Environmental Product Declaration

In accordance with ISO 14025:2006 and EN 15804:2012+A2:2019/AC:2021 for:

xReflexwire 16mm, 20mm, 25mm

See tables on p.5 and p.16 for all included products
from

Pmflex Group Northern Europe AB

EPD of multiple products, based on the worst-case results

Programme:	The International EPD® System, www.environdec.com
Programme operator:	EPD International AB
EPD registration number:	EPD-IES-0026285:001
Version date:	2026-08-27
Validity date:	2031-08-27

An EPD may be updated or depublished if conditions change. To find the latest version of the EPD and to confirm its validity, see www.environdec.com

General information

Programme information

Programme:	The International EPD® System
Address:	EPD International AB Box 210 60 SE-100 31 Stockholm Sweden
Website:	www.environdec.com
E-mail:	support@environdec.com

Accountabilities for PCR, LCA and independent, third-party verification
Product Category Rules (PCR)
CEN standard EN 15804 serves as the Core Product Category Rules (PCR)
Product Category Rules (PCR): *Construction products, 2019:14, version 2.0.1 and c-PCR-019 Electrical cables and wires, version 2.0*
PCR review was conducted by: *The Technical Committee of the International EPD System. A full list of members is available on www.environdec.com. The review panel may be contacted via support@environdec.com. Chairs of the PCR review: Rob Rouwette (chair), Noa Meron (co-chair)*
Life Cycle Assessment (LCA)
LCA accountability: *Annie Johansson, Sweco (annie.johansson@sweco.se)* *Jennifer Granström, Sweco (jennifer.granstrom@sweco.se)*
Third-party verification
Independent third-party verification of the declaration and data, according to ISO 14025:2006, via: ☒ EPD verification by individual verifier Third-party verifier: Pär Lindman, Miljögiraff Approved by: The International EPD® System
OR
Independent third-party verification of the declaration and data, according to ISO 14025:2006, via: ☐ EPD verification by accredited certification body Third-party verification: <*name, organisation*> is an approved certification body accountable for the third-party verification The certification body is accredited by: <*name of accreditation body & accreditation number, where applicable*>
OR

Independent third-party verification of the declaration and data, according to ISO 14025:2006 via: ☐ EPD verification by EPD Process Certification* Internal auditor: <*name, organisation*> Third-party verification: <*name, organisation*> is an approved certification body accountable for third-party verification Third-party verifier is accredited by: <*name of accreditation body & accreditation number, where applicable*> *For EPD Process Certification, an accredited certification body certifies and reviews the management process and verifies EPDs published on a regular basis. For details about third-party verification procedure of the EPDs, see GPI.
Procedure for follow-up of data during EPD validity involves third party verifier: ☐ Yes ☒ No

The EPD owner has the sole ownership, liability, and responsibility for the EPD.

EPDs within the same product category but registered in different EPD programmes, or not compliant with EN 15804, may not be comparable. For two EPDs to be comparable, they must be based on the same PCR (including the same version number) or be based on fully-aligned PCRs or versions of PCRs; cover products with identical functions, technical performances and use (e.g. identical declared/functional units); have equivalent system boundaries and descriptions of data; apply equivalent data quality requirements, methods of data collection, and allocation methods; apply identical cut-off rules and impact assessment methods (including the same version of characterisation factors); have equivalent content declarations; and be valid at the time of comparison. For further information about comparability, see EN 15804 and ISO 14025.

Information about EPD owner

Owner of the EPD:
Pmflex Group Northern Europe AB
Transportgatan 29, 422 46 Hisings Backa

Contact:
Emil Allered
emil.allered@pmflex.com

Description of the organisation:
Pmflex has a great commitment and desire to simplify the value for installers trough modern technology and innovative solutions. After almost 60 years of business, the company offers 12 quality brands, positioning it as a specialist and number one manufacturer in Europe of plastic insulating conduits for electrical systems. The product range includes a complete range of conduits and accessories.

PM Plastic Materials was set up in 1962, taking its name from the very original founder, Pietro Moscheni. In that year, the company began producing flexible plastic conduits and linked its name to the products. In 2020 the product brand was refreshed and rebranded as Pmflex, maintaining a focus on flexibility and innovation.

Pmflex offer a wide range of corrugated hollow pliable ICTA conduits (LSF0H and HF), corrugated pre-wired flexible conduits, corrugated flexible conduits in PP, smooth rigid conduits in PP and smooth LSZH and HF rigid conduits, industrial sheaths, and cable ducts. Additionally, Pmflex also offer all the relevant accessories for every product family.

The company's mission centers on innovating to make installers' work increasingly easier, faster, and safer, while committing to sustainability practices. Emphasis is placed on developing next-generation solutions, fostering an innovative corporate culture, and maintaining close customer relationships to enable unique product solutions.

At Pmflex polypropylene raw material and masterbatch are mixed, extruded and processed into cable conduits in different diameters. These products are called xReflex. Cables are added to the products in a pre-wiring process generating the xReflexwire products. The pipes are packaged into different package solutions before transport to customers.

Name and location of production site(s):
Pmflex operates a factory for electrical installation conduits at Transportgatan 29, 422 46 Hisings Backa.

Product-related or management system-related certifications:
The products have a CE marking.

The characteristics of the products are presented below:

Characteristic	**ICTA**
Material	Polypropylene
Compressive strength	MEDIUM 750N
Impact resistance	HEAVY 6J
Minimum operating temperature	-5°C (also available -25°C)
Maximum operating temperature	+90°C
Bending resistance	Pliable self-recovering
Insulation resistance	>100MΩ
Glow Wire Test (IEC EN 60695-2)	960°C
Standards	EN 61386.1, EN 61386.22

Product information

Product name: xReflexwire

Product identification:
xReflexwire is a product variant within the xFlexWire product family, manufactured by Pmflex. The product is functionally equivalent to xFlexWire but is distinguished by the incorporation of recycled polymer content in the cable conduit, which affects the material composition while maintaining the same intended application and performance characteristics.

The cable conduits are plastic condiuts with pre-wired cables and classified as a component of an electrical system. They are installed in buildings and can be present for example in concrete constructions, other wood-based constructions or behind plaster in different settings.

Product description:
Pmflex xFlexWire is a pre-wired flexible conduit for electrical installations. The conduit is halogen-free, protected with flame retardant with round, finely stranded copper conductors and colour-coded insulation. Used in renovations or new installations. Pre-wired pliable corrugated conduit with cables.

The worst-case product is represented by xFlexWire 25mm 5x6 and xFlexWire 20mm 2xDATA+COAXIAL. The majority of the report is based on the product xFlexWire 25mm 5x6 except declaration of results for those environmental impact categories where xFlexWire 20mm 2xDATA+COAXIAL generate higher impact. The worst-case products stand for 0% of the total sales during 2025 and are a very small part of the sales, meaning that the results are overestimated for a large part of the product segment.

The other products covered by this product group are presented in the table below:

Product name and dimension (mm) ***(to be combined with cable setup)***	**Type of cable for pre-wiring**
xFlexWire 16mm	1xDATA 1x6 1x4 2x1,5 2x2,5 2x0,75 2x1 3x1,5 4x1,5 5x1,5 3x2,5 2xDATA 1x2,5 4x2,5
xFlexWire 20mm	2xDATA 2x6 5x2,5 6x1,5 7x1,5 2xDATA+COAXIAL 3x1,5 5x1,5 3x2,5 1xDATA+COAXIAL 3x6
xFlexWire 25mm	2xDATA 4x6 5x6

The material composition in the xFlex pipe in % remains the same for the different products within the product group (94% polypropylene and 6% masterbatch), but the dimensions and hence weight per m differ between the products. Additionally, the cables pre-wired in the pipes affect the weight per m and have different composition depending on type of cable.

Visual representation of product:

UN CPC code: 36320 - 4634 - Other electric conductors, for a voltage not exceeding 1000 V

Content information

The content declaration per 1 m of conduits for the worst-case product xReflexwire 25mm 5x6.

Product components	Weight, kg/m	Weight range in product group (kg/m)	Post-consumer material, weight-%	Biogenic material, kg C
Polypropylene granulates, recycled	0,076	0,034 – 0,076	70%	0
Polypropylene granulates, virgin	0,026	0,012 – 0,026	0%	0
Masterbatch with Flame retardant	0,0065	0,0029 – 0,0065	0%	0
Cable	0,35	0,020-0,35	0%	0
TOTAL	0,46	0,068 – 0,46	0%	0

Packaging materials	Weight, kg/m	Weight-% (versus the product)	Weight biogenic carbon, kg C/kg
Plastic film	0,00045	0,41%	0
Box (cardboard)	0,0014	1,3%	0,0064
Bobin (plastic)	0,0020	1,8%	0
Pallet (wood)	0,00042	0,38%	0,00011
TOTAL	0,0043	3,9%	0,00075

1 kg biogenic carbon in the product/packaging is equivalent to the uptake of 44/12 kg of CO2.

No substances on the SVHC list have been reported.

LCA information

Declared unit: 1 m of cable conduit.

Conversion factor to mass: 1m of xReflexwire 25mm 5x6 weighs 0,46kg.

Time representativeness: Primary data has been collected through relevant documentation from Pmflex Group Northern Europe AB 's own production and supplier production representing the production year 2025. Data was collected from January 2026 to June 2026. All data collected reflects the current actual production representative of Pmflex Group Northern Europe AB's product flows.

Geographical scope:
A1-A3: Europe, A4-A5: Sweden, B6: Sweden, C1-C4: Sweden.

Database(s) and LCA software used: Modelling of environmental impact has been carried out with the LCA tool SimaPro, version 10.2.0.3. Generic datasets and background data have been based on LCI data from Ecoinvent 3.11.

Impact assessment methods: Categories, units and parameters used to describe environmental impacts were selected according to PCR (PCR 2019:14) and c-PCR-
019. Characterization factors used to assess material and energy flows were applied according to EN 15804:2012+A2:2019/AC:2021 based on EF 3.1.

Description of system boundaries: Cradle to gate with options, modules C1–C4, module D and with optional modules (A1–A3 + C + D and additional modules)". The additional modules are A4–A5 and B6.

Electricity: Pmflex uses electricity produced from own solar cells on the roof of the facility and purchased electricity from Göteborg Energi AB, with guarantees of origin stating 100% hydro power. The corresponding calculated emission factor for the electricity on the production site in Hisings backa is 0,0547 kg CO2eq/kWh. The emission factor was calculated using IPCC 2021 (GWP-GHG = GWP total).

Data quality: The general data quality and robustness of the results are considered to be good. Most of the input data that is important for the result is based on specific information about material and energy flows from Pmflex. Additionally, EPDs from suppliers have been used. The EPD for the 1,5 and 2,5 cable lack data on additional impact categories. Results from EPD FQ (H07Z1-R) 4 is used as these overestimate the impact. All generic datasets used come from reliable and audited sources (Ecoinvent 3.11) and have been selected based on technical, geographical, and temporal aspects to represent actual processes.

All specific (measured) data has been verified by Pmflex.

The processes constituting over 80% of the impact are presented below and evaluated with regards to data quality.

Process	Share	Reference year	Geographical representativeness	Technical representativeness	Temporal representativeness
EPD FQ (H07Z1-R) 6 [modules A1-A3]	<80%	2023	Very good	Very good	Very Good

Share of primary data: The share of primary data is calculated based on GWP-GHG results. It is a simplified indicator for data quality that supports the use of more primary data, to increase the representativeness of and comparability between EPDs. Note that the indicator does not capture all relevant aspects of data quality and is not comparable across product categories.

The reported share of primary data is associated with uncertainty, as one or several EPDs that are used as data source lack information on the share of primary data used. The cable, which has the largest proportion by weight and climate impact is based on an EPD from a supplier for the specific product. There is no declaration of primary data in the EPD. Conservatively, it is regarded as 0% primary data. ***Therefore, the amount of specific data in the study is likely underestimated***.

The share of primary/specific data contributing to the GWP-GHG results in the manufacturing stage is 10%. The calculations for share of specific data are based on shares of primary data given for raw materials, as well as data from the manufacturing site, see compilation in the table below.

Module	Specification	Source	Reference year	Contribution to GWP	GWP-GHG (kg CO2-eq.)	Total share of primary data
A1	Polypropylene granulates	Polypropylene raw material 100% generic from ecoinvent.	2025	1,2%	0,031	0%
A1	Polypropylene granulates virgin + recycled	Combination of generic data from ecoinvent adapted with specific data on energy in production	2025	3,7%	0,094	5,8%
A1	Masterbatch with Flame retardant, xFlex	Masterbatch for xRigid used as proxy. Primary data	2025	0,8%	0,020	0%
A1	Cable	EPD from supplier	2023	66,7 %	1,57	0%
A2	Transport of raw materials to Pmflex	Specific distances and weights collected	2025	1,3%	0,033	100%
A3	Production at Pmflex	Specific manufacturing data collected	2025	0,5%	0,014	100%
A1-A3				**74%**	1,76	**8%**

Allocation: The amount of material in each component is based on specific data. For energy consumption, water use and waste at the production plant, allocation based on mass was used. Total production volumes over a year were used to allocate the environmental impacts from the production processes per unit of studied products respectively.

The allocation of waste follows the polluter-pays principle. The system boundary to the subsequent product system is set where the waste (e.g., the discarded product) reaches the end-of-waste state, i.e., when the material has become a usable flow (e.g., for reuse, energy recovery and/or recycling).

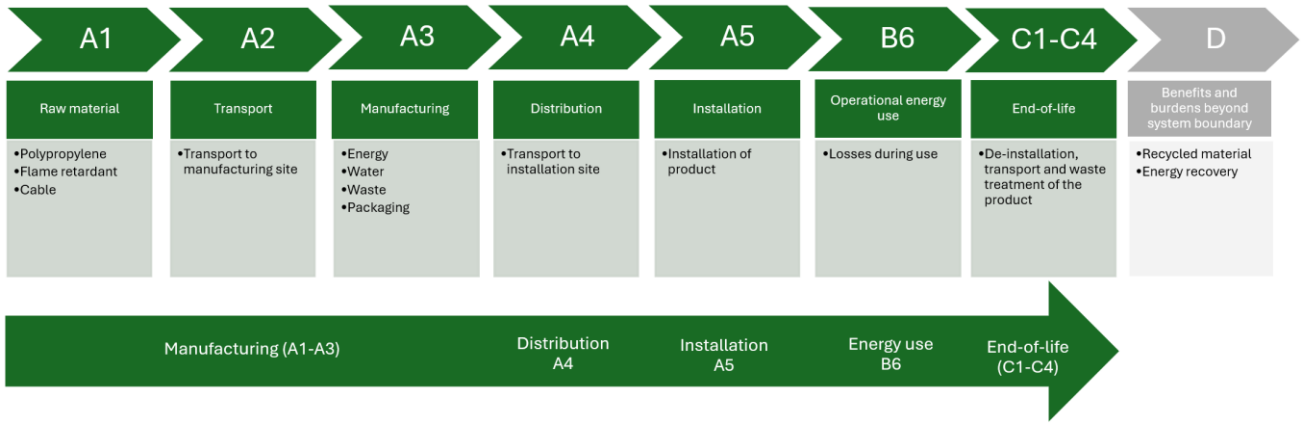
PIR recycled materials used as raw materials have been allocated by economic allocation to capture upstreams burden. PCR recycled raw material comes burden free as per the PCR.

Cut-off criteria: The cut-of rule of 1% for mass and energy and 5% for environmental impact over the product life cycle has been followed. Material and energy flows that have been excluded in this LCA are:

- Plastic straps or film used for packaging of final product. Very small amounts per m, environmental impact estimated to fall under cut-off.

In this study, the infrastructure and capital goods are included in the LCA since it is not possible within reasonable effort to subtract the data on infrastructure/capital goods.

System diagram: The system diagram is presented below.



More information:
The scenarios included are currently used and are representative of one of the most likely options. Current market is the Swedish market, hence scenarios for customers located in Sweden has been used through modules A4 to C.

Module A4: Module A4 includes the transport from the Pmflex Group Northern Europe site to wholesale partners and from there further transport to final site for installation. This includes the impact related to the transportation by lorry.

Module B: The products have limited activities generating environmental aspects in module B. Therefore, most parts of the B-module are not applicable, except for module B6. Module B6 covers the electrical energy dissipated during the use stage of the cables over their reference service life. This module includes the energy dissipated throughout the entire life cycle of the cables. The electrical energy dissipated by the cable due to the Joule effect is calculated in accordance with the methodology described in the PEP Ecopassport, Product Specific Rules (PSR) for wires, cables and accessories, reference PSR -0001-ed4-EN-2022-11-16:

$$\mathbf{E = Z x I^2 \Delta t}$$

where:

- Z: linear resistivity of the cable in Ω/km
- I: current in A
- Δt: use time in s

A reference service life of 30 years with a usage rate of 70% (according to Appendix 1 of the PSR) is used.

The electricity mix used for this is phase is based on the Swedish low-voltage electricity market.

Module C: For plastics, the 20% recycling rate comes from the EN 50693 (Product category rules for electronic products and systems) (SIS, 2020). The remaining flow for plastic is assumed to go to incineration (80%). For the cable, the copper is recycled while the plastic sheath is incinerated.

Where a scenario beyond the A3 module has been made, a conservative assumption has generally been made.

Modules declared, geographical scope, share of primary data (in GWP-GHG results) and data variation (in GWP-GHG results):

	Product stage			Distribution/ installation stage		Use stage							End-of-life stage				Beyond product life cycle
	Raw material supply	Transport	Manufacturing	Transport	Construction installation	Use	Maintenance	Repair	Replacement	Refurbishment	Operational energy use	Operational water use	De-construction demolition	Transport	Waste processing	Disposal	Reuse-Recovery-Recycling-potential
Module	**A1**	**A2**	**A3**	**A4**	**A5**	**B1**	**B2**	**B3**	**B4**	**B5**	**B6**	**B7**	**C1**	**C2**	**C3**	**C4**	**D**
Modules declared	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Geography	EU/ GLO	EU	SE	SE	SE	SE	SE	SE	SE	SE	SE	SE	SE	SE	SE	SE	SE
Share of primary data	10%			-	-	-	-	-	-	-	-	-	-	-	-	-	-
Variation – products	0% to -91%[1]					-	-	-	-	-	-	-	-	-	-	-	-
Variation – sites	0%			-	-	-	-	-	-	-	-	-	-	-	-	-	-

Modules/processes/life-cycle stages declared shall be noted with “X”.

The reported share of primary data is associated with uncertainty, as an EPD used as data source lack information on the share of primary data.

[1] Variations are large due to differences in dimension of cable conduit and the choice of cable or cables to be included in the pre-wired product. See further elaboration in differences in results in section “Result for different dimensions and included cable(s)”.

Results of the environmental performance indicators

The worst-case product results are represented with the cable xFlexWire 25mm 5x6 in all categories but for modules in certain impact categories marked with an asterisk (*) in the table for the environmental impact indicators below. It is mainly the impact categories GWP-biogenic, GWP-luluc, EP-freshwater, ADP-minerals and metals where a version of the pre-wired cable with data and coaxial cables (represented with generic data) generates more impact in these categories. For additional impact categories, it is mainly IRP, HTP-c and SQP that are adjusted with values for the other cable. As per the worst-case approach the version of the product with most impact in all impact categories is used. Hence, the version xFlexWire 20mm 2xDATA+COAXIAL represents the worst-case results in certain modules in certain impact categories.

The GWP-total is calculated for the worst-case results as the sum of GWP-fossil, GWP-biogenic and GPW-luluc based on the worst-case results in each category. This is marked ** in the table.

The worst-case product**s** stand for 0% of the total sales during 2025 and is a very small part of the sales, meaning that the results presented below are overestimated for a large part of the product group.

Further down in the EPD, the variations in results for the different products within the product group are presented. Variations are highly dependent on the dimension of the cable conduit and the results differ significantly depending on the chosen product.

The estimated impact results are only relative statements, which do not indicate the endpoints of the impact categories, exceeding threshold values, safety margins and/or risks.

The results of the end-of-life stage (modules C1-C4) should be considered when using the results of the product stage (modules A1-A3).

Mandatory impact category indicators according to EN 15804

Results per functional or declared unit											
Indicator	**Unit**	**A1-A3**	**A4**	**A5**	**B6**	**B7**	**C1**	**C2**	**C3**	**C4**	**D**
GWP-fossil	kg CO_2 eq.	1,76E+00	2,60E-02	5,97E-03	2,26E-01	1,83E-04	8,58E-03	5,12E-01	0,00E+00	9,45E-03	1,76E+00
GWP-biogenic	kg CO_2 eq.	5,37E-03*	1,81E-05	2,71E-03	7,69E-03	3,70E-08	5,89E-06	2,60E-05	0,00E+00	-2,65E-03*	5,37E-03*
GWP-luluc	kg CO_2 eq.	5,18E-03*	8,76E-06	6,49E-08	2,20E-02	1,87E-08	2,84E-06	4,29E-06	0,00E+00	-9,31E-04*	5,18E-03*
GWP-total	**kg CO_2 eq.**	1,77E+00**	2,60E-02	8,68E-03	2,55E-01	1,83E-04	8,59E-03	5,12E-01	0,00E+00	5,87E-03**	1,77E+00**
ODP	kg CFC 11 eq.	1,32E-07	5,68E-10	4,47E-12	8,04E-09	2,72E-12	1,87E-10	1,54E-10	0,00E+00	-8,91E-09*	1,32E-07
AP	mol H^+ eq.	7,11E-02	5,59E-05	1,98E-06	2,64E-03	1,64E-06	2,76E-05	1,34E-04	0,00E+00	-3,02E-03*	7,11E-02
EP-freshwater	kg P eq.	3,65E-03*	1,81E-06	2,93E-08	1,94E-04	5,90E-09	5,86E-07	4,32E-06	0,00E+00	-5,26E-04*	3,65E-03*
EP-marine	kg N eq.	4,74E-03	1,35E-05	1,07E-06	4,14E-04	7,61E-07	9,28E-06	8,86E-05	0,00E+00	-8,77E-04*	4,74E-03
EP-terrestrial	mol N eq.	6,93E-02	1,45E-04	9,39E-06	4,40E-03	8,33E-06	1,01E-04	6,99E-04	0,00E+00	-1,42E-02*	6,93E-02
POCP	kg NMVOC eq.	1,83E-02	8,86E-05	2,53E-06	1,12E-03	2,49E-06	4,18E-05	1,73E-04	0,00E+00	-2,50E-03*	1,83E-02
ADP-minerals&metals*	kg Sb eq.	7,07E-04*	8,94E-08	6,57E-10	2,38E-05	6,53E-11	2,89E-08	1,89E-08	0,00E+00	-1,52E-04*	7,07E-04*
ADP-fossil*	MJ	2,56E+01	2,95E-02	3,40E-04	2,68E+01	9,27E-05	9,57E-03	2,33E-02	0,00E+00	-9,09E-01*	2,56E+01
WDP*	m^3	1,16E+02	1,45E-03	3,87E-05	3,88E-01	5,09E-06	4,72E-04	7,72E-03	0,00E+00	-1,37E-01*	1,16E+02
Acronyms	GWP-fossil = Global Warming Potential fossil fuels; GWP-biogenic = Global Warming Potential biogenic; GWP-luluc = Global Warming Potential land use and land use change; ODP = Depletion potential of the stratospheric ozone layer; AP = Acidification potential, Accumulated Exceedance; EP-freshwater = Eutrophication potential, fraction of nutrients reaching freshwater end compartment; EP-marine = Eutrophication potential, fraction of nutrients reaching marine end compartment; EP-terrestrial = Eutrophication potential, Accumulated Exceedance; POCP = Formation potential of tropospheric ozone; ADP-minerals&metals = Abiotic depletion potential for non-fossil resources; ADP-fossil = Abiotic depletion for fossil resources potential; WDP = Water (user) deprivation potential, deprivation-weighted water consumption										

** Disclaimer: The results of this environmental impact indicator shall be used with care as the uncertainties of these results are high or as there is limited experience with the indicator.*

Additional mandatory and voluntary impact category indicators

Results per functional or declared unit										
Indicator	**Unit**	**A1-A3**	**A4**	**A5**	**B6**	**C1**	**C2**	**C3**	**C4**	**D**
GWP-GHG[2]	kg CO2 eq.	1,76E+00	2,60E-02	5,97E-03	2,48E-01	1,83E-04	8,58E-03	5,12E-01	0,00E+00	7,67E-03
PM	disease inc.	3,68E+13	1,95E-09	1,72E-11	2,26E-08	4,67E-11	6,86E-10	6,41E-10	0,00E+00	-3,63E-08
IRP[3]	kBq U-235 eq	2,38E-01*	4,47E-04	6,25E-06	1,98E+00	1,01E-06	1,45E-04	5,75E-04	0,00E+00	-4,23E-02
ETP-fw[4]	CTUe	8,36E+02	4,96E-02	1,51E-02	2,68E+00	1,29E-04	1,61E-02	5,07E+00	0,00E+00	-7,23E+00
HTP-c[3]	CTUh	6,18E-09*	4,35E-12	4,28E-13	3,44E-10	1,86E-14	1,46E-12	6,03E-11	0,00E+00	9,70E-10
HTP-nc[3]	CTUh	1,13E-06	2,32E-10	1,79E-11	2,06E-08	2,93E-13	7,59E-11	1,16E-08	0,00E+00	-1,21E-08
SQP[3]	Pt	2,29E+01*	2,22E-01	1,16E-03	7,31E+00	1,58E-04	7,19E-02	2,79E-02	0,00E+00	-3,69E+01
Acronyms	PM = Particulate Matter emissions; IRP = Ionizing radiation – human health; ETP-fw = Eco toxicity – freshwater; HTP-c = Human toxicity – cancer effects; HTP-nc = Human toxicity – non cancer effects; SQP = Soil Quality									

[2] *This indicator accounts for all greenhouse gases except biogenic carbon dioxide uptake and emissions and biogenic carbon stored in the product. As such, the indicator is identical to GWP-total except that the CF for biogenic CO2 is set to zero.*

[3] *Disclaimer: This impact category deals mainly with the eventual impact of low dose ionizing radiation on human health of the nuclear fuel cycle. It does not consider effects due to possible nuclear accidents, occupational exposure nor due to radioactive waste disposal in underground facilities. Potential ionizing radiation from the soil, from radon and from some construction materials is also not measured by this indicator.*

[4] *Disclaimer: The results of this environmental impact indicator shall be used with care as the uncertainties of these results are high or as there is limited experience with the indicator.*

Resource use indicators

The use of primary energy resources is calculated according to option B in Annex 3 in PCR *Construction products, 2019:14, version 2.0.1.*

Results per functional or declared unit										
Indicator	**Unit**	**A1-A3**	**A4**	**A5**	**B6**	**C1**	**C2**	**C3**	**C4**	**D**
PERE	MJ	5,16E+00	6,10E-03	9,38E-05	1,76E+01	1,50E-05	1,98E-03	4,65E-03	0,00E+00	-1,53E+01
PERM	MJ	5,11E-01	0,00E+00	-2,32E-02	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
PERT	MJ	5,67E+00	6,10E-03	-2,31E-02	1,76E+01	1,50E-05	1,98E-03	4,65E-03	0,00E+00	-1,53E+01
PENRE	MJ	2,23E+01	3,08E-02	3,55E-04	2,68E+01	9,71E-05	9,99E-03	2,41E-02	0,00E+00	-2,55E+00
PENRM	MJ	8,95E+00	0,00E+00	-4,47E-01	0,00E+00	0,00E+00	0,00E+00	-7,06E+00	0,00E+00	0,00E+00
PENRT	MJ	3,12E+01	3,08E-02	-4,46E-01	2,68E+01	9,71E-05	9,99E-03	-7,03E+00	0,00E+00	-2,55E+00
SM	kg	5,24E-02	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
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
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
FW	m^3	2,97E-02	5,56E-05	1,22E-05	7,93E-03	1,74E-07	1,81E-05	3,59E-04	0,00E+00	-1,22E-02
Acronyms	PERE = Use of renewable primary energy excluding renewable primary energy resources used as raw materials; PERM = Use of renewable primary energy resources used as raw materials; PERT = Total use of renewable primary energy resources; PENRE = Use of non-renewable primary energy excluding non-renewable primary energy resources used as raw materials; PENRM = Use of non-renewable primary energy resources used as raw materials; PENRT = Total use of non-renewable primary energy re-sources; SM = Use of secondary material; RSF = Use of renewable secondary fuels; NRSF = Use of non-renewable secondary fuels; FW = Use of net fresh water									

Waste indicators

Results per functional or declared unit										
Indicator	**Unit**	**A1-A3**	**A4**	**A5**	**B6**	**C1**	**C2**	**C3**	**C4**	**D**
Hazardous waste disposed	kg	2,12E-02	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Non-hazardous waste disposed	kg	6,26E-01	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Radioactive waste disposed	kg	9,27E-05	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00

Output flow indicators

Results per functional or declared unit										
Indicator	**Unit**	**A1-A3**	**A4**	**A5**	**B6**	**C1**	**C2**	**C3**	**C4**	**D**
Components for re-use	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
Material for recycling	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	2,91E-01	0,00E+00	0,00E+00
Materials for energy recovery	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, electricity	MJ	0,00E+00	0,00E+00	4,70E-02	0,00E+00	0,00E+00	0,00E+00	6,24E-01	0,00E+00	0,00E+00
Exported energy, thermal	MJ	0,00E+00	0,00E+00	4,23E-01	0,00E+00	0,00E+00	0,00E+00	5,61E+00	0,00E+00	0,00E+00

Scenarios for end of life

As per the PCR, 100% scenarios should be developed. If any of the declared scenarios is a mix of end-of-life alternatives (reuse, recycling, incineration with energy recovery, landfill, etc.), also the corresponding 100% scenarios (100% reuse, 100% recycling, 100% incineration with energy recovery, 100% landfill, etc.) shall be declared. In other words, the 100% scenarios of relevance for the intended market shall be declared. Scenarios have to be relevant for the product and the market. As the product is sold on the Swedish market, the original scenario developed is estimated to be the most accurate one.

Scenarios identified, apart from the most likely one developed in the study for the market, that are the 100% alternatives are 100% incineration of plastics and 100% recycling for the xFlex part of the product. Results are presented for the entire life cycle A-D.

Results in modules A and B remain the same. Changes occur in modules C and D. The changes in results are presented for the modules for each scenario for the representative product xFlexWire 25mm 5x6.

Environmental impact											
xFlexWire 25mm 5x6		**100% incineration scenario in end-of-life**					**100% recycling scenario in end-of-life**				
Indicator	**Unit**	**C1**	**C2**	**C3**	**C4**	**D**	**C1**	**C2**	**C3**	**C4**	**D**
GWP-total	kg CO2-eq.	1,83E-04	8,80E-03	5,79E-01	0,00E+00	-1,44E-02	1,83E-04	7,76E-03	2,46E-01	0,00E+00	7,47E-02
GWP-fossil	kg CO2-eq.	1,83E-04	8,79E-03	5,79E-01	0,00E+00	-7,49E-03	1,83E-04	7,75E-03	2,46E-01	0,00E+00	7,72E-02

GWP-biogenic	kg CO2-eq.	3,70E-08	6,03E-06	2,91E-05	0,00E+00	-3,03E-03*	3,70E-08	5,32E-06	1,38E-05	0,00E+00	-1,11E-03*
GWP-luluc	kg CO2-eq.	1,87E-08	2,91E-06	4,64E-06	0,00E+00	-1,04E-03*	1,87E-08	2,57E-06	2,92E-06	0,00E+00	-5,03E-04*
ODP	kg CFC 11 eq.	2,72E-12	1,92E-10	1,73E-10	0,00E+00	-9,69E-09*	2,72E-12	1,69E-10	7,83E-11	0,00E+00	-5,77E-09*
AP	mol H^+ eq.	1,64E-06	2,82E-05	1,51E-04	0,00E+00	-3,27E-03*	1,64E-06	2,49E-05	6,61E-05	0,00E+00	-2,04E-03*
EP-freshwater	kg P eq.	5,90E-09	6,00E-07	4,88E-06	0,00E+00	-5,30E-04*	5,90E-09	5,29E-07	2,09E-06	0,00E+00	-5,12E-04*
EP-marine	kg N eq.	7,61E-07	9,50E-06	9,99E-05	0,00E+00	-9,48E-04*	7,61E-07	8,38E-06	4,33E-05	0,00E+00	-5,90E-04*
EP-terrestrial	mol N eq.	8,33E-06	1,03E-04	7,88E-04	0,00E+00	-1,53E-02*	8,33E-06	9,12E-05	3,44E-04	0,00E+00	-9,56E-03*
POCP	kg NMVOC eq.	2,49E-06	4,28E-05	1,95E-04	0,00E+00	-2,68E-03*	2,49E-06	3,77E-05	8,55E-05	0,00E+00	-1,79E-03*
$ADPm^2$	kg Sb eq.	6,53E-11	2,96E-08	2,13E-08	0,00E+00	-1,52E-04*	6,53E-11	2,61E-08	9,46E-09	0,00E+00	-1,51E-04*
$ADPf^2$	MJ	9,27E-05	9,80E-03	2,54E-02	0,00E+00	-1,02E+00*	9,27E-05	8,64E-03	1,45E-02	0,00E+00	-4,85E-01*
WDP^2	m^3	5,09E-06	4,83E-04	8,71E-03	0,00E+00	-1,37E-01*	5,09E-06	4,26E-04	3,75E-03	0,00E+00	-1,37E-01*

Abbreviations

GWP-total = Global Warming Potential – total; GWP-fossil = Global Warming Potential – fossil fuels; GWP-biogenic = Global Warming Potential – biogenic; GWP-luluc = Global Warming Potential – land use and land use change; ODP = Ozone Depletion; AP = Acidification; EP-freshwater = Eutrophication – aquatic freshwater; EP-marine = Eutrophication – aquatic marine; EP-terrestrial = Eutrophication – terrestrial; POCP = Photochemical zone formation; ADPm = Abiotic Depletion Potential – minerals and metals; ADPf = Abiotic Depletion Potential – fossil fuels; WDP = water use

Result for different dimensions and included cable(s)

In an EPD of multiple products, the difference (in %) between the declared GWP-GHG result, and the product with GWP-GHG results furthest away from the declared results, for modules A1-A3, shall be reported in the EPD.

The final xFlexWire product can vary depending on the dimension of the xFlex part (between 16 and 25mm) and the choice of cable or cables to be pre-wired. The difference in dimension and choice of cable(s) generates significant differences in impact per DU (m). Below, the products have been divided into ranges depending on cable content in the final product. There are four ranges, <50%, 50-60%, 61-70% and 71-80%. The worst-case product is within the range 71-80%. As presented below,

the range that the product group belongs to stands for 8% of the total sales during 2025 and the chosen product stands for 0,23% of the total sales during 2025. The main results are hence overestimated for a large part of the product group. The final products included in each range is presented together with the sales statistics for the range and the difference in GWP.

Different products in the xFlexWire product group				
% cables weight/total conduit weight	<50%	50-60%	61-70%	71-80%
Pmflex 2025 prewired ICTA. Share of sales for each range	0%	38%	42%	20%
% cables weight/total conduit weight analysed	29%-46%	51%-59%	61%-70%	71%-78%
% Variation from the GWP-GHG A1-A3 impact of the conduit xFlexWire 3x1,5mm	-89% to -91%	-33% to -87%	-33% to -84%	0% to -77%
Cables	Ø16 with two 0,75 mmq cables Ø16 with two 1 mmq cables Ø16 with two 1,5 mmq cables Ø16 with one 2,5 mmq cables	Ø16 with three 1,5 mmq cables Ø16 with two 2,5 mmq cables Ø16 with one 4 mmq cable Ø16 with one 6 mmq cable Ø16 with one DATA cable Ø20 with three 1,5 mmq cables Ø25 with two DATA cables	Ø16 with four 1,5 mmq cables Ø16 with five 1,5 mmq cables Ø16 with three 2,5 mmq cables Ø20 with five 1,5 mmq cables Ø20 with six 1,5 mmq cables Ø20 with three 2,5 mmq cables Ø20 with two 6 mmq cables Ø20 with two DATA cables Ø20 with one DATA cable and one COAXIAL cable	Ø16 with four 2,5 mmq cables Ø16 with two DATA cables Ø20 with seven 1,5 mmq cables Ø20 with five 2,5 mmq cables Ø20 with three 6 mmq cables Ø20 with two DATA cables and one COAXIAL cable Ø25 with four 6 mmq cables Ø25 with five 6 mmq cables

Below, the results for “best case” product and the “worst case” within the product range for the mandatory environmental impact indicators as well as the indicator GWP-GHG are presented, per 1 m of xFlexWire. The weight of the best case product is 0,089 kg/m and the worst case 0,46 kg/m.
As the difference between the products in the products group is significant, also the results for environmental indicator GWP-GHG are presented as per the optional element in the PCR to highlight how the different dimensions affect the results.

Environmental impact A1-A3			
Indicator	**Unit**	**Ø16 with two 1,5 mmq cables (”best case”)**	**Ø25 with five 6 mmq cables (”worst case”)**
GWP-total	kg CO_2 eq.	1,86E-01	7,28E-01
GWP-fossil	kg CO_2 eq.	1,84E-01	7,34E-01
GWP-biogenic	kg CO_2 eq.	-2,87E-04	-8,15E-03
GWP-luluc	kg CO_2 eq.	1,73E-03	2,36E-03
ODP	kg CFC 11 eq.	9,25E-09	5,38E-08
AP	mol H^+ eq.	3,12E-03	2,86E-02
EP-freshwater	kg P eq.	4,27E-05	2,53E-04
EP-marine	kg N eq.	3,09E-04	1,92E-03
EP-terrestrial	mol N eq.	4,29E-03	2,79E-02
POCP	kg NMVOC eq.	1,27E-03	7,43E-03
ADP-minerals&metals*	kg Sb eq.	3,83E-05	2,49E-04
ADP-fossil*	MJ	2,37E+00	1,04E+01
WDP*	m^3	1,94E-01	4,64E+01
GWP-GHG	**kg CO_2 eq**	1,86E-01	7,36E-01

Abbreviations

Abbreviation	Definition
General Abbreviations	
EN	European Norm (Standard)
EPD	Environmental Product Declaration
EF	Environmental Footprint
GPI	General Programme Instructions
ISO	International Organization for Standardization
LCA	Life Cycle Assessment
PCR	Product Category Rules
c-PCR	Complementary Product Category Rules
CEN	European Committee for Standardization
CLC	Co-location centre
CPC	Central product classification
GHS	Globally harmonized system of classification and labelling of chemicals
GRI	Global Reporting Initiative
Environmental Impact Indicators (EN 15804)	
GHG	Greenhouse gas
GWP	Global Warming Potential (kg CO_2 eq.)
GWP-fossil	Global Warming Potential from fossil sources (kg CO_2 eq.)
GWP-biogenic	Global Warming Potential from biogenic sources (kg CO_2 eq.)
GWP-luluc	Global Warming Potential from land use and land use change (kg CO_2 eq.)
GWP-total	Total Global Warming Potential (kg CO_2 eq.)
GWP-GHG	Global Warming Potential for greenhouse gases (kg CO_2 eq.)
ODP	Ozone Depletion Potential (kg CFC-11 eq.)
AP	Acidification Potential (mol H^+ eq.)
EP	Eutrophication Potential
EP-freshwater	Freshwater eutrophication potential (kg P eq.)
EP-marine	Marine eutrophication potential (kg N eq.)
EP-terrestrial	Terrestrial eutrophication potential (mol N eq.)
POCP	Photochemical Ozone Creation Potential (kg NMVOC eq.)
ADP	Abiotic Depletion Potential
ADP-minerals&metals	Abiotic depletion potential for non-fossil resources (kg Sb eq.)
ADP-fossil	Abiotic depletion potential for fossil resources (MJ)
WDP	Water Deprivation Potential (m^3)
Resource Use Indicators	
PERE	Use of renewable primary energy excluding renewable primary energy resources used as raw materials (MJ)
PERM	Use of renewable primary energy resources used as raw materials (MJ)
PERT	Total use of renewable primary energy resources (MJ)
PENRE	Use of non-renewable primary energy excluding non-renewable primary energy resources used as raw materials (MJ)
PENRM	Use of non-renewable primary energy resources used as raw materials (MJ)
PENRT	Total use of non-renewable primary energy resources (MJ)
SM	Use of secondary material (kg)
RSF	Use of renewable secondary fuels (MJ)
NRSF	Use of non-renewable secondary fuels (MJ)
FW	Use of net fresh water (m^3)
Waste Indicators	
HW	Hazardous Waste (disposed) (kg)
NHW	Non-Hazardous Waste (disposed) (kg)
RW	Radioactive Waste (disposed) (kg)
Output Flow Indicators	
CFR	Components for Reuse (kg)
MR	Material for Recycling (kg)
MER	Materials for Energy Recovery (kg)
EEE	Exported Energy, Electricity (MJ)

EET	Exported Energy, Thermal (MJ)
Lifecycle Stages / Modules	
A1	Raw material supply
A2	Transport
A3	Manufacturing
A4	Transport to site
A5	Construction/Installation
B1	Use
B2	Maintenance
B3	Repair
B4	Replacement
B5	Refurbishment
B6	Operational energy use
B7	Operational water use
C1	Deconstruction/Demolition
C2	Transport to waste processing
C3	Waste processing
C4	Disposal
D	Reuse-Recovery-Recycling potential
Other Relevant Terms	
SVHC	Substances of Very High Concern
EC No.	European Community Number
CAS No.	Chemical Abstracts Service Number
MJ	Megajoule
kg	Kilogram
m^3	Cubic Meter
NMVOC	Non-Methane Volatile Organic Compounds
Sb eq.	Antimony Equivalents
P eq.	Phosphorus Equivalents
N eq.	Nitrogen Equivalents
CFC-11 eq.	Chlorofluorocarbon-11 Equivalents
CO_2 eq.	Carbon Dioxide Equivalents
kg C	Kilograms of Carbon
kg CO_2 eq.	Kilograms of Carbon Dioxide Equivalent
ND	Not Declared

References

c-PCR 2019:14-c-PCR-019. Electrical cables and wires (for construction sector) (c-PCR to PCR 2019:14) (Adopted from EPD Norway) Version 2.0

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LCA report_xReflex and xReflexwire_Pmflex 2026-08-27 Sweco. Johansson & Granström.

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