ENVIRONMENTAL PRODUCT DECLARATION

RAYCHEM T2BLUE+ HEATING CABLES

CONSTANT WATTAGE HEATING CABLE

RAYCHEM T2Blue+ cables provide constant power output floor heating.

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Chemelex is a global leader in electrical heat tracing products and services, mineral-insulated fire rated wiring, electrical floor heating systems, and fluid Leak detection systems. The company supports customers with products and services in industries ranging from commercial and residential construction, data centers, energy, industrial process heating and transportation. Its products are marketed globally under leading brands including Raychem, Tracer, Pyrotenax, and Nuheat.

Chemelex's Raychem brand is at the forefront of the heat tracing industry. Products include industrial process heating systems, pipe freeze protection, surface snow melting & de-icing, floor heating, and hot water temperature maintenance. Raychem's solutions are vital in sectors including energy, infrastructure, and commercial & residential building. Applications ensure accurate temperature maintenance for operational efficiency, enhanced safety and customer comfort.

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RAYCHEM T2Blue+
Constant wattage heating cable

According to ISO 14025 and EN 15804+A2

EPD PROGRAM AND PROGRAM OPERATOR NAME, ADDRESS, LOGO, AND WEBSITE	UL Solutions www.ul.com 333 Pfingsten Rd, Northbrook IL, 60062 www.spot.ul.com
GENERAL PROGRAM INSTRUCTIONS AND VERSION NUMBER	UL Solutions Program Operator Rules v2.7 2022
MANUFACTURER NAME AND ADDRESS	Chemelex 15375 Memorial Drive, Houston, TX 77079, United States
DECLARATION NUMBER	4791918284.101.1
DECLARED PRODUCT & FUNCTIONAL UNIT OR DECLARED UNIT	1 km of constant wattage heating cable
REFERENCE PCR AND VERSION NUMBER	Core PCR: EN 15804:2012+A2:2019 Guidance PCR: PEP-PCR-ed4-EN-2021 09 06
DESCRIPTION OF PRODUCT APPLICATION/USE	Electrical floor heating
PRODUCT RSL DESCRIPTION (IF APPL.)	25 years
MARKETS OF APPLICABILITY	Europe
DATE OF ISSUE	September 12th 2025
PERIOD OF VALIDITY	5 Years
EPD TYPE	Product-specific
RANGE OF DATASET VARIABILITY	N/A
EPD SCOPE	Cradle-to-grave
YEAR(S) OF REPORTED PRIMARY DATA	2023
LCA SOFTWARE & VERSION NUMBER	LCA For Experts 10.8
LCI DATABASE(S) & VERSION NUMBER	Sphera MLC 2024.2
LCIA METHODOLOGY & VERSION NUMBER	EF 3.1 (as per EN 15804+A2)

The PCR review was conducted by:	European Standards Review Panel info@en-standard.eu
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:	WAP Sustainability
This life cycle assessment was independently verified in accordance with ISO 14044 and the reference PCR by:	Peter Yeon, H.I.P Pathway

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.

1. Product Definition and Information

1.1. Description of Company/Organization

Chemelex is a global leader in electric thermal and sensing solutions, protecting the world's critical processes, places and people. With over 50 years of innovation and a commitment to excellence, we develop solutions that ensure safety, reliability, and efficiency in diverse environments – from industrial plants and data centers to people's homes. Chemelex delivers future-ready technologies, advanced engineering capabilities and local expertise backed by global standards. Our offering includes a leading portfolio from our trusted brands: Raychem, Tracer, Pyrotenax, and Nuheat.

1.2. Product Description

RAYCHEM T2Blue+

The reference product to represent RAYCHEM T2Blue+ cables is R-BL12P-40M-480W/T0. T2Blue+ is a floor heating cable with constant power output. It is a pre-terminated, dual conductor heater with a 2.5m cold lead attached at one end. The heating cable should be embedded in a layer of filler (typically 15-30mm) but can also be fitted into the Raychem Membranes or embedded deeper in the floor construction (screed of 30-50mm).

Figure 1: T2Blue+ product image

Note that the higher the cable is positioned in the floor construction, the more energy efficient it is to regulate the cable. T2Blue+ is the ideal floor heating system for installations in newly constructed buildings as well as for renovations. The cable exists in 2 power output variants of 7W/m and 12W/m and available in pre-terminated lengths (10-180 m). The range is composed of installer friendly kits including the cable on a spool and all installation accessories. Variants with or without touchscreen programmable, WiFi-enabled thermostat are available. The range of products is EcoDesign compliant when used in combination with one of the Raychem programmable thermostats.

Table 1: Products covered in the EPD

PRODUCT NUMBER	PRODUCT NAME	NOMINAL POWER OUTPUT	POWER	RESISTANCE RANGE @ 20°C	LENGTH
2000005312	R-BL7P-15M-105W/T0	7	105 W	278.6 – 554.2	15 m
2000005313	R-BL7P-20M-140W/T0	7	140 W	359.0 – 415.6	20 m
2000005314	R-BL7P-25M-175W/T0	7	175 W	267.2 – 332.5	25 m
2000005315	R-BL7P-30M-210W/T0	7	210 W	239.3 – 277.1	30 m
2000005316	R-BL7P-40M-280W/T0	7	280 W	179.5 – 207.8	40 m
2000005317	R-BL7P-50M-350W/T0	7	350 W	143.6 – 166.3	50 m
2000005318	R-BL7P-60M-420W/T0	7	420 W	119.7 – 138.5	60 m
2000005319	R-BL7P-80M-560W/T0	7	560 W	89.7 – 103.9	80 m
2000005320	R-BL7P-100M-700W/T0	7	700 W	71.8 – 83.1	100 m

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PRODUCT NUMBER	PRODUCT NAME	NOMINAL POWER OUTPUT	POWER	RESISTANCE RANGE @ 20°C	LENGTH
2000005321	R-BL7P-120M-840W/T0	7	840 W	59.8 – 69.3	120 m
2000005322	R-BL7P-140M-980W/T0	7	980 W	51.3 – 59.4	140 m
2000005323	R-BL7P-160M-1120W/T0	7	1120 W	44.9 – 52.0	160 m
2000005324	R-BL7P-180M-1260W/T0	7	1260 W	39.9 – 46.2	180 m
2000005325	R-BL12P-10M-120W/T0	12	120 W	418.8 – 484.9	10 m
2000005326	R-BL12P-15M-180W/T0	12	180 W	269.2 – 311.7	15 m
2000005327	R-BL12P-20M-240W/T0	12	240 W	229.7 – 266.0	20 m
2000005328	R-BL12P-25M-300W/T0	12	300 W	167.5 – 194.0	25 m
2000005329	R-BL12P-30M-360W/T0	12	360 W	134.6 – 155.9	30 m
2000005330	R-BL12P-40M-480W/T0	12	480 W	114.9 – 133.0	40 m
2000005331	R-BL12P-50M-600W/T0	12	600 W	83.8 – 97.0	50 m
2000005332	R-BL12P-60M-720W/T0	12	720 W	67.3 – 77.9	60 m
2000005333	R-BL12P-80M-960W/T0	12	960 W	57.4 – 66.5	80 m
2000005334	R-BL12P-100M-1200W/T0	12	1200 W	41.9 – 48.5	100 m
2000005335	R-BL12P-120M-1440W/T0	12	1440 W	33.7 – 39.0	120 m
2000005336	R-BL12P-140M-1680W/T0	12	1680 W	31.0 – 35.9	140 m
2000005337	R-BL12P-160M-1920W/T0	12	1920 W	26.2 – 30.3	160 m
2000005338	R-BL12P-180M-2160W/T0	12	2160 W	23.3 – 26.9	180 m
2000005693	R-BL7P-15M-105W/SENZ-WIFI	7	105 W	278.6 – 554.2	15 m
2000005694	R-BL7P-20M-140W/SENZ-WIFI	7	140 W	359.0 – 415.6	20 m
2000005695	R-BL7P-25M-175W/SENZ-WIFI	7	175 W	267.2 – 332.5	25 m
2000005696	R-BL7P-30M-210W/SENZ-WIFI	7	210 W	239.3 – 277.1	30 m
2000005697	R-BL7P-40M-280W/SENZ-WIFI	7	280 W	179.5 – 207.8	40 m
2000005698	R-BL7P-50M-350W/SENZ-WIFI	7	350 W	143.6 – 166.3	50 m
2000005699	R-BL7P-60M-420W/SENZ-WIFI	7	420 W	119.7 – 138.5	60 m
2000005700	R-BL7P-80M-560W/SENZ-WIFI	7	560 W	89.7 – 103.9	80 m
2000005701	R-BL7P-100M-700W/SENZ-WIFI	7	700 W	71.8 – 83.1	100 m
2000005702	R-BL7P-120M-840W/SENZ-WIFI	7	840 W	59.8 – 69.3	120 m
2000005703	R-BL7P-140M-980W/SENZ-WIFI	7	980 W	51.3 – 59.4	140 m

PRODUCT NUMBER	PRODUCT NAME	NOMINAL POWER OUTPUT	POWER	RESISTANCE RANGE @ 20°C	LENGTH
2000005704	R-BL7P-160M-1120W/SENZ-WIFI	7	1120 W	44.9 – 52.0	160 m
2000005705	R-BL7P-180M-1260W/SENZ-WIFI	7	1260 W	39.9 – 46.2	180 m
2000005706	R-BL12P-10M-120W/SENZ-WIFI	12	120 W	418.8 – 484.9	10 m
2000005707	R-BL12P-15M-180W/SENZ-WIFI	12	180 W	269.2 – 311.7	15 m
2000005708	R-BL12P-20M-240W/SENZ-WIFI	12	240 W	229.7 – 266.0	20 m
2000005709	R-BL12P-25M-300W/SENZ-WIFI	12	300 W	167.5 – 194.0	25 m
2000005710	R-BL12P-30M-360W/SENZ-WIFI	12	360 W	134.6 – 155.9	30 m
2000005711	R-BL12P-40M-480W/SENZ-WIFI	12	480 W	114.9 – 133.0	40 m
2000005712	R-BL12P-50M-600W/SENZ-WIFI	12	600 W	83.8 – 97.0	50 m
2000005713	R-BL12P-60M-720W/SENZ-WIFI	12	720 W	67.3 – 77.9	60 m
2000005714	R-BL12P-80M-960W/SENZ-WIFI	12	960 W	57.4 – 66.5	80 m
2000005715	R-BL12P-100M-1200W/SENZ-WIFI	12	1200 W	41.9 – 48.5	100 m
2000005716	R-BL12P-120M-1440W/SENZ-WIFI	12	1440 W	33.7 – 39.0	120 m
2000005717	R-BL12P-140M-1680W/SENZ-WIFI	12	1680 W	31.0 – 35.9	140 m
2000005718	R-BL12P-160M-1920W/SENZ-WIFI	12	1920 W	26.2 – 30.3	160 m
2000005719	R-BL12P-180M-2160W/SENZ-WIFI	12	2160 W	23.3 – 26.9	180 m
2000005693	R-BL7P-15M-105W/SENZ-WIFI	7	105 W	278.6 – 554.2	15 m

1.3. Application

T2Blue+ is the ideal floor heating system for installation in newly constructed buildings or for renovation, and for example in conservatories.

1.4. Technical Requirements

Minimum installation temperature: 5˚C.

The technical requirements are available on the Chemelex product page under engineering specifications: https://www.nvent.com/en-gb/raychem/products/t2blue-floor-heating-cable-0.

1.5. Properties of Declared Product as Delivered

The product is spooled onto an ABS reel, then packaged in a cardboard box, and finally shipped onto pallets.

1.6. Material Composition

The mass associated with the functional unit for the reference product R-BL12P-40M-480W/T0 is 31 kg.

Table 2: Material composition, per 1 km

MATERIAL	Weight [%]
COPPER	25
PLASTIC	41
MINERALS AND OTHER ADDITIVES	33
TOTAL	**100**

1.7. Manufacturing

The process of producing T2Blue+ cables begins with re-spooling the heating wire to the required length. Next, the cold lead wire is cut and stripped as necessary to prepare it for further assembly. The end seal is then created to ensure proper insulation and functionality. Following this, the splice connection between the heating wire and the cold lead is made with precision.

Once the connection is complete, the product undergoes a DC resistance test and a Hi-Pot inspection to ensure it meets quality and safety standards. After passing these tests, the heating cable and accompanying kits are assembled and placed into boxes. Finally, the products are carefully packaged, and the appropriate labels are applied before they are ready for distribution.

1.8. Packaging

The cables are spooled onto ABS reels that made from recycled materials and are recyclable. The ABS reels are placed inside a cardboard box, which is shippped on a pallet.

1.9. Transportation

The Raychem heating cables are manufactured at the Chemelex site in Suzhou, China. The cables are then transported by ocean to Antwerp and then by truck to Chemelex's EU distribution center in Leuven. From Leuven the products are distributed all over Europe by truck.

1.10. Product Installation

Installation only requires the use of hand tools. No maintainance is required after installation. A product loss of 5% is assumed during installation.

1.11. Use

The reference T2Blue+ cable (R-BL12P-40M-480W/T0) has a power consumption of 480 W when switched on. A cable of 40 m can heat a 5 m^2 heated floor area during 120 days and consuming 343 kWh annually. This means that for the functional unit of 1 kilometer of cable, T2Blue+ could heat a heated floor area of 125 m^2.

1.12. Reference Service Life

The reference service life (RSL) of the T2Blue+ product is 25 years.

1.13. Reuse, Recycling, and Energy Recovery

The end-of-life disposal rates (recycling, energy recovery, and disposal) used in the study were based on EN 50639:2019 – Product category rules for life cycle assessments of electronic and electrical products and systems, Table G.4, as shown in Table 3.

Table 3: End-of-life disposal rates

	Material Recovery Rate (%)	Energy Recovery Rate (%)	Disposal Rate (%)
Copper	60	0	40
Aluminum	70	0	30
Steel	80	0	20
Plastic	20	40	40
Electronics	50	0	50
Minerals and other additives	0	0	100

1.14. Disposal

The aluminum, plastic, copper braid and bus wires are recyclable. The remaining materials will go to a landfill.

2. Life Cycle Assessment Background Information

2.1. Functional Unit

The functional unit is 1 km of cable.

2.2. System Boundary

This EPD is a Cradle-to-Grave study.

2.3. Estimates and Assumptions

All estimates and assumptions are within the requirements of ISO 14040/44 and EN 15804. The primary data was collected as annual totals for electricity usage and production volume. The utility usage information was divided by the production to find a utility consumption per kilometer of cable produced.

2.4. Cut-off Criteria

Material inputs greater than 1% (based on total mass of the final product) were included within the scope of analysis. Material inputs less than 1% were included if sufficient data was available to warrant inclusion and/or the material input was thought to have significant environmental impact. Cumulative excluded material inputs and environmental impacts are less than 5% based on total weight of the functional unit.

2.5. Data Sources

Primary data were collected by facility personnel and from utility bills and was used for all manufacturing processes. Whenever available, supplier data was used for raw materials used in the production process. When primary data did not exist, secondary data for raw material production was utilized from Sphera Managed LCA Content Database 2024.2.

2.6. Data Quality

The geographical scope of the manufacturing portion of all life cycle modules is North America. All primary data were collected from the manufacturer. The geographic coverage of primary data is considered excellent. Time coverage of this data is considered excellent. Primary data provided by the manufacturer is specific to the technology used in manufacturing their product. It is site-specific and considered of good quality. Data necessary to model cradle-to-gate unit processes was sourced from Sphera Managed LCA Content LCI datasets.

2.7. Period under Review

The period under review is the full calendar year 2023.

2.8. Allocation

General principles of allocation were based on ISO 14040/44. To derive a per-unit value for manufacturing inputs such as electricity, thermal energy and water, allocation based on total production by mass was adopted. As a default, secondary Sphera Managed LCA datasets use a physical basis for allocation.

3. Life Cycle Assessment Scenarios

It is assumed that all raw materials are delivered to the manufacturing facility via truck and ship, based on global region. Distances were calculated using the supplier location and the location of manufacturing.

Table 4. Transport to the building site (A4)

NAME	UNIT	TRUCK	RAIL	SHIP	AIR
Vehicle type		Heavy Heavy-duty Diesel Truck / 53,333 lb payload - 8b	Rail transport cargo – Diesel, average train, gross tonne weight 1,000t/726t pay load capacity	Bulk commodity carrier, 1.000 to 250.000 dwt payload capacity, deep sea	Cargo plane, 65t payload
Fuel efficiency for full vehicle		42 l/100km	1.17E-05 kg / kg	15,134 l/100km	0.00175 kg / lb
Capacity utilization (including empty runs, mass based	%	67	40	53	66
Transport distance	km	7.77E+02	-	6.97E+03	-
Gross density of products transported	kg/m^3	n/a			
Weight of products transported (if gross density not reported)	kg	3.16E+01			
Volume of products transported (if gross density not reported)	m^3	n/a			

Table 5. Installation into the building (A5)

NAME	VALUE	UNIT
Ancillary materials	0.00E+00	kg
Net freshwater consumption specified by water source and fate (amount evaporated, amount disposed to sewer)	0.00E+00	m^3
Other resources	0.00E+00	kg
Electricity consumption	0.00E+00	MJ
Other energy carriers	0.00E+00	MJ
Product loss per functional unit	1.55E+00	kg
Waste materials at the construction site before waste processing, generated by product installation	2.20E+00	kg
Output materials resulting from on-site waste processing	0.00E+00	kg
Biogenic carbon contained in packaging	2.50E-01	kg CO_2
Direct emissions to ambient air, soil and water	0.00E+00	kg
VOC content	0.00E+00	$\mu g/m^3$

Table 6. Reference Service Life

NAME	VALUE	VALUE	UNIT
RSL	25		years
Declared product properties (at the gate) and finishes, etc.	The products are spooled onto an ABS reel and shipped within a cardboard box.		Units as appropriate
Design application parameters (if instructed by the manufacturer), including references to the appropriate practices and application codes)	IEC 60800 (ed.3):2009		
An assumed quality of work, when installed in accordance with the manufacturer's instructions	Installation performed by electrician (or by Certified PRO installer)		
Outdoor environment	N/A		
Indoor environment: minimum installation temperature	+5°C, supply voltage 230V +/-10%, IPX7 class I		°C
Use conditions	Embedded in the floor, limited mechanical exposure after installation		
Maintenance, e.g. required frequency, type and quality of replacement components	No replacements are necessary.		

Table 7. Operational energy use (B6)

NAME	VALUE	UNIT
Lifetime of cable	25	years
Power consumption when powered on	4.80E+02	W/m
Power consumption over lifetime	7.72E+05	kWh/km

Table 8. End of life (C1-C4)

NAME		VALUE	UNIT
Recovery (specified by type)	Reuse	0.00E+00	kg
	Recycling	1.21E+01	kg
	Landfill	1.94E+01	kg
	Incineration	4.88E+00	kg
	Incineration with energy recovery	0.00E+00	kg
Disposal (landfill)	Product or material for final deposition	1.94E+01	kg
Removals of biogenic carbon (excluding packaging)		0.00E+00	kg CO_2

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

NAME	VALUE	UNIT
Net energy benefit from energy recovery from waste treatment declared as exported energy in C3 (R>0.6)	0.00E+00	MJ
Net energy benefit from thermal energy due to treatment of waste declared as exported energy in C4 (R<0.6)	2.91E+01	MJ
Net energy benefit from material flow declared in C3 for energy recovery	0.00E+00	MJ

4. Life Cycle Assessment Results

Table 10. Description of the system boundary modules

	PRODUCT STAGE			CONSTRUCT-ION PROCESS STAGE		USE STAGE							END OF LIFE STAGE				BENEFITS AND LOADS BEYOND THE SYSTEM BOUNDARY
	A1	**A2**	**A3**	**A4**	**A5**	**B1**	**B2**	**B3**	**B4**	**B5**	**B6**	**B7**	**C1**	**C2**	**C3**	**C4**	**D**
	Raw material supply	Transport	Manufacturing	Transport from gate to site	Assembly/Install	Use	Maintenance	Repair	Replacement	Refurbishment	Building Operational Energy Use During Product Use	Building Operational Water Use During Product Use	Deconstruction	Transport	Waste processing	Disposal	Reuse, Recovery, Recycling Potential
Cradle to Grave	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

Modules B1-B5, B7 and C1 to be reported were all zero following the calculation, hence have not been included in the results tables for an easier reading experience.

4.1 Life Cycle Impact Assessment Results

Table 11: EF 3.1 Impact Assessment Results, per 1 km of product

EF 3.1	A1 – A3	A4	A5	B6	C2	C3	C4	D
GWP_{total} [kg CO_2 eq]	8.25E+01	1.02E+01	2.76E+01	8.85E+04	1.85E+01	-2.45E+01	8.25E+01	1.02E+01
GWP_{fossil} [kg CO_2 eq]	1.11E+02	1.01E+01	1.98E+00	8.73E+04	1.84E+01	-2.45E+01	1.11E+02	1.01E+01
$GWP_{biogenic}$ [kg CO_2 eq]	-2.90E+01	1.09E-02	2.56E+01	1.22E+03	3.18E-03	5.33E-02	-2.90E+01	1.09E-02
$GWP_{land\ use}$ [kg CO_2 eq]	1.83E-01	7.55E-02	2.41E-02	1.71E+01	3.69E-02	-7.35E-02	1.83E-01	7.55E-02
ODP [kg CFC-11 eq]	1.74E-07	1.34E-12	1.45E-12	2.74E-06	4.93E-12	-1.91E-10	1.74E-07	1.34E-12
AP [kg SO_2 eq]	8.88E-01	1.53E-01	1.83E-02	1.37E+02	2.63E-02	-3.04E-01	8.88E-01	1.53E-01
$EP_{freshwater}$ [kg N eq]	3.75E-04	2.05E-05	5.15E-05	5.46E-01	1.18E-04	-5.68E-05	3.75E-04	2.05E-05
EP_{marine} [kg N eq]	1.04E-01	6.87E-02	1.24E-02	4.27E+01	1.21E-02	-1.89E-02	1.04E-01	6.87E-02
$EP_{terrestrial}$ [kg N eq]	1.10E+00	7.54E-01	9.51E-02	4.39E+02	1.37E-01	-1.96E-01	1.10E+00	7.54E-01
POCP [kg O_3 eq]	3.46E-01	1.67E-01	2.27E-02	1.03E+02	2.43E-02	-6.43E-02	3.46E-01	1.67E-01
$ADP_{element}$ [kg Sb-eq]	2.54E-02	1.05E-06	1.45E-07	1.84E-02	2.39E-07	-1.28E-02	2.54E-02	1.05E-06
ADP_{fossil} [MJ, LHV]	1.93E+03	1.26E+02	2.71E+01	1.22E+06	4.01E+01	-2.74E+02	1.93E+03	1.26E+02
WDP [m^3]	3.21E+01	9.32E-02	9.30E-02	2.83E+03	1.60E+00	-1.05E+01	3.21E+01	9.32E-02

Table 12. Resource Use Indicators, per 1 km of product

PARAMETER	A1 – A3	A4	A5	B6	C2	C3	C4	D
PERE [MJ]	5.98E+02	5.66E+00	2.52E+00	1.31E+06	5.16E+00	-1.31E+02	5.98E+02	5.66E+00
PERM [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
PERT [MJ]	5.98E+02	5.66E+00	2.52E+00	1.31E+06	5.16E+00	-1.31E+02	5.98E+02	5.66E+00
PENRE [MJ]	1.32E+03	1.26E+02	2.71E+01	1.22E+06	4.01E+01	-2.74E+02	1.32E+03	1.26E+02
PENRM [MJ]	6.10E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	6.10E+02	0.00E+00
PENRT [MJ]	1.93E+03	1.26E+02	2.71E+01	1.22E+06	4.01E+01	-2.74E+02	1.93E+03	1.26E+02
SM [kg]	2.12E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.12E+00	0.00E+00
FW [m^3]	7.59E-01	6.53E-03	3.72E-03	4.14E+02	4.03E-02	-2.52E-01	7.59E-01	6.53E-03

Table 13. Output Flows and Waste Categories, per 1 km of product

PARAMETER	A1 – A3	A4	A5	B6	C2	C3	C4	D
HWD [kg]	8.06E-07	1.14E-08	2.34E-09	3.02E-03	6.58E-09	-1.96E-07	8.06E-07	1.14E-08
NHWD [kg]	1.62E+01	1.34E-02	7.47E+00	1.24E+03	2.09E+01	8.52E+00	1.62E+01	1.34E-02
RWD [kg]	2.91E-02	2.96E-04	1.44E-04	1.17E+02	3.65E-04	-5.34E-03	2.91E-02	2.96E-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

PARAMETER	A1 – A3	A4	A5	B6	C2	C3	C4	D
MFR [kg]	3.29E+01	0.00E+00	9.08E+00	0.00E+00	0.00E+00	5.08E+00	0.00E+00	0.00E+00
MER [kg]	1.23E+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	2.91E+01
EET [MJ]	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.21E+01

Table 14. Additional Indicators, per 1 km of product

PARAMETER	A1 – A3	A4	A5	B6	C2	C3	C4	D
PM [disease incidence]	1.66E-05	3.26E-06	1.79E-07	1.07E-03	2.67E-07	-2.60E-06	1.66E-05	3.26E-06
IRP [kBq U235 eq]	2.38E+00	3.12E-02	2.12E-02	1.25E+04	5.01E-02	-5.85E-01	2.38E+00	3.12E-02
ETP [CTUe]	9.75E+02	9.61E+01	3.03E+01	4.54E+05	3.34E+01	-1.98E+02	9.75E+02	9.61E+01
HTCE [CTUh]	4.74E-08	1.75E-09	4.41E-10	2.60E-05	7.82E-10	-1.26E-08	4.74E-08	1.75E-09
HTnCE [CTUh}	3.03E-06	5.60E-08	3.48E-08	3.58E-04	4.04E-08	-4.14E-07	3.03E-06	5.60E-08
LU [Pt]	1.16E+03	2.94E+01	9.82E+00	8.56E+05	1.63E+01	-2.32E+02	1.16E+03	2.94E+01

5. LCA Interpretation

The use stage (B6), driven by the electricity required for powering the cables during their lifetime, is the largest contributor of impacts across the life cycle stages, except for $ADP_{elements}$. $ADP_{elements}$ are influenced by the manufacturing (A1-A3) stage.

The use stage (B6) contributes to the majority of impacts across the life cycle stages for all products, and across all indicators, except for Resource Use, minerals and metals, as shown in Figure 2. This is due to the electricity consumed during the use of the product over its lifetime.

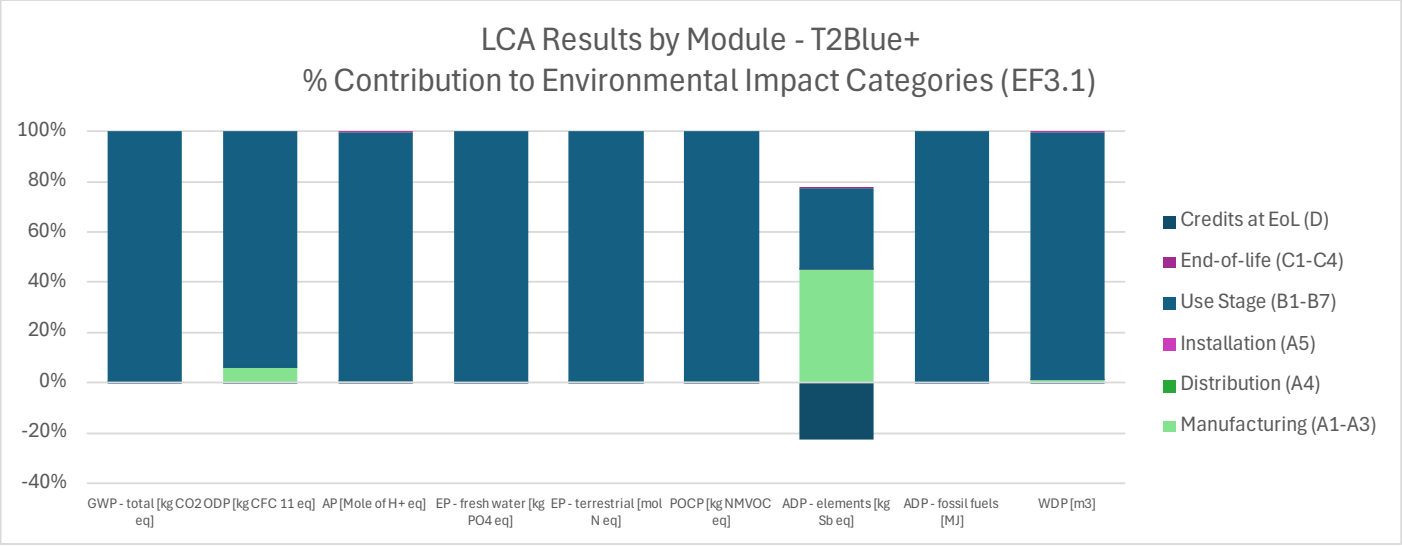

Figure 2: LCA Results for T2Blue+, by life cycle stage

6. Additional Environmental Information

6.1 Environment and Health During Installation

Further information about the product installation can be found on the Chemelex RAYCHEM website product page: https://www.nvent.com/en-gb/raychem/products/t2blue-floor-heating-cable-0.

6.2 Further Information

Further information about the product can be found on the Chemelex RAYCHEM website product page: https://www.nvent.com/en-gb/raychem/products/t2blue-floor-heating-cable-0.

7. References

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