	0%
Zinc	--	--	--	76%	7%
Phosphor Bronze	--	--	--	1%	0%
Polycarbonate granulates	--	--	91%	14%	2%
Acrylonitrile butadiene styrene	--	--	--	--	0%
Polyimide	--	--	--	--	0%
Steel	--	--	--	--	0%

1.9. Manufacturing

At Leviton's manufacturing facilities across the world, copper and HDPE granulate mentioned above are transported

from different sourcing facilities via trucks. HFFR is produced by mixing Ethylene Vinyl Acetate and aluminum hydroxide at the sourcing facility and then transported via trucks to the cable manufacturing facility. The drain wire and braided layer is produced by using tin and copper mixed together. The Aluminum / Polyethylene terephthalate (PET) tape is also included as part of the material input and transported via trucks to the facility.

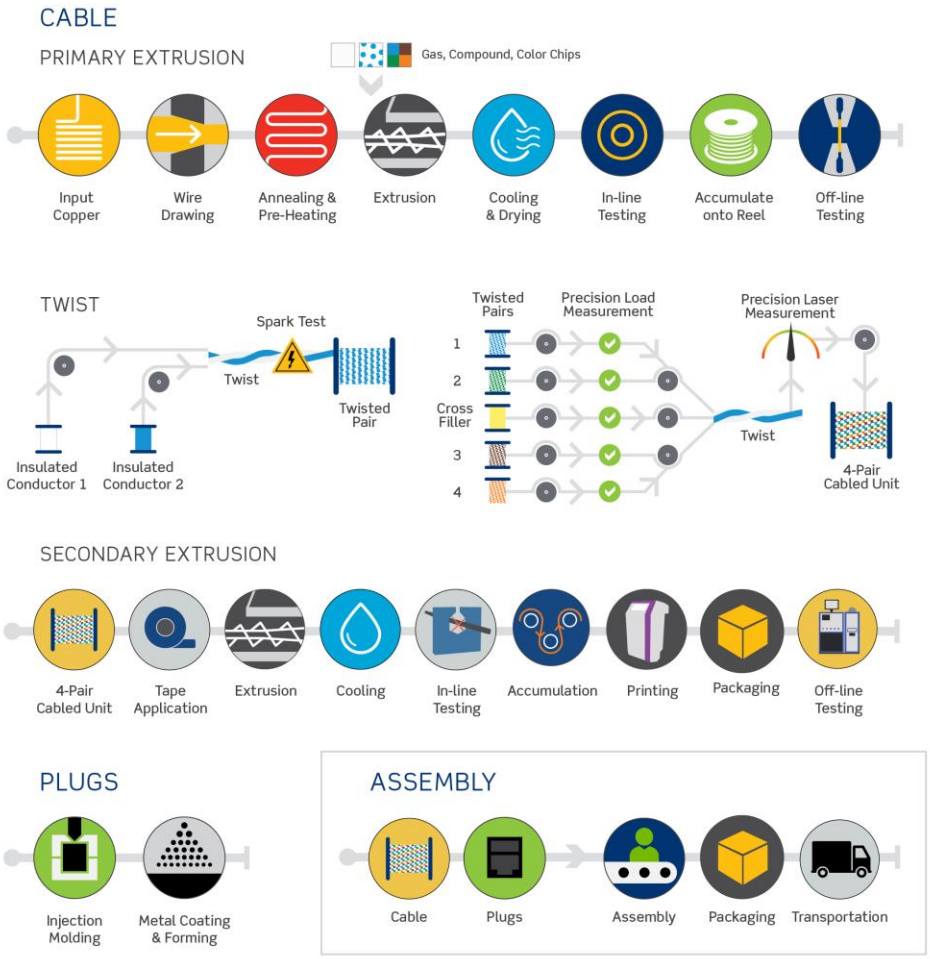


Figure 1:Patch Cord and Consolidation Cord Manufacturing Process

1.10. Packaging

Patch cords are assembled before shipping, typically packed, and shipped in polypropylene bags. Biogenic carbon from packaging is excluded from this assessment.

1.11. Transportation

Final products are distributed via truck to their destination sites. Average transportation distance from the manufacturing

facility to installation site was based on data provided by Leviton, given as 1609 km (1000 mi). The unknown distances were modelled using PCR default distances guidelines. For the international transport, 19,000 km (11,806 mi) by boat, 1,000 km (621 mi) by truck were used and for the domestic transport, 1,000 km (621 mi) by truck was used.

1.12. Product Installation

Since the installation is done manually, the energy usage is assumed zero. For the usage, electricity consumption is modelled assuming the highest rated products.

1.13. Use

The use of the copper patch cords implies the consumption of electricity. This is the only input considered into this stage in the life of the product. For the usage, electricity consumption is modelled assuming the highest rated products. For Cat 6A cable, 1.365 mW/m (0.90 MJ) is assumed.

1.14. Reference Service Life and Estimated Building Service Life

As per the declared unit, the product service life is considered to be 30 years with 70% utilization.

1.15. Reuse, Recycling, and Energy Recovery

In the waste processing and disposal stage (C3 to C4), the PCR (PEP Ecopassport® Program, 2022) requires that all cables are assumed to be shredded, with the metal components recycled and the other (plastic) components incinerated. Energy and material credits are given to account for the electricity, thermal energy and secondary material generated from the incineration and recycling of wastes. The energy and secondary material generated during the disposal of these wastes can substitute an equivalent amount of virgin energy and materials. Recycling and incineration impacts are accounted in module C4.

1.16. Disposal

At the end-of-life, the cables are dismantled manually, and metals are recycled and plastics are incinerated. The waste from manufacturing, installation and packaging are handled based on the 20% incineration and 80% landfill. Regarding the transport to EoL (C2), according to the PCR (PEP Ecopassport® Program, 2022) the waste is transported 1000 km by truck. Metals are recycled and plastics are incinerated.

2. Life Cycle Assessment Background Information

2.1. Functional or Declared Unit

The functional unit selected for this assessment is 1 meter (m) of copper patch cord, at 70% utilization for 30 years. For the plugs, the functional unit is 1 unit of respective plug used to connect or terminate patch cord for 30 years, with 70% utilization. This functional unit is consistent with the study's goals of calculating the environmental impact of copper cable Patch Cords which is used over distances of a number of meters. A reference flow is the quantity of product necessary for the system to deliver the performance described by the functional unit. Table 3 displays the linear weights per meter for the analyzed product categories, i.e., the reference flows for each product category.

Table 3: Linear weights per functional unit of one meter of copper Patch Cord

PRODUCT	LINEAR WEIGHT (KG/M)
Cat 6 & 6A Small Diameter High Flex Patch Cords	0.2213 kg
Cat 6 & 6A Patch Cords	0.3044 kg
Cat 6 and 6A Patch Cord Plug	0.0343 kg
Cat 6A Field Termination Plug	0.0187 kg
Consolidation Point Cord	0.1126 kg

2.2. System Boundary

The system boundary of this study is cradle-to-grave, i.e., all stages of the life cycle have been included: manufacturing, distribution, installation, use, and end-of-life. The net benefits and loads beyond the system boundaries (potential for reuse, recovery, and/or recycling), expressed as net benefits or impacts, is also included. The analysis follows the modular structure defined by (EN 15804+A2/AC, 2021). Table 4 summarizes the major components included and excluded from the study, as shaped by the PCR (PEP Ecopassport® Program, 2022).

Table 4: System boundaries of the cradle-to-grave study

Production			Installation		Use stage*							End-of-Life				Next product system
Raw material supply (extraction, processing, recycled material)	Transport to manufacturer	Manufacturing	Transport from gate to building site	Installation into building	Use / application	Maintenance	Repair	Replacement	Refurbishment	Operational energy use	Operational water use	Deconstruction / demolition	Transport to EoL	Waste processing for reuse, recovery, or recycling	Disposal	Reuse, recovery, or recycling potential
A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1*	C2	C3	C4	D
X	X	X	X	X	ND	ND	ND	ND	ND	X	ND	X	X	X	X	X
x: Declared module			ND: Not Declared			C1 is zero because deconstruction is done manually										

* Use Stage

For Patch cords, B1, B2, B3, B4, B5, B7 is not applicable and B6 is declared as electricity is used by cables. For the usage, electricity consumption is modelled assuming the highest rated products. For Cat 6A cable, 1.365 mW/m (0.90 MJ) is assumed.

For Plugs, B1, B2, B3, B4, B5, B7 is not applicable and B6 is 0 as no electricity is used by product during its usage.

*C1 is zero because deconstruction is done manually

The impacts of the components excluded from the study are expected to be negligible compared to the impacts associated with the rest of the included stages.

As indicated by the PCR (PEP Ecopassport® Program, 2022) impacts related to production, transportation, installation, use and end-of-life, up to final disposal of the flow required to supply the considered stage, shall be accounted in the corresponding stage. Likewise, all impacts related to waste (i.e., transport and processing) are considered in the modules in which the waste arises. In this way, each life cycle stage shall include all aspects related to its inputs and outputs. Key assumptions about the activities included in the declared modules within the system boundary are listed below.

Module A1 to A3

The production stage includes provision of all raw materials and energy, as well as waste processing up to the disposal of final residues during the production stage.

These modules consider the manufacturing of raw materials, in particular copper wire and jacketing compounds, the transport to the production sites and the manufacturing of the cables. This includes the drawing of the wire to the appropriate diameter, the extrusion of insulation, the twining of the paired cables, and the extrusion of the final jacket. Plugs are manufactured by using injection molding and metal coating methods with an assembly process combining components to finished product.

The impact of packaging materials is included.

Module A4

For example, where patch cord products are manufactured in China, this module considers 19000 km (11,806 mi) ship transport from China and 1000 km (621 mi) truck transport to site.

Module A5

No installation material loss was assumed based on company data. No energy is required for the installation process. Regarding the treatment and disposal of packaging material wastes, credits are given to account for the electricity and thermal energy generated from the incineration of wastes and landfill gas. The energy generated during the disposal of these wastes can substitute an equivalent amount of energy produced from virgin materials. These credits are declared in Module D and affect only the rate of primary material (no secondary materials).

Module B1 to B7

In the use stage, the PSR (PEP Ecopassport® Program, 2021) states that the use or application of the product installed (B1), maintenance (B2), repair (B3), replacement (B4), restoration (B5), and water requirements (B7) are not applicable modules in the analysis of copper patch cords.

Regarding the operational energy use stage (B6), the operational usage was assumed using the PCR guidelines. As a conservative assumption, product groups were classified based on the highest power consumption product contained. Also specified in the PCR (PEP Ecopassport® Program, 2022) the product has a usage of 30 years and 70% utilization.

Module C1 to C4

For the deconstruction and demolition stages (C1), manual dismantling is assumed. No loading in trucks or containers is needed.

Regarding the transport to EoL (C2), according to the PCR (PEP Ecopassport® Program, 2021) a transport distance of 1000 km by truck must be assumed.

In the waste processing and disposal stage (C3 to C4), the PCR (PEP Ecopassport® Program, 2021) requires that all cables are assumed to be shredded, with the metal components recycled and the other (plastic) components incinerated. Energy and material credits are given to account for the electricity, thermal energy and secondary material generated from the incineration and recycling of wastes. The energy and secondary material generated during the disposal of these wastes can substitute an equivalent amount of virgin energy and materials. Recycling and incineration impacts are accounted in Module C4.

Module D

The credits for avoided primary production of recycled metals are accounted for in Module D. For the thermal and electrical energy generated in modules A5 and C3 due to the incineration of packaging and product waste, avoided burdens have been calculated by the inversion of electricity grid mix and thermal energy from natural gas, using regionalized datasets. No mandatory life cycle stages, relevant processes, or data needs have been omitted.

2.3. Estimates and Assumptions

The analysis uses the following assumptions:

- If inbound transportation distances were not provided for materials used in manufacturing, a default assumption of international transport: 19,000 km (11,806 mi) by boat, 1,000 km (621 mi) by truck and domestic transport: 1,000 km (621 mi) by truck were made using the PCR default distance.
- Installation is assumed to be manual (no energy use) and 5% installation loss is assumed for cables.

Since primary data were not available to describe end-of-life treatment, the default values specified by the PEP PCR (PEP Ecopassport® Program, 2022) were applied.

2.4. Cut-off Criteria

No cut-off criteria are defined for this study.

2.5. Data Sources

All primary data were sourced internally within the organization. background data (energy and materials) taken from the Managed LCA Content (MLC) 2022.2 databases and is documented online at https://sphera.com/product-sustainability-gabi-data-search/

2.6. Data Quality

Measured primary data are considered to be of the highest precision, followed by calculated data, literature data, and estimated data. The goal is to model all relevant foreground processes using measured or calculated primary data.

2.7. Period under Review

Primary data collected represents the 2021 production year. Therefore, the analysis is intended to represent production of plenum cables for 2021.

2.8. Allocation

This study uses the substitution allocation approach and reports credits in Module D. A summary of the application of the substitution approach in the different end-of-life fates is given below:

Material recycling (substitution approach): In the study, copper at the end of life is recycled and material credits are applied. The original burden of copper input is substituted using the mass of recovered secondary material.

Energy recovery (substitution approach): Plastics from the product, and paper/corrugated board, metal, plastics, and woods used as packaging materials are sent to waste incineration. 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 avoided burden.

Landfilling (substitution approach): Paper/corrugated board, metal, plastics and woods 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. Credits are assigned for energy recovery from landfill gas due to landfilling of wood and cardboard packaging materials.

Allocation of background data (energy and materials) taken from the Managed LCA Content (MLC) 2022.2 databases is documented online at https://scn.spherasolutions.com/client/login.aspx

3. Life Cycle Assessment Scenarios

Table 5:Transport to the building site (A4)

Name	High Flex Cat 6/6A	Cat 6/6A	Cat 6/6A Patch Cord Plug	Field Termination Plug	CP Cord	Unit
Fuel type						
Liters of fuel	55	55	55	55	55	l/100km
Vehicle type	Truck	Truck	Truck	Truck	Truck	
Transport distance	1000	1000	1000	1000	1000	km
Capacity utilization (including empty runs, mass based	70	70	70	70	70	%
Gross density of products transported	-	-	-	-	-	kg/m^3
Weight of products transported (if gross density not reported)	0.095	0.173	0.035	0.1869	0.114	kg
Volume of products transported (if gross density not reported)	-	-	-	-	-	m^3
Capacity utilization volume factor (factor: =1 or <1 or ≥ 1 for compressed or nested packaging products)	<1	<1	<1	<1	<1	-

Table 6: Installation into the building (A5)

Name	High Flex Cat 6/6A	Cat 6/6A	Cat 6/6A Patch Cord Plug	Field Termination Plug	CP Cord	Unit
Ancillary materials	0	0	0	0	0	kg
Net freshwater consumption specified by water source and fate (amount evaporated, amount disposed to sewer)	-	-	-	-	-	m^3
Other resources	-	-	-	-	-	kg
Electricity consumption	-	-	-	-	-	kWh
Other energy carriers	-	-	-	-	-	MJ

Product loss per functional unit	0	0	0.035	0.0187	0.114	kg
Waste materials at the construction site before waste processing, generated by product installation	-	-	-	-	-	kg
Output materials resulting from on-site waste processing (specified by route, e.g. for recycling, energy recovery and/or disposal)	-	-	-	-	-	kg
Biogenic carbon contained in packaging	0	0	0	0	0	kg CO2
Direct emissions to ambient air, soil, and water	-	-	-	-	-	kg
VOC content	-	-	-	-	-	µg/m³

Table 7: Reference Service Life

NAME	HIGH FLEX CAT 6/6A	CAT 6/6A	CAT 6/6A PATCH CORD PLUG	FIELD TERMINATION PLUG	CP CORD	UNIT
RSL	30	30	30	30	30	years
Load frequency	1	1	1	1	1	
Fugitive emissions	-	-	-	-	-	
Energy requirement	0.903	0.903	0	0	0.903	MJ

Table 8: End of life (C1-C4)

NAME		HIGH FLEX CAT 6/6A	CAT 6/6A	CAT 6/6A PATCH CORD PLUG	FIELD TERMINATION PLUG	CP CORD	UNIT
Assumptions for scenario development (description of deconstruction, collection, recovery, disposal method and transportation)							
Collection process (specified by type)	Collected separately						kg
	Collected with mixed construction waste	0.095	0.173	0	0	0	kg
Recovery (specified by type)	Reuse						kg
	Recycling	0.008	0.0197				kg
	Landfill	0	0	0.035	0.1869	0.114	kg
	Incineration	0.001	0.001	0	0	0	kg
	Incineration with energy recovery	0.087	0.153	0	0	0	kg
	Energy conversion efficiency rate	-	-				-
Disposal (specified by type)	Product or material for final deposition	0.004	0.004	0	0	0	kg
Removals of biogenic carbon (excluding packaging)		-	-				kg CO_2

Table 9: Reuse, recovery and/or recycling potentials (D), relevant scenario information

Name	High Flex Cat 6/6A	Cat 6/6A	Cat 6/6A Patch Cord Plug	Field Termination Plug	CP Cord	Unit
Net energy benefit from energy recovery from waste treatment declared as exported energy in C3 (R>0.6)	-	-	-	-	-	MJ
Net energy benefit from thermal energy due to treatment of waste declared as exported energy in C4 (R<0.6)	1.60E-01	3.05E-01	2.70E-04	1.31E-04	3.09E-04	MJ
Net energy benefit from material flow declared in C3 for energy recovery	-	-	-	-	-	MJ
Process and conversion efficiencies	-					
Further assumptions for scenario development (e.g. further processing technologies, assumptions on correction factors);	-	-	-	-	-	

The energy datasets used to determine the impacts of the manufacturing, installation, use and end-of-life stages for Leviton's patch cords and plugs are provided in Table 10. Leviton's plugs are manufactured in China. No energy is used during the installation, use-stage is considered in USA and at the end-of-life stages as installation is assumed to be manual, no electricity is used by patch cords and plugs. At end of life, the patch cords and plugs are removed manually, the plastics are incinerated and the metals are sent to landfill.

Table 10: Key energy datasets used in inventory analysis.

Energy	Location	Dataset	Data Provider	Reference Year	Proxy?
Electricity	US	Electricity grid mix	Sphera	2018	No
Technical heat	CN	Thermal energy from natural gas	Sphera	2018	No
Electricity	CN	Electricity grid mix	Sphera	2018	No

4. Life Cycle Assessment Results

Environmental Product Declarations (EPDs) created under different Product Environmental Profile (PEP) and Product Category Rules (PCR) (PEP Ecopassport® Program, 2022) are not comparable. Additionally, EPDs based on a declared unit shall not be used for comparisons between products, regardless of the EPDs using the same PCR.

There is no biogenic carbon in the product. the biogenic carbon in the packaging is minimal hence excluded from this assessment.

It shall be noted that the mentioned impact categories in this study represent impact potentials, i.e., they are approximations of environmental impacts that could occur if the emissions would (a) follow the underlying impact pathway and (b) meet certain conditions in the receiving environment while doing so. In addition, the inventory only captures that fraction of the total environmental load that corresponds to the functional unit (relative approach). LCIA results are therefore relative expressions only and do not predict actual impacts, the exceeding of thresholds, safety

margins, or risks.

4.1. Life Cycle Impact Assessment Results

Cradle-to-grave results for the life cycle impact categories, use of resources, and generation of wastes for Leviton's copper patch cords are presented in the tables below. The assessment results are provided as per the European Standard, (EN 15804+A2/AC, 2021). The breakdown of potential environmental impacts per life cycle stage is also presented in the following tables. Since the products are intended for markets outside of Europe, the Rest of the world impact assessment results using IPCC AR6 (GWP) and CML 2016 are also included in the report following part A of ULE PCR (ULE)**.** As described in section 2.2, results from modules A1, A2, A3, A4, A5, A6, B6, C1, C2, C3, C4 and D are included in the results. Use Stage – B1, B2, B3, B4, B5, B7 is zero because they are not applicable in the analysis of copper cable products, and C1 is zero as the deconstruction process is done manually. These zeroes modules are excluded from the result tables. The results of ILCD type 3 environmental impact indicators reported (ADP minerals and metals, APD fossil, and WDP) shall be used with care as the uncertainties on these results are high or as there is limited experience with the indicator. Lastly, as per the PEP requirements, the total column of the result of the impacts calculated in the LCA does not include the results of the net benefits and loads (module D).

Table 11: EN 15804+A2/AC (2021) LCIA Results for Small Diameter High Flex Patch Cord Cat 6/6A

EN 15804+A2/AC	Unit	Total	A1-A3	A4	A5	B6	C1	C2	C3	C4	D
GWP Total	Kg CO_2 eq.	1.31E+00	8.19E-01	4.98E-02	2.99E-03	1.08E-01	--	1.70E-02	0.00E+00	3.15E-01	-1.60E-01
GWP Fossil	Kg CO_2 eq.	1.31E+00	8.16E-01	4.92E-02	2.99E-03	1.07E-01	--	1.70E-02	0.00E+00	3.15E-01	-1.60E-01
GWP Bio	Kg CO_2 eq.	3.24E-03	2.57E-03	5.39E-04	1.61E-06	4.75E-05	--	6.25E-05	0.00E+00	2.33E-05	1.52E-04
GWP Luluc	Kg CO_2 eq.	4.72E-04	4.50E-04	1.19E-06	5.75E-08	7.68E-06	--	1.07E-05	0.00E+00	2.84E-06	-1.69E-04
ODP	Kg CFC 11 eq.	2.97E-12	2.50E-12	3.61E-15	2.92E-16	4.14E-13	--	5.89E-15	0.00E+00	4.44E-14	-5.25E-13
AP	Mole H+ eq.]	5.36E-03	3.74E-03	1.32E-03	1.21E-06	1.59E-04	--	6.81E-05	0.00E+00	7.62E-05	-9.50E-04
EP Fresh	kg P eq.	2.84E-06	9.92E-07	6.93E-09	1.35E-07	6.01E-08	--	1.63E-06	0.00E+00	1.29E-08	-1.47E-07
EP Marine	Kg N eq.	1.11E-03	6.52E-04	3.68E-04	2.80E-07	3.45E-05	--	3.10E-05	0.00E+00	2.07E-05	-7.71E-05
EP Terr	Mole of N eq.	1.22E-02	7.08E-03	4.04E-03	4.35E-06	3.71E-04	--	3.36E-04	0.00E+00	3.36E-04	-8.11E-04
POCP	Kg NMVOC eq.	3.25E-03	2.03E-03	9.96E-04	7.68E-07	9.80E-05	--	6.99E-05	0.00E+00	5.73E-05	-2.49E-04
ADP element	Kg Sb eq.	1.05E-04	1.05E-04	6.48E-09	4.81E-11	1.95E-08	--	5.22E-09	0.00E+00	2.93E-09	-3.62E-05
ADP fossil	MJ	1.55E+01	1.27E+01	6.39E-01	2.69E-03	1.68E+00	--	2.24E-01	0.00E+00	2.68E-01	-2.22E+00
WDP	m^3 World -q	2.25E-01	1.75E-01	2.83E-04	2.71E-04	2.27E-02	--	1.00E-03	0.00E+00	2.59E-02	-5.15E-02

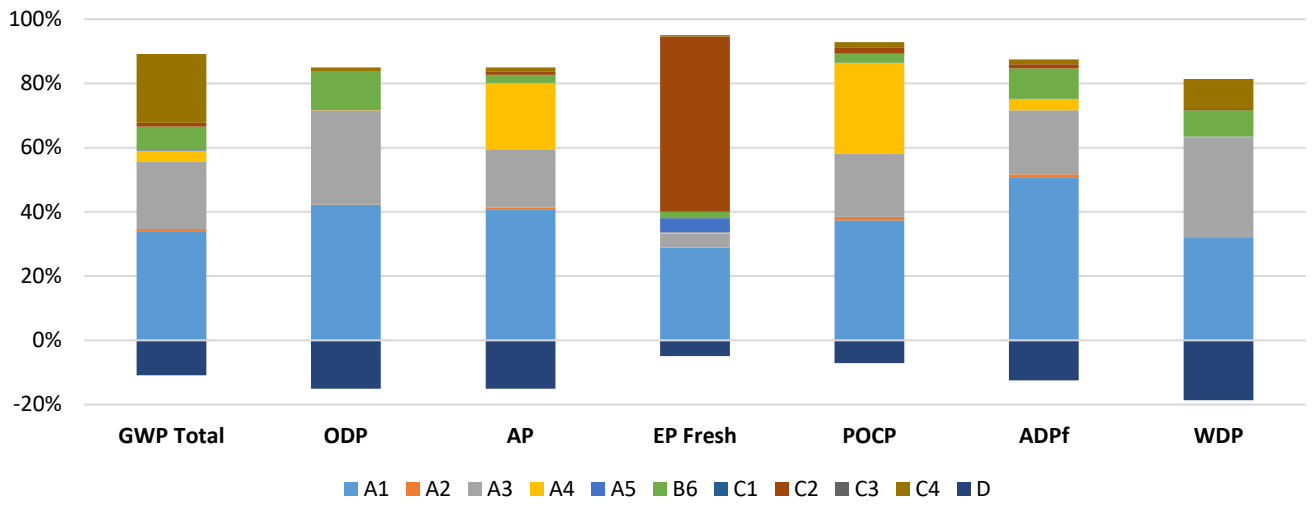


Figure 2: Contributions to the environmental impact categories for copper small diameter high flex patch cord Cat 6/6A

Table 12: EN 15804+A2/AC (2021) LCIA Results for Patch Cord Cat 6/6A

EN 15804+A2/AC	Unit	Total	A1-A3	A4	A5	B6	C1	C2	C3	C4	D
GWP Total	Kg CO_2 eq.	1.80E+00	1.03E+00	6.96E-02	2.99E-03	1.29E-01	--	2.21E-02	0.00E+00	5.42E-01	-2.85E-01
GWP Fossil	Kg CO_2 eq.	1.78E+00	1.02E+00	6.89E-02	2.99E-03	1.29E-01	--	2.20E-02	0.00E+00	5.42E-01	-2.85E-01
GWP Bio	Kg CO_2 eq.	4.63E-03	3.70E-03	7.54E-04	1.61E-06	5.72E-05	--	6.85E-05	0.00E+00	4.79E-05	3.19E-04
GWP Luluc	Kg CO_2 eq.	6.16E-04	5.86E-04	1.67E-06	5.75E-08	9.24E-06	--	1.44E-05	0.00E+00	5.09E-06	-3.36E-04
ODP	Kg CFC 11 eq.	3.83E-12	3.24E-12	5.06E-15	2.92E-16	4.98E-13	--	5.34E-15	0.00E+00	8.62E-14	-9.38E-13
AP	Mole H+ eq.]	6.78E-03	4.52E-03	1.84E-03	1.21E-06	1.91E-04	--	8.64E-05	0.00E+00	1.38E-04	-1.86E-03
EP Fresh	kg P eq.	2.70E-06	1.40E-06	9.69E-09	1.35E-07	7.23E-08	--	1.06E-06	0.00E+00	2.45E-08	-2.78E-07
EP Marine	Kg N eq.	1.36E-03	7.27E-04	5.15E-04	2.80E-07	4.15E-05	--	4.08E-05	0.00E+00	3.84E-05	-1.44E-04
EP Terr	Mole of N eq.	1.50E-02	7.88E-03	5.65E-03	4.35E-06	4.47E-04	--	4.46E-04	0.00E+00	6.07E-04	-1.51E-03
POCP	Kg NMVOC eq.	4.05E-03	2.34E-03	1.39E-03	7.68E-07	1.18E-04	--	9.14E-05	0.00E+00	1.06E-04	-4.69E-04
ADP element	Kg Sb eq.	2.67E-04	2.67E-04	9.07E-09	4.81E-11	2.35E-08	--	6.85E-09	0.00E+00	5.27E-09	-7.23E-05

ADP fossil	MJ	2.07E+01	1.70E+01	8.94E-01	2.69E-03	2.02E+00	--	2.88E-01	0.00E+00	4.95E-01	-3.89E+00
WDP	m^3 World -q	2.81E-01	2.07E-01	3.96E-04	2.71E-04	2.73E-02	--	1.29E-03	0.00E+00	4.49E-02	-9.69E-02

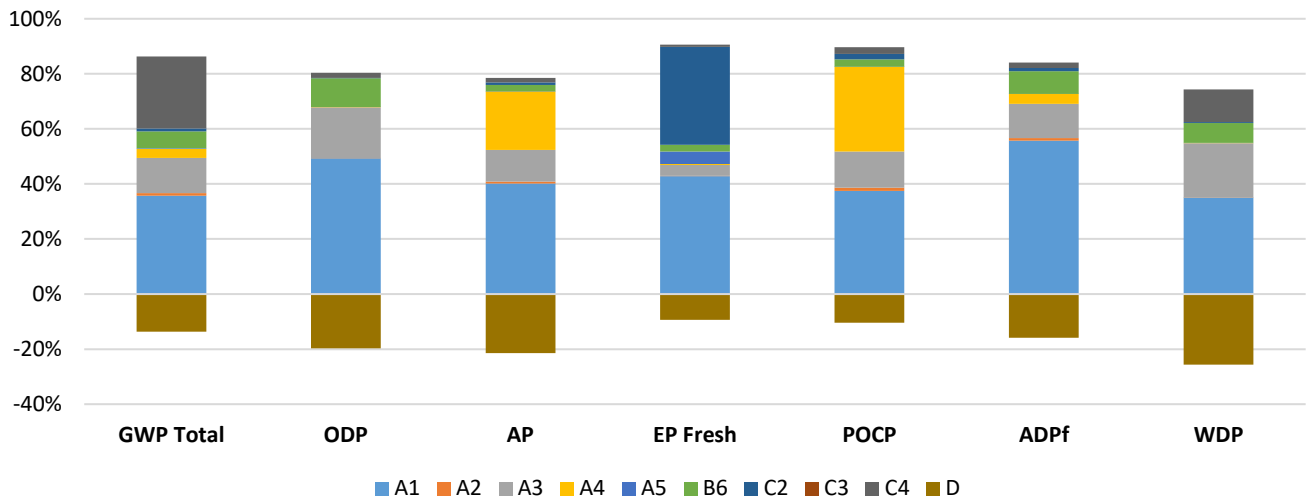


Figure 3: Contributions to the environmental impact categories for copper patch cord Cat 6/6A

Table 13: EN 15804+A2/AC (2021) LCIA Results for Cat 6/6A Patch Cord Plugs

EN 15804+A2/AC	Unit	Total	A1-A3	A4	A5	B6	C1	C2	C3	C4	D
GWP Total	Kg CO_2 eq.	2.23E-01	2.05E-01	4.96E-03	9.60E-03	--	--	2.35E-03	0.00E+00	1.49E-03	5.27E-03
GWP Fossil	Kg CO_2 eq.	2.29E-01	2.18E-01	4.94E-03	2.33E-03	--	--	2.34E-03	0.00E+00	1.47E-03	-1.30E-02
GWP Bio	Kg CO_2 eq.	-6.00E-03	-1.33E-02	1.13E-05	7.27E-03	--	--	5.33E-06	0.00E+00	1.51E-05	1.83E-02
GWP Luluc	Kg CO_2 eq.	6.61E-05	6.04E-05	3.42E-06	1.51E-07	--	--	1.62E-06	0.00E+00	5.23E-07	-4.65E-06
ODP	Kg CFC 11 eq.	8.38E-10	8.38E-10	4.43E-16	7.10E-16	--	--	2.10E-16	0.00E+00	2.29E-15	-7.08E-15
AP	Mole H+ eq.]	9.19E-04	8.72E-04	1.88E-05	1.21E-05	--	--	8.91E-06	0.00E+00	7.28E-06	-7.63E-05
EP Fresh	kg P eq.	2.02E-06	1.45E-06	2.47E-08	2.39E-07	--	--	1.17E-08	0.00E+00	2.96E-07	-1.43E-06
EP Marine	Kg N eq.	1.79E-04	1.60E-04	9.36E-06	3.08E-06	--	--	4.43E-06	0.00E+00	2.42E-06	-1.60E-05
EP Terr	Mole of N eq.	1.93E-03	1.70E-03	1.03E-04	5.19E-05	--	--	4.89E-05	0.00E+00	2.16E-05	-1.50E-04

POCP	Kg NMVOC eq.	5.52E-04	5.10E-04	2.08E-05	6.43E-06	--	--	9.85E-06	0.00E+00	5.40E-06	-3.93E-05
ADP element	Kg Sb eq.	3.90E-05	3.90E-05	1.57E-09	1.22E-10	--	--	7.41E-10	0.00E+00	3.91E-10	-2.78E-09
ADP fossil	MJ	3.62E+00	3.50E+00	6.40E-02	6.91E-03	--	--	3.03E-02	0.00E+00	2.13E-02	-1.77E-01
WDP	m^3 World -q	4.38E-02	4.29E-02	2.90E-04	3.66E-04	--	--	1.37E-04	0.00E+00	8.90E-05	-3.97E-03

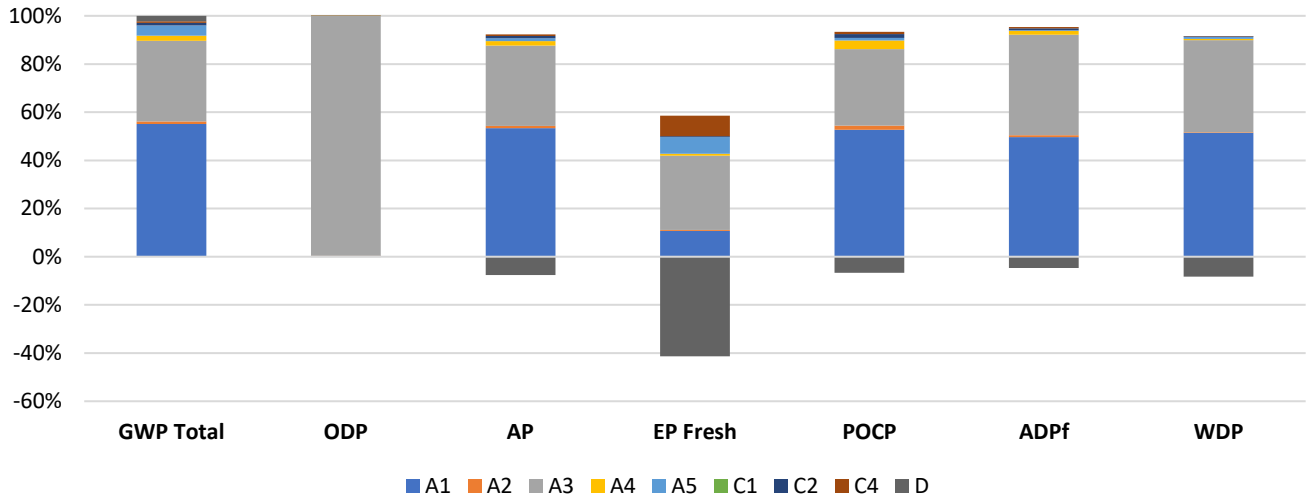


Figure 4: Contributions to the environmental impact categories for Cat 6/6A patch cord plug

Table 14: EN 15804+A2/AC (2021) LCIA Results for Cat 6A field termination plug

EN 15804+A2/AC	Unit	Total	A1-A3	A4	A5	B6	C1	C2	C3	C4	D
GWP Total	Kg CO_2 eq.	1.30E-01	1.23E-01	4.44E-03	--	--	-	2.09E-03	--	--	--
GWP Fossil	Kg CO_2 eq.	1.29E-01	1.23E-01	4.39E-03	--	--	-	2.08E-03	--	--	--
GWP Bio	Kg CO_2 eq.	3.81E-04	3.22E-04	4.81E-05	--	--	-	1.11E-05	--	--	--
GWP Luluc	Kg CO_2 eq.	4.97E-05	4.84E-05	1.07E-07	--	--	-	1.17E-06	--	--	--
ODP	Kg CFC 11 eq.	4.28E-13	4.26E-13	3.22E-16	--	--	-	1.36E-15	--	--	--
AP	Mole H+ eq.]	6.41E-04	5.14E-04	1.18E-04	--	--	-	8.83E-06	--	--	--
EP Fresh	kg P eq.	3.36E-07	2.26E-07	6.18E-10	--	--	-	1.09E-07	--	--	--

EP Marine	Kg N eq.	1.30E-04	9.38E-05	3.29E-05	--	--	-	3.76E-06	--	--	--
EP Terr	Mole of N eq.	1.42E-03	1.02E-03	3.60E-04	--	--	-	3.85E-05	--	--	--
POCP	Kg NMVOC eq.	3.99E-04	3.02E-04	8.89E-05	--	--	-	8.32E-06	--	--	--
ADP element	Kg Sb eq.	2.21E-05	2.21E-05	5.79E-10	--	--	-	6.17E-10	--	--	--
ADP fossil	MJ	1.66E+00	1.57E+00	5.70E-02	--	--	-	2.81E-02	--	--	--
WDP	m^3 World -q	2.92E-02	2.91E-02	2.53E-05	--	--	-	1.23E-04	--	--	--

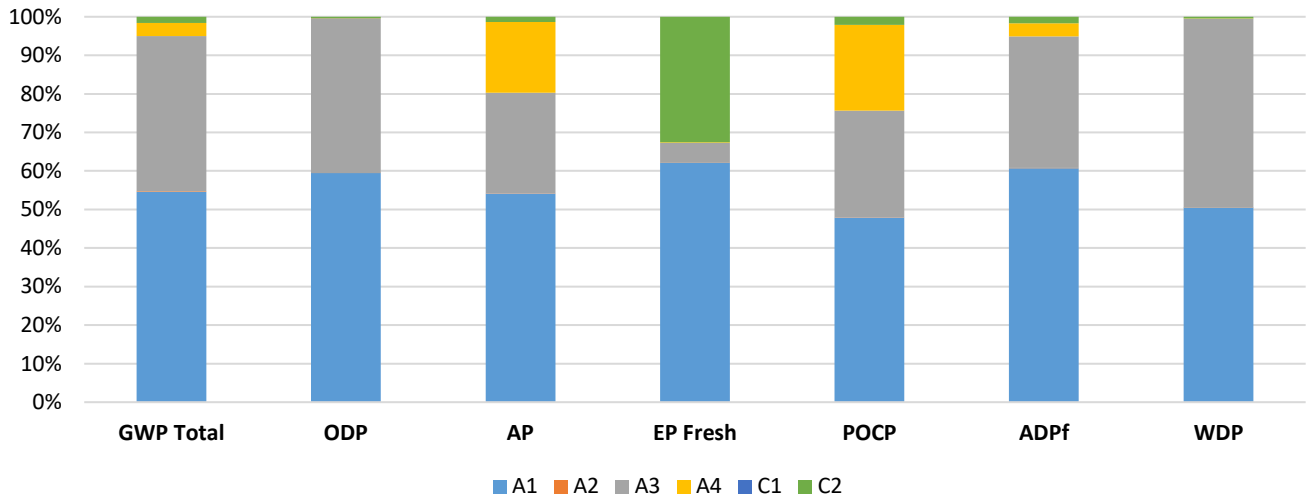


Figure 5: Contributions to the environmental impact categories for Cat 6A field termination plug

Table 15: EN 15804+A2/AC (2021) LCIA Results for Consolidation Point Cord

EN 15804+A2/AC	Unit	Total	A1-A3	A4	A5	B6	C1	C2	C3	C4	D
GWP Total	Kg CO_2 eq.	7.25E-01	5.63E-01	1.18E-02	2.08E-02	--	--	8.43E-03	--	1.21E-01	-1.40E-01
GWP Fossil	Kg CO_2 eq.	7.31E-01	5.86E-01	1.18E-02	4.84E-03	--		8.44E-03	--	1.20E-01	-1.68E-01
GWP Bio	Kg CO_2 eq.	-8.17E-03	-2.42E-02	-2.58E-05	1.60E-02	--	--	-4.01E-05	--	9.11E-05	2.79E-02
GWP Luluc	Kg CO_2 eq.	6.16E-04	5.43E-04	3.47E-05	2.97E-07	--	--	3.56E-05	--	2.78E-06	-3.95E-04
ODP	Kg CFC 11 eq.	1.27E-09	1.27E-09	1.10E-15	1.91E-15	--	--	8.01E-16	--	9.06E-14	-6.69E-13

AP	Mole H+ eq.]	3.52E-03	3.36E-03	3.36E-05	1.96E-05	--	--	1.93E-05	--	8.30E-05	-2.06E-03
EP Fresh	kg P eq.	3.64E-06	2.70E-06	5.30E-08	3.90E-07	--	--	3.53E-08	--	4.64E-07	-2.44E-06
EP Marine	Kg N eq.	4.87E-04	4.28E-04	1.58E-05	5.24E-06	--	--	8.62E-06	--	2.97E-05	-1.41E-04
EP Terr	Mole of N eq.	5.24E-03	4.54E-03	1.76E-04	8.32E-05	--	--	9.69E-05	--	3.39E-04	-1.44E-03
POCP	Kg NMVOC eq.	1.54E-03	1.39E-03	3.59E-05	1.22E-05	--	--	1.99E-05	--	8.10E-05	-4.59E-04
ADP element	Kg Sb eq.	2.62E-04	2.62E-04	2.81E-09	2.01E-10	--	--	1.62E-09	--	2.84E-09	-8.55E-05
ADP fossil	MJ	9.62E+00	8.99E+00	1.54E-01	1.57E-02	--	--	1.11E-01	--	3.45E-01	-2.03E+00
WDP	m^3 World -q	1.60E-01	1.45E-01	4.87E-04	8.06E-04	--	--	2.63E-04	--	1.37E-02	-8.38E-02

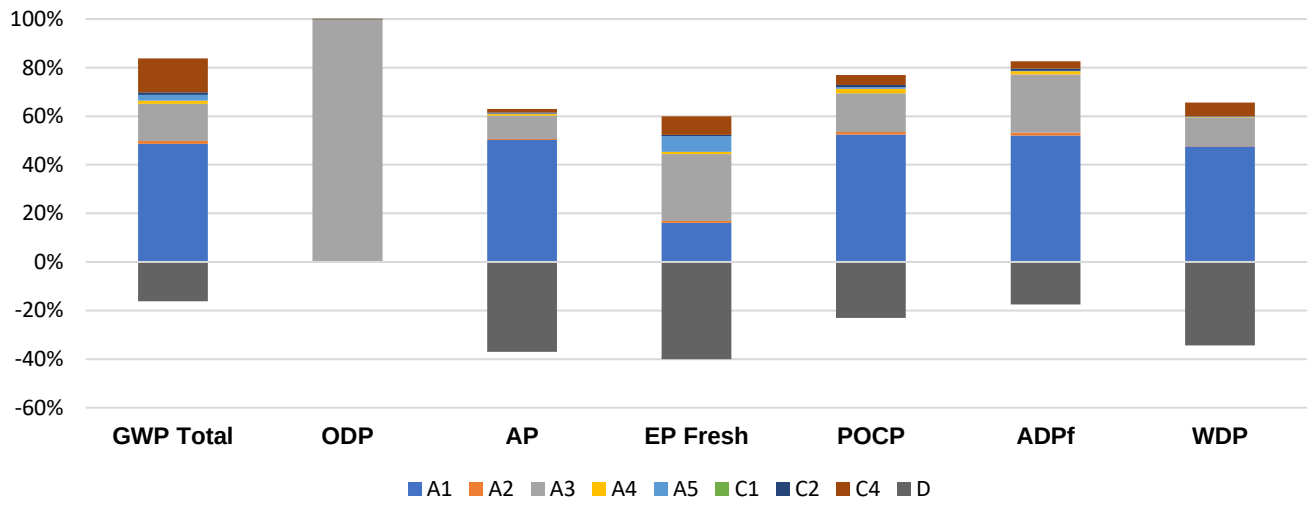


Figure 6: Contributions to the environmental impact categories for consolidation point cord

Rest of World Results : International results are added in the following tables below.

Table 16: Rest of World Results for Copper small diameter High Flex Patch Cord Cat 6/6A

Parameters	Units	Total	A1-A3	A4	A5	B6	C1	C2	C3	C4	D
GWP – 100	kg CO2 eq.	1.39E+00	9.00E-01	5.24E-02	2.99E-03	1.06E-01	--	1.85E-02	0.00E+00	3.15E-01	-1.58E-01
ODP	kg R11 eq.	3.94E-12	3.39E-12	4.58E-15	3.43E-16	4.87E-13	--	8.29E-15	0.00E+00	5.23E-14	-6.18E-13

AP	kg SO2 eq.	5.04E-03	3.63E-03	1.12E-03	8.72E-07	1.42E-04	--	5.35E-05	0.00E+00	9.54E-05	-8.57E-04
EP	kg Phosphate eq.	4.63E-04	2.77E-04	1.35E-04	1.03E-06	1.53E-05	--	2.46E-05	0.00E+00	1.02E-05	-3.36E-05
POCP	kg Ethene eq.	3.55E-04	3.14E-04	3.33E-05	2.47E-08	1.05E-05	--	-6.94E-06	0.00E+00	4.36E-06	-4.30E-05

Table 17: Rest of World Results for Patch Cord Cat 6/6A

Parameters	Units	Total	A1-A3	A4	A5	B6	C1	C2	C3	C4	D
GWP – 100	kg CO_2 eq.	1.88E+00	1.11E+00	7.18E-02	2.99E-03	1.27E-01	--	2.35E-02	0.00E+00	5.41E-01	-2.81E-01
ODP	kg R11 eq.	4.96E-12	4.26E-12	6.27E-15	3.43E-16	5.87E-13	--	7.64E-15	0.00E+00	1.01E-13	-1.10E-12
AP	kg SO2 eq.	6.82E-03	4.88E-03	1.53E-03	8.72E-07	1.71E-04	--	6.56E-05	0.00E+00	1.69E-04	-1.67E-03
EP	kg Phosphate eq.	5.60E-04	3.12E-04	1.85E-04	1.03E-06	1.84E-05	--	2.48E-05	0.00E+00	1.85E-05	-6.27E-05
POCP	kg Ethene eq.	4.11E-04	3.54E-04	4.56E-05	2.47E-08	1.26E-05	--	-9.64E-06	0.00E+00	8.00E-06	-8.28E-05

Table 18: Rest of World Results for Cat 6/6A patch cord plugs

Parameters	Units	Total	A1-A3	A4	A5	B6	C1	C2	C3	C4	D
GWP – 100	kg CO_2 eq.	2.30E-01	2.16E-01	4.89E-03	5.44E-03	--	--	2.32E-03	--	1.44E-03	-1.34E-02
ODP	kg R11 eq.	9.64E-10	9.64E-10	5.22E-16	8.36E-16	--	--	2.47E-16	--	2.69E-15	-8.91E-15
AP	kg SO_2 eq.	7.82E-04	7.47E-04	1.28E-05	1.01E-05	--	--	6.07E-06	--	5.79E-06	-6.42E-05
EP	kg Phosphate eq.	8.74E-05	7.38E-05	3.82E-06	4.81E-06	--	--	1.81E-06	--	3.19E-06	-1.64E-05
POCP	kg Ethene eq.	8.35E-05	8.45E-05	-2.32E-06	2.35E-06	--	--	-1.10E-06	--	5.31E-08	-4.36E-06

Table 19: Rest of World Results for Cat 6A Field Termination plug

Parameters	Unit	Total	A1-A3	A4	A5	B6	C1	C2	C3	C4	D
GWP – 100	kg CO2 eq.	1.26E-01	1.20E-01	4.35E-03	--	--	0.00E+00	2.05E-03	--	--	--
ODP	kg R11 eq.	5.05E-13	5.03E-13	3.80E-16	--	--	0.00E+00	1.60E-15	--	--	--
AP	kg SO2 eq.	6.31E-04	5.32E-04	9.26E-05	--	--	0.00E+00	6.47E-06	--	--	--
EP	kg Phosphate eq.	6.32E-05	4.96E-05	1.12E-05	--	--	0.00E+00	2.37E-06	--	--	--

POCP	kg Ethene eq.	5.59E-05	5.37E-05	2.76E-06	--	--	0.00E+00	-5.70E-07	--	--	--

Table 20: Rest of World Results for consolidation point cord

Parameters	Unit	Total	A1-A3	A4	A5	B6	C1	C2	C3	C4	D
GWP 100	kg CO2 eq.	8.11E-01	5.82E-01	1.17E-02	1.21E-02	7.66E-02	0.00E+00	8.36E-03	--	1.20E-01	-1.67E-01
ODP	kg R11 eq.	1.46E-09	1.46E-09	1.29E-15	2.24E-15	1.33E-12	0.00E+00	9.43E-16	--	1.067E-13	-7.89E-13
AP	kg SO2 eq.	3.42E-03	3.15E-03	2.31E-05	1.62E-05	1.59E-04	0.00E+00	1.34E-05	--	6.27E-05	-1.86E-03
EP	kg Phosphate eq.	2.40E-04	1.89E-04	6.64E-06	8.20E-06	1.78E-05	0.00E+00	3.71E-06	--	1.464E-05	-7.56E-05
POCP	kg Ethene eq.	2.40E-04	2.25E-04	-3.63E-06	4.37E-06	1.11E-05	0.00E+00	-1.81E-06	--	5.23E-06	-8.76E-05

4.2. Life Cycle Inventory Results

Table 21: Resource Use for Copper small diameter High Flex Patch Cord Cat 6/6A

Parameters	Unit	Total	A1-A3	A4	A5	B6	C1	C2	C3	C4	D
PERE	MJ, LHV	2.09E+00	1.68E+00	3.29E-03	2.57E-04	3.64E-01	--	1.17E-02	0.00E+00	3.17E-02	-4.60E-01
PERT	MJ, LHV	2.09E+00	1.68E+00	3.29E-03	2.57E-04	3.64E-01	--	1.17E-02	0.00E+00	3.17E-02	-4.60E-01
PENRE	MJ, LHV	1.55E+01	1.27E+01	6.55E-01	2.77E-03	1.68E+00	--	2.39E-01	0.00E+00	2.68E-01	-2.22E+00
PENRT	MJ, LHV	1.55E+01	1.27E+01	6.55E-01	2.77E-03	1.68E+00	--	2.39E-01	0.00E+00	2.68E-01	-2.22E+00
FW	m3	6.29E-03	4.93E-03	8.56E-06	6.45E-06	6.90E-04	--	3.35E-05	0.00E+00	6.17E-04	-1.16E-03

Table 22: Resource Use for Copper Patch Cord Cat 6/6A

Parameters	Unit	Total	A1-A3	A4	A5	B6	C1	C2	C3	C4	D
PERE	MJ, LHV	2.84E+00	2.32E+00	4.60E-03	2.57E-04	4.39E-01	--	1.39E-02	0.00E+00	6.12E-02	-8.21E-01
PERT	MJ, LHV	2.84E+00	2.32E+00	4.60E-03	2.57E-04	4.39E-01	--	1.39E-02	0.00E+00	6.12E-02	-8.21E-01
PENRE	MJ, LHV	2.07E+01	1.70E+01	9.17E-01	2.77E-03	2.02E+00	--	3.08E-01	0.00E+00	4.96E-01	-3.90E+00
PENRT	MJ, LHV	2.07E+01	1.70E+01	9.17E-01	2.77E-03	2.02E+00	--	3.08E-01	0.00E+00	4.96E-01	-3.90E+00
FW	m3	8.68E-03	6.72E-03	1.20E-05	6.45E-06	8.31E-04	--	4.31E-05	0.00E+00	1.07E-03	-2.12E-03

Table 23: Resource Use for Copper Cat 6/6A Patch Cord Plugs

Parameters	Unit	Total	A1-A3	A4	A5	B6	C1	C2	C3	C4	D
PERE	MJ, LHV	5.75E-01	5.68E-01	2.67E-03	6.27E-04	--	0.00E+00	1.26E-03	--	2.06E-03	-2.55E-01
PERT	MJ, LHV	6.88E-01	6.81E-01	2.67E-03	6.27E-04	--	0.00E+00	1.26E-03	--	2.06E-03	-2.55E-01
PENRE	MJ, LHV	3.66E+00	3.53E+00	6.86E-02	7.08E-03	--	0.00E+00	3.25E-02	--	2.20E-02	-1.78E-01
PENRT	MJ, LHV	4.03E+00	3.90E+00	6.86E-02	7.08E-03	--	0.00E+00	3.25E-02	--	2.20E-02	-1.78E-01
FW	m3	1.27E-03	1.24E-03	9.59E-06	8.85E-06	--	0.00E+00	4.54E-06	--	3.15E-06	-1.02E-04

Table 24: Resource Use for Cat 6A Field Termination plug

Parameters	Unit	Total	A1-A3	A4	A5	B6	C1	C2	C3	C4	D
PERE	MJ, LHV	3.18E-01	3.16E-01	2.93E-04	--	--	0.00E+00	1.81E-03	--	--	--
PERT	MJ, LHV	3.18E-01	3.16E-01	2.93E-04	--	--	0.00E+00	1.81E-03	--	--	--
PENRE	MJ, LHV	1.67E+00	1.58E+00	5.85E-02	--	--	0.00E+00	2.97E-02	--	--	--
PENRT	MJ, LHV	1.67E+00	1.58E+00	5.85E-02	--	--	0.00E+00	2.97E-02	--	--	--
FW	m3	7.46E-04	7.41E-04	7.64E-07	--	--	0.00E+00	4.20E-06	--	--	--

Table 25: Resource Use for consolidation point cord.

Parameters	Unit	Total	A1-A3	A4	A5	B6	C1	C2	C3	C4	D
PERE	MJ, LHV	1.92E+00	1.84E+00	8.01E-03	1.53E-03	--	0.00E+00	6.39E-03	--	6.26E-02	-9.02E-01
PERT	MJ, LHV	2.14E+00	2.06E+00	8.01E-03	1.53E-03	--	0.00E+00	6.39E-03	--	6.26E-02	-9.02E-01
PENRE	MJ, LHV	9.68E+00	9.04E+00	1.61E-01	1.59E-02	--	0.00E+00	1.14E-01	--	3.47E-01	-2.04E+00
PENRT	MJ, LHV	1.06E+01	1.00E+01	1.61E-01	1.59E-02	--	0.00E+00	1.14E-01	--	3.47E-01	-2.04E+00
FW	m3	4.38E-03	3.98E-03	1.91E-05	1.93E-05	--	0.00E+00	1.20E-05	--	3.46E-04	-1.60E-03

Table 26: Output flows and waste categories for small diameter High Flex Patch Cord Cat 6/6A

Parameters	Unit	Total	A1-A3	A4	A5	B6	C1	C2	C3	C4	D
HWD	kg	1.02E-09	9.41E-10	1.60E-12	1.03E-13	6.59E-11	--	2.48E-12	0.00E+00	1.35E-11	-1.67E-10
NHWD	kg	1.73E-01	7.07E-02	2.66E-05	3.61E-03	5.65E-04	--	6.94E-02	0.00E+00	2.90E-02	-1.94E-02
RWD	kg	3.45E-04	1.71E-04	7.29E-07	3.59E-08	1.63E-04	--	9.29E-07	0.00E+00	9.36E-06	-1.49E-04

CRU	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	--	0.00E+00	0.00E+00	0.00E+00	0.00E+00
MFR	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	--	0.00E+00	0.00E+00	0.00E+00	0.00E+00
MER	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	--	0.00E+00	0.00E+00	0.00E+00	0.00E+00
EEE	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	--	0.00E+00	0.00E+00	0.00E+00	0.00E+00
EET	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	--	0.00E+00	0.00E+00	0.00E+00	0.00E+00

Table 27: Output flows and waste categories for Patch Cord Cat 6/6A

Parameters	Unit	Total	A1-A3	A4	A5	B6	C1	C2	C3	C4	D
HWD	kg	1.44E-09	1.33E-09	2.23E-12	1.03E-13	7.93E-11	--	2.42E-12	0.00E+00	2.50E-11	-3.10E-10
NHWD	kg	2.22E-01	1.14E-01	3.73E-05	3.61E-03	6.81E-04	--	5.36E-02	0.00E+00	5.02E-02	-3.87E-02
RWD	kg	5.00E-04	2.84E-04	1.02E-06	3.59E-08	1.96E-04	--	1.06E-06	0.00E+00	1.80E-05	-2.53E-04
CRU	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	--	0.00E+00	0.00E+00	0.00E+00	0.00E+00
MFR	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	--	0.00E+00	0.00E+00	0.00E+00	0.00E+00
MER	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	--	0.00E+00	0.00E+00	0.00E+00	0.00E+00
EEE	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	--	0.00E+00	0.00E+00	0.00E+00	0.00E+00
EET	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	--	0.00E+00	0.00E+00	0.00E+00	0.00E+00

Table 28: Output flows and waste categories for Cat 6/6A patch cord plugs

Parameters	Unit	Total	A1-A3	A4	A5	B6	C1	C2	C3	C4	D
HWD	kg	2.15E-06	2.15E-06	2.85E-13	2.92E-13	--	0.00E+00	1.35E-13	--	8.24E-13	-2.27E-10
NHWD	kg	4.85E-02	6.63E-03	5.90E-06	7.57E-03	--	0.00E+00	2.79E-06	--	3.43E-02	-1.82E-03
RWD	kg	1.61E-04	1.60E-04	1.90E-07	8.79E-08	--	0.00E+00	9.00E-08	--	1.93E-07	-6.58E-06
CRU	kg	0.00E+00	--	--	--	--	--	--	--	--	--
MFR	kg	4.04E-03	4.04E-03	0.00E+00	0.00E+00	--	0.00E+00	0.00E+00	--	0.00E+00	0.00E+00
MER	kg	0.00E+00	--	--	--	--	--	--	--	--	--
EEE	MJ	9.22E-03	5.99E-04	0.00E+00	8.62E-03	--	0.00E+00	0.00E+00	--	0.00E+00	0.00E+00
EET	MJ	3.38E-03	2.69E-04	0.00E+00	3.11E-03	--	0.00E+00	0.00E+00	--	0.00E+00	0.00E+00

Table 29: Output flows and waste categories for Cat 6A Field Termination plug

Parameters	Unit	Total	A1-A3	A4	A5	B6	C1	C2	C3	C4	D
HWD	kg	1.20E-10	1.19E-10	1.43E-13	--	--	0.00E+00	5.23E-13	--	--	--
NHWD	kg	2.05E-02	1.81E-03	2.38E-06	--	--	0.00E+00	1.87E-02	--	--	--
RWD	kg	4.76E-05	4.74E-05	6.51E-08	--	--	0.00E+00	1.54E-07	--	--	--
CRU	kg	0.00E+00	--	--	--	--	--	--	--	--	--
MFR	kg	0.00E+00	--	--	--	--	--	--	--	--	--
MER	kg	0.00E+00	--	--	--	--	--	--	--	--	--
EEE	MJ	0.00E+00	--	--	--	--	--	--	--	--	--
EET	MJ	0.00E+00	--	--	--	--	--	--	--	--	--

Table 30: Output flows and waste categories for consolidation point cord

Parameters	Unit	Total	A1-A3	A4	A5	B6	C1	C2	C3	C4	D
HWD	kg	3.25E-06	3.25E-06	7.36E-13	1.23E-12	--	0.00E+00	5.48E-13	--	1.74E-11	-6.51E-10
NHWD	kg	1.38E-01	6.46E-02	1.83E-05	1.57E-02	--	0.00E+00	1.48E-05	--	5.77E-02	-4.77E-02
RWD	kg	3.90E-04	3.72E-04	3.94E-07	2.48E-07	--	0.00E+00	2.57E-07	--	1.71E-05	-7.18E-05
CRU	kg	0.00E+00	-	-	-	--	-	-	--	-	-
MFR	kg	3.45E-02	6.12E-03	0.00E+00	0.00E+00	--	0.00E+00	0.00E+00	--	2.84E-02	0.00E+00
MER	kg	0.00E+00	-	-	-	--	-	-	--	-	-
EEE	MJ	2.15E-01	9.07E-04	0.00E+00	1.76E-02	--	0.00E+00	0.00E+00	--	1.96E-01	0.00E+00
EET	MJ	3.60E-01	4.08E-04	0.00E+00	1.09E-02	--	0.00E+00	0.00E+00	--	3.49E-01	0.00E+00

5. LCA Interpretation

The supply of raw materials (including their extraction and processing, Module A1) is the main driver (48% to 99%) of the potential environmental impacts associated with the production of copper patch cord. Module A1 contributes 48% to 60% of GWP, followed by manufacturing (A3, 4% to 16%) and disposal of wastes (C4, 10% to 11%). In categories other than Ozone Depletion Potential (ODP), operational energy use (B6) and manufacturing (A3) contribute as much as 19% and 13%, respectively. Almost all (99%) of all ODP originates during extraction and processing of raw materials. Module D's credits contribute between 11% to 38% across impact categories as result of material and energy recovery from wastes.

Raw material (A1) contributes the most to GWP, followed by manufacturing (A3) and Disposal of wastes (C4). Recyling of copper contributes in offseting some of the environmental burden. Almost all (99%) of all ODP originates during extraction and processing of raw materials.

6. Additional Environmental Information

6.1. Environmental Activities and Certifications

This report has been generated through Leviton's System Verification Laboratory (SVL).

Leviton Network Solutions has long been motivated by sustainability goals. Our copper and fiber cable manufacturing facility in Glenrothes, UK, has been carbon neutral since 2011, a first step toward accomplishing CN2030, our initiative to achieve carbon neutrality across our operations by 2025, with an ambition to be net zero by 2050. Also, Leviton Network Solutions' environmental activities include: the first data communications cable factory to achieve BSI PAS 2060 Carbon Neutrality, all manufacturing facilities are ISO 9001 Certified, and primary cable and connectivity factories are ISO 14001 and ISO 50001 Certified. Also, all manufacturing facilities comply with Conflict Minerals regulations, including

supply chain contracts and supplier reviews.

6.2. Further Information

Leviton's CN2030 sustainability program to achieve carbon neutrality is based on the company's refreshed commitment to reduce its environmental impact in several focus areas: energy, waste, recycling, water, and by creating innovations that empower and enable customers to be more sustainable. Learn more about Leviton Network Solutions' sustainability commitments: Leviton.com/sustainability

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