TKF CONNECTIVITY SOLUTIONS

Environmental Product Declaration

According to ISO14025+EN15804 A2 (+indicators A1)

This declaration is for:
YMvK Dca 0,6/1 kV 5 G 2,5 rm

Provided by:
Twentsche Kabelfabriek BV

MRPI® registration:
1.1.00901.2025

Program operator:
Stichting MRPI®
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Nationale MILIEUDATABASE

MRPI milieu relevante product informatie

TKF CONNECTIVITY SOLUTIONS

COMPANY INFORMATION

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MRPI® REGISTRATION

1.1.00901.2025

DATE OF THIS ISSUE

15-7-2025

EXPIRY DATE

15-7-2030

SCOPE OF DECLARATION

This MRPI®-EPD certificate is verified by Lex Roes, Ecochain Technologies B.V.. The LCA study has been done by Aileen Mentink, Twentsche Kabelfabriek BV. The certificate is based on an LCA-dossier according to ISO14025+EN15804 A2 (+indicators A1). It is verified according to the 'MRPI®-EPD verification protocol November 2020.v4.0'. EPDs of construction products may not be comparable if they do not comply with EN15804+A2. Declaration of SVHC that are listed on the 'Candidate list of Substances of Very High Concern for authorisation' when content exceeds the limits for registration with ECHA.

PROGRAM OPERATOR

Stichting MRPI®
Kingsfordweg 151
1043 GR
Amsterdam

PRODUCT

YMvK Dca 0,6/1 kV 5 G 2,5 rm

DECLARED UNIT / FUNCTIONAL UNIT

1 Length (m)

DESCRIPTION OF PRODUCT

This 0.6/1 kV power cable is KEMA-approved and suitable for low-voltage installations where fire safety is required, as described in NEN 1010.
It features a 5G 2.5mm² solid copper core and is designed for permanent installation. With a net weight of 0.269 kg/m, this cable is a reliable choice for applications where safety and durability are paramount.

VISUAL PRODUCT

MORE INFORMATION

https://www.tkf.nl/en/44-ymvk-dca-061-kv/165100

Ing. L. L. Oosterveen MSc. MBA Managing Director MRPI	DEMONSTRATION OF VERIFICATION
	CEN standard EN15804 serves as the core PCR [1]
	Independent verification of the declaration an data according to ISO14025+EN15804 A2 (+indicators A1) Internal: External: X
	Third party verifier: Lex Roes, Ecochain Technologies B.V.
	[1] PCR = Product Category Rules

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DETAILED PRODUCT DESCRIPTION (PART 1)

The YMvK Dca 0.6/1 kV power cable is produced in the Netherlands, specifically in Haaksbergen, by TKF, an originaly family-owned now stock-listed (TKH group) company. With its rich history spanning 95 years, TKF is committed to sustainability. Its dedication to environmental responsibility, for example shown by the use of 100% green electricity from wind GVOs is a testament to the company's values and mission.

With its KEMA approval and compliance with NEN 1010 standards, the YMvK Dca 0.6/1 kV power cable is a reliable and durable solution for low-voltage installations. The cable's construction characteristics include: 5 cores, each with a nominal cross-section of 2.5mm² of copper conductor material, with a bare surface and a round shape, cross-linked polyethylene (XLPE) insulation, with a nominal thickness of 0.7mm, polyvinyl chloride (PVC) outer sheath, with a nominal thickness of 1.8mm and a grey color, outer diameter of approximately 12.8mm. Note that the actual values may vary slightly from the nominal values, but the cable always meets or exceeds the specified requirements.

The YMvK Dca 0.6/1 kV power cable is suitable for a range of applications, including: commercial or industrial buildings, public spaces, such as shopping centers, renewable energy installations, such as solar or wind power plants, data centers or server rooms, where reliable power supply is critical.

Overall, the YMvK Dca 0.6/1 kV power cable is a high-quality, reliable, and durable cable designed for low-voltage installations. Its robust construction makes it an ideal choice for a range of applications, and its production by a sustainable and experienced manufacturer like TKF ensures a high level of quality and reliability.

DETAILED PRODUCT DESCRIPTION (PART 4)

The production of the cable involves several steps, which may vary slightly depending on the specific cable design and construction. The process begins with the drawing of the conductors to the desired width. The conductors are then insulated and combined to form the core of the cable, with a filler wire included to provide support. The core is then wrapped with an additional sheathing layer, and finally, an outer sheath is applied to complete the cable. Once completed, the cable is prepared for transportation. The Reference Service Life (RSL) for this cable is 40 years, although this value is not used in the calculation of the impact of the modules declared in this EPD.

Component (> 1%)	(%)
Metals	40,00%
Plastics	60,00%

SCOPE AND TYPE

This EPD has been prepared for the cable YMvK Dca 0,6/1 kV 5 G 2,5 rm, manufactured and sold by TKF. The scope of this EPD is "Cradle to Gate with options, modules C1-C4 and module D", following the requirements of EN 15804+A2. The optional modules included in this EPD are modules A4 and A5. Furthermore, the EPD aligns with the Determination Method v1.2 published by the Nationale Milieu Database (NMD).

The following specifications apply: The manufacturing of the cable takes place at Spinnerstraat 15, 7481 KJ Haaksbergen, The Netherlands. The product is primarily applied within the Netherlands. The standard transportation assumption of the NMD methodology is used as a reference for A4, entailing 150 km transport to the installation location. Installation losses are considered to be 3%, aligned with the NMD's determination method. The EoL scenarios are based on the NMD document "Bijlage: Forfaitaire waarden verwerkingsscenario's einde leven", the corresponding scenarios can be found in the next chapter.

Company-specific data for the product stage have been collected by TKF. Publicly available generic data is used for all background processes, such as transportation by means of a specific truck, etc. Primary data is used for modules A1, A2, A3, and, partly, A5. The rest of the study is based on scenarios, including module A4, A5, modules C1-C4 and module D.

The main LCI sources used in this EPD are the Ecoinvent database for calculation of the indicators, as is required by the NMD's Determination Method. For the calculation of the LCA results, the software program SimaPro 9.6.0.1 has been used.

TKF CONNECTIVITY SOLUTIONS

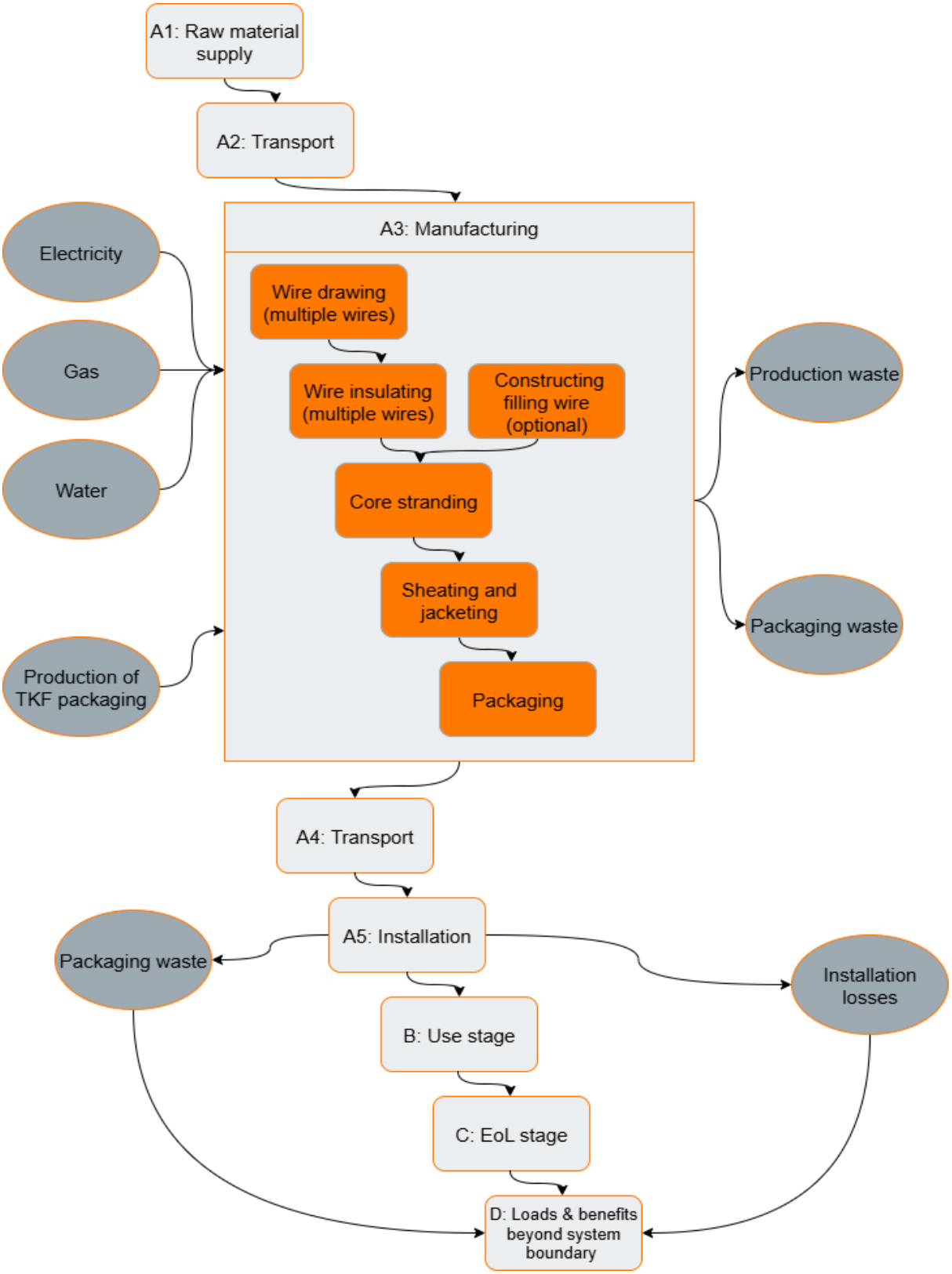
PRODUCT STAGE			CONSTRUCTION PROCESS STAGE		USE STAGE							END OF LIFE STAGE				BENEFITS AND LOADS BEYOND THE SYSTEM BOUNDARIES
Raw material supply	Transport	Manufacturing	Transport gate to site	Assembly	Use	Maintenance	Repair	Replacement	Refurbishment	Operational energy use	Operational water use	De-construction demolition	Transport	Waste processing	Disposal	Reuse - Recovery - 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	ND	ND	X	X	X	X	X

X = Modules Assessed

ND = Not Declared

Nationale MILIEUDATABASE

MRPI milieu relevante product informatie


A1: Raw material supply
A2: Transport
A3: Manufacturing
Electricity
Gas
Water
Production of TKF packaging
Wire drawing (multiple wires)
Wire insulating (multiple wires)
Constructing filling wire (optional)
Core stranding
Sheating and jacketing
Packaging
Production waste
Packaging waste
A4: Transport
A5: Installation
Packaging waste
Installation losses
B: Use stage
C: EoL stage
D: Loads & benefits beyond system boundary

TKF CONNECTIVITY SOLUTIONS

ENVIRONMENTAL IMPACT per functional unit or declared unit (indicators A1)

	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
ADPE	kg Sb eq.	1,16E-04	3,84E-07	9,84E-06	1,26E-04	1,38E-07	3,81E-06	ND	ND	ND	ND	ND	ND	ND	0,00E+00	8,48E-08	8,55E-07	2,68E-09	-5,77E-05
ADPF	MJ	9,68E+00	2,29E-01	1,72E+00	1,16E+01	8,22E-02	3,69E-01	ND	ND	ND	ND	ND	ND	ND	0,00E+00	5,05E-02	4,63E-01	6,63E-03	-5,30E+00
GWP	kg CO2 eq.	4,76E-01	1,50E-02	1,15E-01	6,06E-01	5,41E-03	2,82E-02	ND	ND	ND	ND	ND	ND	ND	0,00E+00	3,32E-03	1,70E-01	1,43E-03	-1,89E-01
ODP	kg CFC11 eq.	8,23E-08	2,67E-09	1,21E-08	9,70E-08	9,59E-10	3,10E-09	ND	ND	ND	ND	ND	ND	ND	0,00E+00	5,89E-10	4,16E-09	7,06E-11	-1,17E-07
POCP	kg ethene eq.	6,47E-04	9,07E-06	1,03E-04	7,58E-04	3,26E-06	2,37E-05	ND	ND	ND	ND	ND	ND	ND	0,00E+00	2,00E-06	2,09E-05	4,43E-07	-2,02E-04
AP	kg SO2 eq.	8,48E-03	6,61E-05	1,21E-03	9,75E-03	2,38E-05	3,00E-04	ND	ND	ND	ND	ND	ND	ND	0,00E+00	1,46E-05	1,40E-04	1,77E-06	-2,36E-03
EP	kg (PO4) 3 eq.	7,56E-04	1,30E-05	1,63E-04	9,32E-04	4,67E-06	2,97E-05	ND	ND	ND	ND	ND	ND	ND	0,00E+00	2,87E-06	2,46E-05	5,34E-07	8,46E-06

Toxicity indicators and ECI (Dutch market)

HTP	kg DCB eq.	1,28E+00	6,33E-03	1,83E-01	1,47E+00	2,28E-03	4,58E-02	ND	ND	ND	ND	ND	ND	ND	0,00E+00	1,40E-03	4,28E-02	2,11E-04	-3,23E-01
FAETP	kg DCB eq.	4,44E-02	1,85E-04	8,10E-03	5,27E-02	6,64E-05	1,69E-03	ND	ND	ND	ND	ND	ND	ND	0,00E+00	4,08E-05	1,75E-03	8,37E-05	-6,48E-03
MAETP	kg DCB eq.	1,67E+02	6,64E-01	2,37E+01	1,91E+02	2,39E-01	5,94E+00	ND	ND	ND	ND	ND	ND	ND	0,00E+00	1,47E-01	3,43E+00	7,02E-02	-3,97E+01
TETP	kg DCB eq.	3,57E-03	2,24E-05	6,37E-04	4,23E-03	8,04E-06	1,35E-04	ND	ND	ND	ND	ND	ND	ND	0,00E+00	4,94E-06	1,47E-04	5,80E-07	-4,90E-04
ECI	euro	2,00E-01	1,81E-03	3,15E-02	2,34E-01	6,52E-04	7,73E-03	ND	ND	ND	ND	ND	ND	ND	0,00E+00	4,00E-04	1,36E-02	1,14E-04	-5,29E-02
ADPF	kg Sb eq.	4,56E-03	1,11E-04	8,29E-04	5,50E-03	3,98E-05	1,75E-04	ND	ND	ND	ND	ND	ND	ND	0,00E+00	2,44E-05	2,28E-04	3,14E-06	-2,59E-03

ADPE = Abiotic Depletion Potential for non-fossil resources
ADPF = Abiotic Depletion Potential for fossil resources
GWP = Global Warming Potential
ODP = Depletion potential of the stratospheric ozone layer
POCP = Formation potential of tropospheric ozone photochemical oxidants
AP = Acidification Potential of land and water
EP = Eutrophication Potential
HTP = Human Toxicity Potential
FAETP = Fresh water aquatic ecotoxicity potential
MAETP = Marine aquatic ecotoxicity potential
TETP = Terrestrial ecotoxicity potential
ECI = Environmental Cost Indicator
ADPF = Abiotic Depletion Potential for fossil resources

TKF CONNECTIVITY SOLUTIONS

ENVIRONMENTAL IMPACT per functional unit or declared unit (core indicators A2)

	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
GWP-total	kg CO2 eq.	9,87E-01	1,68E-02	1,12E-01	1,12E+00	6,03E-03	5,84E-02	ND	ND	ND	ND	ND	ND	ND	0,00E+00	3,70E-03	1,72E-01	1,48E-03	-5,80E-01
GWP-fossil	kg CO2 eq.	9,83E-01	1,67E-02	1,20E-01	1,12E+00	6,00E-03	4,36E-02	ND	ND	ND	ND	ND	ND	ND	0,00E+00	3,68E-03	1,72E-01	1,47E-03	-5,82E-01
GWP-biogenic	kg CO2 eq.	2,09E-03	2,60E-05	-7,95E-03	-5,84E-03	9,35E-06	1,47E-02	ND	ND	ND	ND	ND	ND	ND	0,00E+00	5,74E-06	-3,53E-05	6,32E-06	3,21E-03
GWP-luluc	kg CO2 eq.	1,67E-03	5,94E-05	1,41E-04	1,87E-03	2,14E-05	5,84E-05	ND	ND	ND	ND	ND	ND	ND	0,00E+00	1,31E-05	3,38E-05	1,72E-07	-8,77E-04
ODP	kg CFC11 eq.	5,91E-08	2,97E-10	6,44E-09	6,58E-08	1,07E-10	2,03E-09	ND	ND	ND	ND	ND	ND	ND	0,00E+00	6,55E-11	1,47E-09	7,80E-12	-1,09E-07
AP	mol H+ eq.	6,39E-02	7,98E-05	3,34E-03	6,73E-02	2,87E-05	2,03E-03	ND	ND	ND	ND	ND	ND	ND	0,00E+00	1,76E-05	1,71E-04	2,14E-06	-3,75E-02
EP-fresh water	kg PO4 eq.	1,92E-04	1,66E-07	1,26E-05	2,05E-04	5,96E-08	6,17E-06	ND	ND	ND	ND	ND	ND	ND	0,00E+00	3,66E-08	9,15E-07	3,84E-09	-1,06E-04
EP-marine	kg N eq.	2,50E-03	3,03E-05	1,78E-04	2,70E-03	1,09E-05	8,43E-05	ND	ND	ND	ND	ND	ND	ND	0,00E+00	6,70E-06	4,89E-05	1,16E-06	-1,39E-03
EP-terrestrial	mol N eq.	3,56E-02	3,23E-04	2,31E-03	3,82E-02	1,16E-04	1,18E-03	ND	ND	ND	ND	ND	ND	ND	0,00E+00	7,14E-05	5,31E-04	8,85E-06	-2,04E-02
POCP	kg NMVOC eq.	1,14E-02	1,10E-04	7,76E-04	1,23E-02	3,97E-05	3,78E-04	ND	ND	ND	ND	ND	ND	ND	0,00E+00	2,44E-05	1,81E-04	3,43E-06	-6,44E-03
ADP-minerals & metals	kg Sb eq.	8,78E-04	5,22E-08	4,00E-05	9,18E-04	1,88E-08	2,76E-05	ND	ND	ND	ND	ND	ND	ND	0,00E+00	1,15E-08	3,12E-07	6,77E-10	-5,32E-04
ADP-fossil	MJ, net calorific value	1,59E+01	2,39E-01	1,79E+00	1,79E+01	8,59E-02	5,58E-01	ND	ND	ND	ND	ND	ND	ND	0,00E+00	5,27E-02	4,76E-01	6,76E-03	-9,90E+00
WDP	m3 world eq. Deprived	1,32E+00	1,30E-03	9,58E-02	1,42E+00	4,69E-04	4,49E-02	ND	ND	ND	ND	ND	ND	ND	0,00E+00	2,88E-04	8,20E-02	1,86E-04	-9,38E-01

GWP-total = Global Warming Potential total

GWP-fossil = Global Warming Potential fossil fuels

GWP-biogenic = Global Warming Potential biogenictotal

GWP-luluc = Global Warming Potential land use and land use change

ODP = Depletion potential of the stratospheric ozone layer

AP = Acidification Potential, Accumulated Exceedence

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 Exceedence

POCP = Formation potential of tropospheric ozone photochemical oxidants

ADP-minerals & metals = Abiotic Depletion Potential for non-fossil resources [1]

ADP-fossil = Abiotic Depletion for fossil resources potential [1]

WDP = Water (user) deprivation potential, deprivation-weighted water consumption [1]

Disclaimer [1]:

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

Nationale MILIEUDATABASE

MRPI milieu relevante product informatie

TKF CONNECTIVITY SOLUTIONS

ENVIRONMENTAL IMPACT per functional unit or declared unit (additional indicators A2)

	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
PM	Disease inci-dence	1,33E-07	1,65E-09	9,19E-09	1,44E-07	5,92E-10	4,45E-09	ND	ND	ND	ND	ND	ND	ND	0,00E+00	3,63E-10	2,73E-09	4,74E-11	-7,34E-08
IRP	kBq U235 eq.	5,21E-02	9,32E-05	5,91E-03	5,81E-02	3,35E-05	1,77E-03	ND	ND	ND	ND	ND	ND	ND	0,00E+00	2,06E-05	6,74E-04	5,99E-06	-2,05E-02
ETP-fw	CTUe	5,21E+01	1,76E-01	3,17E+00	5,55E+01	6,34E-02	1,77E+00	ND	ND	ND	ND	ND	ND	ND	0,00E+00	3,89E-02	3,11E+00	1,42E-01	-3,08E+01
HTP-c	CTUh	1,08E-08	8,83E-12	6,15E-10	1,14E-08	3,18E-12	3,45E-10	ND	ND	ND	ND	ND	ND	ND	0,00E+00	1,95E-12	5,23E-11	2,38E-13	-6,23E-09
HTP-nc	CTUh	9,50E-07	1,92E-10	4,88E-08	9,99E-07	6,90E-11	3,00E-08	ND	ND	ND	ND	ND	ND	ND	0,00E+00	4,24E-11	9,40E-10	1,25E-11	-5,52E-07
SQP	-	2,12E+01	1,88E-01	2,25E+00	2,36E+01	6,78E-02	7,24E-01	ND	ND	ND	ND	ND	ND	ND	0,00E+00	4,16E-02	3,61E-01	1,56E-02	-1,15E+01

PM = Potential incidence of disease due to PM emissions
IRP = Potential Human exposure efficiency relative to U235 [1]
ETP-fw = Potential Comparative Toxic Unit for ecosystems [2]
HTP-c = Potential Comparative Toxic Unit for humans, cancer [2]
HTP-nc = Potential Comparative Toxic Unit for humans, non-cancer [2]
SQP = Potential soil quality index [2]

Disclaimer [1]:

- 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.

Disclaimer [2]:

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

TKF CONNECTIVITY SOLUTIONS

OUTPUT FLOWS AND WASTE CATEGORIES per functional unit or declared unit (A1 en A2)

	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
HWD	kg	1,70E-03	1,52E-06	3,23E-04	2,03E-03	5,48E-07	6,09E-05	ND	ND	ND	ND	ND	ND	ND	0,00E+00	3,36E-07	1,92E-06	3,26E-08	-2,46E-05
NHWD	kg	3,39E-01	1,58E-02	3,40E-02	3,89E-01	5,68E-03	1,47E-02	ND	ND	ND	ND	ND	ND	ND	0,00E+00	3,48E-03	3,42E-02	2,70E-02	-1,73E-01
RWD	kg	3,52E-05	5,46E-08	4,44E-06	3,97E-05	1,97E-08	1,21E-06	ND	ND	ND	ND	ND	ND	ND	0,00E+00	1,21E-08	4,90E-07	3,42E-09	-1,24E-05
CRU	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	ND	ND	ND	ND	ND	ND	ND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
MFR	kg	0,00E+00	0,00E+00	2,35E-02	2,35E-02	0,00E+00	3,80E-03	ND	ND	ND	ND	ND	ND	ND	0,00E+00	0,00E+00	9,98E-02	0,00E+00	0,00E+00
MER	kg	0,00E+00	0,00E+00	2,52E-02	2,52E-02	0,00E+00	1,68E-02	ND	ND	ND	ND	ND	ND	ND	0,00E+00	0,00E+00	1,43E-01	0,00E+00	0,00E+00
EEE	MJ	0,00E+00	0,00E+00	8,91E-02	8,91E-02	0,00E+00	5,76E-02	ND	ND	ND	ND	ND	ND	ND	0,00E+00	0,00E+00	6,29E-01	0,00E+00	0,00E+00
ETE	MJ	0,00E+00	0,00E+00	1,53E-01	1,53E-01	0,00E+00	1,06E-01	ND	ND	ND	ND	ND	ND	ND	0,00E+00	0,00E+00	1,08E+00	0,00E+00	0,00E+00

HWD = Hazardous Waste Disposed
NHWD = Non Hazardous Waste Disposed
RWD = Radioactive Waste Disposed
CRU = Components for reuse
MFR = Materials for recycling
MER = Materials for energy recovery
EEE = Exported Electrical Energy
ETE = Exported Thermal Energy

TKF CONNECTIVITY SOLUTIONS

RESOURCE USE per functional unit or declared unit (A1 and A2)

	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
PERE	MJ	2,81E+00	3,38E-03	1,04E+00	3,86E+00	1,21E-01	0,00E+00	ND	ND	ND	ND	ND	ND	ND	0,00E+00	7,45E-04	3,08E-02	2,50E-04	-1,35E+00
PERM	MJ	0,00E+00	0,00E+00	1,49E-01	1,49E-01	0,00E+00	0,00E+00	ND	ND	ND	ND	ND	ND	ND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
PERT	MJ	2,81E+00	3,38E-03	1,19E+00	4,00E+00	1,21E-01	0,00E+00	ND	ND	ND	ND	ND	ND	ND	0,00E+00	7,45E-04	3,08E-02	2,50E-04	-1,35E+00
PENRE	MJ	1,18E+01	2,39E-01	1,33E+00	1,33E+01	8,60E-02	5,58E-01	ND	ND	ND	ND	ND	ND	ND	0,00E+00	5,28E-02	4,76E-01	6,76E-03	-9,90E+00
PENRM	MJ	4,11E+00	0,00E+00	4,52E-01	4,57E+00	0,00E+00	0,00E+00	ND	ND	ND	ND	ND	ND	ND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
PENRT	MJ	1,59E+01	2,39E-01	1,79E+00	1,79E+01	8,60E-02	5,58E-01	ND	ND	ND	ND	ND	ND	ND	0,00E+00	5,28E-02	4,76E-01	6,76E-03	-9,90E+00
SM	kg	3,35E-02	0,00E+00	6,40E-03	3,99E-02	0,00E+00	0,00E+00	ND	ND	ND	ND	ND	ND	ND	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	ND	ND	ND	ND	ND	ND	ND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
NSRF	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	ND	ND	ND	ND	ND	ND	ND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
FW	m3	2,88E-02	5,77E-05	2,32E-03	3,12E-02	2,08E-05	1,01E-03	ND	ND	ND	ND	ND	ND	ND	0,00E+00	1,27E-05	2,51E-03	7,53E-06	-1,59E-02

PERE = Use of renewable primary energy excluding renewable primary energy 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 resources excluding non-renewable 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 resources
SM = Use of secondary materials
RSF = Use of renewable secondary fuels
NSRF = Use of non-renewable secondary fuels
FW = Use of net fresh water

BIOGENIC CARBON CONTENT per functional unit or declared unit (A1 and A2)

	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
BBCpr	kg C	ND	ND	0,00E+00	0,00E+00	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
BCCpa	kg C	ND	ND	5,32E-03	5,32E-03	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

BCCpr = Biogenic carbon content in product
BCCpa = Biogenic carbon content in packaging

Nationale MILIEUDATABASE

MRPI milieu relevante product informatie

TKF CONNECTIVITY SOLUTIONS

CALCULATION RULES (PART 1)

Allocation:
TKF is a manufacturer of various cable types. The data available on resource usage, including electricity, natural gas, water, supplier packaging, and ancillary materials, is limited to the BV or facility level. To assign these resources to the specific cable being analyzed, the annual production volume in kilograms is used as the basis for mass allocation. This method establishes a direct physical connection between the facility-level data and the product-level data. The calculated amounts are then adjusted to correspond to the weight of the cable. Since TKF purchases Wind GVOs for all electricity used, no allocation is necessary for green electricity.

SCENARIOS AND ADDITIONAL TECHNICAL INFORMATION (PART 1)

A1 - Raw material supply
This stage encompasses the extraction and processing of resources necessary for cable production. Both primary and secondary material routes are considered, utilizing average European and global datasets from Ecoinvent to ensure a comprehensive assessment.

A2 - Transport
The transportation of raw materials to the manufacturing site is primarily done by truck, with distances based on realistic European supply routes.
In cases where multiple suppliers deliver raw materials, the weighted average transportation distance is calculated for the year 2024, providing a representative estimate of the transportation footprint.

A3 - Manufacturing
This stage includes a detailed analysis of the manufacturing process, encompassing various aspects such as electricity, gas, and water usage, production losses and waste treatment, treatment of miscellaneous and other waste, waste treatment of supplier packaging, and the production of packaging materials provided by TKF.

SCENARIOS AND ADDITIONAL TECHNICAL INFORMATION (PART 2)

Description of scenarios for modules beyond A1–A3

A4 – Transport to construction site
A fixed distance of 150 km is assumed for the transportation of cables from the manufacturing site to the construction site, as specified in the determination method by the NMD. Although TKF typically transports products to customers using HVO diesel trucks or electric trucks, the predefined transportation process by the NMD is used for this calculation.

A5 - Construction/Installation process
The installation process is assumed to result in fixed installation losses of 3%, which is consistent with the definition of prefab products that most closely fits cables. These losses are accounted for by allocating 3% of the impact of modules A1-A4 and C1-C4 to module A5. The treatment of TKF packaging waste is also included in this module. The benefits of recycling are accounted for in module D. It is assumed that the installation is done manually, and therefore, there are no environmental impacts associated with this process.

C1 – Deconstruction
The deconstruction process is also assumed to be done manually, and as a result, no environmental impacts are generated in this module.

C2 – Transport to EoL processing
The transportation method and distances for end-of-life processing are based on predefined End of Life (EoL) scenarios and distances as defined by the NMD. The resulting scenario is as follows: 37% of the product is transported for recycling over a distance of 50 km, 10% is transported for landfill over a distance of 150 km, and 53% is transported for incineration over a distance of 200 km. The incineration and landfill transportation distances include an extra 50 km to account for sorting and decommissioning of the cable, consistent with the recycling distance.

C3 – Waste processing
The waste processing is based on Ecoinvent data and uses the scenarios described by the NMD, as outlined in the table below.

C4 - Disposal
The disposal process is also based on Ecoinvent data and uses the scenarios described by the NMD, as outlined in the table below.

D – Module D (recovery)
The benefits of recycled materials are modeled over the net amount of primary materials input. Energy recovery is considered for the materials to which it applies, as outlined in the table below.

Waste scenario EoL	Source	Recycling %	Landfill %	Incineration %	LHV MJ/kg
EoL Copper	NMD-42	0,85	0,1	0,05	0
EoL PE	NMD-57	0,05	0,1	0,85	42,41
EoL PVC	NMD-62	0,05	0,1	0,85	21,51

DECLARATION OF SVHC

None of the substances contained in the product are listed in the “Candidate List of Substances of Very High Concern for authorisation”, or they do not exceed the threshold with the European Chemicals Agency.

REFERENCES

ISO 14025:2006: Environmental labels and Declarations-Type III Environmental Declarations-Principles and procedures.

ISO 14040:2006: Environmental Management-Life Cycle Assessment-Principles and framework.

ISO 14044:2006: Environmental Management-Life Cycle Assessment-Requirements and guidelines.

NEN-EN 15804+A2:2019: Sustainability of construction works – Environmental product declarations – Core rules for the product category of construction products.

Stichting Nationale Milieudatabase, 2025, Bepalingsmethode Milieuprestatie Bouwwerken, version 1.2

The ecoinvent database version 3 (part I): overview and methodology.

Pré Consultants, 2024, SimaPro 9.6.0.1 [Computer Software]. Amersfoort, The Netherlands

REMARKS

Set 1 indicators have been calculated using Ecoinvent v3.6 Cut-off by classification database, while set 2 indicators have been calculated using Ecoinvent v3.9.1 Cut-off by classification database.