Environmental Product Declaration

In accordance with ISO 14025:2006 for:

Unannealed process pipes produced in Pietarsaari

from

OSTP Holding Oy

Programme:	The International EPD® System, www.environdec.com
Programme operator:	EPD International AB
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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:	support@environdec.com

Accountabilities for PCR, LCA and independent, third-party verification
Product Category Rules (PCR)
PCR 2015:03 - Basic iron or steel products & special steels, except construction products (3.0.1)
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: Etteplan Finland 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: Valtteri Kainila from Ramboll Finland Oy. 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 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 ISO 14025.

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

Company information

Owner of the EPD: OSTP Holding Oy
Address:
OSTP Finland Oy Ab
Pohjantie 11 / Nordanvägen 11
68600 Pietarsaari / Jakobstad,
Finland
Switchboard: +358 20 778 5500

Description of the organisation:

OSTP – the Specialist in Welded Stainless Steel Tubular Products
OSTP is a market leader in welded stainless steel tubes and fittings, as well as specialised equipment for pressure corrosion applications. We're committed to customers and applications with the highest demands for quality. With an extensive range of products and grades, backed by application engineering, technical support, and development services, we give businesses a competitive and sustainable edge.

CUSTOMER APPLICATIONS
Used in a wide range of industries, OSTP's high-quality stainless steel tubes and fittings are trusted in the most demanding applications around the globe.

- Pulp & Paper
- Water
- Pharmaceutical
- Food & Dairy
- Construction
- Chemical
- Shipbuilding
- Metallurgy
- Oil & Gas
- Energy and Environmental Solution

Main route to markets is via stockholders.

SAFETY AND PERFORMANCE
Our business philosophy is based on highly focused customer service, best in class in safety & quality and optimized production and logistical processes. Our personnel are our most important asset and therefore, it is important for us to continuously develop our staff and our leadership.

QUALITY
We're committed to customers and applications with the highest demands for quality. OSTP's tubular products have a good reputation and are known for their reliability and high product quality.

SUSTAINABILITY
To safeguard tomorrow's climate, we're also raising the bar. Our commitment means reducing carbon levels throughout the supply chain, from our raw material sourcing to the delivery at our customer's gate.

Product-related or management system-related certifications: ISO 9001-, 14001- and 45001-certificates, PED 2014/68/EU, AD 2000-Merkblatt W 0

Name and location of production site: OSTP Finland Oy Ab, Jakobstad Works

Product information

Product name: Unannealed process pipes produced in Pietarsaari
Product identification: Manufactured according to EN 10217-7
Product description: Semi-finished unannealed process pipes for pressure corrosion and in challenging temperature conditions applications for various industries.

UN CPC code: Group 412, Class 4128
Geographical scope: Modules A1, A2: Finland, Belgium, Sweden, Germany and Italy, Module A3: Finland

LCA information

Declared unit: 1 ton (1000 kg) of unannealed process pipes at the manufacturer gate and its packaging (the weight of the packaging is not included in this 1000kg).
Reference service life: N/A
Time representativeness: The data is collected from year 2025. The database data are from 2026. The stainless steel LCI data is from 2020-2024.
Database(s) and LCA software used: Sphera LCA for Experts (version 10.9) software with Professional database (Sphera 2026) and Ecoinvent 3.12 database with cut-off system model (Ecoinvent 2026).
System diagram: See figure below
Description of system boundaries: Cradle to gate
Excluded life cycle stages: Transportation to retail, use stage and end-of-life stages are excluded.
Environmental impact assessment method: EN 15804 reference package based on EF 3.1

More information:
Cut-off rule: 1% cut-off rule is applied for input or output flows in the inventory. Cut-off allocation of waste burdens and benefits in accordance with the polluter pays principle as stipulated in the PCR. Excluded items are:

- Capital equipment, infrastructure and employee commute
- Production of packaging for stainless steel raw material
- Small auxiliary chemicals (< 0.05 % of inputs)

Allocation: Steel scrap produced in core process is treated as co-product and environmental impacts are allocated to it based on physical properties, and therefore, mass-based allocation is applied.
LCA partitioner: Etteplan Finland Oy, www.etteplan.com

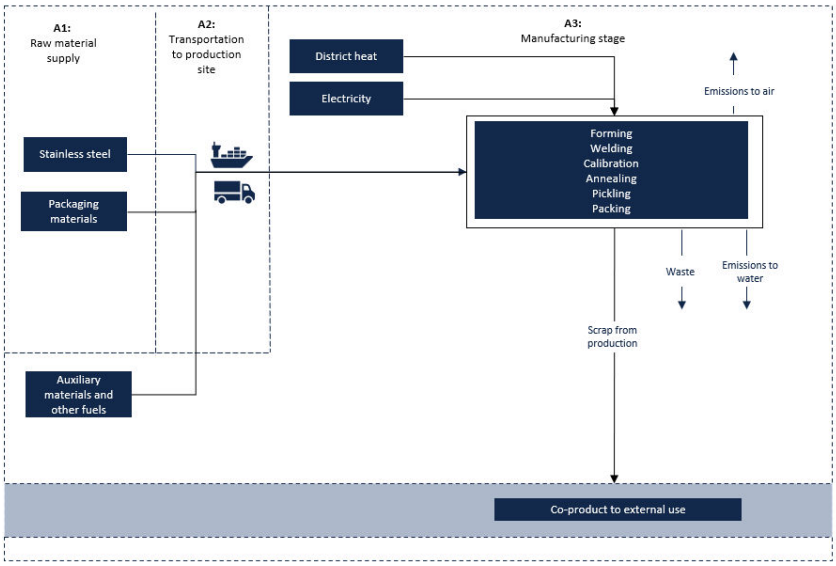

Figure 1. System diagram.

	Product stage		
	Raw material supply	Transport	Manufacturing
Module	**A1**	**A2**	**A3**
Modules declared	X	X	X
Geography	FI, DE, BE, IT, SE		FI
Share of primary data	94.1 %		

Module A1 includes raw material extraction and production of stainless steel with electric arc furnace route (EAF) and product packaging;

Module A2 comprises of transportation of stainless steel, packaging materials, auxiliary materials and fuels to production site.

Module A3 includes Production of stainless steel, production of auxiliary materials, production of consumed energy on site; transportation to, and treatment of waste; treatment of wastewater; emissions to environment. production of packaging materials, production of used energy, treatment of wastes. Heat used in manufacturing is from solid biomass. Electricity used in manufacturing is produced 100% with nuclear power and its emission factor is 0.005 kg CO2 eq./kWh (GWP-GHG).

Data quality:
Primary data of unannealed process pipes produced in Pietarsaari represents year 2025 and annual production inventory data is used as the basis of calculation. Modeling data is obtained from Sphera Professional 2026.1 and Ecoinvent 3.12 databases. Time-related, geographical and technological representativeness are assessed before using secondary data and overall, the data quality is good.

Share of specific data is < 94.1 % (see below table).

Process	Source type	Source	Reference year	Data category	Share of primary data, of GWP-GHG results for A1-A3
Stainless steel (A1)	EPD	EPD-IES- 0017255	2024	Primary data	3.2 %
Stainless steel (A1)	EPD	EPD-IES-0017264	2024	Primary data	77.6 %
Stainless steel (A1)	EPD	UL Environment: 4789825084.102.1	2022	Primary data	7.6 %
Stainless steel (A1)	EPD	UL Solutions: 4790380554.102.1	2023	Primary data	1.7 %
Stainless steel (A1)	EPD	EPD-IES- 0017270	2024	Primary data	0.5 %
Stainless steel (A1)	EPD	S-P-001727	2024	Primary data	0.4 %
Stainless steel (A1)	EPD	UL Solutions: 4790380554.101.1	2023	Primary data	1.3 %

Stainless steel (A1)	EPD	EPD-IES-0017040	2024	Primary data	1.8 %
Production emissions (A3)	Collected data	EPD Owner/ Sphera	2025	Primary data	0.0 %
Total share of primary data, of GWP-GHG results for A1-A3					94.1 %

Content declaration

Product

Element	wt.%	Environmental / hazardous properties
Iron	70.29	-
Carbon	0.02	-
Chromiun	17.26	-
Nickel	10.03	-
Molybdenum	1.92	-
Nitrogen	0.00	-
Titanium	0.05	-
Copper	0.02	-
Manganese	0.18	-
Cerium	0.01	-
Silicon	0.23	-
TOTAL	**100.0**	-

Product content	wt.%	Pre-consumer recycled material, mass-% of product	Post-consumer recycled material, mass-% of product	Biogenic material, mass-% of product	Biogenic material, kg C/ declared unit
Stainless steel (including alloys)	1000	0 %	71.0 %	0	0
TOTAL	1000	0 %	71.0 %	**0**	**0**

Packaging materials	Mass, kg	Mass-% (versus the product)	Biogenic material, kg C/product or declared unit
Cardboard	-	0 %	-
Wooden pallets, collars, bars	30.49	3 %	13.26
Strap polyethylene terephthalate	0.78	0 %	-
Plastic wrap polypropylene	0.19	0 %	-
Plastic wrap low density polyethylene	0.72	0 %	-
Paper wrap	1.70	0 %	0.73
Strap zinc-plated steel	0.86	0 %	-
Plastic bag high density polyethylene	-	0 %	-
TOTAL	**34.74**	3.47 %	13.99

All the stainless steel raw materials used by OSTP in the manufacturing of its products do not contain substances of very high concern (SVHC) as defined and listed per Article 57 and 59 (ECHA candidate list) of the REACH Regulation. There are no Annex XIV substances in the stainless steels used that

would require authorization. Additionally, all used stainless steel comply with the restrictions in Annex XVII of the REACH Regulation.

Packaging

Distribution packaging: Products are packed in cardboard boxes, bound with plastic straps and loaded on wooden pallets.

Recycled material

Provenience of recycled materials (pre-consumer or post-consumer) in the product: The product contains on average 71.0 % of post-consumer material.

Results of the environmental performance indicators

Results presented for 1 t of steel product.
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.

Impact category indicators

PARAMETER		UNIT	A1	A2	A3	TOTAL
Global warming potential (GWP)	Fossil	kg CO_2 eq.	1.87E+03	4.41E+01	2.78E+01	1.94E+03
	Biogenic	kg CO_2 eq.	3.03E+01	4.79E-02	8.08E-01	3.12E+01
	Land use and land transformation	kg CO_2 eq.	1.38E+00	1.80E-01	3.81E-02	1.60E+00
	TOTAL	kg CO_2 eq.	1.90E+03	4.43E+01	2.86E+01	1.98E+03
Ozone layer depletion (ODP)		kg CFC 11 eq.	2.01E-02	2.04E-11	5.41E-08	2.01E-02
Acidification potential (AP)		mol H^+ eq.	8.40E+00	1.36E-01	1.00E+00	9.53E+00
Eutrophication potential (EP)	Aquatic freshwater	kg P eq.	5.42E-01	1.07E-04	6.18E-03	5.48E-01
	Aquatic marine	kg N eq.	1.11E+00	5.37E-02	2.03E+00	3.19E+00
	Aquatic terrestrial	mol N eq.	1.22E+01	5.84E-01	4.82E+00	1.76E+01
Photochemical oxidant creation potential (POCP)		kg NMVOC eq.	4.50E+00	1.28E-01	1.14E+00	5.76E+00
Abiotic depletion potential (ADP)*	Metals and minerals	kg Sb eq.	4.60E-02	3.13E-06	1.17E-04	4.61E-02
	Fossil resources	MJ, net calorific value	1.68E+04*(1)	5.80E+02	4.77E+03	2.21E+04
Water deprivation potential (WDP)*		m^3 world eq. deprived	6.69E+02	1.75E-01	1.36E+01	6.83E+02

** 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.*
**(1) The result is subject to uncertainty arising from the EPD data used.*

Resource use indicators

PARAMETER		UNIT	A1	A2	A3	TOTAL
Primary energy resources – Renewable	Use as energy carrier	MJ	2.43E+02	3.93E+01	8.51E+02	1.13E+03
	Used as raw materials	MJ	5.13E+02	0.00E+00	0.00E+00	5.13E+02
	TOTAL	MJ	7.56E+02	3.93E+01	8.51E+02	1.65E+03
Primary energy resources – Non-renewable	Use as energy carrier	MJ	6.68E+03	5.80E+02	4.77E+03	1.20E+04
	Used as raw materials	MJ	5.67E+01	0.00E+00	0.00E+00	5.67E+01
	TOTAL	MJ	6.74E+03	5.80E+02	4.77E+03	1.21E+04
Secondary material		kg	7.10E+02	0.00E+00	0.00E+00	7.10E+02
Renewable secondary fuels		MJ	1.08E+00	0.00E+00	0.00E+00	1.08E+00
Non-renewable secondary fuels		MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Net use of fresh water		m^3	1.69E+02	1.24E-02	2.75E+00	1.71E+02

Waste indicators

PARAMETER	UNIT	A1	A2	A3	TOTAL
Hazardous waste disposed	kg	4.09E+02	2.67E-08	2.69E+01	4.36E+02
Non-hazardous waste disposed	kg	4.61E+02	1.08E-01	1.66E+01	4.77E+02
Radioactive waste disposed	kg	5.33E-02	8.96E-04	1.59E+00	1.64E+00

Output flow indicators

PARAMETER	UNIT	A1	A2	A3	TOTAL
Components for reuse	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Material for recycling	kg	0.00E+00	0.00E+00	5.71E+00	5.71E+00
Materials for energy recovery	kg	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
Exported energy, thermal	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00

The results of the GWP-GHG indicator

The indicator is given per declared unit.

PARAMETER	UNIT	A1	A2	A3	TOTAL
GWP-GHG*	kg CO_2 eq.	1.91E+03	4.43E+01	2.87E+01	1.98E+03
Acronyms	GWP-GHG: Global warming potential greenhouse gas				

Disclaimer (*) 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.

Differences versus previous versions

2023-01-04 (Original version)
2025-01-02 (Version 1)
2026-02-10 (Version 2)

This EPD shows higher climate impact in the downstream and core due to change of raw materials suppliers and transportation distance from supplier. The total climate impact is higher than the previous EPD from 1.98E+03 kgCO2e/tonne instead of 1.89E+03, i.e. 5% increase.

Difference between 2026 and 2024 in climate impact per 1 000 kg of annealed butt weld fittings produced in Pietarsaari.

PARAMETER	UNIT	Upstream	Core	TOTAL
Global warming potential (GWP), total 2026	kg CO_2 eq.	1.90E+03	7.29E+01	1.98E+03
Global warming potential (GWP), total 2024	kg CO_2 eq.	1.83E+03	6.06E+01	1.89E+03

References

Ecoinvent. 2026. Ecoinvent 3.12 database (cut-off system model).

General Programme Instructions of the International EPD® System. Version 5.0.1.

International EPD System: PCR 2015:03 Basic iron or steel products & special steels, except construction steel products. Version 3.0.1. 28 pages. Valid until 2029-07-14.

ISO 14025:2010 Environmental labels and declarations. Type III Environmental Declarations – Principles and procedures

ISO 14040. 2006. Environmental management. Life cycle assessment. Principles and framework.

ISO 14044. 2006. Environmental management. Life cycle assessment. Requirements and guidelines.

Kumpulainen. 2026. Life cycle assessment of tubular stainless steel products for environmental product declaration.

Sphera. 2026. Sphera Professional database 2026.

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