Environmental Product Declaration

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

Stainless steel long and tube products

from

BE Group Oy Ab

Programme:	The International EPD® System, www.environdec.com
Programme operator:	EPD International AB
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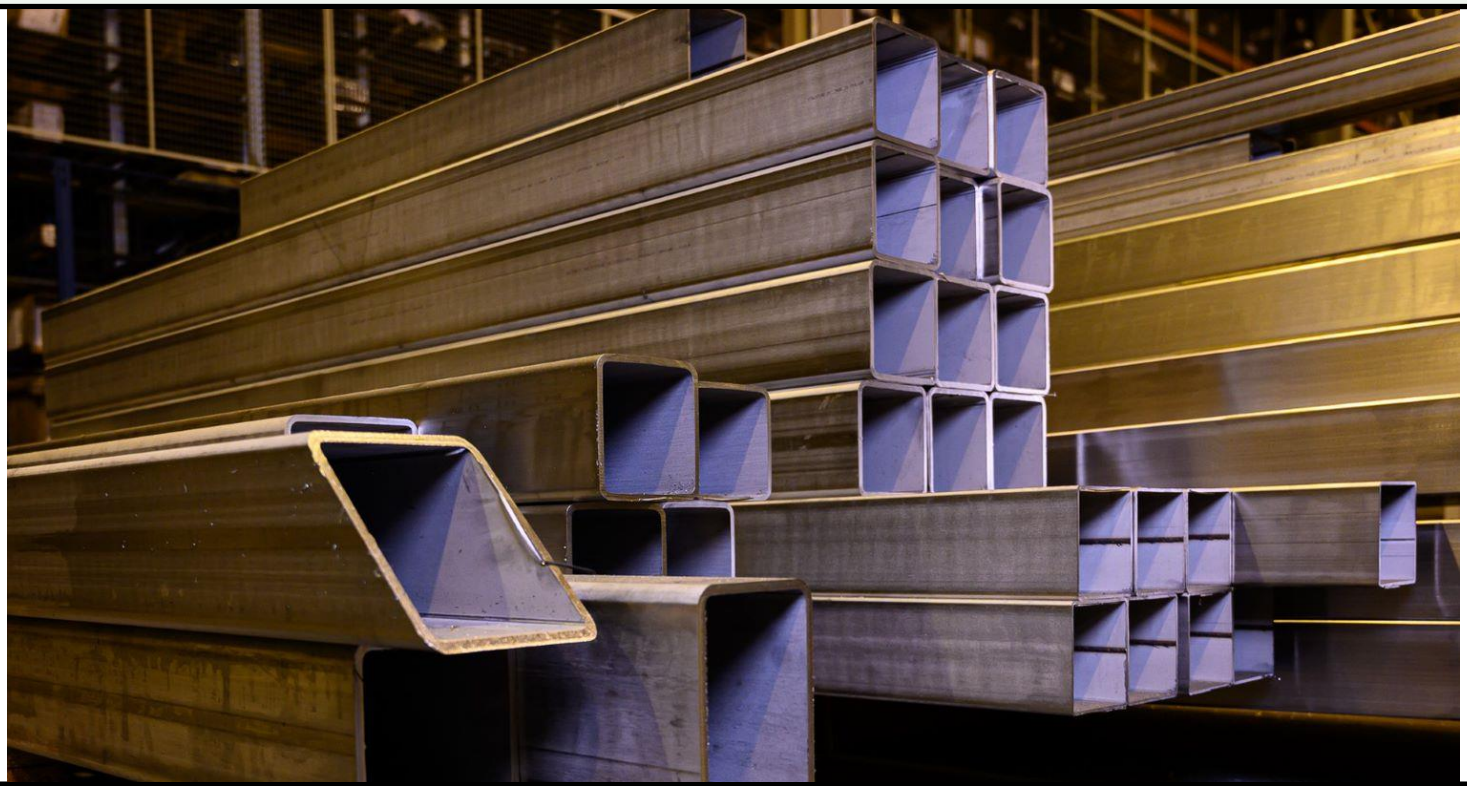
An EPD should provide current information and may be updated if conditions change. The stated validity is therefore subject to the continued registration and publication at www.environdec.com



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

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, Construction products, version 1.2.5. UN CPC code 412 – Products of iron or steel.
PCR review was conducted by: The Technical Committee of the International EPD® System. A full list of members available on www.environdec.com. The review panel may be contacted via info@environdec.com. Chair of the PCR review: Claudia A. Peña.
Life Cycle Assessment (LCA)
LCA accountability: Ecobio Oy
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: Pär Lindman, Miljögiraff AB 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:
BE Group Oy Ab

Contact:
info@begroup.fi

Description of the organisation:
BE Group is a trading and service company, offering a broad range of steel, stainless steel and aluminium products. With extensive expertise and efficient processes in purchasing, logistics and production, we offer inventory sales, production service and direct deliveries to customers based on their specific needs for steel and metal products. The customers mainly operate in the manufacturing and construction industries in Finland, the Baltic States and Sweden.

Product-related or management system-related certifications:
BE Group is certified according to ISO 14001 and ISO 9001.

Name and location of production site:
BE Group Oy Ab Lahti production site
Vanhanradankatu 42, FI-15101 Lahti, Finland

Product information

Product name:
Stainless steel long and tube products

Product identification:
Stainless steel long and tubular products have their chemical composition, mechanical properties and other delivery conditions specified according to the European standards EN 10088-1,-2, -3, -5, EN 10296-2, EN 10217-7 and EN 10272. The dimensional tolerances for long and tubular products are specified according to European standards.

Product description:
The benefits of using stainless steel are its resistance to corrosion and heat and, long life cycle, weldability and good formability properties.
Stainless steel is used in different industries and applications, such as building & infrastructure & architecture, automotive & transportation, paper & pulp industry, home appliances and process, medical and food industries.

Stainless steel long and tubular products can be 100% recycled into new raw material.

UN CPC code:
4123 – Flat-rolled products of steel, further worked than hot rolled or cold-rolled; flat-rolled products of silicon-electrical and high-speed steel, whether or not further worked.

Geographical scope:
Raw materials used for production come from Europe.

Transportation of final products to retail covers the main customer locations in Finland.

End-of-life activities are modelled based on global averages. Global average is considered as conservative approach although the main customer locations are in Finland.

LCA information

Functional unit / declared unit:
1 ton of stainless steel long and tube product

Reference service life:
The scenarios for modules B1-B5 are not given, thus the RSL is not specified in cradle to gate with options, modules C1–C4, and module D with additional module A4 type of EPD.

Time representativeness:
Data describing the acquisition of raw materials and manufacturing processes covers production year 2021.

Environmental product declarations used as background data for modelling are published less than five years ago.

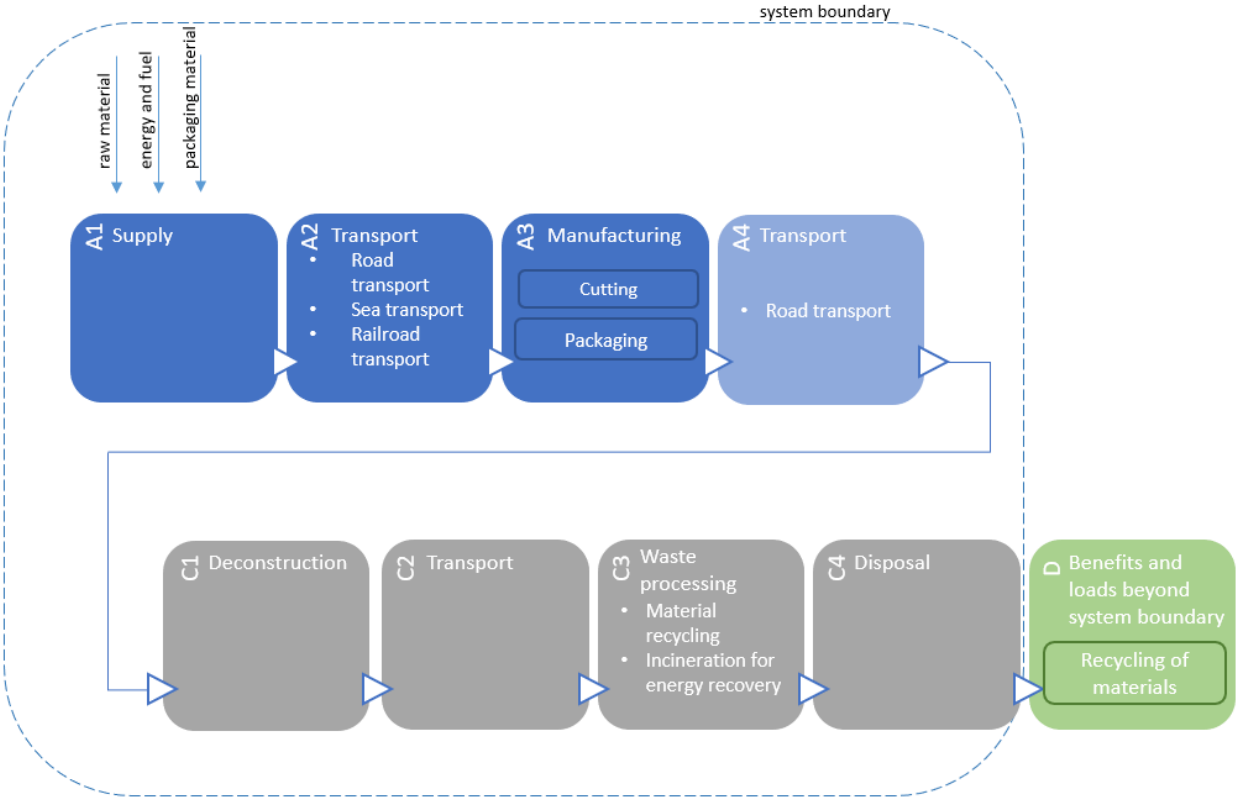
Database data used for modelling is from 2022 for ecoinvent data and 2021 for Industry data 2.0 data.

Databases and LCA software used:
Databases used for modelling are ecoinvent 3.8 and Industry data 2.0 (Worldsteel data).

SimaPro LCA software version 9.4.0.2 was used for modelling.

Description of system boundaries:
Cradle to gate with options, modules C1–C4, module D and with optional module A4.

System diagram:



The processing of stainless steel long and tubes consists of sawing. About 10% of the long and tubes are processed.

More information:

LCA practitioner:
Ecobio Oy, info@ecobio.fi
Explanatory material can be obtained from the EPD owner and/or LCA practitioner.

Cut-off rule:
1% cut-off rule was applied for input flows in the inventory.

Allocation:
Steel scrap produced in module A3 is treated as co-product and environmental impacts are allocated for it based on economic co-product allocation principles.

Scenarios:

Transports of stainless steel long and tube products to the construction site by road	
Parameter	**Unit**
Vehicle type	Lorry, >32 metric ton
Load capacity	37 % (ecoinvent 3.8)
Distance	211 km
Bulk density	1 757 kg/m3

End-of-life phase of stainless steel long and tube products	
Parameter	**Unit**
Collection process	Collected seperately
Transportation	50 km road
Recovery system	85% recycled
Disposal	15% to landfill

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

	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	X	ND	ND	ND	ND	ND	ND	ND	ND	X	X	X	X		X
Geography	EU27	EU27	FI	FI	-	-	-	-	-	-	-	-	FI	FI	GLO	GLO		GLO
Specific data used	0 %					-	-	-	-	-	-	-	-	-	-	-		-
Variation – products	0 %					-	-	-	-	-	-	-	-	-	-	-		-
Variation – sites	0 %					-	-	-	-	-	-	-	-	-	-	-		-

Content information

Product components	Weight, kg	Post-consumer material, weight-%	Biogenic material, weight-% and kg C/kg
Stainless steel hot rolled coil 1.4301	0,509	31,5 %	0 %
Stainless steel hot rolled coil 1.4404	0,093	34,2 %	0 %
Stainless steel long product 1.4301	0,265	30,9 %	0 %
Stainless steel long product 1.4404	0,133	37,0 %	0 %
TOTAL	1,000	32,3 %	0 %
Packaging materials	**Weight, kg**	**Weight-% (versus the product)**	**Weight biogenic carbon, kg C/kg**
Cardboard	0,0006	0,06 %	0,0003
Polyethylene	0,0003	0,03 %	0
Steel	0,0003	0,03 %	0
Wood	0,0120	1,2 %	0,0060
TOTAL	0,0132	1,32 %	0,0063

Stainless steel long and tube products do not contain substances which exceed the limits for registration with the European Chemicals Agency regarding the “Candidate List of Substances of Very High Concern for authorisation”.

Environmental Information

Potential environmental impact – mandatory indicators according to EN 15804

Results per 1 ton of stainless steel long and tube products								
Indicator	**Unit**	**A1-A3**	**A4**	**C1**	**C2**	**C3**	**C4**	**D**
GWP-fossil	kg CO_2 eq.	3,46E+03	1,91E+01	3,31E+00	8,31E+00	4,42E+02	7,90E-01	-2,18E+03
GWP-biogenic	kg CO_2 eq.	2,40E+02	1,95E-02	1,24E-03	7,48E-03	1,01E+01	8,57E-04	-1,68E+01
GWP-luluc	kg CO_2 eq.	6,50E+00	6,88E-03	3,30E-04	3,26E-03	6,65E-01	7,46E-04	-1,88E+00
GWP-total	kg CO_2 eq.	3,70E+03	1,92E+01	3,31E+00	8,32E+00	4,53E+02	7,91E-01	-2,20E+03
ODP	kg CFC 11 eq.	3,59E-05	4,57E-06	7,07E-07	1,92E-06	2,58E-05	3,20E-07	-9,68E-05
AP	mol H^+ eq.	2,71E+01	7,99E-02	3,44E-02	3,37E-02	1,87E+00	7,43E-03	-1,31E+01
EP-freshwater	kg P eq.	2,14E-02	1,19E-03	1,03E-04	5,35E-04	3,12E-01	7,23E-05	-7,24E-01
EP-freshwater	kg PO_4^{-3} eq.	7,91E-03	4,41E-04	3,79E-05	1,98E-04	1,15E-01	2,68E-05	-2,68E-01
EP-marine	kg N eq.	3,45E+00	2,44E-02	1,52E-02	1,02E-02	3,67E-01	2,58E-03	-2,18E+00
EP-terrestrial	mol N eq.	3,77E+01	2,67E-01	1,67E-01	1,11E-01	3,55E+00	2,83E-02	-2,34E+01
POCP	kg NMVOC eq.	1,07E+01	8,58E-02	4,59E-02	3,40E-02	9,80E-01	8,23E-03	-7,44E+00
ADP-minerals&metals*	kg Sb eq.	1,58E-01	4,39E-05	1,70E-06	2,89E-05	1,16E-03	1,80E-06	-7,24E-02
ADP-fossil*	MJ	4,61E+04	2,98E+02	4,54E+01	1,26E+02	6,93E+03	2,21E+01	-2,39E+04
WDP*	m^3	9,42E+04	1,03E+00	7,11E-02	3,76E-01	3,14E+02	9,93E-01	-6,72E+02
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 1 ton of stainless steel long and tube products								
Indicator	**Unit**	**A1-A3**	**A4**	**C1**	**C2**	**C3**	**C4**	**D**
GWP-GHG[1]	kg CO_2 eq.	3,47E+03	1,92E+01	3,31E+00	8,32E+00	4,45E+02	7,91E-01	-2,19E+03

Use of resources

Results per 1 ton of stainless steel long and tube products								
Indicator	**Unit**	**A1-A3**	**A4**	**C1**	**C2**	**C3**	**C4**	**D**
PERE	MJ	5,54E+03	3,80E+00	2,55E-01	1,77E+00	1,04E+03	1,88E-01	-6,28E+03
PERM	MJ	0,291176	0	0	0	0	0	0
PERT	MJ	5,54E+03	3,80E+00	2,55E-01	1,77E+00	1,04E+03	1,88E-01	-6,28E+03
PENRE	MJ	4,61E+04	2,98E+02	4,54E+01	1,26E+02	6,93E+03	2,21E+01	-2,39E+04
PENRM	MJ	0	0	0	0	0	0	0
PENRT	MJ	4,61E+04	2,98E+02	4,54E+01	1,26E+02	6,93E+03	2,21E+01	-2,39E+04
SM	kg	3,23E+02	0	0	0	0	0	0
RSF	MJ	0	0	0	0	0	0	0
NRSF	MJ	0	0	0	0	0	0	0
FW	m^3	8,61E+03	3,55E-02	2,59E-03	1,40E-02	1,07E+01	2,36E-02	-1,76E+01
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 production and output flows

Waste production

Results per 1 ton of stainless steel long and tube products								
Indicator	**Unit**	**A1-A3**	**A4**	**C1**	**C2**	**C3**	**C4**	**D**
Hazardous waste disposed	kg	6,19E-03	7,22E-04	1,24E-04	3,28E-04	3,66E-03	3,34E-05	-1,65E-02
Non-hazardous waste disposed	kg	1,23E+02	2,79E+01	6,06E-02	6,46E+00	3,23E+02	1,50E+02	-2,47E+03
Radioactive waste disposed	kg	2,04E-02	2,02E-03	3,13E-04	8,50E-04	4,57E-02	1,45E-04	-5,23E-02

Output flows

Results per 1 ton of stainless steel long and tube products								
Indicator	**Unit**	**A1-A3**	**A4**	**C1**	**C2**	**C3**	**C4**	**D**
Components for re-use	kg	0	0	0	0	0	0	0
Material for recycling	kg	0	0	0	0	850	0	0
Materials for energy recovery	kg	3,55	0	0	0	0,9	0	0
Exported energy, electricity	MJ	0	0	0	0	0	0	0
Exported energy, thermal	MJ	0	0	0	0	0	0	0

Additional environmental information

BE GROUP'S SUSTAINABILITY WORK

BE Group is working to reduce the Company's environmental impact and to be an economically, socially and ethically responsible actor. The sustainability issues are an important part of the operations and the goal is for them to be an integral part of daily activities and be taken into account in all strategic decisions and investments.
Read the Sustainability Report, which is a part of the Annual Report, here:
https://www.begroup.com/about-be-group/sustainability

PRIORITIZED AREAS

The sustainability work is based on the UN Global Compact's 10 principles for responsible business and this mean that we will:

Strive to create a safe, inclusive and stimulating workplace
Work in a goal-oriented way to limit the environmental and climate impact
Be a reliable partner to our business partners, suppliers and customers

References

General Programme Instructions of the International EPD® System. Version 4.0.
PCR 2019:14. Construction products. Version 1.2.5.
LCA Report – BE Group Oy Ab's steel and aluminium products. 2022-11-22.

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