epd-norway
Global Program Operator

Environmental Product Declaration

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

Processed reinforcing steel from bars, coils and mesh

Owner of the declaration:
Sülzle Stahlpartner GmbH

Product name:
Processed reinforcing steel from bars, coils and mesh

Declared unit:
1 kg

Product category /PCR:
CEN Standard EN 15804:2012+A2:2019 & NPCR 013:2021 Part B for Steel and aluminium construction products 3.0

Program holder and publisher:
The Norwegian EPD foundation

Declaration number:
NEPD-12995-14272

Registration number:
NEPD-12995-14272

Issue date: 2025.11.10

Valid to: 2030.11.10

The Norwegian
EPD Foundation

General information

Product:
Processed reinforcing steel from bars, coils and mesh

Program operator:
The Norwegian EPD Foundation
Post Box 5250 Majorstuen, 0303 Oslo, Norway
Phone: +47 23 08 80 00
e-mail: post@epd-norge.no

Declaration number:
NEPD-12995-14272

This declaration is based on Product Category Rules:
NPCR 013 Part B for Steel and Aluminium Construction Products Version 3.0

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 processed reinforcing steel from bars, coils, and mesh

Declared unit with option:
1 kg of processed reinforcing steel from bars, coils, and mesh

Functional unit:
Not applicable

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

internal ☐ external **x**

Elisabet Amat, GREENIZE
Independent verifier approved by EPD Norway

Owner of the declaration:
SÜLZLE Stahlpartner GmbH
e-mail: nachhaltigkeit@Suelzle-Gruppe.de

Manufacturer:
SÜLZLE Stahlpartner GmbH
Hauffstraße 14 , 72348 Rosenfeld, DE

Place of production:
The EPD represents an average of 16 production sites of SÜLZLE Stahlpartner GmbH in Germany

Management system:
ISO 14001

Organisation no:

Issue date:
2025.11.10

Valid to:
2030.11.10

Year of study:
1st May 2024 – 30th April 2025

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:
EPEA GmbH – Part of Drees & Sommer

Approved Manager of EPD Norway

Håkon Hauan, CEO EPD-Norge

Processed reinforcing steel from rods, coils, and mesh

Product description:

Reinforcing steel that is processed by SÜLZLE specifically for the needs of the client into the form that is required in the respective project. The product represents the average production mix of all current production sites in Germany.

Product specification:

Reinforcing steel made from 95% steel scrap.

Materials	kg	%
Steel	1.00	100 %

Technical data:

Standard: DIN 488 Reinforcing steel

Ductility class B500A

- Material number: 1.0438
- Yield strength ratio (R_m/R_e): 1.05
- Total elongation at maximum load (A_{gt}): 2.5 %

Ductility class B500B

- Material number: 1.0439
- Yield strength ratio (R_m/R_e): 1.08
- Total elongation at maximum load (A_{gt}): 5.0%
-

The production sites Rosenfeld, Dessau-Roßlau, Lübeck, Seelze are certified according to ISO 9001:2015

All productions sites are certified according to ISO 50001:2018

Welding of steel structures up to EXC 2 in the sites Lübeck and Dessau is in accordance with EN 1090-2

Market:

Germany

Reference service life, product:

50 years

Reference service life, building:

50 years

LCA: Calculation rules

Declared unit:

1 kg of processed reinforcing steel from rods, coils, and mesh

Cut-off criteria:

Packaging material which accounted for less than 0,1% of the total material mass was excluded from this study. The excluded packaging material does not contain any biogenic carbon.

Allocation:

No allocation procedures were required as there is no co-product. In accordance with EN 15804 all the material and energy flows are allocated to the product of the respective production site. The results shown in this EPD are a weighted average across all production sites in Germany.

Data quality:

The processing of the customized steel bars takes place in Germany. Therefore, wherever possible a German dataset was selected. If no dedicated German dataset was available, a Europe-an or alternatively a Swiss dataset was used as an approximation. If none of those options were available, a global dataset was used.

For each of their suppliers, a dedicated EPD was used as data source wherever possible. To maintain database consistency, only EPDs that are based on ecoinvent were included. For all steel suppliers that did not provide an EPD, a custom dataset that represents the average of all other suppliers was created.

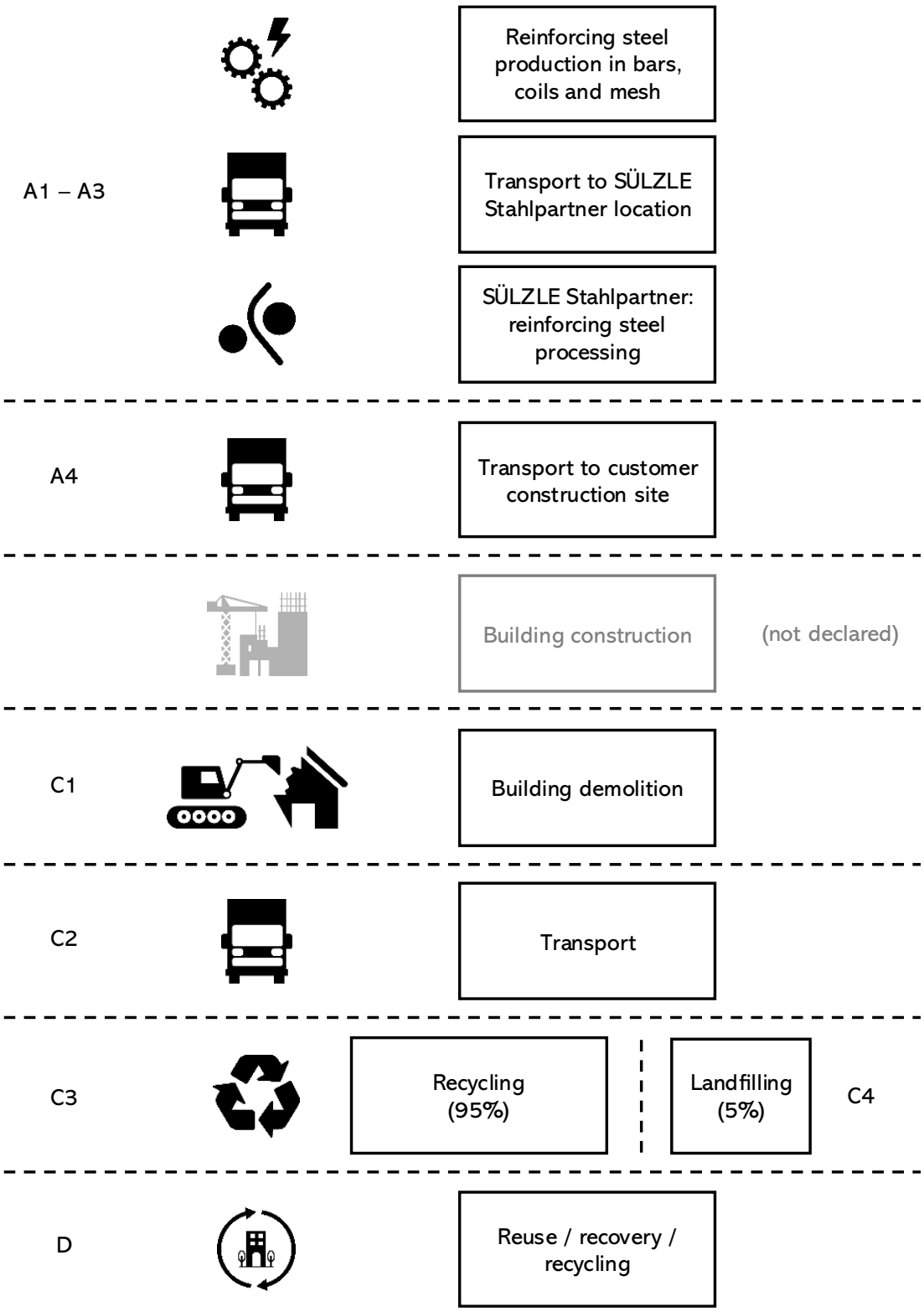
In terms of technological representation, as the process only covers the processing of the steel and the energy demand for that process was directly measured at site, the technological data quality was deemed as optimal.

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	MNR	MNR	MNR	MNR	MNR	MNR	MNR	X	X	X	X	X

System boundary:

This EPD represents a cradle to gate with options, with modules A1-A3, A4, C1-C4, and D as shown in the flowchart. Any cutoffs are treated within module A3. 95 % of the total mass go into recycling, which is considered in module C3, whereas the remaining 5 % are landfilled which is considered in module C4.



LCA: Scenarios and additional technical information

The following information describes the scenarios in the different modules of the EPD.

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	61%	80	0,044	l/km	3,49 l

The values for capacity utilization and fuel consumption were taken directly from the corresponding Ecoinvent processes.

End of Life (C1, C3, C4)

	Unit	Value
Recycling	kg	0.95
To landfill	kg	0.05

Shares are taken from the NMD default waste treatment scenario for reinforcing steel.

In C1 deconstruction with a diesel-operated building machine is considered. The Average consumption of demolition machines was set to be 0,001 liters per kg of Steel.

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 (to landfill)	61%	100	0,044	l/km	4,36 l
Truck (to recycling)	61 %	50	0,044	l/km	2,18 l

The values for capacity utilization and fuel consumption were taken directly from the corresponding Ecoinvent processes.

Benefits and loads beyond the system boundaries (D)

As per net flow calculation, no benefits or loads beyond the system boundaries are accounted for as the secondary material share going into the system equals the secondary material that is leaving the system. Therefore, the net use/supply of secondary material equals zero.

LCA: Results

Benefits and loads beyond the system boundaries (D)	Unit	Value
Substitution of primary steel with net scrap	kg	0

The result tables are given using a *market-based approach* for foreground system (A3)
More information about transparent reporting of electricity in the additional requirements section.

Core environmental impact indicators

Indicator	Unit	A1-A3	A4	C1	C2	C3	C4	D
GWP - total	kg CO2 eq	5,31E-01	8,32E-03	3,51E-03	5,46E-03	2,58E-03	3,81E-05	0,00E+00
GWP - fossil	kg CO2 eq	5,20E-01	8,32E-03	3,51E-03	5,46E-03	2,57E-03	2,85E-05	0,00E+00
GWP - biogenic	kg CO2 eq	1,21E-02	4,43E-06	3,84E-07	2,91E-06	3,20E-06	9,57E-06	0,00E+00
GWP - luluc	kg CO2 eq	3,24E-04	2,94E-06	3,05E-07	1,93E-06	3,37E-06	7,35E-09	0,00E+00
ODP	kg CFC11 eq	1,12E-08	1,73E-10	5,37E-11	1,13E-10	1,81E-11	7,85E-13	0,00E+00
AP	molc H+ eq	2,26E-03	2,05E-05	3,17E-05	1,34E-05	1,36E-05	1,58E-07	0,00E+00
EP- freshwater	kg P eq	3,39E-05	5,83E-07	1,03E-07	3,83E-07	1,14E-06	8,78E-09	0,00E+00
EP -marine	kg N eq	5,76E-04	5,61E-06	1,47E-05	3,68E-06	2,75E-06	6,48E-08	0,00E+00
EP - terrestrial	molc N eq	7,05E-03	6,07E-05	1,61E-04	3,99E-05	2,82E-05	7,05E-07	0,00E+00
POCP	kg NMVOC eq	1,93E-03	3,52E-05	4,80E-05	2,31E-05	8,42E-06	2,67E-07	0,00E+00
ADP-M&M[2]	kg Sb-Eq	1,41E-06	2,37E-08	1,29E-09	1,56E-08	1,44E-08	6,69E-11	0,00E+00
ADP-fossil[2]	MJ	8,58E+00	1,24E-01	4,59E-02	8,16E-02	3,32E-02	5,46E-04	0,00E+00
WDP[2]	m^3	1,04E-01	6,25E-04	1,13E-04	4,10E-04	5,59E-04	3,78E-06	0,00E+00

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 PO4 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 = $9.0*10^{-3} = 9.0*\frac{1}{10}*\frac{1}{10}*\frac{1}{10}=0.009$ 9.0 E+03 = $9.0*10^{3} = 9.0*10*10*10=9000$

Additional environmental impact indicators

Indicator	Unit	A1-A3	A4	C1	C2	C3	C4	D
PM	Disease incidence	5,24E+02	8,12E-10	9,00E-10	5,33E-10	1,29E-10	4,32E-12	0,00E+00
IRP[1]	kBq U235 eq.	5,24E+02	1,51E-04	2,06E-05	9,92E-05	3,38E-04	6,96E-07	0,00E+00
ETP-fw[2]	CTUe	5,30E+02	2,94E-02	6,51E-03	1,93E-02	8,27E-03	2,59E-04	0,00E+00
HTP-c[2]	CTUh	5,24E+02	5,30E-11	1,37E-11	3,48E-11	5,57E-12	2,83E-13	0,00E+00
HTP-nc[2]	CTUh	5,24E+02	8,21E-11	6,26E-12	5,39E-11	2,44E-11	2,20E-13	0,00E+00
SQP[2]	Dimensionless	5,28E+02	1,25E-01	3,23E-03	8,21E-02	1,93E-02	8,37E-04	0,00E+00

PM: *Particulate matter emissions;* ***IRP:*** *Ionising 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*

[1] 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.

[2] 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
PERE	MJ	7,57E-01	1,97E-03	2,82E-04	1,30E-03	4,51E-03	1,50E-05	0,00E+00
PERM	MJ	8,38E-01	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
PERT	MJ	1,59E+00	1,97E-03	2,82E-04	1,30E-03	4,51E-03	1,50E-05	0,00E+00
PENRE	MJ	6,68E+00	1,13E-01	4,14E-02	7,40E-02	3,24E-02	4,96E-04	0,00E+00
PENRM	MJ	2,16E+00	1,16E-02	4,53E-03	7,60E-03	8,27E-04	5,03E-05	0,00E+00
PENRT	MJ	8,86E+00	1,24E-01	4,59E-02	8,16E-02	3,32E-02	5,46E-04	0,00E+00
SM	kg	1,19E+00	1,29E-04	2,72E-05	8,49E-05	7,77E-05	8,48E-06	0,00E+00
RSF	MJ	3,63E-03	3,29E-05	3,21E-06	2,16E-05	4,01E-05	1,86E-07	0,00E+00
NRSF	MJ	9,68E-03	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
FW	m^3	4,35E-03	1,81E-05	2,99E-06	1,19E-05	1,60E-05	4,67E-07	0,00E+00

PERE *Renewable primary energy resources used as energy carrier;* ***PERM*** *Renewable primary energy resources used as raw materials;* ***PERT*** *Total use of renewable primary energy resources;* ***PENRE*** *Nonrenewable primary energy resources used as energy carrier;* ***PENRM*** *Nonrenewable primary energy resources used as materials;* ***PENRT*** *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;* ***FW*** *Use of net fresh water.*

End of life – Waste

Parameter	Unit	A1-A3	A4	C1	C2	C3	C4	D
HWD	kg	9,16E-04	1,23E-04	3,98E-05	8,10E-05	1,12E-04	8,76E-07	0,00E+00
NHWD	kg	1,15E-01	1,20E-03	2,98E-04	7,85E-04	2,60E-04	5,10E-02	0,00E+00
RWD	kg	3,51E-05	3,74E-08	5,05E-09	2,45E-08	8,27E-08	1,70E-10	0,00E+00

HWD *Hazardous waste disposed;* ***NHWD*** *Non-hazardous waste disposed;* ***RWD*** *Radioactive waste disposed.*

End of life – output flow

Parameter	Unit	A1-A3	A4	C1	C2	C3	C4	D
CRU	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
MFR	kg	1,77E-01	1,12E-04	2,24E-05	7,33E-05	9,50E-01	2,73E-04	0,00E+00
MER	kg	5,50E-05	1,48E-08	1,44E-09	9,69E-09	1,80E-08	8,35E-11	0,00E+00
EEE	MJ	9,67E-04	1,84E-05	2,05E-06	1,21E-05	2,99E-05	2,04E-04	0,00E+00
EET	MJ	3,24E-03	2,21E-05	1,09E-06	1,45E-05	1,88E-06	3,96E-05	0,00E+00

CRU *Components for reuse;* ***MFR*** *Materials for recycling;* ***MER*** *Materials for energy recovery;* ***EEE*** *Exported electric energy;* ***EET*** *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
Biogenic carbon content in the accompanying packaging	kg C	0

Note: 1 kg biogenic carbon is equivalent to 44/12 (approx. 3.67) kg CO_2

Additional requirements

Transparent reporting of energy

The EPD provides in the main result tables environmental impact categories based on a *market based approach*. The information below is provided so EPD users are able to understand the effect of these methodological choices.

The table below shows calculation of GWP-total for energy resources used in the manufacturing process (A3) for each approach.

Energy source	Data source	Amount*	Unit	GWP_{total} [kg CO_2 - eq/unit]	SUM [kg CO_2 - eq]
Guarantees of origin: Grid electricity	Vattenfall	1,11E-02	kWh	0,031	3,46E-04
Guarantees of origin: Self-generated solar electricity	Sülzle	1,41E-03	kWh	0,116	1,63E-04

The electricity guarantee of origin and/or biogas certificate utilized in this EPD is provided by *Vattenfall Real Estate Energy Sales GmbH* and certifies that the provided electricity consists of 100% renewable hydro power. Additionally, Sülzle themselves generate their own renewable solar electricity.

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.

x 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.

Name	CAS no.	Amount

Indoor environment

The product meets the requirements for low emissions.

Carbon footprint

While a carbon footprint analysis has not been conducted for the product separately, the results section does include an evaluation of Global Warming Potential (GWP) with such an analysis. The GWP total results presented in this EPD document represents the carbon footprint of the product studied

Bibliography

ISO 14025:2010	Environmental labels and declarations - Type III environmental declarations - Principles and procedures
ISO 14044:2006	Environmental management - Life cycle assessment - Requirements and guidelines
EN 15804:2012+A2:2019	Sustainability of construction works - Environmental product declaration - Core rules for the product category of construction products
ISO 21930:2017	Sustainability in building construction - Environmental declaration of building products
ecoinvent	ecoinvent Version 3.10 Cut-Off unit-process, 2023
NPCR Part A	NPCR Part A: Construction products and services, Version 2.0, EPD Norge, 2021
NPCR Part B	NPCR 013:2021 Part B for Steel and aluminium construction products 3.0
Fahy, K et al.	Fahy, K, Kelly, M, Newell, S - Analysis of Circular Economy Interventions during the Demolition and Enabling Phase of a Construction Project: An Irish Case Study
NMD:	Nationale Milieudatabase, End-of-Life scenarios, URL: https://milieudatabase.nl/en/environmental-data-lca/information-for-life-cycle-assessment-lca-practitioners/end-of-life-scenarios/

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