Environmental Product Declaration

In accordance with ISO 14025:2006 for:

Unannealed butt weld fittings produced in Pietarsaari

from

OSTP Holding Oy

Programme:	The International EPD® System, www.environdec.com
Programme operator:	EPD International AB
EPD registration number:	EPD-IES-0007952:002
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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
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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 (2.1.1)
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: Hudai Kara
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: Sigita Židonienė, UAB Vesta Consulting 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, 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
Our environmental focus sets OSTP apart as the most sustainable supplier in our industry. Compared to others, we are already doing well in the industry. 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.

OUR TARGET IS TO BE CO_2 NEUTRAL BY 2025 WITHIN OUR SITES

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 butt weld fittings produced in Pietarsaari
Product identification: Manufactured according to EN 10253-3 / EN 10253-4

Product description: Butt weld fittings for pressure corrosion applications
UN CPC code: Group 412, Class 4129
Geographical scope: Finland

LCA information

Declared unit: 1 ton (1000 kg) of annealed process pipes at the manufacturer gate.
Reference service life: N/A
Time representativeness: The data is collected from year 2023. The database data are from 2023. The stainless steel LCI data is from 2023.
Database(s) and LCA software used: Sphera LCA for Experts (version 10.8) software with Professional database (Sphera 2024) and Ecoinvent 3.10 database with cut-off system model (Ecoinvent 2024).
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.

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 practitioner: Etteplan Finland Oy, www.etteplan.com

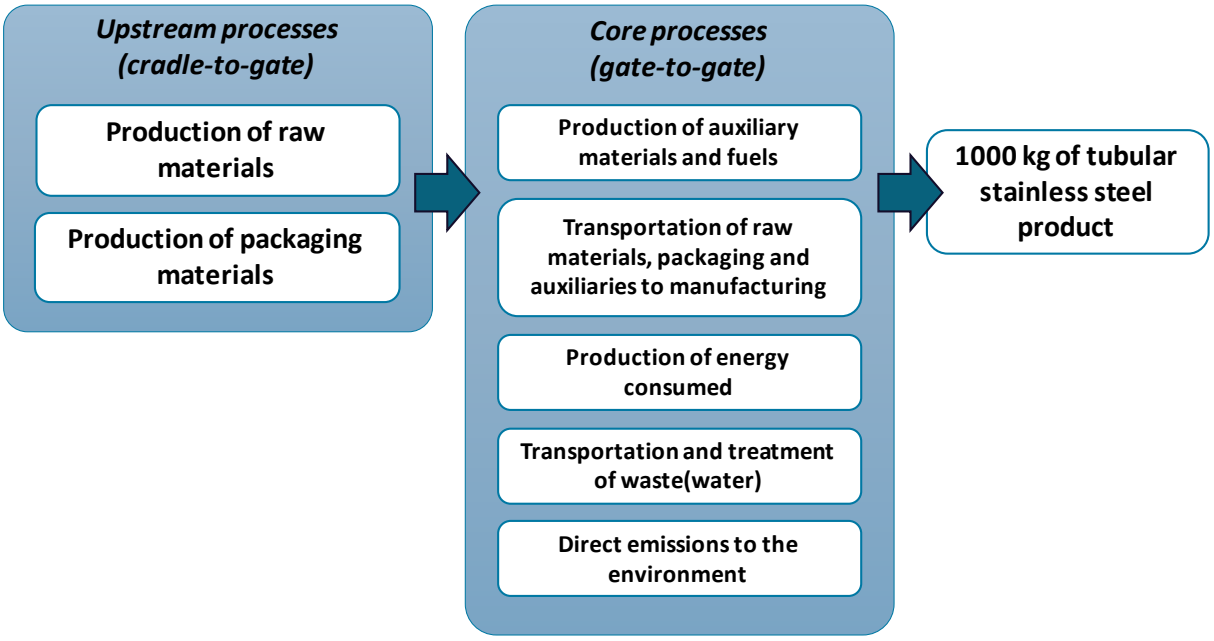

Figure 1. System diagram.

Content declaration

Product

Element	wt.%	Environmental / hazardous properties
Iron	71.80	-
Carbon	0.03	-
Chromium	17.53	-
Nickel	9.37	-
Molybdenum	1.23	-
Nitrogen	0.00	-
Titanium	0.04	-
Copper	0.004	-
Manganese	0.007	-
Silicon	0.003	-
Cobalt	0.001	-
TOTAL	100	

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 69.8 % of post-consumer material.

Results of the environmental performance indicators

Downstream processes are not included in the scope of PCR 2015:03 and are not shown in the result tables below.

Impact category indicators

PARAMETER		UNIT	Upstream	Core	TOTAL
Global warming potential (GWP)	Fossil	kg CO_2 eq.	1.89E+03	1.19E+02	2.01E+03
	Biogenic	kg CO_2 eq.	3.40E+01	7.45E-01	3.48E+01
	Land use and land transformation	kg CO_2 eq.	4.52E+00	2.63E+00	7.14E+00
	TOTAL	kg CO_2 eq.	1.93E+03	1.22E+02	2.05E+03
Ozone layer depletion (ODP)		kg CFC 11 eq.	2.17E-02	5.20E-06	2.17E-02
Acidification potential (AP)		mol H^+ eq.	8.03E+00	4.48E-01	8.47E+00
Eutrophication potential (EP)	Aquatic freshwater	kg P eq.	5.65E-01	3.74E-03	5.69E-01
	Aquatic marine	kg N eq.	3.16E+00	1.74E-01	3.33E+00
	Aquatic terrestrial	mol N eq.	2.17E+01	1.63E+00	2.33E+01
Photochemical oxidant creation potential (POCP)		kg NMVOC eq.	6.57E+00	4.69E-01	7.04E+00
Abiotic depletion potential (ADP)*	Metals and minerals	kg Sb eq.	4.06E-02	5.20E-05	4.06E-02
	Fossil resources	MJ, net calorific value	2.18E+04	6.74E+03	2.86E+04
Water deprivation potential (WDP)*		m^3 world eq. deprived	7.40E+02	1.37E+01	7.53E+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.*

Resource use indicators

PARAMETER		UNIT	Upstream	Core	TOTAL
Primary energy resources – Renewable	Use as energy carrier	MJ	0.00E+00	1.56E+03	1.56E+03
	Used as raw materials	MJ	3.77E+03	0.00E+00	3.77E+03
	TOTAL	MJ	3.77E+03	1.56E+03	5.33E+03
Primary energy resources – Non-renewable	Use as energy carrier	MJ	1.03E+04	6.74E+03	1.70E+04
	Used as raw materials	MJ	1.26E+01	0.00E+00	1.26E+01
	TOTAL	MJ	1.03E+04	6.74E+03	1.71E+04
Secondary material		kg	6.98E+02	0.00E+00	6.98E+02
Renewable secondary fuels		MJ	1.77E-01	0.00E+00	1.77E-01
Non-renewable secondary fuels		MJ	0.00E+00	0.00E+00	0.00E+00
Net use of fresh water		m^3	1.86E+02	2.51E+00	1.89E+02

Waste indicators

PARAMETER	UNIT	Upstream	Core	TOTAL
Hazardous waste disposed	kg	3.74E+02	6.97E-01	3.75E+02
Non-hazardous waste disposed	kg	3.74E+02	2.41E+00	3.77E+02
Radioactive waste disposed	kg	1.90E+00	1.87E+00	3.77E+00

Output flow indicators

PARAMETER	UNIT	Upstream	Core	TOTAL
Components for reuse	kg	0.00E+00	0.00E+00	0.00E+00
Material for recycling	kg	1.05E+01	0.00E+00	1.05E+01
Materials for energy recovery	kg	2.84E+00	0.00E+00	2.84E+00
Exported energy, electricity	MJ	0.00E+00	0.00E+00	0.00E+00
Exported energy, thermal	MJ	0.00E+00	0.00E+00	0.00E+00

Differences versus previous versions

2023-01-04 (Version 1)
2025-01-02 (Version 2)
The inventory data have been updated since previous EPD of unannealed butt weld fittings produced in Pietarsaari was published in 2023. Changes include used software (from SimaPro to LCA for Experts), used databases (from only Ecoinvent to Sphera and Ecoinvent), Ecoinvent database version (from 3.8 to 3.10), and editorial changes (system boundary figure, texts). This EPD shows lower climate impact in the upstream and core processes due to reduction efforts undertaken by raw material supplier and due to smaller changes in several background datasets. The total climate impact is lower than the previous EPD from 2.05E+03 kgCO2e/tonne instead of 4.67E+03, i.e. 56% decrease.

Difference between 2024 and 2023 in climate impact per 1 000 kg of unannealed butt weld fittings produced in Pietarsaari.

PARAMETER	UNIT	Upstream	Core	TOTAL
Global warming potential (GWP), total 2024	kg CO_2 eq.	1.93E+03	1.93E+03	2.05E+03
Global warming potential (GWP), total 2023	kg CO_2 eq.	4.44E+03	2.27E+02	4.67E+03

References

Ecoinvent. 2024. Ecoinvent 3.10 database (cut-off system model).

General Programme Instructions of the International EPD® System. Version 3.01.

International EPD System: PCR 2015:03 Basic iron or steel products & special steels, except construction steel products. Version 2.0. 28 pages. Valid until 2024-03-27.

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

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

Kumpulainen & Kuusela. 2024. Life cycle assessment of tubular stainless steel products for environmental product declaration.

Sphera. 2024. Sphera Professional database 2024.

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