

Product Environmental Profile

Reference product name: CU TPS 2X 2.5+E WH 1HM



541
kg CO₂ eq.
Climate change - total



0.15860
kg Sb eq.
Resource use - minerals & metals (ADPe)




7.5
m³
Net use of fresh water



11378
MJ
Total Primary Energy

The above environmental impacts are "cradle to gate" or "Manufacturing phase" values (A1-A3)

PEP ecopassport N°:	NXNS-00365-V01.01-EN	Product Category Rules:	PEP-PCR-ed4-EN-2021 09 06
Verifier accreditation N°:	VH55	Product Specific Rules:	PSR-0001-ed4-EN-2022 11 16
Date of publication:	06-2024	Program information & documents:	www.pep-ecopassport.org
		Validity period:	5 years
Independent verification of the declaration and data, in accordance with ISO 14025 : 2006			
Internal <input type="checkbox"/> External <input checked="" type="checkbox"/>			
The PCR critical review was conducted by a panel of experts chaired by Julie Orgelet (Ddemain).			
PEP are compliant with XP C08-100-1 :2016 and EN 50693 : 2019 The elements of the present PEP cannot be compared with elements from another program.			
Compliant with ISO 14025: 2006 "Environmental labels and declarations - Type III environmental declarations".			

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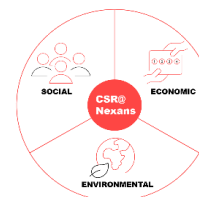
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<https://www.nexans.com.au/en/>



Nexans Corporate Social Responsibility commitment

Corporate Social Responsibility which is the confluence between environmental, economic and social aspects, is an integral part of the Nexans’s strategy. Nexans has been supporting the **United Nations Global Compact** since December 2008 and has implemented internal action plans to integrate Sustainable Development at all levels. It includes responsible governance, healthy and safe working environment for employees, reduced global carbon footprint through the **Nexans Carbon Neutrality strategy**.



Reference Product description

CU TPS 2X 2.5+E WH 1HM

2 core+earth flat, 450/750V V-90 insulated, PVC sheathed to AS/NZS 5000.2, copper conductors, 90°C. Manufactured in accordance with PVC Best Practice Guidelines.

Product covered:

The aforementioned energy wire and cable product belongs to the category power transmission wires and cables of the Product Specific Rules (PSR) for Wires, Cables and Accessories (PSR-0001) of the PEP ecopassport® program.

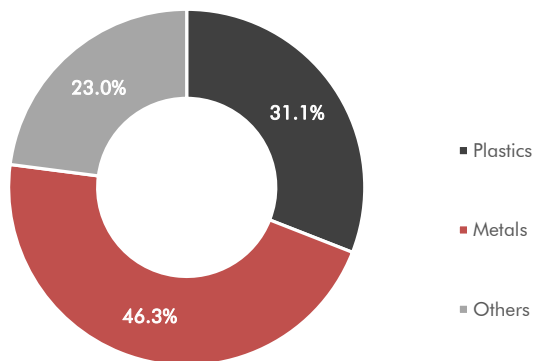
The PEP concerns the product CU TPS 2X 2.5+E WH 1HM.

Functional unit:

To transmit energy expressed for 1A over a distance of 1km during 30 years and a 70% use rate, in accordance with the relevant standards, detailed in the data sheet available on our website www.nexans.com.

Lifetime and use rate correspond to the Building - Residential / Tertiary / Industrial application as defined in the table given in Appendix 1 of the specific rules for wires, cables and accessories.

Constituent materials



The total mass of the reference product and packaging is 137.17 kg/km. Constituent materials are distributed as given in the graph.

Nexans has implemented necessary procedures to ensure product compliance with the relevant standards when products are put on the market.



II. LIFE CYCLE ASSESSMENT

Manufacturing



- The reference product is manufactured in Australia.
- The electricity mix model for the manufacturing stage is from Australia ≤ 1 kV (2018).
- All Nexans sites in Australia have implemented a certified Environmental Management System according to ISO14001 standard.

Packaging designed to reduce environmental impacts:

- Packaging was designed according to the applicable standard (Directive 94/62/EC).
- The packaging considered to transport the reference product is a Plastic drum. It is considered to be used 1 time.

Distribution



The transportation scenario for the impact assessment of the distribution stage is a distribution within New Zealand, considering:

- 1000 km covered by truck.
- 3000 km covered by boat.

Installation



Installation processes for the reference product are considered out of the scope of the study, according to the Product Specific Rules document for "Wires, Cables and Accessories" from PEP ecopassport® program. Only 5% of product losses and packaging disposal is considered in this stage

Use



The use scenario considers the operation of the reference product in Building - Residential / Tertiary / Industrial, with:

- Reference Lifetime (RLT) = 30 years
- Use rate = 70%

Considering the aforementioned hypotheses, the energy consumption over the RLT at use stage is 2726.29 kWh/km.

This value is calculated for $I=1$ A. For the effective consumption of the cable installed, multiply the value given by the square of intensity.

- The electricity mix considered at use stage is New Zealand ≤ 1 kV (2018).
- No maintenance is necessary to ensure the operation of the cable during the considered reference lifetime.

The reference lifetime mentioned in this PEP corresponds to an average data used for impact calculation, taking into account the average time a cable might be installed in a system before being disposed. **It CANNOT BE considered as an equivalent to the guaranteed product technical lifetime.**

End-of-life



- The transportation scenario chosen for the impact analysis associated with end-of-life stage is 1000 km covered by truck and 3000 km covered by boat.
- The assumed electricity mix model for end-of-life stage is New Zealand ≤ 1 kV (2018).

The cables are recycled through a grinding process for the separation of polymers and metal parts. The separated materials are then assumed to be recycled, incinerated or landfilled.

If the customer wants to recycle their cables at the end-of-life, Nexans has the know-how of cables recycling at their end-of-life through the structure named Nexans Recycling Services (recycling.services@nexans.com), to offer a complete solution for the recycling of polymers and metals.



III. ENVIRONMENTAL IMPACTS

The reference product CU TPS 2X 2.5+E WH 1HM belongs to the Product Category Rules (PEP-PCR-ed4-EN-2021 09 06) and Product Specific Rules (PSR-0001-ed4-EN-2022 11 16) from the PEP ecopassport® program. According to the PCR, the life cycle impact assessment of the reference product takes into account manufacturing, distribution, installation, use and end-of-life stages.

All the necessary hypotheses to evaluate the environmental impacts of the reference product lifecycle are presented in the previous sections (electricity mix models, use scenario, etc). The software used to perform the evaluation is EIME 6.2-22, with the Nexans-2024-03 database.

Representativeness: the study is representative of cable production in Australia with a worldwide scenario for distribution. The electricity model for use is New Zealand ≤1 kV (2018) and the model for end-of-life is New Zealand ≤1 kV (2018).

Impact results for 1000 m of CU TPS 2X 2.5+E WH 1HM

Mandatory indicators:

Environmental indicator/flows	Unit	A1-Raw materials	A2-Transport to manufacturer	A3-Manufacturing process	Total A1-A3	A4-Distribution to customer	A5-Installation*	B6-Use** (for 1 A)	C1-C4-End of life	TOTAL (for 1 A)
Climate change - total (GWP)	kg CO ₂ eq.	4.06E+02	3.14E+01	1.04E+02	5.41E+02	1.23E+01	3.49E+01	4.30E+02	6.82E+01	1.09E+03
Climate change - fossil (GWPf)	kg CO ₂ eq.	3.97E+02	3.14E+01	1.04E+02	5.32E+02	1.23E+01	3.45E+01	4.30E+02	6.82E+01	1.08E+03
Climate change - biogenic (GWPb)	kg CO ₂ eq.	4.63E+00	0.00E+00	1.07E-01	4.73E+00	0.00E+00	2.31E-01	6.59E-01	7.31E-03	5.63E+00
Climate change - land use & land use change (GWPlu)	kg CO ₂ eq.	3.69E+00	0.00E+00	0.00E+00	3.69E+00	0.00E+00	1.76E-01	0.00E+00	0.00E+00	3.86E+00
Ozone layer depletion (ODP)	kg CFC-11 eq.	2.57E-05	4.36E-08	3.58E-06	2.93E-05	1.73E-08	1.48E-06	1.27E-06	9.48E-07	3.30E-05
Acidification potential of soil and water (AP)	mol H ⁺ eq.	3.87E+00	7.39E-01	7.42E-01	5.35E+00	2.62E-01	2.78E-01	1.69E+00	9.75E-02	7.68E+00
Eutrophication - freshwater (Epf)	kg PO ₄₃₋ eq.	3.59E-03	1.12E-05	1.02E-04	3.71E-03	4.40E-06	2.76E-04	5.95E-06	6.63E-04	4.65E-03
Eutrophication - marine (Epm)	kg N eq.	5.11E-01	1.92E-01	8.72E-02	7.90E-01	7.03E-02	4.42E-02	2.14E-01	3.10E-02	1.15E+00
Eutrophication - terrestrial (Ept)	mol N eq.	5.56E+00	2.11E+00	9.64E-01	8.63E+00	7.71E-01	4.84E-01	3.31E+00	3.55E-01	1.36E+01
Photochemical ozone formation - human health (POCP)	kg NMVOC eq.	1.60E+00	5.41E-01	4.31E-01	2.57E+00	1.97E-01	1.41E-01	6.85E-01	9.09E-02	3.68E+00
Resource use - minerals & metals (ADPe)	kg Sb eq.	1.59E-01	1.16E-06	1.23E-05	1.59E-01	4.60E-07	7.58E-03	5.56E-05	7.43E-06	1.66E-01
Resource use - fossils (ADPf)	MJ	2.11E+04	4.12E+02	5.22E+03	2.67E+04	1.63E+02	1.31E+03	5.98E+03	4.24E+02	3.46E+04
Water use (WU)	m ³ eq.	2.32E+02	1.09E-01	8.37E+01	3.15E+02	4.33E-02	1.68E+01	1.34E+01	6.67E+00	3.52E+02
Use of renewable primary energy excluding renewable primary energy used as raw material	MJ	8.10E+01	5.36E-01	7.34E+01	1.55E+02	2.13E-01	1.39E+01	1.15E+04	1.24E+02	1.18E+04
Use of renewable primary energy used as raw material (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	0.00E+00
Total use of renewable primary energy resources (PERT)	MJ	8.10E+01	5.36E-01	7.34E+01	1.55E+02	2.13E-01	1.39E+01	1.15E+04	1.24E+02	1.18E+04
Non-renewable primary energy excluding non-renewable primary energy resources used as raw material (PENRM)	MJ	4.52E+03	4.12E+02	5.18E+03	1.01E+04	1.63E+02	5.18E+02	5.98E+03	4.24E+02	1.72E+04
Use of non-renewable primary energy resources used as raw materials (PENRM)	MJ	1.07E+03	0.00E+00	4.31E+01	1.11E+03	0.00E+00	5.29E+01	0.00E+00	0.00E+00	1.17E+03
Total use of non-renewable primary energy resources (PENRT)	MJ	5.59E+03	4.12E+02	5.22E+03	1.12E+04	1.63E+02	5.71E+02	5.98E+03	4.24E+02	1.84E+04
Use of secondary material (SM)	kg	0.00E+00	0.00E+00	2.76E+00	2.76E+00	0.00E+00	1.38E-01	0.00E+00	0.00E+00	2.90E+00
Use of renewable secondary fuels (RSF)	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
Use of non-renewable secondary fuels (NRSF)	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
Net use of fresh water (FW)	m ³	5.58E+00	2.54E-03	1.95E+00	7.53E+00	1.01E-03	4.00E-01	3.11E-01	1.55E-01	8.40E+00
Hazardous waste disposed (HWD)	kg	2.70E+00	0.00E+00	6.16E+00	8.86E+00	0.00E+00	2.05E+00	5.86E+00	3.24E+01	4.92E+01
Non hazardous waste disposed (NHWD)	kg	9.95E+00	1.01E+00	1.80E+01	2.90E+01	4.01E-01	9.31E+00	7.32E+01	9.22E+01	2.04E+02
Radioactive waste disposed	kg	8.49E-02	7.10E-04	3.54E-03	8.91E-02	2.82E-04	4.91E-03	1.61E-02	9.49E-03	1.20E-01
Components for reuse (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
Materials for recycling (MFR)	kg	0.00E+00	0.00E+00	5.74E-01	5.74E-01	0.00E+00	7.33E-01	0.00E+00	3.20E-01	1.63E+00
Materials for energy recovery (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
Exported Energy (EE)	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

* Installation stage includes only 5% product losses & packaging disposal. Impacts related to installation processes might be completed by the PEP user.

**Energy losses in use phase are calculated for 1A current intensity, the PEP user must multiply this impact by square of real current intensity

Environmental indicator/flows	Unit	Total
Biogenic carbon content - product (BC-pro)	kg of C	0.00E+00
Biogenic carbon content - packaging (BC-pack)	kg of C	0.00E+00

Biogenic carbon storage is calculated according to the O/O assessment methodology.

Optional indicators:

Environmental indicator/flow	Unit	A1-Raw materials	A2-Transport to manufacturer	A3-Manufacturing process	Total A1-A3	A4-Distribution to customer	A5-Installation*	B6-Use** (for 1 A)	C1-C4-End of life	TOTAL (for 1 A)
Total Primary Energy (TPE)	MJ	5.67E+03	1.99E+01	1.36E+03	7.05E+03	7.87E+00	2.15E+02	3.41E+03	1.55E+02	3.02E+04
EF-particulate matter (EF-PM)	Disease occurrence	4.39E-05	4.99E-10	1.54E-07	4.41E-05	1.98E-10	2.87E-08	4.57E-08	8.29E-08	6.71E-05
Ionising radiation, human health (IR)	kg U235 eq.	5.78E+02	8.08E-08	5.45E-07	5.78E+02	3.06E-08	7.94E-07	1.36E-06	9.84E-08	6.54E+02
Ecotoxicity, freshwater (Eco-fw)	CTUe	2.50E+03	0.00E+00	7.72E-01	2.50E+03	0.00E+00	4.29E+01	1.08E+01	1.12E-01	7.66E+03
Human toxicity, cancer (HT-c)	CTUh-c	3.58E-07	0.00E+00	0.00E+00	3.58E-07	0.00E+00	0.00E+00	0.00E+00	0.00E+00	6.70E-07
Human toxicity, non-cancer (HT-nc)	CTUh-nc	1.58E-05	0.00E+00	0.00E+00	1.58E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.87E-05
Land use (LU)	No dimension	7.70E+02	0.00E+00	0.00E+00	7.70E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	8.24E+02

Environmental indicators are calculated according to JRC method - EF3.0.