

Environmental Product Declaration



In accordance with ISO 14025 and EN 15804:2012+A2:2019 for:

1000 kg of Steel Profiles and Accessories

CPC 42190-Other structures (except prefabricated buildings) and parts of structures, of iron, steel or aluminium; plates, rods, angles, shapes, sections, profiles, tubes and the like, prepared for use in structures, of iron, steel or aluminium;

from

LANIK I S.A.



EPD owner and address:

Programme:

Programme operator:

EPD registration number:

Publication date:

Valid until:

LANIK I S.A. Mundaiz 8, 20012 Donostia (Spain), www.lanik.com

The International EPD® System, www.environdec.com

EPD International AB

S-P-02476

2021-01-20

2026-01-20

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



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

CEN standard EN 15804 serves as the Core Product Category Rules (PCR)
Product category rules (PCR): PCR 2019:14 Construction products, version 1.1
PCR review was conducted by: The Technical Committee of the International EPD® System. See www.environdec.com/TC 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 .
Independent third-party verification of the declaration and data, according to ISO 14025:2006: ☐ EPD process certification ☒ EPD verification
Third party verifier: Tecnalia R&I Certificacion, SL Auditor: Maria Feced info@tecnaliacertificacion.com Accredited by: ENAC n°125/C-PR283 accreditation.
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 from different programmes may not be comparable. EPDs of construction products may not be comparable if they do not comply with EN 15804. For further information about comparability, see EN 15804 and ISO 14025.

Company information

Owner of the EPD: LANIK I S.A.

Contact person:

Jose Javier Lapitz.

Product Quality, Prevention and Environment Coordination

jjlapitz@lanik.com

Description of the organisation:

Since 1977, LANIK offers own designed structure solutions. The experience gathered during all these years allows us to provide our structures with the solutions that best suit our clients' requirements in each of the stages of the project - design, manufacturing and assembly. We rely on a multidisciplinary team to offer structural solutions for roofs, facades and retractable projects

LANIK has its own production plant, where it connects design and manufacture processes through its in-house developed CAM system. All elements are manufactured with CNC machines.

LANIK has set itself the vision of being a benchmark in enveloping systems, balancing automation with the maximum adaptation to the needs of our clients. All of this while maintaining a mix of projects that allows us to tackle new markets and trends, and guarantees us a solid business. To foster it, a management system based on excellent management practices has been implemented. LANIK develops products and processes under criteria that take into account all applicable requirements, current legislation, respect and environmental protection and social promotion.

Product-related or management system-related certifications:

LANIK is committed to minimizing the environmental impact of its activity, through the responsible and efficient use of natural resources and reducing, as far as possible, waste, discharges and atmospheric emissions, as well as the prevention of pollution.

In LANIK we have the following certificates that guarantee the quality and sustainability of our products and their applications in projects:

- ISO 9001:2015
- ISO 14001:2015
- CE Marking EN 1090-1:2009+A1:2011:EXC4
- DIT: N° 583p/17
- Moscow Voluntary Certification

Name and location of production site(s):

LANIK I S.A.

Polígono Industrial Asteasu.

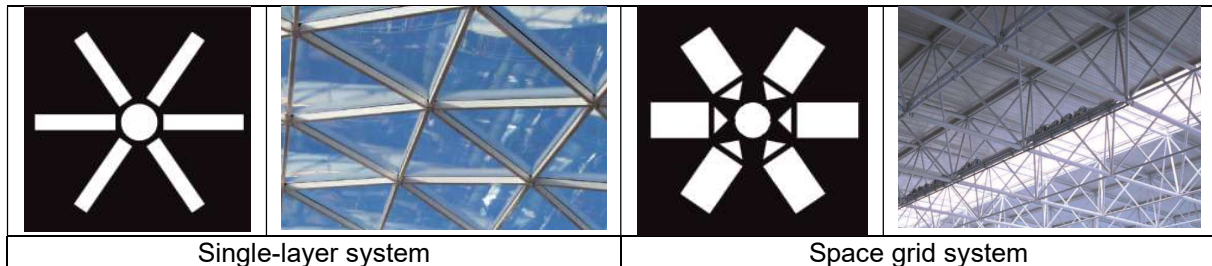
B Gunea 45ª, 45B, 45C

20159 Asteasu, Gipuzkoa (Spain)

Product information

Product name: Steel profiles and accessories

Product description: The product consists on a composition of steel profiles, the connecting nodes between the profiles (discs or spheres) and accessories (caps or covers, bolts and nuts). The applications are in the form of Single-layer system and Space grid system.



The application for Single-layer or Transparent Structures enhances even more glazed decks, where covered space stands out because of the extreme transparency.

With these structures, architects and engineers can design authentic "shells", with a total absence of structural elements, where the structure hardly has thickness and seems to defy the laws of physics.

The space grid system is an architectural solution with some qualities well differentiated over another type of structures: Versatility and adaptability distinguish our space truss systems, whose esthetic appeal makes them ideal for small-scale awnings, and whose ability to easily accommodate point loads at almost any location makes possible the execution of long-span structures. With a track record of success in such varied applications as sports halls, shopping centers, airport concourses, airplane hangars, running walls, industrial pavilions, etc.

UN CPC code: 42190-Other structures (except prefabricated buildings) and parts of structures, of iron, steel or aluminium; plates, rods, angles, shapes, sections, profiles, tubes and the like, prepared for use in structures, of iron, steel or aluminium;

LCA information

Declared unit: 1000 kg steel profiles and accessories.

Reference service life: RSL is not relevant for this EPD.

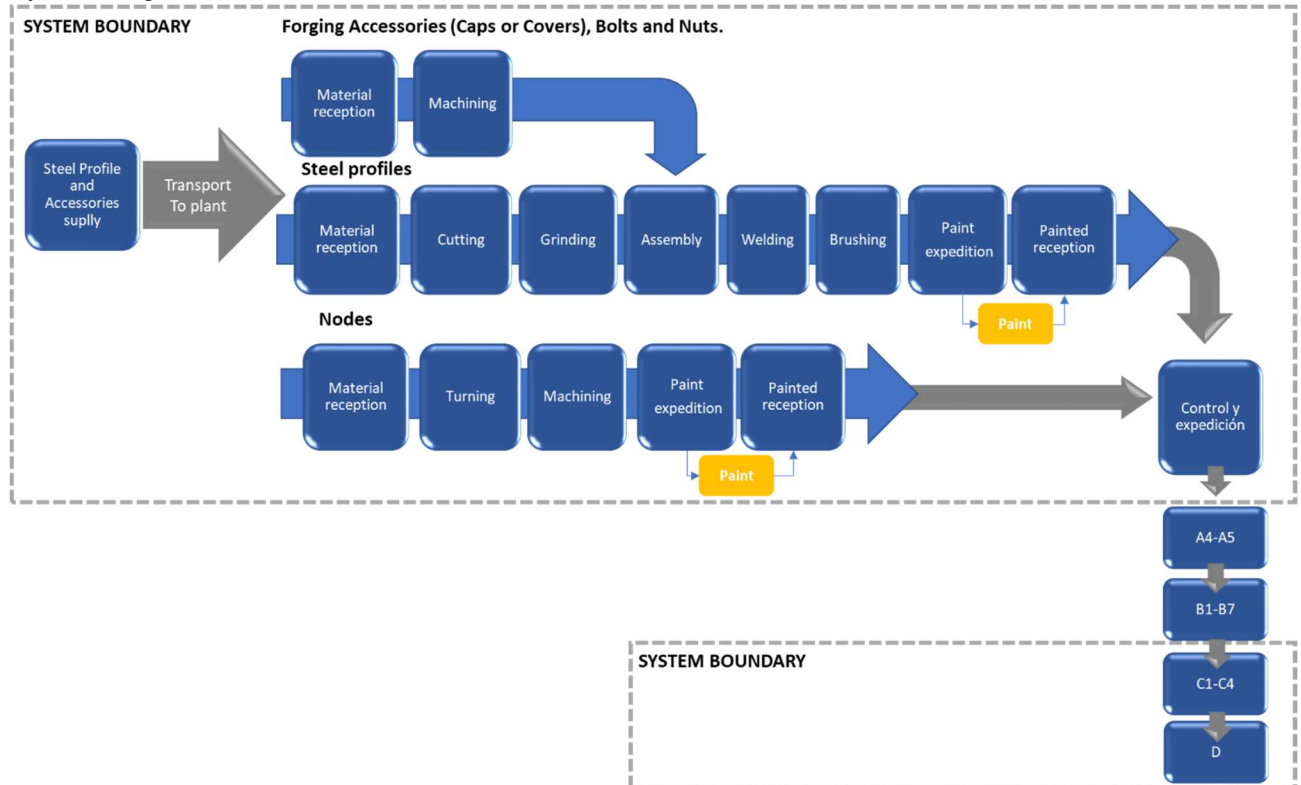
Time representativeness: 2019.

Geographical scope: Global.

Database(s) and LCA software used: All the data used to model the process and obtain the Life Cycle Inventory are specific data and have been obtained by measurements made during the year 2019. They are representative of the different processes implemented during the manufacturing process. The data has been measured directly at the company's own premises. In addition, the most complete and highest quality European life cycle inventory database, Ecoinvent 3.6, has been used, as this database contains the most extensive and updated information and its scope coincides with the geographical, technological and temporal area of the project. The LCA was modelled with Simapro 9.1.1.1.

Description of system boundaries: Cradle to gate with modules C1–C4 and module D (A1–A3 + C + D). The life cycle stages A4–A5, B1–B7 were excluded from the LCA study.

System diagram:



Manufacturing process:

The production takes place in following steps:

a) Steel profiles

- Reception of the steel bars
- Cutting of the tube.
- Grinding of the tube.
- Assembly
- Welding of the tubes to the accessories (conical caps or covers, Nuts & Bolts).
- Preparation of surface and painting of the bars (subcontracted operation)
- Classification and preparation for sending to site.

b) Nodes

- Reception of the steel bars or forged Spheres
- Turning and machining
- Preparation of surface and painting (subcontracted operation).
- Classification and preparation for sending to site.

c) Forging Accessories (Caps or Covers), Bolts and Nuts.

- Reception of the material
- Machining
- Preparation for Assembly

More information: For more information please visit <http://www.lanik.com>

Author of the Life Cycle Assessment:

IK ingenieria

Av. Cervantes 51, Edif. 10, planta 5, dpto.

748970 Basauri, Bizkaia (Spain)

Data quality

The environmental impact of the steel profiles and accessories has been calculated based on the international standards established for the development of environmental product declarations, such as ISO 14025 for the preparation of the environmental product declaration, ISO 14040 and ISO 14044 for the preparation of the life cycle analysis, UNE-EN 15804_2012+A2_2020 (MARCH 2020) and the Product Category Rules PCR -"2019:14 CONSTRUCTION PRODUCTS " (Version 1.1) of the CPC 42190. Data has been collected in 2019 and is representative of that year. Data for raw material supply, transport to fabrication plant and production (A1-A3) is based on specific consumption data for the factory at Asteasu. Generic background datasets were used for the downstream processes. Sima. Pro v9.1.1.1. software was used to prepare the life cycle analysis together with the Ecoinvent 3.6 database. Characterization factors from EN15804: 2012 + A2:2019.

Assumptions

The following assumptions have been made in this EPD:

- ✓ It does not include the manufacturing processes of the capital goods or spare parts and/or maintenance with a life of more than three years.
- ✓ The environmental impact of infrastructure for general management, office, and headquarters operations is not included.
- ✓ The impact caused by people (common activities, travel for work...) will not be considered.
- ✓ The processes associated with fuel production are intrinsically included in the indicators in Ecoinvent's database used in carrying out the LCA.
- ✓ The environmental impact of external transport has been calculated using lorries from the Ecoinvent 3.6 database. These lorries have been selected to reflect the most realistic scenario possible.

Cut-off rules

The standard ISO 14025 and the PCR -"2019:14 CONSTRUCTION PRODUCTS" indicate that the life cycle inventory data should include a minimum of 95% of the total inputs (materials and energy) for each stage. This cut-off rule does not apply for hazardous materials and substances. No such cut-off criteria have been taken into account in this study.

Allocation

It has not been necessary to make any load allocation between products and co-products. The consumption of materials and energy, as well as machine maintenance and auxiliary materials, have been allocated by the total tons of profiles and accessories produced.

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

Spanish Residual National production mix, low voltage (production of transmission lines, in addition to direct emissions and losses in grid) electricity is considered for the manufacturing process (A3).

Electricity mix	Amount	Units
Spanish residual electricity mix (2019)	0,44	Kg CO ₂ -eqv/kWh

LCA Scenarios and additional technical information

Dismantling/demolition (module C1):

The consumption of energy (electricity and diesel) of elevators, manipulators, and cranes is considered. These consumptions have been based on LANIK's own data.

Transport (module C2)

With a collection rate of 100%, the transports are carried out by lorry (EURO 5) over 50 km.

Waste processing (modules C3 and C4)

A recycling ratio of 95% is considered in accordance with the recycling rate (R2) for building steel sheets, established in the Annex C of the Environmental Footprint Method. The remaining 5% is considered to be landfilled.

The recycling percentage is representative of the scope of the EPD. Given the type of material being treated (economic value) and the ease of disassembling the product, a high degree of recyclability of the product is justified internationally.

In module C3, the impact derived from the separation of the steel in the waste management plant has been included.

Recyclability potentials (module D)

Module D contains credits from the recycling of profiles and accessories in module C3. The steel recycled is credited with the avoided production of the raw material they would be displacing in the technosphere if recycled.

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

	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	MND	MND	MND	MND	MND	MND	MND	MND	MND	x	x	x	x	x
Geography	EU	EU	EU	MND	MND	MND	MND	MND	MND	MND	MND	MND	GLO	GLO	GLO	GLO	GLO
Specific data	>90%					-	-	-	-	-	-	-	-	-	-	-	-
Variation – products	-					-	-	-	-	-	-	-	-	-	-	-	-
Variation – sites	-					-	-	-	-	-	-	-	-	-	-	-	-

Content information

Product components	Weight, kg	Post-consumer material, weight-%	Renewable material, weight-%
Steel	9,95E+02	77,78%	0%
Paint	5,00E+00	0%	0%
TOTAL	1,00E+03	77,36%	0%
Packaging materials	Weight, kg	Weight-% (versus the product)	
Wooden boxes	2,48E+01	2,48%	
Straps	1,99E+00	0,20%	
Packing plastic film	5,86E-02	0,01%	
TOTAL	2,68E+01	2,68%	

Packaging: The product is transported to the customers in wooden boxes, with steel straps and plastic packing film.

Recycled material: An average of 77,78% of the steel content of the products corresponds to post-consumer scrap.

No substances included in the Candidate List of Substances of Very High Concern for authorization under REACH Regulations are present in the steel profiles and accessories manufactured by LANIK, either above the threshold for registration with the European Chemicals Agency or above 0,1% (wt/wt).

Environmental Information

Potential environmental impact – mandatory indicators according to EN 15804

Results per functional or declared unit							
Indicator	Unit	A1-A3	C1	C2	C3	C4	D
GWP-fossil	kg CO ₂ eq.	1,63E+03	9,94E+01	8,33E+00	4,67E-01	2,63E-01	-8,08E+01
GWP-biogenic	kg CO ₂ eq.	-2,82E+01	7,18E-02	4,45E-03	4,21E-02	5,22E-04	3,68E-01
GWP-luluc	kg CO ₂ eq.	5,62E+00	4,86E-02	2,91E-03	9,12E-04	7,34E-05	-1,54E-02
GWP-total	kg CO ₂ eq.	1,61E+03	9,95E+01	8,34E+00	5,10E-01	2,64E-01	-8,05E+01
ODP	kg CFC 11 eq.	1,53E-04	2,08E-05	1,89E-06	8,93E-08	1,08E-07	-3,54E-06
AP	mol H ⁺ eq.	1,13E+01	3,69E-01	3,41E-02	3,31E-03	2,50E-03	-3,51E-01
EP-freshwater	kg PO ₄ ³⁻ eq.	4,88E+00	1,59E-02	1,87E-03	1,24E-03	8,29E-05	-9,03E-02
EP-freshwater	kg P eq.	1,59E+00	5,17E-03	6,10E-04	4,05E-04	2,70E-05	-2,94E-02
EP-marine	kg N eq.	2,01E+00	1,18E-01	1,02E-02	7,63E-04	8,64E-04	-7,58E-02
EP-terrestrial	mol N eq.	2,13E+01	1,29E+00	1,12E-01	8,14E-03	9,48E-03	-7,55E-01
POCP	kg NMVOC eq.	7,39E+00	3,95E-01	3,42E-02	2,10E-03	2,75E-03	-4,29E-01
ADP-minerals&metals*	kg Sb eq.	1,08E-01	2,08E-04	2,26E-04	8,19E-06	2,41E-06	-1,46E-04
ADP-fossil*	MJ	2,38E+04	1,46E+03	1,26E+02	1,81E+01	7,36E+00	-8,07E+02
WDP	m ³	7,87E+02	6,06E+00	3,50E-01	1,46E-01	3,30E-01	1,42E+00
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.

Potential environmental impact – additional mandatory and voluntary indicators

Results per functional or declared unit						
Indicator	A1-A3	C1	C2	C3	C4	D
GWP-GHG ¹	1,61E+03	9,95E+01	8,34E+00	5,10E-01	2,64E-01	-8,05E+01

Use of resources

Results per functional or declared unit							
Indicator	Unit	A1-A3	C1	C2	C3	C4	D
PERE	MJ	2,32E+03	5,10E+01	1,77E+00	1,08E+01	5,95E-02	-1,31E+0
PERM	MJ	4,36E+02	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
PERT	MJ	2,76E+03	5,10E+01	1,77E+00	1,08E+01	5,95E-02	-1,31E+0
PENRE	MJ	2,38E+04	1,46E+03	1,26E+02	1,81E+01	7,36E+00	-8,07E+02
PENRM	MJ.	9,06E+01	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
PENRT	MJ	2,38E+04	1,46E+03	1,26E+02	1,81E+01	7,36E+00	-8,07E+02
SM	kg	9,03E+02	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	m ³	2,34E+01	1,33E-01	1,32E-02	3,57E-02	7,86E-03	-1,09E-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 production and output flows

Waste production

Results per functional or declared unit							
Indicator	Unit	A1-A3	C1	C2	C3	C4	D
Hazardous waste disposed	kg	8,34E-02	3,57E-03	3,29E-04	1,15E-05	1,10E-05	-8,22E-03
Non-hazardous waste disposed	kg	4,96E+02	2,18E+00	6,01E+00	6,29E-02	5,00E+01	-7,12E+00
Radioactive waste disposed	kg	1,06E-01	1,01E-02	8,57E-04	2,02E-04	4,83E-05	-8,84E-04

¹ The indicator includes all greenhouse gases included in GWP-total but excludes biogenic carbon dioxide uptake and emissions and biogenic carbon stored in the product. This indicator is thus equal to the GWP indicator originally defined in EN 15804:2012+A1:2013.

Output flows

Results per functional or declared unit							
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	1,64E+02	0,00E+00	0,00E+00	9,50E+02	0,00E+00	0,00E+00
Materials for energy recovery	kg	4,01E-01	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

Information on biogenic carbon content

Results per functional or declared unit		
BIOGENIC CARBON CONTENT	Unit	QUANTITY
Biogenic carbon content in product	kg C	0,00E+00
Biogenic carbon content in packaging	kg C	1,13E+01

Note: 1 kg biogenic carbon is equivalent to 44/12 kg CO₂.

Additional information

No additional information is provided.

Information related to Sector EPD

This is an individual EPD®

Differences versus previous versions

This is the first version of the EPD®.

References

- ✓ General Programme Instructions of the International EPD® System. Version 3.01.
- ✓ ISO14040:2006. Environmental management. Life cycle assessment. Principles and framework.
- ✓ ISO14044:2006. Environmental management. Life cycle assessment. Requirements and guidelines.
- ✓ ISO 14020:2000 Environmental labels and declarations-General principles.
- ✓ ISO 14025:2010 Environmental labels and declarations-Type III Environmental Declarations-Principles and procedures.
- ✓ PCR -“2019:14 CONSTRUCTION PRODUCTS” (Version 1.1)
- ✓ UNE-EN 15804:2012+A2:2020. Sustainability of construction works -Environmental product declarations -Core rules for the product category of construction products

