ENVIRONMENTAL PRODUCT DECLARATION

IN ACCORDANCE WITH EN 15804+A2 & ISO 14025 / ISO 21930

Cable support systems with PG surface treatment
Meka Pro Oy

EPD HUB, HUB-1487
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Created with One Click LCA

GENERAL INFORMATION

MANUFACTURER

Manufacturer	Meka Pro Oy
Address	Konetie 25, 90620 Oulu, Finland
Contact details	quality@meka.eu
Website	www.meka.eu

EPD STANDARDS, SCOPE AND VERIFICATION

Program operator	EPD Hub, hub@epdhub.com
Reference standard	EN 15804+A2:2019 and ISO 14025
PCR	EPD Hub Core PCR version 1.1, 5 Dec 2023
Sector	Construction product
Category of EPD	Third party verified EPD
Scope of the EPD	Cradle to gate with options, A4-A5, and modules C1-C4, D
EPD author	Oskari Ylimaula, Meka Pro Oy
EPD verification	Independent verification of this EPD and data, according to ISO 14025: ☐ Internal verification ☑ External verification
EPD verifier	Haiha Nguyen, as an authorized verifier acting for EPD Hub Limited

The manufacturer has the sole ownership, liability, and responsibility for the EPD. EPDs within the same product category but from different programs may not be comparable. EPDs of construction products may not be comparable if they do not comply with EN 15804 and if they are not compared in a building context.

PRODUCT

Product name	Cable support systems with PG surface treatment
Additional labels	-
Product reference	-
Place of production	Finland
Period for data	1.1.2023 - 31.12.2023
Averaging in EPD	Multiple products
Variation in GWP-fossil for A1-A3	0 %

ENVIRONMENTAL DATA SUMMARY

Declared unit	1 kg of Cable Support Product made of PG steel
Declared unit mass	1 kg
GWP-fossil, A1-A3 (kgCO2e)	2,65E+00
GWP-total, A1-A3 (kgCO2e)	2,61E+00
Secondary material, inputs (%)	2.65
Secondary material, outputs (%)	94.1
Total energy use, A1-A3 (kWh)	9.64
Net fresh water use, A1-A3 (m3)	0

PRODUCT AND MANUFACTURER

ABOUT THE MANUFACTURER

Meka Pro Oy is a Finnish family-owned business, which manufactures long life cycle cable management systems. The company has nine sales offices and a certified testing laboratory. It directly employs around 100 professionals. Meka now has employees in 6 countries and Meka has already delivered its products to its partners and customers in more than 80 countries. Fulfilling customer needs has always been a matter of honour for Meka. We keep, what we promise. This applies to both our products and our operations.

PRODUCT DESCRIPTION

Meka Pro Oy pre-galvanised steel products are made of steel that is already galvanised. These products may also be called pre-galvanised (PG), continuously galvanised or Sendzimir-galvanised. Pre galvanization is a form of galvanization which is done already at the steel mill directly on the flat steel raw material. This process results in lower layer thickness compared hot dip galvanization post-processing.

This EPD covers the cable support products produced of PG raw material at Meka Pro Oy plant located in Oulu, Finland. The cable support system consist of ladders, trays, mesh trays, joints, pendants, cantilevers and accessories.

Further information can be found at https://www.meka.eu.

PRODUCT RAW MATERIAL MAIN COMPOSITION

Raw material category	Amount, mass- %	Material origin
Metals	100	Europe
Minerals	-	-
Fossil materials	-	-
Bio-based materials	-	-

BIOGENIC CARBON CONTENT

Product's biogenic carbon content at the factory gate

Biogenic carbon content in product, kg C	0
Biogenic carbon content in packaging, kg C	0.00123

FUNCTIONAL UNIT AND SERVICE LIFE

Declared unit	1 kg of Cable Support Product made of PG steel
Mass per declared unit	1 kg
Functional unit	-
Reference service life	-

SUBSTANCES, REACH - VERY HIGH CONCERN

The product does not contain any REACH SVHC substances in amounts greater than 0,1 % (1000 ppm).

PRODUCT LIFE-CYCLE

SYSTEM BOUNDARY

This EPD covers the life-cycle modules listed in the following table.

Product stage			Assembly stage		Use stage							End of life stage				Beyond the system boundaries
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
Raw materials	Transport	Manufacturing	Transport	Assembly	Use	Maintenance	Repair	Replacement	Refurbishment	Operational energy use	Operational water use	Deconstr./demol.	Transport	Waste processing	Disposal	Reuse	Recovery	Recycling

Modules not declared = MND. Modules not relevant = MNR.

MANUFACTURING AND PACKAGING (A1-A3)

The environmental impacts considered for the product stage cover the manufacturing of raw materials used in the production as well as packaging materials and other ancillary materials. Also, fuels used by machines, and handling of waste formed in the production processes at the manufacturing facilities are included in this stage. The study also considers the material losses occurring during the manufacturing processes as well as losses during electricity transmission.

Final products consist of pre-galvanized steel purchased in coils and sheets. Distance between Meka Pro manufacturing unit and each supplier has been calculated with truck freight. Manufacturing consists of several different stages like roll forming, cutting, punching and resistance welding of steel. During manufacturing 2% of scrap is considered. Used electricity and central heating is measured and calculated per kg of final product. Packaging is done with plastic binding tape and wooden pallets.

TRANSPORT AND INSTALLATION (A4-A5)

Transportation impacts occurred from final products delivery to construction site (A4) cover fuel direct exhaust emissions, environmental impacts of fuel production, as well as related infrastructure emissions.

Average distance of transportation is based on actual delivery data from the freight supplier. 0,01kWh of electricity use is estimated for assembly of 1kg of HDG product. Steel bolts and fasteners are included in the model. Packaging material waste is considered 95% recycled and 5% landfill.

PRODUCT USE AND MAINTENANCE (B1-B7)

This EPD does not cover the use phase.
Air, soil, and water impacts during the use phase have not been studied.

PRODUCT END OF LIFE (C1-C4, D)

Disassembling is assumed to consume 0,01 kWh/kg of product. Small hand drill has been considered same as mounting of the product. Transportation distance to treatment is assumed as 50 km and the transportation method is assumed to be lorry (C2). Approximately 95% of steel is assumed to be recycled based on World Steel Association, 2020 (C3). It is assumed that the remaining 5 % of steel is taken to landfill for final disposal (C4). Due to the recycling process, the end-of-life product is converted into recycled steel, while the wooden pallet is incinerated for energy recovery (D).

MANUFACTURING PROCESS

Roll-forming
Cutting
Punching
Welding
Packaging

LIFE-CYCLE ASSESSMENT

CUT-OFF CRITERIA

The study does not exclude any modules or processes which are stated mandatory in the reference standard and the applied PCR. The study does not exclude any hazardous materials or substances. The study includes all major raw material and energy consumption. All inputs and outputs of the unit processes, for which data is available for, are included in the calculation. There is no neglected unit process more than 1% of total mass or energy flows. The module specific total neglected input and output flows also do not exceed 5% of energy usage or mass.

ALLOCATION, ESTIMATES AND ASSUMPTIONS

Allocation is required if some material, energy, and waste data cannot be measured separately for the product under investigation. All allocations are done as per the reference standards and the applied PCR. In this study, allocation has been done in the following ways:

Data type	Allocation
Raw materials	Allocated by mass or volume
Packaging materials	Allocated by mass or volume
Ancillary materials	Allocated by mass or volume
Manufacturing energy and waste	Allocated by mass or volume

AVERAGES AND VARIABILITY

Type of average	Multiple products
Averaging method	Averaged by shares of total mass
Variation in GWP-fossil for A1-A3	0 %

This EPD represents products that are produced with same raw material and same plant, so no variation can be seen. Final products varies in shape and weight but are all made with same raw materials and similar process.

LCA SOFTWARE AND BIBLIOGRAPHY

This EPD has been created using One Click LCA EPD Generator. The LCA and EPD have been prepared according to the reference standards and ISO 14040/14044. The EPD Generator uses Ecoinvent v3.8, Plastics Europe, Federal LCA Commons and One Click LCA databases as sources of environmental data.

ENVIRONMENTAL IMPACT DATA

CORE ENVIRONMENTAL IMPACT INDICATORS – EN 15804+A2, PEF

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
GWP – total[1)]	kg CO_2e	2,54E+00	5,24E-02	1,85E-02	2,61E+00	5,29E-02	3,90E-02	MND	MND	MND	MND	MND	MND	MND	2,70E-03	4,69E-03	2,08E-02	2,64E-04	-1,53E+00
GWP – fossil	kg CO_2e	2,54E+00	5,24E-02	5,44E-02	2,65E+00	5,29E-02	3,13E-03	MND	MND	MND	MND	MND	MND	MND	2,67E-03	4,69E-03	2,08E-02	2,63E-04	-1,49E+00
GWP – biogenic	kg CO_2e	0,00E+00	3,88E-07	-3,59E-02	-3,59E-02	0,00E+00	3,59E-02	MND	MND	MND	MND	MND	MND	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	-4,00E-02
GWP – LULUC	kg CO_2e	7,23E-04	1,93E-05	4,14E-05	7,84E-04	1,95E-05	2,42E-05	MND	MND	MND	MND	MND	MND	MND	2,40E-05	1,73E-06	2,73E-05	2,49E-07	-2,67E-04
Ozone depletion pot.	kg CFC_{-11}e	1,22E-13	1,21E-08	3,70E-09	1,58E-08	1,22E-08	1,86E-10	MND	MND	MND	MND	MND	MND	MND	1,51E-10	1,08E-09	2,57E-09	1,07E-10	-5,84E-08
Acidification potential	mol H^+e	7,15E-03	2,22E-04	6,39E-04	8,01E-03	2,24E-04	1,28E-05	MND	MND	MND	MND	MND	MND	MND	1,17E-05	1,99E-05	2,64E-04	2,48E-06	-6,10E-03
EP-freshwater[2)]	kg Pe	0,00E+00	4,29E-07	2,19E-06	2,62E-06	4,33E-07	1,09E-07	MND	MND	MND	MND	MND	MND	MND	1,04E-07	3,84E-08	1,12E-06	2,76E-09	-6,14E-05
EP-marine	kg Ne	1,76E-03	6,60E-05	9,09E-05	1,92E-03	6,65E-05	2,17E-06	MND	MND	MND	MND	MND	MND	MND	1,86E-06	5,90E-06	5,58E-05	8,57E-07	-1,25E-03
EP-terrestrial	mol Ne	1,91E-02	7,28E-04	1,83E-03	2,16E-02	7,34E-04	2,57E-05	MND	MND	MND	MND	MND	MND	MND	2,24E-05	6,51E-05	6,45E-04	9,43E-06	-1,46E-02
POCP ("smog")[3)]	kg NMVOCe	5,23E-03	2,33E-04	2,87E-04	5,75E-03	2,35E-04	7,01E-06	MND	MND	MND	MND	MND	MND	MND	5,98E-06	2,08E-05	1,77E-04	2,74E-06	-7,45E-03
ADP-minerals & metals[4)]	kg Sbe	1,80E-04	1,23E-07	1,45E-07	1,80E-04	1,24E-07	3,56E-08	MND	MND	MND	MND	MND	MND	MND	3,35E-08	1,10E-08	2,80E-06	6,05E-10	-2,83E-05
ADP-fossil resources	MJ	2,98E+01	7,87E-01	3,54E-01	3,09E+01	7,94E-01	8,30E-02	MND	MND	MND	MND	MND	MND	MND	8,02E-02	7,05E-02	2,82E-01	7,22E-03	-1,31E+01
Water use[5)]	m^3e depr.	1,63E-01	3,52E-03	1,80E-01	3,47E-01	3,55E-03	1,78E-03	MND	MND	MND	MND	MND	MND	MND	1,73E-03	3,15E-04	5,47E-03	2,29E-05	-2,75E-01

1) GWP = Global Warming Potential; 2) EP = Eutrophication potential. Required characterisation method and data are in kg P-eq. Multiply by 3,07 to get PO4e; 3) POCP = Photochemical ozone formation; 4) ADP = Abiotic depletion potential; 5) EN 15804+A2 disclaimer for Abiotic depletion and Water use and optional indicators except Particulate matter and Ionizing radiation, human health. The results of these environmental impact indicators shall be used with care as the uncertainties on these results are high or as there is limited experience with the indicator.

ADDITIONAL (OPTIONAL) ENVIRONMENTAL IMPACT INDICATORS – EN 15804+A2, PEF

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Particulate matter	Incidence	0,00E+00	6,04E-09	5,05E-09	1,11E-08	6,09E-09	9,52E-11	MND	MND	MND	MND	MND	MND	MND	6,68E-11	5,41E-10	3,45E-09	4,99E-11	-9,90E-08
Ionizing radiation[6)]	kBq U235e	0,00E+00	3,75E-03	5,68E-02	6,05E-02	3,78E-03	3,87E-03	MND	MND	MND	MND	MND	MND	MND	3,85E-03	3,36E-04	3,15E-03	3,27E-05	5,26E-02
Ecotoxicity (freshwater)	CTUe	0,00E+00	7,08E-01	9,94E-01	1,70E+00	7,14E-01	5,72E-02	MND	MND	MND	MND	MND	MND	MND	5,27E-02	6,34E-02	1,28E+00	4,71E-03	-5,31E+01
Human toxicity, cancer	CTUh	0,00E+00	1,74E-11	5,87E-11	7,61E-11	1,75E-11	2,07E-12	MND	MND	MND	MND	MND	MND	MND	1,60E-12	1,56E-12	3,91E-11	1,18E-13	1,25E-08
Human tox. non-cancer	CTUh	0,00E+00	7,01E-10	6,86E-10	1,39E-09	7,07E-10	4,40E-11	MND	MND	MND	MND	MND	MND	MND	3,89E-11	6,27E-11	1,75E-09	3,08E-12	-3,57E-08
SQP[7)]	-	0,00E+00	9,07E-01	2,97E+00	3,88E+00	9,15E-01	2,97E-02	MND	MND	MND	MND	MND	MND	MND	2,58E-02	8,12E-02	5,67E-01	1,54E-02	-7,51E+00

6) EN 15804+A2 disclaimer for Ionizing radiation, human health. 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; 7) SQP = Land use related impacts/soil quality.

USE OF NATURAL RESOURCES

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Renew. PER as energy[8)]	MJ	1,95E+00	8,87E-03	5,00E-01	2,46E+00	8,94E-03	1,98E-02	MND	MND	MND	MND	MND	MND	MND	1,97E-02	7,94E-04	5,00E-02	6,27E-05	-1,30E+00
Renew. PER as material	MJ	0,00E+00	0,00E+00	3,14E-01	3,14E-01	0,00E+00	-3,14E-01	MND	MND	MND	MND	MND	MND	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	3,10E-01
Total use of renew. PER	MJ	1,95E+00	8,87E-03	8,15E-01	2,77E+00	8,94E-03	-2,95E-01	MND	MND	MND	MND	MND	MND	MND	1,97E-02	7,94E-04	5,00E-02	6,27E-05	-9,86E-01
Non-re. PER as energy	MJ	2,98E+01	7,87E-01	1,67E+00	3,22E+01	7,94E-01	8,30E-02	MND	MND	MND	MND	MND	MND	MND	8,02E-02	7,05E-02	2,82E-01	7,22E-03	-1,30E+01
Non-re. PER as material	MJ	0,00E+00	0,00E+00	1,06E-01	1,06E-01	0,00E+00	-1,06E-01	MND	MND	MND	MND	MND	MND	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	9,60E-02
Total use of non-re. PER	MJ	2,98E+01	7,87E-01	1,78E+00	3,23E+01	7,94E-01	-2,26E-02	MND	MND	MND	MND	MND	MND	MND	8,02E-02	7,05E-02	2,82E-01	7,22E-03	-1,29E+01
Secondary materials	kg	2,65E-02	2,19E-04	1,23E-03	2,80E-02	2,20E-04	1,35E-05	MND	MND	MND	MND	MND	MND	MND	6,72E-06	1,96E-05	3,14E-04	1,52E-06	8,57E-01
Renew. secondary fuels	MJ	8,68E-23	2,21E-06	1,07E-02	1,07E-02	2,22E-06	8,72E-08	MND	MND	MND	MND	MND	MND	MND	3,05E-08	1,97E-07	1,63E-05	3,96E-08	-1,07E-02
Non-ren. secondary fuels	MJ	1,02E-21	0,00E+00	0,00E+00	1,02E-21	0,00E+00	0,00E+00	MND	MND	MND	MND	MND	MND	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Use of net fresh water	m^3	4,99E-04	1,02E-04	1,64E-03	2,24E-03	1,03E-04	7,25E-05	MND	MND	MND	MND	MND	MND	MND	7,12E-05	9,13E-06	1,65E-04	7,90E-06	-3,26E-03

8) PER = Primary energy resources.

END OF LIFE – WASTE

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Hazardous waste	kg	6,48E-02	1,04E-03	2,86E-03	6,87E-02	1,05E-03	2,00E-04	MND	MND	MND	MND	MND	MND	MND	1,77E-04	9,34E-05	1,92E-03	0,00E+00	-4,95E-01
Non-hazardous waste	kg	7,75E-02	1,72E-02	8,69E-02	1,82E-01	1,73E-02	4,96E-03	MND	MND	MND	MND	MND	MND	MND	4,52E-03	1,54E-03	6,12E-02	5,00E-02	-2,43E+00
Radioactive waste	kg	5,65E-04	5,27E-06	2,24E-05	5,93E-04	5,31E-06	8,60E-07	MND	MND	MND	MND	MND	MND	MND	8,43E-07	4,71E-07	1,65E-06	0,00E+00	3,85E-06

END OF LIFE – OUTPUT FLOWS

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	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	2,40E-02	MND	MND	MND	MND	MND	MND	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Materials for recycling	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	1,90E-03	MND	MND	MND	MND	MND	MND	MND	0,00E+00	0,00E+00	9,50E-01	0,00E+00	0,00E+00
Materials for energy rec	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	MND	MND	MND	MND	MND	MND	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Exported energy	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	MND	MND	MND	MND	MND	MND	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00

ENVIRONMENTAL IMPACTS – EN 15804+A1, CML / ISO 21930

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Global Warming Pot.	kg CO_2e	2,47E+00	5,19E-02	5,70E-02	2,58E+00	5,23E-02	3,09E-03	MND	MND	MND	MND	MND	MND	MND	2,64E-03	4,64E-03	2,05E-02	2,58E-04	-1,41E+00
Ozone depletion Pot.	kg CFC_{-11}e	2,16E-13	9,55E-09	3,01E-09	1,26E-08	9,63E-09	1,60E-10	MND	MND	MND	MND	MND	MND	MND	1,32E-10	8,55E-10	2,08E-09	8,43E-11	-6,51E-08
Acidification	kg SO_2e	5,74E-03	1,72E-04	4,71E-04	6,39E-03	1,74E-04	1,05E-05	MND	MND	MND	MND	MND	MND	MND	9,68E-06	1,54E-05	2,13E-04	1,87E-06	-4,93E-03
Eutrophication	kg PO_4^3e	6,17E-04	3,93E-05	1,19E-04	7,75E-04	3,96E-05	5,83E-06	MND	MND	MND	MND	MND	MND	MND	4,12E-06	3,52E-06	7,05E-05	4,03E-07	-2,53E-03
POCP (“smog”)	kg C_2H_4e	5,31E-04	6,73E-06	2,28E-05	5,61E-04	6,79E-06	4,86E-07	MND	MND	MND	MND	MND	MND	MND	4,36E-07	6,03E-07	8,07E-06	7,84E-08	-8,50E-04
ADP-elements	kg Sbe	1,80E-04	1,19E-07	3,07E-07	1,80E-04	1,20E-07	3,57E-08	MND	MND	MND	MND	MND	MND	MND	3,36E-08	1,07E-08	2,80E-06	5,96E-10	-2,83E-05
ADP-fossil	MJ	2,84E+01	7,87E-01	1,77E+00	3,09E+01	7,94E-01	7,89E-02	MND	MND	MND	MND	MND	MND	MND	7,61E-02	7,05E-02	2,82E-01	7,22E-03	-1,31E+01

VERIFICATION STATEMENT

VERIFICATION PROCESS FOR THIS EPD

This EPD has been verified in accordance with ISO 14025 by an independent, third-party verifier by reviewing results, documents and compliancy with reference standard, ISO 14025 and ISO 14040/14044, following the process and checklists of the program operator for:

- This Environmental Product Declaration
- The Life-Cycle Assessment used in this EPD
- The digital background data for this EPD

Why does verification transparency matter? Read more online
This EPD has been generated by One Click LCA EPD generator, which has been verified and approved by the EPD Hub.

THIRD-PARTY VERIFICATION STATEMENT

I hereby confirm that, following detailed examination, I have not established any relevant deviations by the studied Environmental Product Declaration (EPD), its LCA and project report, in terms of the data collected and used in the LCA calculations, the way the LCA-based calculations have been carried out, the presentation of environmental data in the EPD, and other additional environmental information, as present with respect to the procedural and methodological requirements in ISO 14025:2010 and reference standard.

I confirm that the company-specific data has been examined as regards plausibility and consistency; the declaration owner is responsible for its factual integrity and legal compliance.

I confirm that I have sufficient knowledge and experience of construction products, this specific product category, the construction industry, relevant standards, and the geographical area of the EPD to carry out this verification.

I confirm my independence in my role as verifier; I have not been involved in the execution of the LCA or in the development of the declaration and have no conflicts of interest regarding this verification.

HaiHa Nguyen, as an authorized verifier acting for EPD Hub Limited
06.06.2024

VERIFIED ISO 14025