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The Norwegian EPD Foundation

## ENVIRONMENTAL PRODUCT DECLARATION

in accordance with ISO 14025, ISO 21930 and EN 15804

Owner of the declaration:

Program operator:

Publisher:

Declaration number:

Registration number:

ECO Platform reference number:

Issue date:

Valid to:

Øglænd System AS

EPD-Norge

The Norwegian EPD Foundation

<From EPD-Norge>

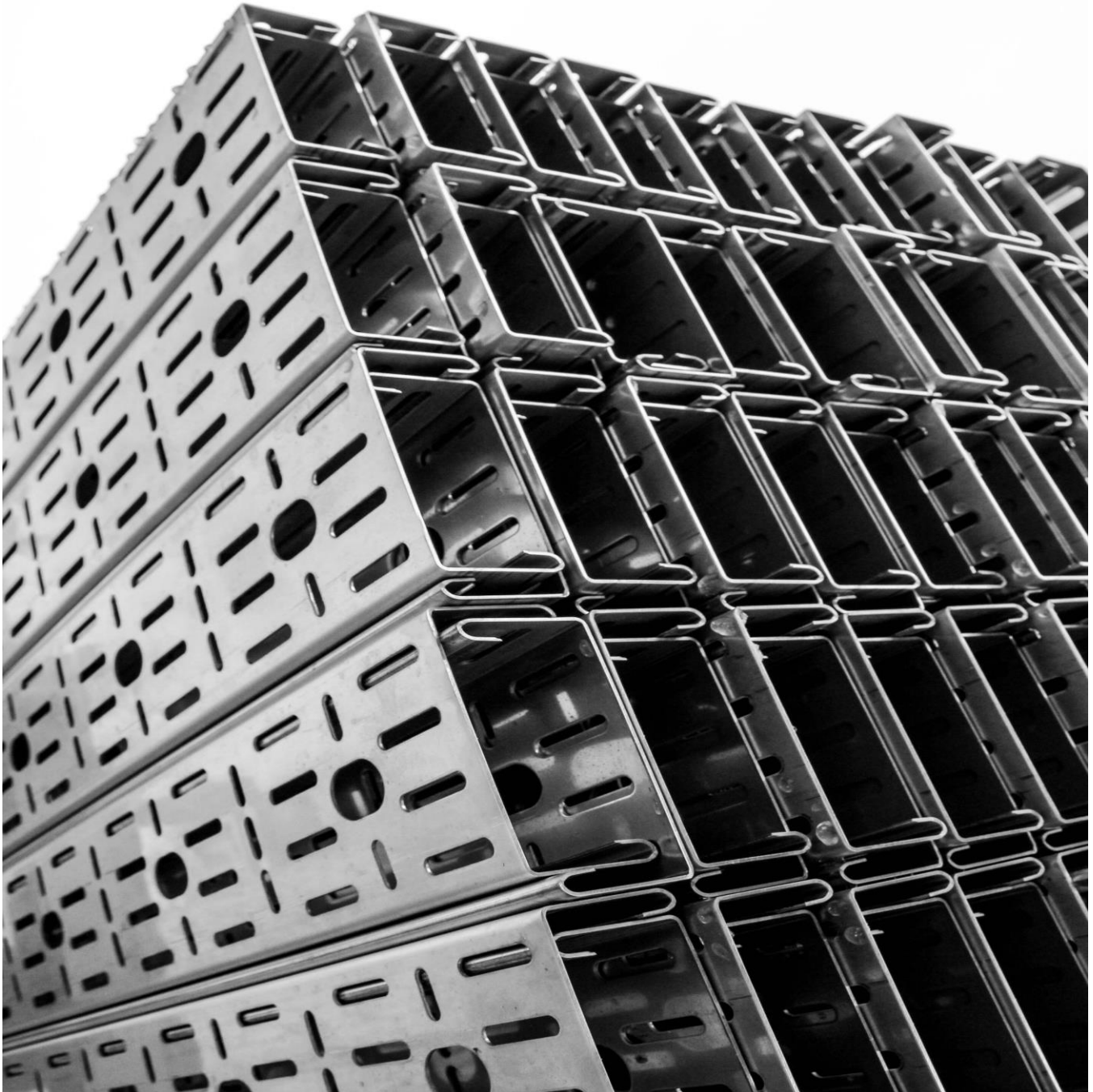
<From EPD-Norge>

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<xx.xx.xxxx>

Stainless Steel Products

Øglænd System AS



## General information

**Product:**

Stainless Steel Products

**Program operator:**

EPD-Norge

Post Box 5250 Majorstuen, 0303 Oslo

Phone: +47 23 08 80 00

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**Declaration number:**

&lt;From EPD-Norge&gt;

**ECO Platform reference number:**

&lt;From EPD-Norge&gt;

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

CEN Standard EN 15804 serves as core PCR

NPCR Construction products and services - Part A - April 2017

**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 information, life cycle assessment data and evidences.

**Declared unit:**

1 kg Stainless Steel Products

**Declared unit with option:**
**Functional unit:**
**Owner of the declaration:**

Øglænd System AS

Contact person:

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**Manufacturer:**

Øglænd System AS

Engelsvollvegen 264, 4353 Klepp St., Norway

Phone:

Tlf: +47 51 78 81 00

e-mail:

[oglaend@oglaend-system.com](mailto:oglaend@oglaend-system.com)
**Place of production:**

Klepp, Norway

**Management system:**

NS-EN ISO 9001:2015

NS-EN ISO 14001:2015

SN-BS OHSAS 18001:2007

**Organisation no.(Norway):**

985748128

**Issue date:**
**Valid to:**

&lt;xx.xx.xxxx&gt;

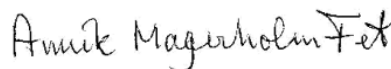
**Year of study:**

2017-2018

**Comparability:**

EPD of construction products may not be comparable if they not comply with EN 15804 and seen in a building context.

**The EPD has been worked out by:**



Annik Magerholm Fet

**Verification:**

The CEN Norm EN 15804 serves as the core PCR. Independent verification of the declaration and data, according to ISO14025:2010

 internal

 external

Third party verifier:

*Selamawit Mamo Fufa*

Selamawit Mamo Fufa

SINTEF Building and Infrastructure

(Independent verifier approved by EPD Norway)

Approved

sign

&lt;Name&gt;

(Managing Director EPD-Norway)

## Product

### Product description:

Øglænd System AS provides a wide range of products for support, cable ladders, cable trays and accessories. This EPD covers the products from Øglænd System AS that are made from stainless steel, and then machined - but not welded. 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 following products are covered by this EPD:

Name/ designation	Item group nr.
SPBE/SPB RF Tray W/Accessories	120
Support systems - Mekano/Flexogrid	140
UNO Channel Support systems	145
Perf. profiler/Stangstål	165
SmartCleat	172

Material	kg	%
Stainless steel with alloys	1,0	100,0

### Product specification:

The products covered by this EPD are produced by Øglænd System AS at their production site in Klepp, Norway. The steel grade used for these products is AISI 316L.

The manufacturing of these products comprises the cutting, punching, and forming of the steel input.

### Market:

Norway/Nordics

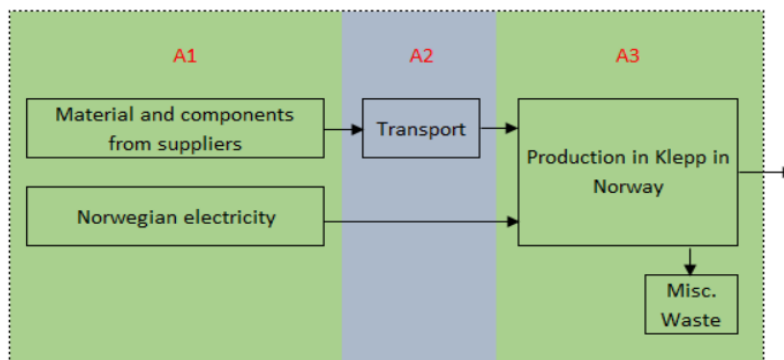
### Reference service life, product:

Not relevant for cradle to gate

## LCA: Calculation rules

### Declared unit:

1 kg Stainless Steel Products



### System boundary:

System boundaries are shown in the flowchart. Cradle to gate (A1-A3).

### 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 according to temporal, geographical and technological requirements.

### Temporal:

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.

### Geographical:

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.

### Technological:

Data represents technology in use. All generic (background) data has been gathered from the PE International GaBi 6 Professional Database and the Ecoinvent V3 database.

### Cut-off criteria:

All major raw materials and all the essential energy is 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.

## LCA: Results

All key assumptions and estimates are either presented in the EPD or can be found in NPCR Part A for construction products and services. The impacts generated in the life cycle stages described within the system boundaries are calculated using GaBi 6. Background data is from the GaBi 6 professional database and Ecoinvent v3. The impact assessment methodology used is CML 2001.

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

Product stage			Assembly stage		Use stage							End of life stage				Beyond the system boundaries
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	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND

### Environmental impact

Parameter	Unit	A1-A3
GWP	kg CO <sub>2</sub> -eqv	4,66E+00
ODP	kg CFC11-eqv	2,42E-07
POCP	kg C <sub>2</sub> H <sub>4</sub> -eqv	2,90E-02
AP	kg SO <sub>2</sub> -eqv	6,14E-02
EP	kg PO <sub>4</sub> <sup>3-</sup> -eqv	2,70E-03
ADPM	kg Sb-eqv	6,16E-04
ADPE	MJ	6,59E+01

GWP Global warming potential; ODP Depletion potential of the stratospheric ozone layer; POCP Formation potential of tropospheric photochemical oxidants; AP Acidification potential of land and water; EP Eutrophication potential; ADPM Abiotic depletion potential for non fossil resources; ADPE Abiotic depletion potential for fossil resources

## Resource use

Parameter	Unit	A1-A3
RPEE	MJ	1,01E+01
RPEM	MJ	2,39E-05
TPE	MJ	1,01E+01
NRPE	MJ	6,66E+01
NRPM	MJ	2,57E-04
TRPE	MJ	6,66E+01
SM	kg	9,96E-01
RSF	MJ	-
NRSF	MJ	-
W	m <sup>3</sup>	5,64E-04

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 Non renewable primary energy resources used as energy carrier; NRPM Non renewable 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
HW	kg	2,05E-03
NHW	kg	1,89E-02
RW	kg	3,89E-03

HW Hazardous waste disposed; NHW Non hazardous waste disposed; RW Radioactive waste disposed

## End of life - Output flow

Parameter	Unit	A1-A3
CR	kg	-
MR	kg	4,02E-01
MER	kg	-
EEE	MJ	-
ETE	MJ	-

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

Reading example:  $9,0 \text{ E-03} = 9,0 \cdot 10^{-3} = 0,009$

## Additional Norwegian requirements

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

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(A3).

Data source	Amount	Unit
GaBi 6 Electricity mix (NO) (2013)	0,0377	kg CO <sub>2</sub> -eqv/kWh

### Dangerous substances

- The product contains no substances given by the REACH Candidate list or the Norwegian priority list
- The product contains substances given by the REACH Candidate list or the Norwegian priority list that are less than 0,1 % by weight.
- The product contain dangerous substances, more then 0,1% by weight, given by the REACH Candidate List or the Norwegian Priority list, see table.
- The product contains no substances given by the REACH Candidate list or the Norwegian priority list. The product is classified as hazardous waste (Avfallsforskriften, Annex III).

### Indoor environment




No tests has been carried out on the product concerning indoor climate - Not relevant.

### Carbon footprint

Carbon footprint has not been worked out for the product.

## Bibliography

ISO 14025:2010	<i>Environmental labels and declarations - Type III environmental declarations - Principles and procedures</i>
ISO 14044:2006	<i>Environmental management - Life cycle assessment - Requirements and guidelines</i>
EN 15804:2012	<i>Sustainability of construction works - Environmental product declaration - Core rules for the product category of construction products</i>
LCA-Report D - Øglænd System AS	<i>Life Cycle Assessment Report: Øglænd System AS - EPD D - Stainless Steel Products</i>
EPD Outokumpu Oyj	<i>Cold Rolled Stainless Steel (2014)</i>
NPCR April 2017	<i>Construction products and services - Part A</i>

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