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The Norwegian EPD Foundation

ENVIRONMENTAL PRODUCT DECLARATION

in accordance with ISO 14025, ISO 21930 and EN 15804

Owner of the declaration:	Elektroskandia Norge AS
Program operator:	The Norwegian EPD Foundation
Publisher:	The Norwegian EPD Foundation
Declaration number:	NEPD-2886-1586-EN
Registration number:	NEPD-2886-1586-EN
ECO Platform reference number:	-
Issue date:	14.06.2021
Valid to:	14.06.2026

HF-Coilfix PP20/ 2x Data cable U/UTP 6 4P awg 23 EC400

Elektroskandia Norge AS

www.epd-norge.no

General information

Product:

HF-Coilfix PP20/ 2x Data cable U/UTP 6 4P awg 23 EC400

Owner of the declaration:

Elektroskandia Norge AS
Contact person: Pål Kristiansen
Phone: +47 97 66 22 12
e-mail: pkr@elektroskandia.no

Program operator:

The Norwegian EPD Foundation
Pb. 5250 Majorstuen, 0303 Oslo
Phone: +47 23 08 80 00
e-mail: post@epd-norge.no

Manufacturer:

TECCON Norge AS

Declaration number:

NEPD-2886-1586-EN

Place of production:

TECCON Norge AS
Mekjarvik 18 4072 Randaberg
Norway

ECO Platform reference number:

Management system:

ISO 14001, ISO 9001

This declaration is based on Product Category Rules:

CEN Standard EN 15804:2012+A1:2013 serves as core PCR
NPCR 027 Part B for Electrical cables and wires

Organisation no:

977 454 700

Statement of liability:

The owner of the declaration shall be liable for the underlying information and evidence. EPD Norway shall not be liable with respect to manufacturer information, life cycle assessment data and evidences.

Issue date:

14.06.2021

Valid to:

14.06.2026

Declared unit:

1 m HF-Coilfix PP20/ 2x Data cable U/UTP 6 4P awg 23 EC400

Year of study:

2020

Declared unit with option:

A1,A2,A3,A4,A5,C1,C2,C3,C4,D

Comparability:

EPD of construction products may not be comparable if they not comply with EN 15804 and seen in a building context.

Functional unit:

Development and verification of EPD:

The declaration has been developed and verified using EPD tool lca.tools ver EPD2020.11, developed by LCA.no AS. The EPD tool is integrated into the company's environmental management system, and has been approved by EPD-Norway

Developer of EPD:

Jan Vestergaard, Teccon Norge AS

Reviewer of company-specific input data and EPD:

Helge Aardal, Teccon Norge AS

General information on verification of EPD from EPD tools:

Independent verification of data, other environmental information and the declaration according to ISO 14025:2010, § 8.1.3 and § 8.1.4. Individual third party verification of each EPD is not required when the EPD tool is i) integrated into the company's environmental management system, ii) the procedures for use of the EPD tool are approved by EPDNorway, and iii) the proccess is reviewed annualy. See Appendix G of EPD-Norway's General Programme Instructions for further information on EPD tools.

Verification of EPD tool:

Independent third party verification of the EPD tool, background data and test-EPD in accordance with EPDNorway's procedures and guidelines for verification and approval of EPD tools.

Fredrik Moltu Johnsen, Norsus AS

(no signature required)

Approved:

Sign

Håkon Hauan, CEO EPD-Norge

Product

Product description:

Pre-wired corrugated, Halogen free pliable / self-recovering conduit acc. to EN 61386-1 and EN 61386-22. U/UTP cat 6 cable, unscreened, used in data communication networks with 400MHz bandwidth capacity. The cable can be used indoor, fixed installed in dry and moisty environment's, and outdoor if protected against UV. May not be buried. The cable are Halogen Free, Non Corrosive and Flame retardant, meet EN 50575 classification Dca.

Product specification

CONDUIT
Construction standards EN 611386-1; EN 61386-22
ICTA 34423

CABLE
Construction standards ISO/IEC 11801; EN 50173; IEC61156-5EN50288-1; ANS/TIA/EIA 568-C2

Materials	kg	%
Polypropylene (PP)	0,06	40,00
Copper	0,04	24,00
Polyethylene	0,05	36,00
Total:	0,15	

Packaging	kg	
Packaging	0,00	
Total including packaging	0,15	

Technical data:

Corrugated Conduit Pliable/Self recovering halogen free Polypropylene
Compression force 750N
Marking EN, Date, and meter marking: 0-100m
Temperature - operation -25 to + 90°C
Temperature - installation -5 to + 90°C
Bending Radius 8 x D
Resistant to fire performance Flame retardant, self-extinguishing, low smoke toxic emission
Insulations resistance >100M? at 500V in 1 min
Test - mechanical Acc. EN 61386-1; EN 61386-22
Test - electrical Acc. EN 61386-1; >2,0kV 50HZ in 15 min
Conductor Solid copper class 1 AWG 23
Insulation - conductor PE - coloured
Conductor marking/Pairs Colours Combinations "1 White-Blue / Blue; 2 White-Orange / Orange
3 White-Green / Green; 4 White-Brown / Brown"
Conductor laying Varying short pair lay-length (4 pairs).
Pair seperation PE cross
Jacket HFFR compound TS EN 50290-2-27
Marking acc. EIA/TIA-568-C.2
Voltage - nominel Uo/U 125
Voltage - test 1000
Conductor resistance ?/km 85
Mutual capacitance / Capacitance unballance pF/m 50/1600
Resistance isulation M? x m 5000
Resistant to fire performance EN 60332-1-2
CPR EN 50575 compliance Dca
DoP 17092
Temperature - operation -30 to +70°C
Temperature - installation 0 - +50 °C
Bending Radius Installation/operation 50/25mm

Market:

Nordic

Reference service life, product

25Y+

Reference service life, construcion

25Y+

LCA: Calculation rules

Declared unit:

1 m HF-Coilfix PP20/ 2x Data cable U/UTP 6 4P awg 23 EC400

Cut-off criteria:

All major raw materials and all the essential energy is included. The production processes for raw materials and energy flows with very small amounts (less than 1%) are not included. These cut-off criteria do not apply for hazardous materials and substances.

All major materials have been included. Substance representing <1% have not been included. This include folio film for packaging!

Allocation:

The allocation is made in accordance with the provisions of EN 15804. Incoming energy and water and waste production in-house is allocated equally among all products through mass allocation. Effects of primary production of recycled materials is allocated to the main product in which the material was used. The recycling process and transportation of the material is allocated to this analysis.

The allocation is made in accordance with the guidelines given in EN 15804.
Raw material - Information derived from manufactory and from a LCA generator
Processing: Derived from actual measurements during production of the individual units/stages.

Data quality:

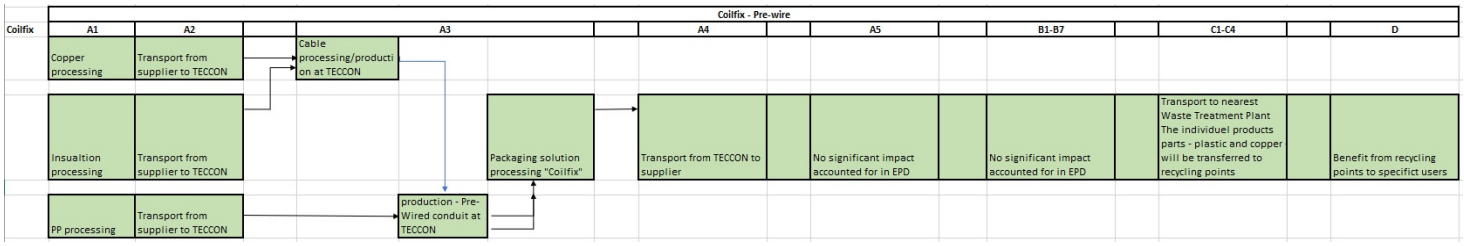
Specific data for the product composition are provided by the manufacturer. They represent the production of the declared product and were collected for EPD development in the year of study. Background data is based on registered EPDs according to EN 15804, Ostfold Research databases, ecoinvent and other LCA databases. The data quality of the raw materials in A1 is presented in the table below.

Data from material supplier and the LCA generator has been accepted "As-Is"
Data from processing TECCON in-house has been repeated ongoingly without major deviations. Figures given in document are worst case values.

Materials	Source	Data quality	Year
Copper	ecoinvent 3.6	Database	2019
Packaging	ecoinvent 3.6	Database	2019
Polyethylene	ecoinvent 3.6	Database	2019
Polypropylene (PP)	ecoinvent 3.6	Database	2019

System boundary:

Cradle to Gate.
The following stages have been declared: A1-A4



Additional technical information:

Article 1251638 HF-Coilfix Data U/UTP 6 4P awg 23 represent the maximum energy consumption from the product family below - from a production volume perspective as follow:
1251685

LCA: Scenarios and additional technical information

The following information describe the scenarios in the different modules of the EPD.

Transport from production place to user (A4)

Type	Capacity utilisation (incl. return) %	Type of vehicle	Distance km	Fuel/Energy consumption	Unit	Value (l/t)
Truck	38,8 %	Truck, lorry 16-32 tonnes, EURO 6	988	0,043626	l/tkm	43,10
Railway					l/tkm	
Boat					l/tkm	
Other Transportation					l/tkm	

Assembly (A5)

.	Unit	Value
Auxiliary	kg	
Water consumption	m^3	
Electricity consumption	kWh	
Other energy carriers	MJ	
Material loss	kg	
Output materials from waste treatment	kg	0,0013
Dust in the air	kg	
VOC emissions	kg	

End of Life (C1, C3, C4)

.	Unit	Value
Hazardous waste disposed	kg	
Collected as mixed construction waste	kg	
Reuse	kg	
Recycling	kg	0,0324
Energy recovery	kg	0,1140
To landfill	kg	0,0073

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Benefits and loads beyond the system boundaries (D)

.	Unit	Value
Substitution of primary Copper with net secondary copper (kg)	kg	0,03
Substitution of electricity, in Norway (MJ)	MJ	0,40
Substitution of thermal energy, district heating, in Norway (MJ)	MJ	2,75

LCA: Results

LCA results according to the indicators of EN 15804:2013+A1:2013 are presented in the following tables, for the declared unit defined on page 2 of the EPD document. All potential environmental impacts might not be covered by the EN 15804 indicators. This concerns indicators such as noise, electromagnetic radiation, electromagnetic fields and treatment brominated flame retardants.

System boundaries (X=included, MND=module not declared, MNR=module not relevant)

Product stage			Construction installation stage		User stage							End of life stage				.	Beyond the system bondaries
Raw materials	Transport	Manufacturing	Transport	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	MND	MND	MND	MND	MND	MND	MND	X	X	X	X	.	X

Environmental impact

Parameter	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D
GWP	kg CO_2 -eq	5,34E-01	2,36E-02	3,83E-03	0	0	3,16E-01	2,32E-04	-7,07E-02
ODP	kg CFC11 -eq	2,43E-08	4,45E-09	7,00E-12	0	0	2,20E-10	2,30E-11	-8,31E-09
POCP	kg C_2H_4-eq	9,15E-04	3,58E-06	8,46E-09	0	0	4,43E-07	3,01E-08	-4,56E-04
AP	kg SO_2 -eq	2,32E-02	5,55E-05	4,18E-07	0	0	2,75E-05	6,75E-07	-1,13E-02
EP	kg PO_4^{3-} -eq	1,33E-03	7,29E-06	1,31E-07	0	0	8,57E-06	1,16E-07	-5,41E-04
ADPM	kg Sb -eq	8,16E-08	7,34E-08	9,80E-11	0	0	8,46E-10	2,00E-12	-2,28E-07
ADPE	MJ	1,10E+01	3,57E-01	6,79E-04	0	0	2,03E-02	2,20E-03	-8,83E-01

GWP Global warming potential; ODP Depletion potential of the stratospheric ozone layer; POCP Formation potential of tropospheric photochemical oxidants; AP Acidification potential of land and water; EP Eutrophication potential; ADPM Abiotic depletion potential for non fossil resources; ADPE Abiotic depletion potential for fossil resources

"Reading example: 9,0 E-03 = 9,0*10-3 = 0,009"
*INA Indicator Not Assessed

Resource use

Parameter	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D
RPEE	MJ	1,08E+00	5,27E-03	1,19E-05	0	0	6,28E-04	1,13E-04	-1,45E+00
RPEM	MJ	0,00E+00	0,00E+00	0,00E+00	0	0	0,00E+00	0,00E+00	0,00E+00
TPE	MJ	1,08E+00	5,27E-03	1,19E-05	0	0	6,28E-04	1,13E-04	-1,45E+00
NRPE	MJ	6,63E+00	3,65E-01	5,42E-02	0	0	2,19E-02	2,35E-03	-1,32E+00
NRPM	MJ	5,34E+00	0,00E+00	0,00E+00	0	0	0,00E+00	0,00E+00	0,00E+00
TRPE	MJ	1,20E+01	3,65E-01	5,42E-02	0	0	2,19E-02	2,35E-03	-1,32E+00
SM	kg	7,20E-03	0,00E+00	0,00E+00	0	0	0,00E+00	0,00E+00	0,00E+00
RSF	MJ	2,26E-05	0,00E+00	0,00E+00	0	0	0,00E+00	0,00E+00	-7,86E-05
NRSF	MJ	0,00E+00	0,00E+00	0,00E+00	0	0	0,00E+00	0,00E+00	0,00E+00
W	m^3	1,03E-02	6,90E-05	9,38E-07	0	0	7,02E-05	2,35E-06	-2,86E-03

RPEE Renewable primary energy resources used as energy carrier; RPEM Renewable primary energy resources used as raw materials; TPE Total use of renewable primary energy resources; NRPE Non renewable primary energy resources used as energy carrier; NRPM Non renewable primary energy resources used as materials; TRPE Total use of non renewable primary energy resources; SM Use of secondary materials; RSF Use of renewable secondary fuels; NRSF Use of non renewable secondary fuels; W Use of net fresh water

"Reading example: 9,0 E-03 = 9,0*10-3 = 0,009"
*INA Indicator Not Assessed

End of life - Waste

Parameter	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D
HW	kg	5,73E-04	2,15E-07	4,07E-09	0	0	2,10E-07	2,90E-09	-1,55E-06
NHW	kg	2,34E+00	1,96E-02	8,11E-05	0	0	6,60E-04	8,46E-03	-7,25E-01
RW	kg	1,54E-05	2,51E-06	2,72E-09	0	0	4,40E-08	1,44E-08	-7,71E-06

HW Hazardous waste disposed; NHW Non hazardous waste disposed; RW Radioactive waste disposed

"Reading example: 9,0 E-03 = 9,0*10-3 = 0,009"
*INA Indicator Not Assessed

End of life - Output flow

Parameter	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D
CR	kg	0,00E+00	0,00E+00	0,00E+00	0	0	0,00E+00	0,00E+00	0,00E+00
MR	kg	0,00E+00	0,00E+00	0,00E+00	0	0	3,24E-02	0,00E+00	0,00E+00
MER	kg	0,00E+00	0,00E+00	1,26E-03	0	0	1,14E-01	0,00E+00	0,00E+00
EEE	MJ	0,00E+00	0,00E+00	2,70E-03	0	0	3,96E-01	0,00E+00	0,00E+00
ETE	MJ	0,00E+00	0,00E+00	2,97E-02	0	0	2,72E+00	0,00E+00	0,00E+00

CR Components for reuse; MR Materials for recycling; MER Materials for energy recovery; EEE Exported electric energy; ETE Exported thermal energy

"Reading example: 9,0 E-03 = 9,0*10-3 = 0,009"
*INA Indicator Not Assessed

Additional Norwegian requirements

Greenhouse gas emissions from the use of electricity in the manufacturing phase

National production mix from import, low voltage (production of transmission lines, in addition to direct emissions and losses in grid) of applied electricity for the manufacturing process (A3).

Electricity mix	Data source	Amount	Unit
El-mix, Norway (kWh)	ecoinvent 3.4	31,04	g CO2-ekv/kWh
Electricity, Turkey (kWh)	ecoinvent 3.6	660,41	g CO2-ekv/kWh

Dangerous substances

The product contains no substances given by the REACH Candidate list or the Norwegian priority list.

Indoor environment

No effect on in-door environment

Bibliography

ISO 14025:2010 Environmental labels and declarations - Type III environmental declarations - Principles and procedures.
ISO 14044:2006 Environmental management - Life cycle assessment - Requirements and guidelines.
EN 15804:2012+A1:2013 Environmental product declaration - Core rules for the product category of construction products.
ISO 21930:2017 Sustainability in buildings and civil engineering works - Core rules for environmental product declarations of construction products.
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epd-norge.no The Norwegian EPD Foundation	**Program operator and publisher** The Norwegian EPD Foundation Post Box 5250 Majorstuen, 0303 Oslo,Norway	Phone: e-mail: web:	+47 23 08 80 00 post@epd-norge.no www.epd-norge.no
Elektroskandia Norge REXEL GROUP	**Owner of the declaration** Elektroskandia Norge AS Postboks 143 1403 Langhus	Phone: e-mail: web:	+47 97 66 22 12 pkr@elektroskandia.no elektroskandia.no
LCA.no	**Author of the Life Cycle Assessment** LCA.no AS Dokka 1C 1671 Kråkerøy	Phone: e-mail: web:	+47 916 50 916 post@lca.no www.lca.no
LCA.no	**Developer of EPD generator** LCA.no AS Dokka 1C,1671 Kråkerøy	Phone: e-mail: web:	+47 916 50 916 post@lca.no www.lca.no