Environmental Product Declaration

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

TEMPORARY FENCING

MOBILT mesh panels, SMART hoarding panels, gatedoors, sliding gates, vehicle gates, assembly accessories (clamp, hinge, bolt, barbed wire holder), transport pallets

from

TLC SP. Z O.O.

Programme:	The International EPD® System, www.environdec.com
Programme operator:	EPD International AB
EPD registration number:	S-P-12944
Publication date:	2024-03-11
Valid until:	2029-03-10
	An EPD should provide current information and may be updated if conditions change. The stated validity is therefore subject to the continued registration and publication at www.environdec.com
	EPD of multiple products, based on the average results of the product group

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:	info@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): 2019:14 version 1.3.1

PCR review was conducted by: The Technical Committee of the International EPD® System. See www.environdec.com for a list of members. Review chair: Claudia A. Peña, University of Concepción, Chile. The review panel may be contacted via the Secretariat www.environdec.com/contact.

Life Cycle Assessment (LCA)

LCA accountability: Joanna Zhuravlova, Bureau Veritas Polska

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: Silvia Vilčeková, Silcert Sro

Approved by: The International EPD® System

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.

COMPANY INFORMATION

Owner of the EPD:
TLC Sp. z o.o.
https://www.tlc.eu/

Contact:
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+48 18 35 00 800
info@tlc.eu

Description of the organisation:
A globally recognized company that designs, manufactures, and sells communication systems for the industry, as well as manufacturing and renting construction security equipment. Its portfolio also includes an innovative mechanism for building large-sized tanks. TLC has over a decade of experience - thousands of projects in Europe, the Americas, Africa, Asia, and Australia. The brand focuses on sustainable development, therefore in its daily activities it operates according to the principles formulated by the UN.

Product-related or management system-related certifications:
TLC has the certificate of conformity of Factory Production Control with EN 1090-1 issued by TÜV SÜD which guarantees the highest quality level of all TLC products. The steel structures are manufactured in execution classes from EXC1 to EXC3. Some of our products are CE marked. Additionally, we have PN-EN ISO 3834-2 certificate issued by TÜV SÜD Polska.
TLC's Production Plant has been certified with the Integrated Management System of Quality, Environment and OHS (ISO 9001/ ISO 14001/ ISO 45001) issued by Bureau Veritas Certification Holding SAS - UK Branch.

Name and location of production site(s):
TLC Sp. z o.o.
ul. Chopina 25N
38-300 Gorlice

PRODUCT INFORMATION

Product name: **Temporary mobile fence**

Products included in this EPD:

- MOBILT mesh panels
- SMART hoarding fence panels
- Mobile fences pedestrian gate
- Mobile fences sliding gates
- Mobile fences vehicle gate
- Mobile fences installation accessories
- Mobile fences transport pallets

Product description:
Fencing system is characterized by its high durability, corrosion resistance and its low weight, all developed through many years of experience and in-house research and development department at TLC. They are the perfect option for those needing a highly-portable fencing system where there is no issue with allowing visibility of the construction site.
The basic components of the temporary fence system are a panel built from a solid steel frame that is then filled with a mesh of welded wires or corrugated steel sheet. The system is completed by a wide range of mounting accessories that allow installation in all terrain conditions, as well as places where interference in the ground is not recommended or even forbidden.

Geographical scope:
The processes have been modelled to represent Europe.

CONTENT INFORMATION

Product components	Weight, kg	Post-consumer material, weight-%	Biogenic material, weight-% and kg C/kg
Steel	0,928-0,97	0	0
Welding wire	0-0,006	0	0
Zinc alloy	0,024-0,06	0	0
Aluminium	0-0,006	0	0
TOTAL	1	0	0
Packaging materials	**Weight, kg**	**Weight-% (versus the product)**	**Weight biogenic carbon, kg C/kg**
Steel tape	0,0035	0,35%	0
TOTAL	0,0035	0,35%	0

Product does not contain substances in the Candidate List of Substances of Very High Concern (SVHC) which exceeds the limits for registration with the European Chemicals Agency (i.e., if the substance constitute more than 0.1% of the weight of the product).

PRODUCTION PROCESS DESCRIPTION

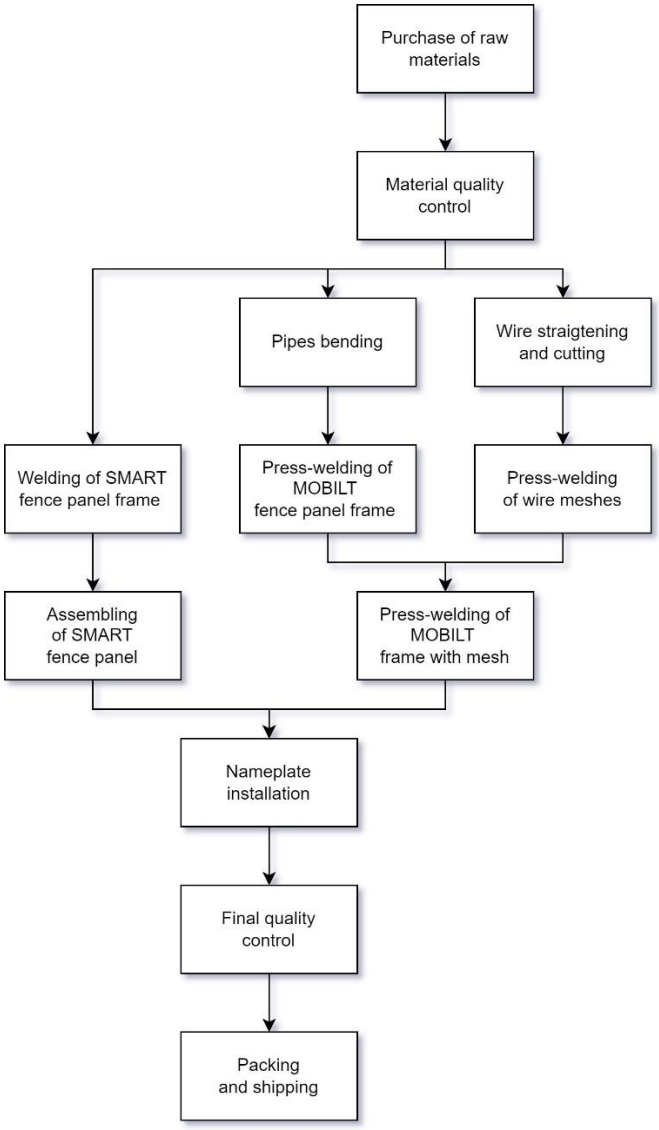
The manufacturing process of our products is virtually identical for all groups. The basic building material is structural steel (S235, S355) or stainless steel (1.4301/7, 1.4401/4).

Materials are purchased from various sources - those that we use more of (e.g. sheets, profiles, pipes, gratings) are obtained directly from steel mills or manufacturers. Others that require less use or are disposable come from distributors.

After being acquired, the materials pass through the warehouse from which they are issued based on the demand generated in the computer system. Then they are additionally cleaned of carbon deposits and combustion products using an automatic deburring machine. This machine additionally bends the edges of sheet metal.
Details that require bending or drilling are sent to appropriate stations where these processes take place.

After completing the material preparation stage, when all details for the assembly of a given order are available, the computer system arranges the assembly work.
After assembly is completed, the elements are permanently marked using micro-impact marking machines and sent for pressure welding of pre-galvanized material. Materials are purchased to size, so there is no need for a cutting step. They go directly from the warehouse to the welding station or indirectly pass through the bending station. The tubes are welded into a frame using a frame welding machine. In parallel, welded mesh from galvanized wire is produced at the stations - the wire from the coil is straightened and cut to size and the mesh is welded from it.
The semi-finished products prepared in this way are then fed to a frame-mesh welding machine, which welds the mesh to the frame tubes. Finally, the panel is marked - a print or sticker with the series number is placed on the frame, and a plate with the customer's logo is mounted on the mesh.
The finished products are fastened with steel tape in several dozen pieces and sent for shipping.

Diagram below presents the production process.



LCA INFORMATION

Functional unit / declared unit:
Declared unit is 1 kilogram of temporary mobile fence product.

Reference service life:
Not applicable

Time representativeness:
Data used for the LCA calculation is representative for the year 2022.

Database(s) and LCA software used:
Database used is Ecoinvent 3.9.1 with LCA software SimaPro 9.5.2

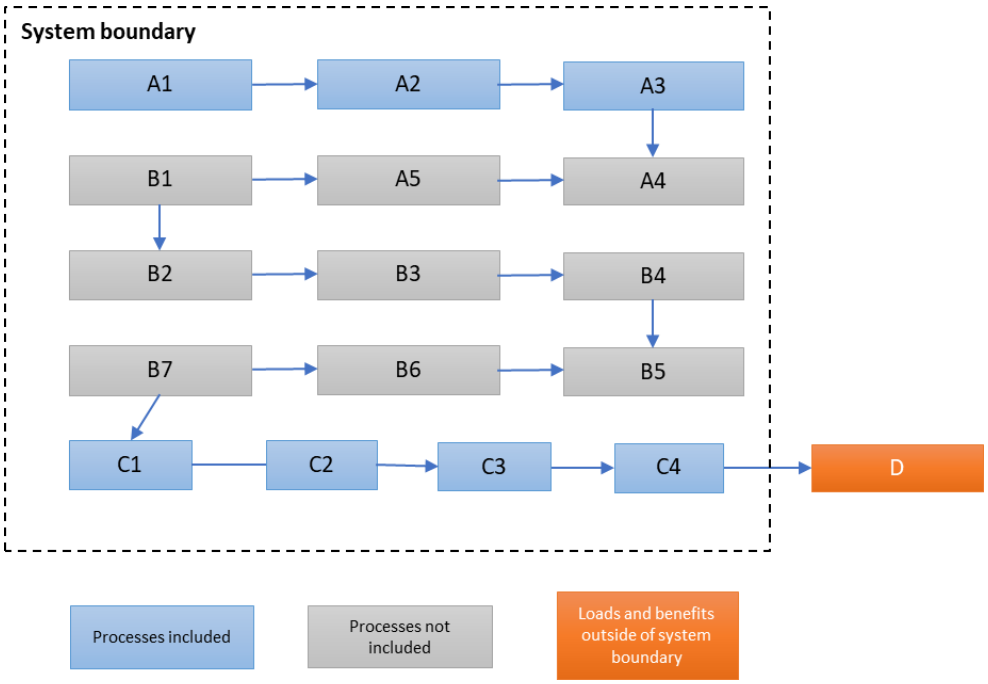
Description of system boundaries:
The studied system is Cradle-to-Gate with modules C and D (A1-A3 + C + D)

	Product stage			Construction process stage		Use stage							End of life stage				Resource recovery stage
	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	ND	ND	ND	ND	ND	ND	ND	ND	ND	X	X	X	X	X
Geography	EU	EU	PL	ND	ND	ND	ND	ND	ND	ND	ND	ND	EU	EU	EU	EU	EU
Specific data used	>90%			ND	ND	-	-	-	-	-	-	-	-	-	-	-	-
Variation – products	GWP-GHG indicator Product 1: 1% Product 2: -9% Product 3: 6% Product 4: -12% Product 5: -14% Product 6: 15% Product 7: -15%			ND	ND	-	-	-	-	-	-	-	-	-	-	-	-
Variation – sites	0%			0%	0%	-	-	-	-	-	-	-	-	-	-	-	-

X – Modules declared
ND – modules not declared

The dataset used to model the electricity used in manufacturing processes of module A3:
Electricity, medium voltage, PL, residual mix with climate impact **1,08 kg CO2 eq./kWh** using the GWP GHG indicator.

System diagram:



Description of modules included, assumptions, scenarios:

Module	Included activities
A1	Raw material extraction, processing (pipe drawing, hot rolling, metal working, galvanizing) Difference between used steel types (S355 and S235) are assumed to be negligible as the difference between them is only max 0,1% of carbon content
A2	Transport of raw materials and components to TLC Sp z .o.o. based on provided distances, using lorry 16-32 metric ton, EURO5
A3	Energy use, water use; Materials needed for welding, cutting; Direct emissions from manufacturing, Waste treatment: Aluminium and steel 95% recycling, 5% landfill*; Non-hazardous waste sent to municipal waste treatment; Hazardous waste sent to underground deposit; Packing with steel tape
C1	Disassembly is done manually; no emissions are associated in this stage
C2	Transport from customer to waste treatment plant based on provided distances. Only road transports are used: lorry 16-32 metric ton, EURO5
C3	Preparation for steel recycling (waste sorting)
C4	Final disposal: landfilling of not recycled part of waste (5%)*
D	Benefits from steel recycling

*Waste treatment scenario for metals is based on *PEFCR Metal Sheets, 2019*.

Allocation

This study allocates manufacturing data between all products by mass. Electricity, heat, water use, waste, direct emissions and packaging are allocated based on production volumes in 2022.

Restrictions to the use of the EPD

The EPD is relevant only for the products range listed in section *Product information*. Information in this EPD shall be used only in reference to the products included in the scope.

RESULTS OF THE ENVIRONMENTAL PERFORMANCE INDICATORS

MANDATORY IMPACT CATEGORY INDICATORS ACCORDING TO EN 15804

Results per declared unit: 1 kilogram of temporary mobile fence product

Indicator	Unit	A1-A3	C1	C2	C3	C4	D
GWP-fossil	kg CO2 eq.	3,31E+00	0,00E+00	1,50E-02	3,33E-02	1,38E-04	-1,53E+00
GWP-biogenic	kg CO2 eq.	1,44E-02	0,00E+00	5,03E-06	1,48E-02	4,58E-08	-6,50E-04
GWP-luluc	kg CO2 eq.	1,20E-02	0,00E+00	7,33E-06	2,39E-05	1,85E-08	-4,90E-04
GWP-total	kg CO2 eq.	3,33E+00	0,00E+00	1,50E-02	4,65E-02	1,38E-04	-1,53E+00
ODP	kg CFC 11 eq.	7,44E-08	0,00E+00	3,41E-10	4,35E-10	2,21E-12	-3,34E-08
AP	mol H+ eq.	3,82E-02	0,00E+00	3,72E-05	1,53E-04	1,25E-06	-5,59E-03
EP-freshwater	kg P eq.	2,48E-04	0,00E+00	1,26E-07	9,68E-07	5,38E-10	-7,26E-05
EP-marine	kg N eq.	3,70E-03	0,00E+00	9,92E-06	6,05E-05	5,78E-07	-1,24E-03
EP-terrestrial	mol N eq.	1,37E-01	0,00E+00	1,04E-04	4,85E-04	6,29E-06	-1,44E-02
POCP	kg NMVOC eq.	1,46E-02	0,00E+00	6,07E-05	1,56E-04	1,87E-06	-7,67E-03
ADP-minerals&metals*	kg Sb eq.	9,46E-05	0,00E+00	4,20E-08	4,37E-07	5,51E-11	-1,39E-06
ADP-fossil*	MJ	3,65E+01	0,00E+00	2,28E-01	3,23E-01	1,80E-03	-1,57E+01
WDP*	m3	1,38E+00	0,00E+00	1,09E-03	3,69E-03	3,89E-06	-3,17E-01
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.*

The results of modules A1-A3 shouldn't be used without considering the results of module C.

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.

ADDITIONAL MANDATORY IMPACT CATEGORY INDICATORS

Results per declared unit: 1 kilogram of temporary mobile fence product

Indicator	Unit	A1-A3	C1	C2	C3	C4	D
GWP-GHG[1]	kg CO_2 eq.	3,33E+00	0,00E+00	1,50E-02	4,75E-02	1,38E-04	-1,53E+00

RESOURCE USE INDICATORS

Results per declared unit: 1 kilogram of temporary mobile fence product

Indicator	Unit	A1-A3	C1	C2	C3	C4	D
PERE	MJ	3,78E+00	0,00E+00	3,34E-03	3,18E-02	5,31E-05	-5,64E-01
PERM	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
PERT	MJ	3,78E+00	0,00E+00	3,34E-03	3,18E-02	5,31E-05	-5,64E-01
PENRE	MJ	3,65E+01	0,00E+00	2,28E-01	3,23E-01	1,80E-03	-1,57E+01
PENRM	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
PENRT	MJ	3,65E+01	0,00E+00	2,28E-01	3,23E-01	1,80E-03	-1,57E+01
SM	kg	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
NRSF	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
FW	m3	1,06E-02	0,00E+00	3,99E-05	7,99E-05	1,80E-07	-2,52E-03
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						

[1] 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 CO_2 is set to zero.

WASTE INDICATORS

Results per declared unit: 1 kilogram of temporary mobile fence product

Indicator	Unit	A1-A3	C1	C2	C3	C4	D
Hazardous waste disposed	kg	1,36E-04	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Non-hazardous waste disposed	kg	9,82E-02	0,00E+00	0,00E+00	5,00E-02	0,00E+00	0,00E+00
Radioactive waste disposed	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00

OUTPUT FLOW INDICATORS

Results per declared unit: 1 kilogram of temporary mobile fence product

Indicator	Unit	A1-A3	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
Material for recycling	kg	0,00E+00	0,00E+00	0,00E+00	9,22E-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
Exported energy, electricity	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Exported energy, thermal	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00

REFERENCES

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