

# Environmental Product Declaration

In accordance with ISO14025:2006 and EN15804:2012+A2:2019

Welded and Pickled Stainless Steel Products



A Group Company of 

The Norwegian  
EPD Foundation

**Owner of the declaration:**

Øglænd System AS

**Product name:**

Welded and Pickled Stainless Steel  
Products

**Declared unit:**

1kg of Welded and Pickled Stainless Steel  
Products

**Product category /PCR:**

NPCR PART A and NPCR 013 Part B  
for Steel and Aluminum Construction  
Products (references to EN15804+A2).

**Program holder and publisher:**

The Norwegian EPD foundation

**Declaration number:**

NEPD-7969-7623-EN

**Registration number:**

NEPD-7969-7623-EN

**Issue date:** 30.10.2024

**Valid to:** 30.10.2029

## General information

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### Product:

Welded and Pickled Stainless Steel Products

### Program operator:

The Norwegian EPD Foundation  
Post Box 5250 Majorstuen, 0303 Oslo, Norway  
Tlf: +47 23 08 80 00  
e-mail: [post@epd-norge.no](mailto:post@epd-norge.no)

### Declaration number:

NEPD-7969-7623-EN

### This declaration is based on Product Category Rules:

NPCR PART A and NPCR 013 Part B for Steel and Aluminum Construction Products (references to EN15804+A2).

### Statement of liability:

The owner of the declaration shall be liable for the underlying information and evidence. EPD Norway shall not be liable with respect to manufacturer, life cycle assessment data and evidences.

### Declared unit:

1 kg of Welded and Pickled Stainless Steel Products

### Declared unit with option:

1 kg of Welded and Pickled Stainless Steel Products with options (A4, C1, C2, C3, C4, & D)

### Functional unit:

N/A

### Verification:

Independent verification of the declaration and data, according to ISO14025:2010

Internal

External



Silvia Vilčeková

Independent verifier approved by EPD Norway

### Owner of the declaration:

Øglænd System AS  
Contact person: Cecilie Vagle  
Phone: (+47) 92615525  
e-mail: [cecilie.vagle@oglaend-system.com](mailto:cecilie.vagle@oglaend-system.com)

### Manufacturer:

Øglænd System AS  
Klepp, Norway  
Phone: (+47) 51 78 81 00  
e-mail: [oglaend@oglaend-system.com](mailto:oglaend@oglaend-system.com)

### Place of production:

Øglænd System AS, Engelsvollvegen 264, 4353 Klepp St., Norway

### Management system:

NS-EN ISO 9001:2015  
NS-EN ISO 14001:2015  
NS-ISO 45001:2018  
EN1090-1:2009+A1:2011  
NO 985 748 128 MVA  
Organisation no:

### Issue date:

30.10.2024

### Valid to:

30.10.2029

### Year of study:

[xxxx]

### Comparability:

EPD of construction products may not be able to compare if they do not comply with EN 15804 and are seen in a building context.

### The EPD has been worked out by:

Modi Michael Elisa | Energiråd AS

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Approved



Manager of EPD Norway

# Product

## Product description

Øglænd System AS provides a wide range of products including multi discipline support, cable ladders, cable trays and accessories for low and high voltage cable management, tubing and instrumentation, piping and HVAC across industries such as Offshore oil and gas, renewable energies, power and distribution, ship building and infrastructure.

## Product specification

This EPD covers the products from Øglænd System AS that are made from stainless steel, and then machined, welded, and pickled. Stainless steel forms a protective chromium oxide layer when the alloy is exposed to air, hindering direct contact between the alloy and the corrosive environment. If a stainless steel component is damaged, a new chromium oxide layer forms, effectively resealing the damaged area. The steel grade used for these products is AISI 316L.

*Tabell 1 Products covered by this EPD*

Item Group no.	Name/ Designation
111	111 SPB-RF CableTray System
120	120 Mekano Support System
121	121 Mekano Support System - Starter Brackets
130	130 UNO Support System
140	140 Other Support - Perforated Profiles
141	141 Other Support - Accessories
156	156 SmartCleaT Cable Cleats
170	170 Equipment Rack, Stand, Tower and Brackets
171	171 Light Fitting Support - Floodlights and Handrails
199	199 No Discount Other Products

## Product manufacturing

The manufacturing of these products comprises the cutting, punching, forming, and welding of the steel input. In addition, these products are "pickled and passivated". This is a process to remove the heat tint that is created during welding. The heat tint is produced by an increase in the density of chromium at the surface and a corresponding decrease in the area below. As a result, the affected region is vulnerable to corrosion and less aesthetically pleasing. This is efficiently solved through "pickling and passivation", which cleans the area and allows a new protective chromium oxide layer to be established. The products covered by this EPD are produced by Øglænd System AS at their production site in Klepp, Norway

*Tabell 2 Material input (s) used to manufacture the included products*

Materials	Value	%
Stainless steel with alloys	1.00	100.00

## Market

Worldwide.

## Reference service life, product

Not relevant for cradle to gate with options

## Reference service life, building

Not relevant

## LCA: Calculation rules

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### Declared unit

1 kg Welded and Pickled Stainless Steel Products

### Cut-off criteria

All major raw materials and all the essential energy are included. The production process for raw materials and energy flows that are included with very small amounts (<1%) are not included. This cut-off rule does not apply for hazardous materials and substances.

### Allocation

The allocation of energy and ancillary material during production was determined by recorded production time for the different product groups. Waste was allocated using total waste streams from the factory and adjusted for the different product groups using mass allocation.

### Data quality

General requirements and guidelines concerning use of generic and specific data and the quality of those are as described in EN 15804: 2012, clause 6.3.6 and 6.3.7. The data is representative of temporal, geographical and technological requirements.

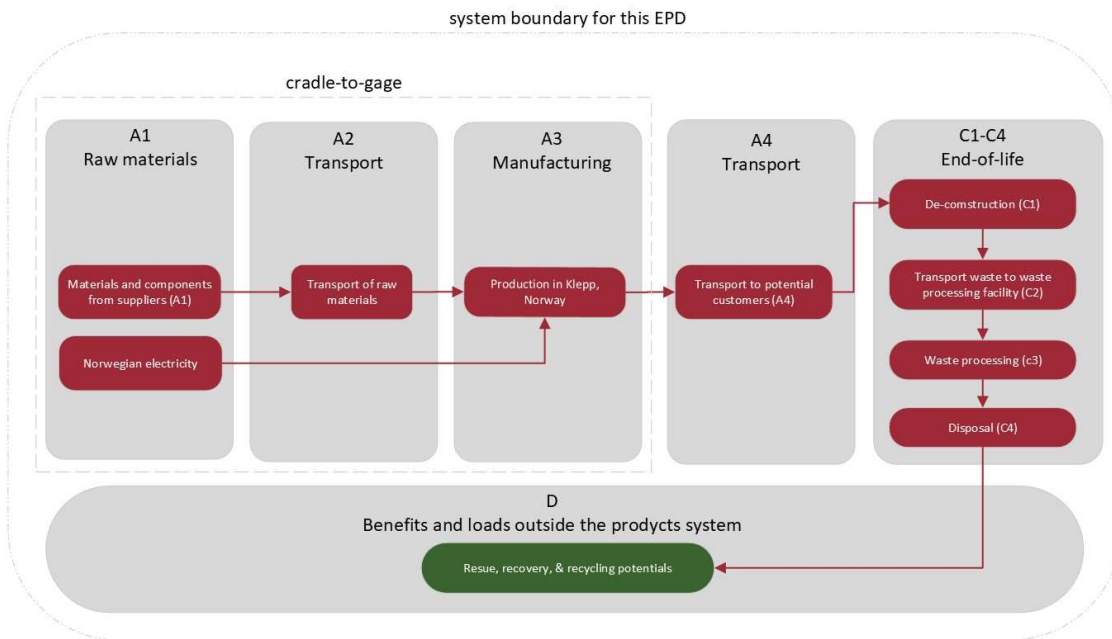
Data for use in module A3 is supplied by the manufacturer and consists of the recorded amount of specific material and energy consumption for the products studied. Specific data has been collected in 2017-2018. Generic data has been created or updated within the last 10 years, except for minor exceptions for generic data used that are slightly older than 10 years.

The geographic region of the production sites included in the calculation is Europe. The specific data from manufacturer is from one site, so no average data is used for several sites.

Data represents technology in use. All generic (background) data has been gathered from version 3.9.1 of the Ecoinvent database (2023).

Tabell 3 System boundaries (X=included, MND=module not declared, MNR=module not relevant)

Product stage			Assembly stage		Use stage								End of life stage				Benefits & loads beyond system boundary
Raw materials	Transport	Manufacturing	Transport	Assembly	Use	Maintenance	Repair	Replacement	Refurbishment	Operational energy use	Operational water use	De-construction demolition	Transport	Waste processing	Disposal	Reuse-Recovery-Recycling-potential	
A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D	
X	X	X	X	MND	MND	MND	MND	MND	MND	MND	MND	X	X	X	X	X	



Figur 1 System boundary

## LCA: Scenarios and additional technical information

The scenarios in the different modules beyond the cradle-to-gate are described as follows:

### Transport from production place to assembly/user (A4)

Transport from production place to assembly/user (A4)	Capacity utilisation (incl. return) %	Distance (km)	Fuel/Energy consumption	Unit	Value
Truck	53%	300	0.0436	l/t*km, diesel	13.08

### End of Life (C1, C3, C4)

	Unit	Value
Hazardous waste disposed	kg	0
Collected as mixed construction waste	kg	0.02
Reuse	kg	0
Recycling	kg	0.98
Energy recovery	kg	0
To landfill	kg	0.02

C1 – dismantling is assumed to be done by use of electrical tools. C2 – the collected mixed waste and sorted waste are transported by truck to landfill and waste processing facility, respectively. C3 – 98% of the product is recycled by remelting process to produce secondary aluminum billets, and C4 – 2% of the product is collected as mixed waste and landfilled.

### Transport to waste processing (C2)

Transport from production place to assembly/user (C2)	Capacity utilisation (incl. return) %	Distance (km)	Fuel/Energy consumption	Unit	Value
Truck	37%	20	0.0436	l/t*km, diesel	0.872

### Benefits and loads beyond the system boundaries (D)

Benefits and loads beyond the system boundaries (D)	Unit	Value
Recycled stainless steel scrap	kg	0.98
Substitution of primary stainless steel with net scrap	kg	0.88

## LCA: Results

The environmental performance indicators for Welded and Pickled Stainless Steel Products is shown in the following tables. For stages A1-A3 the results are aggregated.

### Core environmental impact indicators

Indicator	Unit	A1-A3	A4	C1	C2	C3	C4	D
GWP - total	kg CO2 eq	5.32E+00	3.01E-02	6.21E-02	2.03E-03	7.79E-04	9.58E-05	-1.71E+00
GWP - fossil	kg CO2 eq	5.26E+00	3.00E-02	6.21E-02	2.03E-03	7.78E-04	9.51E-05	-1.23E+00
GWP - biogenic	kg CO2 eq	5.17E-02	2.30E-05	1.34E-05	7.12E-07	6.30E-07	6.94E-07	5.07E-03
GWP - luluc	kg CO2 eq	5.22E-03	1.47E-05	6.99E-06	1.04E-06	1.85E-07	1.30E-08	-2.87E-04
ODP	kg CFC11 eq	1.44E-07	6.82E-10	9.88E-10	3.45E-11	5.79E-12	1.54E-12	-3.05E-08
AP	molc H+ eq	3.20E-02	7.44E-05	5.76E-04	5.57E-06	6.01E-06	8.69E-07	-4.58E-03
EP- freshwater	kg P eq	1.35E-03	2.19E-01	3.89E-01	1.63E-02	2.31E-03	5.96E-04	-3.48E+00
EP -marine	kg N eq	5.02E-03	2.03E-05	2.67E-04	1.46E-06	7.68E-07	4.01E-07	-1.13E-03
EP - terrestrial	molc N eq	5.51E-02	2.08E-04	2.90E-03	1.52E-05	8.18E-06	4.36E-06	-1.20E-02
POCP	kg NMVOC eq	1.90E-02	1.21E-04	8.59E-04	8.02E-06	2.52E-06	1.29E-06	-6.74E-03
ADP-M&M <sup>2</sup>	kg Sb-Eq	2.37E-03	8.61E-08	2.22E-08	5.84E-09	7.16E-10	5.24E-11	4.79E-07
ADP-fossil <sup>2</sup>	MJ	5.26E+00	4.59E-01	8.19E-01	3.09E-02	7.68E-03	1.33E-03	-1.30E+01
WDP <sup>2</sup>	m <sup>3</sup>	1.54E+00	2.36E-03	2.03E-03	1.55E-04	2.23E-04	1.55E-05	-4.98E-02

**GWP-total:** Global Warming Potential; **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; See "additional Norwegian requirements" for indicator given as PO<sub>4</sub> eq. **EP-marine:** Eutrophication potential, fraction of nutrients reaching freshwater end compartment; **EP-terrestrial:** Eutrophication potential, Accumulated Exceedance; **POCP:** Formation potential of tropospheric ozone; **ADP-M&M:** Abiotic depletion potential for non-fossil resources (minerals and metals); **ADP-fossil:** Abiotic depletion potential for fossil resources; **WDP:** Water deprivation potential, deprivation weighted water consumption

Reading example: 9,0 E-03 = 9,0\*10<sup>-3</sup> = 0,009

### Additional environmental impact indicators

Indicator	Unit	A1-A3	A4	C1	C2	C3	C4	D
PM	Disease incidence	2.96E-07	2.97E-09	1.61E-08	2.01E-10	6.48E-11	2.44E-11	-1.28E-07
IRP <sup>1</sup>	kBq U235 eq.	4.96E-01	5.75E-04	3.86E-04	2.81E-05	1.40E-05	5.98E-06	-3.61E-02
ETP-fw <sup>2</sup>	CTUe	1.67E+01	2.19E-01	3.89E-01	1.63E-02	2.31E-03	5.96E-04	-6.15E+00
HTP-c <sup>2</sup>	CTUh	2.17E-08	1.34E-11	1.91E-11	9.05E-13	2.35E-13	2.99E-14	-1.05E-08
HTP-nc <sup>2</sup>	CTUh	8.82E-08	3.28E-10	1.34E-10	2.24E-11	7.76E-12	2.36E-13	-1.90E-08
SQP <sup>2</sup>	Dimensionless	2.28E+01	6.13E-05	4.39E-05	4.26E-06	9.09E-06	3.57E-07	-4.03E-03

**PM:** Particulate matter emissions; **IRP:** Ionizing radiation, human health; **ETP-fw:** Ecotoxicity (freshwater); **ETP-c:** Human toxicity, cancer effects; **HTP-nc:** Human toxicity, non-cancer effects; **SQP:** Land use related impacts / soil quality

<sup>1</sup> This impact category deals mainly with the eventual impact of low dose ionizing radiation on human health of the nuclear fuel cycle. It does not consider effects due to possible nuclear accidents, occupational exposure nor due to radioactive waste disposal in underground facilities. Potential ionizing radiation from the soil, from radon and from some construction materials is also not measured by this indicator.

<sup>2</sup> The results of this environmental impact indicator shall be used with care as the uncertainties on these results are high or as there is limited experienced with the indicator

## Resource use

Parameter	Unit	A1-A3	A4	C1	C2	C3	C4	D
RPEE	MJ	1.29E+01	6.67E-03	4.63E-03	3.88E-04	1.87E-03	1.08E-04	-1.15E-01
RPEM	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TPE	MJ	1.29E+01	6.67E-03	4.63E-03	3.88E-04	1.87E-03	1.08E-04	-1.15E-01
NRPE	MJ	7.10E+01	3.96E-04	3.89E-04	1.94E-05	9.80E-01	4.66E-06	-1.21E+00
NRPM	MJ	1.77E+00	3.99E-02	7.48E-02	2.65E-03	2.62E-04	1.14E-04	-1.73E-01
TRPE	MJ	7.28E+01	4.59E-01	8.19E-01	3.09E-02	7.68E-03	1.33E-03	-1.30E+01
SM	kg	1.03E+00	4.60E-04	4.73E-04	2.34E-05	6.09E-06	4.92E-06	-2.10E-01
RSF	MJ	7.67E-02	1.12E-04	5.22E-05	3.21E-06	2.39E-06	2.54E-06	-2.30E-03
NRSF	MJ	5.44E-01	2.33E-04	1.41E-04	1.19E-05	1.41E-03	9.80E-07	-6.72E-03
W	m <sup>3</sup>	7.46E-02	6.13E-05	4.39E-05	4.26E-06	9.09E-06	3.57E-07	-1.25E-03

*RPEE* Renewable primary energy resources used as energy carrier; *RPEM* Renewable primary energy resources used as raw materials; *TPE* Total use of renewable primary energy resources; *NRPE* Nonrenewable primary energy resources used as energy carrier; *NRPM* Nonrenewable primary energy resources used as materials; *TRPE* Total use of non-renewable primary energy resources; *SM* Use of secondary materials; *RSF* Use of renewable secondary fuels; *NRSF* Use of non-renewable secondary fuels; *W* Use of net fresh water.

## End of life – Waste

Parameter	Unit	A1-A3	A4	C1	C2	C3	C4	D
HW	kg	7.35E+00	4.31E-04	6.81E-04	3.43E-05	1.40E-05	1.08E-06	5.88E-02
NHW	kg	1.13E+00	3.95E-02	5.05E-04	2.64E-03	1.29E-05	2.00E-02	4.16E-02
RW	kg	1.58E-04	1.39E-07	8.91E-08	6.69E-09	3.30E-09	1.34E-09	-3.05E-06

*HW* Hazardous waste disposed; *NHW* Non-hazardous waste disposed; *RW* Radioactive waste disposed.

## End of life – output flow

Parameter	Unit	A1-A3	A4	C1	C2	C3	C4	D
CR	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
MR	kg	5.00E-02	0.00E+00	0.00E+00	0.00E+00	9.80E-01	0.00E+00	0.00E+00
MER	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
EEE	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
ETE	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

*CR* Components for reuse; *MR* Materials for recycling; *MER* Materials for energy recovery; *EEE* Exported electric energy; *ETE* Exported thermal energy.

## Information describing the biogenic carbon content at the factory gate

Biogenic carbon content	Unit	Value
Biogenic carbon content in product	kg C	0.00
Biogenic carbon content in the accompanying packaging	kg C	0.00



## Additional requirements

### Location based electricity mix from the use of electricity in manufacturing

National production mix from import, low voltage (production of transmission lines, in addition to direct emissions and losses in grid) of applied electricity for the manufacturing process (foreground/core) per functional unit.

National electricity grid	Data source	Foreground / core [kWh]	GWP <sub>total</sub> [kg CO <sub>2</sub> - eq/kWh]	SUM [kg CO <sub>2</sub> - eq]
<i>market for electricity, low voltage   electricity, low voltage   EN15804, NO</i>	Ecoinvent v3.9.1 (2023)	0.40	0.0347	0.014

### Guarantees of origin (GoO) from the use of electricity in the manufacturing phase

No electricity with GoO was used in the manufacturing phase.

### Additional environmental impact indicators required for construction products

In order to increase the transparency of biogenic carbon contribution to climate impact, the indicator GWP-IOBC is required as it declares climate impacts calculated according to the principle of instantaneous oxidation. GWP-IOBC is also referred to as GWP-GHG in context to Swedish public procurement legislation.

Parameter	Unit	A1-A3	A4	C1	C2	C3	C4	D
GWP-IOBC	kg	5.32E+00	3.01E-02	6.21E-02	2.03E-03	7.79E-04	9.58E-05	-1.71E+00

**GWP-IOBC** Global warming potential calculated according to the principle of instantaneous oxidation.

### Hazardous substances

The declaration is based upon reference to threshold values and/or test results and/or material safety data sheets provided to EPD verifiers. Documentation available upon request to EPD owner.

- The product contains no substances given by the REACH Candidate list.
- The product contains substances given by the REACH Candidate list that are less than 0,1 % by weight.
- The product contains dangerous substances, more then 0,1% by weight, given by the REACH Candidate List, see table.
- The product contains no substances given by the REACH Candidate list.
- The product is classified as hazardous waste, see table.

### Indoor environment

Not relevant to this product

### Carbon footprint

Carbon footprint has not been worked out for the product.

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 Global program operator	<b>Program Operator</b>	tlf	+47 23 08 80 00
	The Norwegian EPD Foundation Post Box 5250 Majorstuen, 0303 Oslo Norway	e-post:	<a href="mailto:post@epd-norge.no">post@epd-norge.no</a>
		web	<a href="http://www.epd-norge.no">www.epd-norge.no</a>
 Global program operator	<b>Publisher</b>	tlf	+47 23 08 80 00
	The Norwegian EPD Foundation Post Box 5250 Majorstuen, 0303 Oslo Norway	e-post:	<a href="mailto:post@epd-norge.no">post@epd-norge.no</a>
		web	<a href="http://www.epd-norge.no">www.epd-norge.no</a>
	<b>Owner of the declaration</b>	tlf	+47 51 78 81 00
	Øglænd System AS Engelsvollvegen 264 4353 KLEPP STASJON Norway	Fax	-
		e-post:	<a href="mailto:oglaend@oglaend-system.com">oglaend@oglaend-system.com</a>
		web	<a href="https://www.oglaend-system.no/kontakt/norge/">https://www.oglaend-system.no/kontakt/norge/</a>
	<b>Author of the life cycle assessment</b>	tlf	+47 98 25 90 10
	Energiråd AS Trippevegen 1, 6009 Ålesund Norway	Fax	-
		e-post:	<a href="mailto:harald@energirad.no">harald@energirad.no</a>
		web	<a href="http://www.energirad.no">www.energirad.no</a>
	ECO Platform	web	<a href="http://www.eco-platform.org">www.eco-platform.org</a>
	ECO Portal	web	<a href="#">ECO Portal</a>